To Kitty for all her love.
ABSTRACT

COGNITIVE AND BEHAVIOURAL STRATEGIES IN THE MANAGEMENT OF SUICIDAL BEHAVIOUR

Sydney Gordon FRASER

Study One of this research aimed to assess interpersonal problem-solving ability in individuals who evidenced suicidal behaviour. Suicide attempters were compared with mixed psychiatric outpatients and normal controls on a measure of means-ends problem-solving. The results of Study One suggested that suicidal individuals produced significantly fewer relevant means, story directed responses and sufficient narratives compared to both normal and psychiatric subjects. On qualitative indices of introspection, emotional relevant means and on time and obstacle recognition suicides were significantly more deficient than control groups. Amongst suicidal subjects greater social dysfunction, stress and affective disturbance was associated with poorer interpersonal problem-solving. A model for the development of suicidal behaviour which suggested possible points of entry for intervention was proposed.

In Study Two three treatment strategies for suicidal behaviour - Cognitive Therapy, Problem-solving Training and Psychiatric After Care were compared. In general the results suggested that all treatments were having some positive effects. The most significant changes in problem-solving skills occurred in the group receiving such training but improvement in this area was also noted in the Cognitive Therapy Group. It was proposed that aspects of Cognitive Therapy may have direct influence on problem-solving behaviour.

Affective change seen at the end of eight weeks of treatment followed a different time course compared to cognitive change and the maintenance of such change to follow-up was shown to be dependent upon skills learnt during Cognitive Therapy and Problem-solving Training. Problem-solving Training had the most significant impact in improving social dysfunction and all treatments were shown to reduce suicidal ideation but at differing rates. One episode of suicide attempt occurred in the Psychiatric After Care Group representing a 6.25 percent rate of reoccurrence. It was concluded that the acquisition of interpersonal and cognitive skills hold implications for the prophylaxis of suicidal behaviour. Suggestions for early primary intervention within the family and education systems were proposed.
ACKNOWLEDGEMENTS

The author wishes to extend grateful thanks to the Leicestershire Health Authority for the provision of financial support and the facilities for access to experimental subjects. To Dr. R.K. Turner, District Psychologist, I extend my appreciation for quiet support and patience.

Grateful thanks are also extended to my Supervisors at various stages of this research - Dr. A.T. Carr, Dr K. Howells, Dr. Peter Trower and to Professor M. Herbert all of the University of Leicester Psychology Department.

For help with statistical analyses and computer programming my thanks to Dr. J. Beckett, Dr. R. Gillette and to Mr B. Williamson.

Much is owed to all the patients and other staff members who have willingly participated in this research; to the staff of Woodlands Day Hospital, Westcotes Hospital, Dr. G. Agami and Dr. R. Clacey, I express heart felt gratitude.

Many thanks are due to Mrs Lindsay Hague who has spent a great many hours on the patient preparation and typing of this thesis, and to Ms Dawn Elliott for her unstinting help with the preparation of diagrams.

Finally, and not least, to my family who have shared me with this research I express many, many thanks.
LIST OF CONTENTS.

List of Tables. xi.
List of Figures. xxi.
List of Appendices. xxii.

CHAPTER 1. Review of the relevant literature. 1.
  1.1 Introduction and general considerations. 1.
  1.2 Suicidal behaviour. 7.
   1.2.1 Nature and extent of suicidal behaviour. 7.
   1.2.2 Non-fatal suicidal behaviour. 11.
   1.2.3 Suicide intent. 17.
  1.3 Cognitive correlates of suicidal behaviour. 19.
   1.3.1 The role of hopelessness in relation to suicidal behaviour. 20.
   1.3.2 Depression and suicidality. 26.
   1.3.3 Locus of control. Relation to depression and suicidality. 28.
  1.4 Psychosocial theory and suicidal behaviour. 30.
   1.4.1 Sociological explanations of suicidal behaviour. 31.
   1.4.2 Suicidal behaviour in psychodynamic theory. 34.
   1.4.3 The behavioural perpective. 44.
   1.4.4 Summary. 50.

CHAPTER 2. Review of the Problem-solving literature, social adjustment and stress in suicidal behaviour. 52.
  2.1 Relevance of problem solving to suicidal behaviour. 52.
  2.2 Problem-solving in suicidal behaviour. 54.
  2.3 The problem-solving literature. 61.
   2.3.1 Interpersonal problem-solving. 61.
   2.3.2 Interpersonal cognitive problem-solving skills. 64.
3.4 Discussion. 169.
3.4.1 Interpersonal problem-solving: quantitative aspects. 169.
3.4.2 Interpersonal problem-solving: qualitative aspects. 173.
3.4.3 General considerations and implications. 176.
3.4.4 Limitations of the MEPS procedure in interpersonal problem-solving assessment. 180.
3.4.6 Social adjustment and interpersonal problem-solving. 188.
3.4.7 Combined effects of high stress and poor problem-solving. 189.
3.4.8 A model for the development of suicidal behaviour. 194.

CHAPTER 4. Review of psychotherapeutic strategies in the management of suicidal behaviour. 198.
4.1 Psychotherapeutic strategies. 199.
4.2 Crisis intervention and community care. 204.
4.3 Behavioural treatment of suicidal behaviour. 212.
4.4 Clinical psychiatric and related approaches. 217.
4.5 Summary. 225.

CHAPTER 5. Problem-solving training and cognitive therapy: Relevance to the management of suicidal behaviour. 228.
5.1 Problem-solving training in psychopathology. 228.
5.2 Overview of Beck's Cognitive Theory of Depression. 249.
5.3 Overview of cognitive therapy applications to Suicidal Behaviour and Depression. 262.
5.4 Summary. 267.

CHAPTER 6. STUDY 2: Cognitive and behavioural strategies in the management of suicidal behaviour. 269.
6.1 Introduction. 269.
6.4.1 Interpersonal Problem-solving functioning. 368.
6.4.2 Cognitive-affective functioning. 373.
6.4.3 Social functioning. 378.
6.4.4 Suicidal Behaviour. 382.


APPENDICES. 1.

BIBLIOGRAPHY. B1.
LIST OF TABLES

1. Demographic Characteristics of sample. 102.
2. Summary Table: Analyses of Variance (ANOVA) Means Ages of Normal, Psychiatric and Suicidal subjects. 103.
3. Summary Table: Analyses of Variance (ANOVA): Mean number of years of formal schooling for Normal, Psychiatric and Suicidal subjects. 104.
4. Mean (M), Range (R) and Standard Deviation (SD)/Suicide Intent: Suicidal group n = 20. 116.
5. Mean (M), Standard Deviations (SD) for Relevant Means, Relevancy Ratio and Irrelevant Means. 119.
6. ANOVA Summary Table: Relevant Means. 119.
7. ANOVA Summary Table: Relevancy Ratio. 120.
8. Frequency Table: Irrelevant Means. 121.
8.1 Mean and Mean differences: Irrelevant Means. 122.
10. ANOVA Summary Table: Sufficient Narratives. 123.
13.1 Frequency Table: Introspection Suicidal V Psychiatric. 126.
13.2 Frequency Table: Introspection Suicidal V Normal. 126.
13.3 Frequency Table: Introspection Psychiatric V Normal. 127.
15. Mean and Range: Enumerations of Means. 128.
16. Summary Table: Mean and Mean Differences: Time Referents. 129.
37. ANOVA Summary Table: POMS-C. 146.
38. Comparison of Mean POMS-C scores. 147.
39. ANOVA Summary Table: POMS-TMD. 147.
40. Comparison of Mean POMS-TMD scores. 148.
41. Pearson Correlation Coefficients Combined Groups: BDI and POMS by factor. 149.
42. Pearson Correlation Coefficients Suicidal Group: BDI and POMS by factor. 149.
44. Mean, Range, Standard Deviation: Social Dysfunction. 151.
45. ANOVA Summary Table: SDRS-T. 152.
46. Comparison of Mean SDRS-T scores. 153.
47. ANOVA Summary Table: SDRS-SS. 153.
48. Comparison of Mean SDRS-SS scores. 154.
49. ANOVA Summary Table: SDRS-IS. 155.
50. Comparison of Mean SDRS-IS scores. 155.
51. ANOVA Summary Table: SDRS-PS. 156.
52. Comparison of Mean: SDRS-PS scores. 157.
54. ANOVA Summary Table: LES-NNE. 158.
55. Comparison of Mean LES-NNE scores. 159.
56. ANOVA Summary Table: LES-NI. 160.
57. Comparison of Mean LES-NI scores. 160.
58. Mean HS and BDI scores for HI-Stress and LO-Stress Suicidal Subjects. 161.
59. Mean, Range and Standard Deviation: LOC. 162.
60a. ANOVA Summary Table: LOC. 163.
60b. Comparison of Mean LOC scores. 163.
61. Mean Social Dysfunction scores: Good and Poor Problem-solvers. 164.
62. Stress, Hopelessness, Depression and Suicidal Intent: Good and Poor Problem-solvers.  166.
63. Mean Suicide Intent scores for High and Low Sub-groups on Stress and Problem-solving.  167.
64. Mean Hoplessness scores for High and Low Sub-groups on Stress and Problem-solving.  167.
65. Mean Depression scores for High and Low Sub-groups on Stress and Problem-solving.  168.
66. Mean Social Dysfunction scores for High and Low Sub-groups on Stress and Problem-solving.  168.
67. Demographic characteristics of the three treatment groups - Cognitive Therapy (CT) Problem-solving Training (P-ST), and Psychiatric After Care (PAC).  273.
68. ANOVA Summary Table: Mean Ages of CT, P-ST and PAC subjects.  274.
69. ANOVA Summary Table: Mean number of years of formal schooling - CT, P-ST and PAC.  274.
70. Suicide Intent: Mean (M), Range (R), and Standard Deviation (SD).  276.
71. ANOVA Summary: Mean Suicide Intent.  276.
72. Means (M) and Standard Deviations (SD) - Relevant Means (RM), Irrelevant Means (IM) and Relevancy Ratio (RR) - Pre- and Post-Assessments: Social Problems.  284.
73. ANOVA Summary: Pre-assessment Relevant Means.  284.
74. ANOVA Summary: Post-assessment Relevant Means.  285.
76. Pre- Post- changes: Relevant Means.  286.
77. ANOVA Summary: Relevancy Ratio: Pre-assessment.  287.
78. ANOVA Summary: Relevancy Ratio: Post-assessment.  287.
79. Pre- Post- changes: Relevant Ratio.  288.
82. Irrelevant Means as a Proportion of Total Means. Pre-assessment.  290.

xiii.
83. Irrelevant Means as a Proportion of Total Means.  
Post-assessment.  

84. Time Referents: Pre-assessment.  

85. Time Referents: Post-assessment.  

86. Frequency of Time Referents: Pre- Post- 
Comparisons: CT.  

87. Frequency of Time Referents: Pre- Post- 
Comparisons: P-ST.  

88. Frequency of Time Referents: Pre- Post- 
Comparisons: PAC.  

89. Time Referents: Post-assessment Comparison: 
P-ST VS PAC.  


92. Introspection Pre- Post- Comparisons: CT.  

93. Introspections: Pre- Post- Comparisons: P-ST.  

94. Introspections: Pre- Post- Comparisons: PAC.  

95. Introspections: Post-assessment Comparison: 
P-ST VS PAC.  

96. Recognition of Obstacles: Pre-assessment: 
Social Problems.  

97. Recognition of Obstacles: Post-assessment: 
Social Problems.  

98. Means (M) and Standard Deviations (SD) and 
Relevant Means (RM) and Relevancy Ratio (RR) - 
Emotional Problems: Pre- and Post- assessments.  

99. Within groups Pre- Post- changes: Relevant Emotional 
Means.  

100. Within groups Pre- Post- assessment changes: 
Relevancy Ratios - Emotional Problems.  

101. Time Referents: Pre-assessment; Emotional Problems.  

102. Time Referents: Post-assessment; Emotional Problems.  

103. Introspections: Pre-assessment; Emotional Problems.  

104. Introspections: Post-assessment; Emotional Problems.  

xiv.
107. Suicide Ideation: Descriptive Statistics Pre-Treatment (PT), Weekly, End of Treat (BOT) and Follow-up (FU). 307.
108. Analysis of Variance Suicide Ideation: Pre-treatment. 308.
109. Repeated Measures Analysis of Covariance: Suicide Ideation Treatment (Group) Main Effect. 309.
110. Main Effects Summary. Suicide Ideation. 309.
111. Univariate Analysis of Covariance: Suicide Ideation Mid-treatment. 310.
112. Observed and adjusted means Suicide Ideation: Mid-treatment. 311.
113. Adjusted means comparisons Suicide Ideation: Mid-treatment. 311.
114. Univariate Analysis of covariance Suicide Ideation: End of Treatment. 312.
115. Observed and Adjusted Means Suicide Ideation: End of Treatment. 312.
116. Adjusted Means Comparisons Suicide Ideation: End of Treatment. 313.
117. Univariate Analysis of Covariance Suicide Ideation: Follow-up. 313.
118. Observed and Adjusted Means Suicide Ideation: Follow-up. 314.
120. BDI Depression: Description Statistics Pre-treatment (PT), Weekly, End of Treatment (BOT) and Follow-up (FU) scores. 317.
121. Analysis of Variance Depression: Pre-treatment. 318.
122. Repeated measures analysis of Covariance: Depression: Treatment (Group) Main Effect. 319.
123. Main Effect Summary. Depression. 319.
124. Univariate Analysis of Covariance Depression: Mid-Treatment. 320.
125. Observed and Adjusted Means Depression: Mid-Treatment. 320.
126. Adjusted Means Comparisons Depression: Mid-Treatment. 321.
128. Observed and Adjusted Means Depression: End of Treatment. 322.
129. Adjusted Means Comparisons Depression: End of Treatment. 322.
130. Univariate Analysis of Covariance Depression: Follow-up. 323.
131. Observed and Adjusted Means Depression: Follow-up. 324.
132. Adjusted Means Comparisons Depression: Follow-up. 324.
133. Hopelessness: Descriptive Statistics Pre-treatment (PT), Weekly, End of Treatment (EOT) and Follow-up (FU) scores. 327.
135. Repeated Measures Analysis of Covariance Hopelessness: Treatment (Group) Main Effect. 329.
136. Main Effect Summary: Hopelessness. 329.
139. Adjusted Means Comparisons Hopelessness: Mid-Treatment. 331.
140. Univariate Analysis of Covariance Hopelessness: End of Treatment. 332.
141 Observed and Adjusted Means Hopelessness: End of Treatment. 332.
142. Adjusted Means Comparisons Hopelessness: End of Treatment. 333.
143. Univariate Analysis of Covariance Hopelessness: Follow-up. 333.

xvi.
144. Observed and Adjusted Means Hopelessness: Follow-up. 334.
146. Social Dysfunction Total Scores; Descriptive Statistics Pre-treatment (PT), End of Treatment (EOT) and Follow-up (FU) scores. 337.
147. Analysis of Variance Social Dysfunction (Total) Pre-treatment. 338.
151. Observed and Adjusted Means Social Dysfunction (Total) End of Treatment. 341.
152. Adjusted Means Comparisons Social Dysfunction (Total): End of Treatment. 341.
155. Adjusted Means Comparisons Social Dysfunction (Total): Follow-up. 343.
156. Social Dysfunction (SDRS-SS). Descriptive Statistics Pre-treatment (PT), End of Treatment (EOT) and Follow-up (FU) scores. 345.
158. Repeated Measures Analysis of Covariance Social Dysfunction (SDRS-SS): Treatment (Group) Main Effect. 346.
159. Main Effects Summary: Social Dysfunction (SDRS-SS). 347.
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>162</td>
<td>Adjusted Means Comparisons Social Dysfunction (Total): Follow-up.</td>
<td>349</td>
</tr>
<tr>
<td>163</td>
<td>Univariate Analysis of Covariance Social Dysfunction (SDRS-SS): Follow-up.</td>
<td>349</td>
</tr>
<tr>
<td>164</td>
<td>Observed and Adjusted Means Social Dysfunction (SDRS-SS): Follow-up.</td>
<td>350</td>
</tr>
<tr>
<td>165</td>
<td>Adjusted Means Comparisons Social Dysfunction (SDRS-SS): Follow-up.</td>
<td>350</td>
</tr>
<tr>
<td>166</td>
<td>Social Dysfunction (SDRS-IS): Descriptive Statistics Pre-Treatment (PT), End of Treatment (EOT) and Follow-up (FU) Scores.</td>
<td>351</td>
</tr>
<tr>
<td>167</td>
<td>Univariate Analysis of Variance Social Dysfunction (SDRS-IS): Pre-treatment.</td>
<td>353</td>
</tr>
<tr>
<td>168</td>
<td>Repeated Measures Analysis of Covariance Social Dysfunction (SDRS-IS): Treatment (Group) Main Effect.</td>
<td>353</td>
</tr>
<tr>
<td>169</td>
<td>Main Effects Summary. Social Dysfunction (SDRS-IS).</td>
<td>354</td>
</tr>
<tr>
<td>170</td>
<td>Univariate Analysis of Variance Social Dysfunction (SDRS-IS): End of Treatment.</td>
<td>354</td>
</tr>
<tr>
<td>171</td>
<td>Observed and Adjusted Means Social Dysfunction (SDRS-IS): End of Treatment.</td>
<td>355</td>
</tr>
<tr>
<td>172</td>
<td>Adjusted Means Comparisons Social Dysfunction (SDRS-IS): End of Treatment.</td>
<td>355</td>
</tr>
<tr>
<td>173</td>
<td>Univariate Analysis of Covariance Social Dysfunction (SDRS-IS): Follow-up.</td>
<td>356</td>
</tr>
<tr>
<td>174</td>
<td>Observed and Adjusted Means Social Dysfunction (SDRS-IS): Follow-up.</td>
<td>357</td>
</tr>
<tr>
<td>175</td>
<td>Adjusted Means Comparisons Social Dysfunction (SDRS-IS): Follow-up.</td>
<td>357</td>
</tr>
<tr>
<td>176</td>
<td>Social Dysfunction (SDRS-PS). Descriptive Statistics Pre-treatment (PT), End of Treatment (EOT) and Follow-up (FU) scores.</td>
<td>359</td>
</tr>
<tr>
<td>177</td>
<td>Univariate Analysis of Variance Social Dysfunction (SDRS-PS): Pre-treatment.</td>
<td>360</td>
</tr>
<tr>
<td>178</td>
<td>Repeated Measures Analysis of Covariance Social Dysfunction (SDRS-PS): Treatment (Group) Main Effect.</td>
<td>360</td>
</tr>
<tr>
<td>179</td>
<td>Main Effects Summary. Social Dysfunction (SDRS-PS).</td>
<td>361</td>
</tr>
</tbody>
</table>

xviii.
180. Univariate Analysis of Covariance  
Social Dysfunction (SDRS-PS): End of Treatment.  361.

181. Observed and Adjusted Means  
Social Dysfunction (SDRS-PS): End of Treatment.  362.

182. Adjusted Means Comparisons  
Social Dysfunction (SDRS-PS): End of Treatment.  362.

183. Univariate Analysis of Covariance  
Social Dysfunction (SDRS-PS): Follow-up.  363.

184. Observed and Adjusted Means  
Social Dysfunction (SDRS-PS): Follow-up.  364.

185. Adjusted Means Comparisons  
Social Dysfunction (SDRS-PS): Follow-up.  364.

186. Frequency Occurrence of Suicidal Behaviour.  367.
LIST OF FIGURES

1. Profile of Mood States. 140.
2. Schematic Model of Route to Suicidal Behaviour. 196.
3. Mean reported levels of Suicide Ideation by group at four of ten assessment points. 315.
4. Mean reported levels of Depression (BDI) by group at four of ten assessment points. 325.
5. Mean reported levels of Hopelessness by group at four of ten assessment points. 336.
6. Mean assessed level of Social Dysfunction (Total). 344.
LIST OF APPENDICES

APPENDIX 1. Beck Depression Inventory. 1.
APPENDIX 2. Scale for Suicide Ideation. 4.
APPENDIX 3. Hopelessness Scale. 6.
APPENDIX 4. Social Dysfunction Rating Scale. 7.
APPENDIX 5. Life Experience Survey. 9.
APPENDIX 6. Profile of Mood States. 13.
APPENDIX 8. Suicide Intent Scale. 16.
APPENDIX 10. Cognitive Therapy for Suicide Attempters: Treatment Guide. 36.
APPENDIX 11. Interpersonal Problem-Solving (Social). 57.
APPENDIX 13. Suicidal Behaviour Record. 60.
CHAPTER: 1 REVIEW OF RELEVANT LITERATURE.

1.1. Introduction and general considerations.

This research effort aims first to examine and assess interpersonal cognitive problem-solving ability in individuals who have evidenced suicidal behaviour. Later the focus will shift to the evaluation of treatment intervention strategies for this group of individuals.

A review of the nature and extent of the problem of suicidal behaviour, its clinical and cognitive correlates, theoretical propositions - sociological, psychodynamic and behavioural - will, however, first be presented.

The contemporary study of suicidal behaviours has served to highlight crucial differences between completed suicide and attempted suicide. The last two decades has witnessed dramatic and divergent trends in the incidence of suicidal behaviours. There are grounds for regarding the two types of behaviours - suicide, and attempted suicide - (Stengel, 1964) as phenomenologically distinct. After taking account of identifiable social, epidemiological, motivational and psychological differences between completed and attempted suicide Kreitman et al., (1969) proposed the term parasuicide, referring to a behavioural analogue of suicide but without considering a psychological orientation towards death. Morgan (1975) proposed that deliberate non-fatal self-harm may be a more appropriate term than attempted-suicide and defined deliberate non-fatal self-harm (DSH) as
any deliberate non-fatal act, whether physical in nature, a drug overdose or poisoning, done in the knowledge that it was potentially harmful, and in the case of drug overdose, that the amount taken was excessive.

The World Health Organisation (1982) Working Party retained the term attempted suicide to emphasize the relationship of this behaviour to suicide but included all non-fatal intentional acts of self-injury and self-poisoning where the recommended dose was deliberately exceeded.

It has been shown that ten percent of suicide attempters go on to complete suicide within twelve months of their first attempt. Thus the meaningful study of suicidal attempts must take account of its critical relationship, even if in outcome alone, to suicide in general.

Schneidman (1979) acknowledged the difficulties and complexities in defining the term suicide and briefly described it as the human act of self-inflicted and/or self-intentional cessation.

In England and Wales intentional self harm and whether the harm was self-inflicted has to be clearly determined in cases of unnatural deaths. The determination of the status of unnatural deaths lies with coroners, who, in order to reach a verdict of suicide, have to be satisfied that the evidence proves that the person intended to take his or her own life. Widgery (1975) stated the law in relation to the determination of suicide suggesting that suicide must not be presumed
but had clearly to be proven by evidence.

Legal definitions of suicide imply that the act involves a conceptualization of death that
a) combines an individual's conscious wish to die and his actions to realise that wish,
b) it focuses on his intention (this invariably may have to be inferred by others),
c) the goal of the action relates to death rather than self-mutilation, and
and
d) it focuses on the concept of cessation of the individual's conscious life.

Thus the definition of suicide is clearly complicated and even more confusion occurs when the word is used in its adjectival sense (i.e. "suicidal"). Suicidal behaviours clearly occur in a background of inner turmoil and intolerable emotions and is acted out within a specific socio-cultural context. It is probably accurate to assume difficulties in assessing and 'proving' the individual intention to commit suicide given the background of psychological and other difficulties that clearly surround suicidal acts.

In its adjectival sense 'suicidal' conveys a number of meanings and refers to several categories of behaviour e.g. committed suicide, attempted suicide, threatened suicide, depressive behaviour or general self-destructive tendencies. In its temporal aspects it may refer to characteristics of the individual or to his behaviour in the past (was suicidal), present (currently suicidal) or future (will be suicidal).
In practice, however, the description is largely post hoc with the label more typically used after an individual has either committed or attempted suicide.

Where suicide is defined for medical, legal, or administrative purposes confusion may arise with regard to the individual intention. The coroner's considerations of the mode of death (natural, accident, suicide, homicide) often obscures the individual intentions in relation to cessation and further neglects consideration of the individual as a dynamically motivated psychosocial organism with specific purpose, intention and motivational needs.

An objective understanding of suicide must take account of the place suicide had in history. The deliberate taking of one's life is strongly condemned by contemporary Judaism as well as Christianity and Islam (Hankoff 1979). Although none of the canonical writings of these three religions contain clear prohibitions of this act, the religious ban, rooted in the Judeo-Christian tradition, has remained unquestioned throughout religious history. It is of some interest to note that acts of suicide, particularly martyrdom, have occurred at the same time and adjudged religiously acceptable.

The condemnation of suicide by the ancient Hebrews, who evolved stringent religious prohibitions in the second millennium B.C., contrasts with the greater tolerance for this act by the Egyptians with whom they were in close contact. It is suggested that the abhorrence of suicide for the ancient Hebrews existed because it exposed the whole community to the dire consequences of bloodshed —
the unattended corpse of one of its members.

Suicide seems to have occurred in all groups and societies (Choron, 1972). The Greek Senate provided hemlock for those individuals who had a good cause to commit suicide. Coincidental with the fall of the Roman Empire (c. 400 A.D.) and the rise of Christianity there was a dramatic decline in the number of suicides. The Christian doctrine regarding suicide, which condemns it as a sin (self-murder) was first formulated theologically by St. Augustine (354-430 A.D.).

St. Thomas Aquinas (1225-74 A.D.) elaborated church doctrine on suicide during the Middle Ages acknowledging God's sole control over life and death. The Augustinian - Thomastic view on suicide remains essentially the position of the Roman Catholic Church to this day.

Attitudes towards the morality of suicide have varied strikingly across different ages and cultures. For example, whereas Christianity declared suicide as a violation of the divine injunction against killing, some oriental cultures praise those suicides committed in order to prevent dishonour of self or family.

Within the Western tradition Socrates argued that no one had a right to determine the manner or timing of his death and Thomas Aquinas suggested that this should be binding on all men independent of any belief in a particular religion. Hume (1826), the renowned British empiricist, on the other hand, defended the individual right to suicide on the basis that humans were of so little account in the grand scheme of the universe that their actions were incapable of
profoundly affecting the divine order.

Those who defend the morality of suicide, argue that the control over the circumstances of an individual’s death rightly belongs to the individual. This claim is based on the more fundamental principle of respect for the freedom of every person to determine the course of his own life. The German Philosopher, Kant, (Wolff, 1973) whose moral reasoning propositions identified suicide as wrong, nonetheless saw free will as a necessary condition for the existence of morality.

In contrast to the foregoing moral, ethical, religious and political considerations, suicide as a rational act has also been the focus of much debate. The freedom to suicidal action presupposes the rational capacity to make such a decision. Psychological evidence (Cantor, 1973) suggested that suicides were limited by mental illness in the ability to think and act rationally. However, it was not until the nineteenth century that suicide came to be considered a mental illness (Veith, 1969). Szasz (1970, 1974) suggested in a critique of professional ethics that suicide was not discovered (in the nineteenth century) to be a disease but was, more precisely, declared to be one.

In recognition of the clinical tradition the law no longer punishes those who kill themselves or attempt to do so. It remains clear that despite the psychological and sociological evidence relating suicide to psychological or psychiatric illness, it would be extremely difficult to justify a claim that all suicide attempts were a result of mental illness.
Suicide and attempted suicide remain a fascinating and persistent social and clinical problem which could not be solely or easily understood in terms of health or illness. The contemporary view of suicide as a public health problem remains apparently at variance with the popular views of suicide which foster and permit its occurrence.

1.2. SUICIDAL BEHAVIOUR.


The reported national rates of suicide remain fairly stable year to year but differences persist between cultures (Barraclough, 1973). Suicide is recognised as one of the commoner causes of death. The World Health Organisation estimated that at least 1,000 persons kill themselves every day. In the developed countries of Europe and North America suicide ranks among the first five to ten causes of unnatural death.

Since the early 1960’s European countries have reported steadily increasing rates of suicide, with the exception of England and Wales and Greece where rates have fallen substantially (WHO, 1982). McClure (1984), however, in a reassessment of the England and Wales data agreed that a downward trend evident since the early 1960’s continued until 1975. However, from 1975-1980 the England and Wales suicide rate has increased annually from 75 per million in 1975 to 88 per million in 1980 representing a seventeen percent increase. This contrasts with a twenty four percent decline in rates between 1961 and 1974. It is worthy to note here the positive association (Low et al.,
1981) between the suicide rates in England and Wales and increases in
unemployment and spirit consumption (Central Statistical Office, 1977,

There are wide variations in the International Suicide rates per
100,000 population ranging from 40.3 in Hungary, 12.5 in the United
States, 8.2 in England and Wales, 4.6 in Northern Ireland to 2.8 in
Greece (Office of Health Economics, 1981). Several investigators
(Dean et al., 1976) considered that the actual suicide rates were
certainly underestimated given differences in the ascertainment of
suicide and in the legal procedures adopted in attributing suicide and
how death is recorded and coded (WHO, 1974). Various social,
economic, religious and social factors certainly play a part in
explaining the reported differences.

that each year in England and Wales approximately 4,000 people take
their own lives. This is equivalent to some twenty percent of all
unnatural fatalities and just over 0.7 percent of annual mortality
from all causes.

Dublin (1963) studied in New York the deaths from barbituate
poisoning, inhalation of gases, falls from high places and deaths
under unspecified circumstances. This study suggested that the
recorded suicide figures were understated by as much as thirty
percent. Stengel (1964) proposed that the suicide figures for Great
Britain were no more reliable than those of the United States and
pointed to the low suicide rates for the Republic of Ireland which
were most certainly influenced by religious factors.

McCarthy and Walsh (1975) undertook a study of suicide in Dublin during the five year period 1964-1968 using coroners’ records to estimate the discrepancy between coroners’ verdicts, the national suicide statistics compiled from them, and the clinical assessment of probability of suicide made by psychiatrists examining those same records. The findings clearly indicated that the official suicide rate underestimated the real rate in Dublin considerably by as much as 4.0 per 100,000 population.

A number of reasons have been proposed to account for the valid drop during the 1960’s in suicide rates in England and Wales. The earlier detection and appropriate treatment of psychiatric illness (Dorpat and Ripley, 1960; Robins et al.; 1960, Miles, 1977; Barraclough, et al., 1974) has been proposed as one reason for the decline.

The reduction in suicide deaths has also been linked with the official recommended introduction in the 1960’s of routine psychiatric consultation following attempted suicide (Greer and Bagley 1971; Kennedy, 1972). However, Weissman, (1974) has shown that there was a high drop-out rate for outpatient follow-up referrals, a reluctance among patients to accept treatment and a wide discrepancy between recommended and received treatments.

An effect associated with the rapid growth of the Samaritan organisation - which provides a confidential and befriending service to the distressed and suicidal - has also been proposed (Bagley, 1968;
Fox, 1975). Bagley (1968) has shown that in fifteen Boroughs in England and Wales which were being served by the Samaritans there was a six percent reduction in suicide rate. Whereas, in ecologically matched control Boroughs with no Samaritan organisation there was an increase of twenty percent. Replications of this study with tighter controls (Barraclough et al., 1977; Jennings et al., 1978) have however, failed to demonstrate a significant difference between Samaritan and non-Samaritan cities. It may well be that the Samaritans may be effective in reducing suicide rates but there was no easy way of proving this (Lawson, 1977a; 1977b; Innes, 1980).

The gradual replacement of barbiturate prescription with low lethal benzodiazepine preparations for sleep and neurotic disturbances and the reduction in toxicity of domestic gas supplies (Kreitman, 1976; Brown, 1974; Farmer, 1980) have also been proposed as significant changes that have direct relation to the reduction of suicide rates in the 1960's.

In spite of the proposed effects of fortuitous extraneous events - low toxic domestic gas, reduced prescriptions of barbiturates - not specifically designed (Brown, 1979) to deal with the psychosocial origins of suicidal behaviours or to allievate the social, emotional and psychological disturbances in potentially suicidal people - a trend for increasing suicide rate has become re-established since the mid-seventies. Brooke (1974) reported an International increase in suicide rates for the younger aged group (15-24) with suicide in the United States now established as the third leading cause of death among adolescents (McClure, 1984; Holinger, 1978) exceeded only by
accidents and homicide. It is also clear (Adelstein and Mander, 1975) that earlier recognised decreases in the suicide rate were due mainly to decreases among the older aged groups (35+) suggesting that the younger aged (15-24) were showing a greater willingness to engage in suicidal behaviours. However, throughout all European countries suicide was more common in the older age groups with the over sixties accounting for most suicides in any country.

1.2.2. Non-fatal Suicidal Behaviour.

The magnitude of the problem of non-fatal suicidal behaviour in general and drug overdoseage in particular poses an interesting and ever increasing dilemma. Throughout the Western world very large increases in the numbers of hospital-referred cases of poisoning have been reported during the last two decades. Accidental poisoning accounted for only a small proportion of this increase; the vast majority were attempted suicide (parasuicide, non-fatal deliberate self-harm).

Jones (1977) and Walsh (1982) have suggested that the current incidence in England and Wales is in the region of 100,000 episodes per annum. There are now some twenty cases of attempted suicide for every completed suicide, compared to a ratio of seven to one in the early 1960's (Trethowan, 1979). The annual growth in the total numbers since 1961 has averaged just over 10 percent in England and Wales and a similar picture has emerged in other European countries and North America (Brooke, 1974; Weissman, 1974; Wexler et al, 1978).
The highest rates of growth have occurred among young people (15-24). Female rates were considerably greater than those for males with sixty five percent of all cases fifteen years and over involving females. Similar trends have been observed in various centres - Newcastle (Smith and Davison, 1971), Greater London (Ghodse, 1977), Bristol (Morgan, 1979), Oxford (Bancroft et al., 1975) and in Edinburgh (Kreitman, 1977).

Whilst the problem of suicide is perennial in society it is recognised that 'attempted' suicide by self-poisoning is a recent phenomenon (Kessel, 1965). Dean, Alderstein and Spooner (1976) in their consideration of self-poisoning in Great Britain confirmed the considerable rise in self-poisoning acts in the last two decades (Smith, 1972) and recognised that the recent and worsening situation has developed in parallel with the increase in the prescription of psychotropic medicines (Dean, 1974). Alderson (1974) has pointed out that each successive ten-year cohort of individuals showed an increasing predisposition to self-poisoning to an extent that was not easily explained.

Although clinical studies (McCulloch, 1965) showed that the social solutions effected by a suicide attempt were invariably short lived and unsatisfactory, and for the more serious cases of overdose resuscitation was distinctly unpleasant (Greer and Lee, 1967), there was still evidence that an increasing number of individuals engaged in suicidal behaviour for the first time (Kreitman, 1976) and also showed a willingness to return to such a pattern of behaviour.
More than a negligible proportion of patients who attempt suicide later go on to complete suicide (Tuckman and Youngman, 1963). Depending upon the duration of follow-up, between 10.3 and 22 percent of 'attempted' suicides subsequently commit suicide. Retrospective studies (Dorpat and Ripley, 1967) on suicides indicated that a proportion varying from 8.6 to 33.1 percent had made previous suicide attempts. Ovenstone (1973) in Edinburgh in a study of suicides with a history of previous attempts showed that this group comprised some 47 percent of the sample, a proportion considerably in excess of that generally reported in the literature, and may in fact reflect the admission policy of the Edinburgh Regional Poisoning and Treatment Centre.

There was thus an area of overlap between the suicide and attempted suicide populations. Kennedy et al. (1974), however, confirmed the widely observed epidemiological distinctions and the diverging secular trends between these two populations supporting the contention that the two forms of behaviour had different aetiologies. In general, with regard to completed suicide, for both sexes, suicide rates increased with age but for each age-band male rates exceed those for females. There was an excess of deaths in the highest and lowest socio-economic groups usually associated with divorce, bereavement and urban residence (Farmer et al., 1977). Completed suicides usually planned their deaths carefully; it was usually a premeditated act deliberately undertaken to avoid discovery and to ensure cessation (Sainsbury 1967, 1973).

In contrast, taking into account the area of overlap (Stengel and
Cook, 1958), at a superficial level attempted suicides exhibit some quite dissimilar characteristics. Acts of non-fatal deliberate self harm were more common among the younger aged group (the modal age for completed suicides for both sexes lies in the late forties) with female rates exceeding male rates but with a recent trend for more younger men to make more attempts than before. The attempt itself may have been intended to communicate anger, to frighten or influence family and friends or to provide a means of temporary respite from an increasing intolerable situation (Bancroft et al., 1979). In contrast to completed suicides the attempt is frequently unplanned, impulsive and undertaken in a way that invites discovery.

It was now generally accepted that the two forms of behaviour differ markedly in numerous respects, but that they had important similarities and that individuals who engaged in the one were also likely to have higher than average likelihood of engaging in the other. The precise relationship between the two forms of behaviour continues to warrant close attention.

There were important differences other than death between completed suicide and the majority of attempts (self-poisoning, self-injury) (Overstone and Kreitman, 1974). Attempted suicidal behaviour was often seen as something akin to completed suicide (Kreitman, Philip, Orter and Bagley, 1969) or as more an enactment of dying which carries with it the discharge of some of the emotion appropriate to the actual event (Birtchnell and Alarcon, 1971).

Consistent with the steady increase in attempted suicide (Edwards and
Whitlock, 1968; Smith and Davison, 1972; Walsh, 1982) was the steady and alarming rise in inappropriate drug ingestion which has become the most common method used. Analgesics, sedatives and tranquillizers were among the most commonly used medications (Burston, 1969; Sanzito, 1970). Of a total of over seven thousand attempted suicides seen in Edinburgh between 1968-1974 self-poisoning accounted for between 95 and 99 percent of cases with nearly three-quarters of referrals poisoning themselves with previously prescribed drugs (Holding et al., 1977).

The increasing numbers of individuals who deliberately harmed themselves constituted a heterogeneous population presenting with varying degrees of severity of injury, differing apparent related motivational factors, personality characteristics and life histories. The cry for help explanation (Farberow and Schneidman, 1961) of this behaviour has wide appeal and acceptance. Other workers have suggested stress factors as important (McCullough and Philip, 1972); hostility (Whitlock and Shapiro, 1967) and impulsiveness as personality characteristics (Kessel, 1965) were posited by other workers. The variety of situations which provoked people to behave in suicidal ways remained numerous and complicated the ease with which generalisations about this type of behaviour could be made.

Cluster analysis techniques have been used in an attempt to delineate sub-groups of suicidal behaviour patterns (Paykel and Rassaby, 1978). Three main groupings of suicide attempts were identified. The largest group comprised patients who took overdoses with less risk to life in association with a predominance of interpersonal motivations.
A second smaller group was distinguished by high-risk violent acts against the self. The third group contained recurrent attempters (repeater) who made low-risk attempts and for whom hostility was part of the behavioural response pattern. When other studies using similar types of analysis were compared there was little consistency in the groups so defined highlighting inherent difficulties in methodology which accounted for the varying results.

Morgan et al (1975) found that 64 percent of attempters experienced some major interpersonal upsetting event with a 'key other' person suggesting that the suicidal behaviour was often a response to a situational crisis. The importance of situational factors has also been highlighted by other workers (Paykel et al., 1975; Bancroft et al., 1977). Situational factors were often threatening and experienced as stressful and were more expressions of personal turmoil than causes of the attempted suicidal act.

Delineating the differences in behaviour between social classes has proven very difficult in many areas. Variations in the rate of attempted suicide across major demographic and social groups has, however, shown a remarkable and consistent trend. There was a steep gradient of increasing rates with lower social class (WHO, 1982; Smith and Davison, 1971; Jacobson and Tribe, 1972; Morgan et al., 1975). The unskilled lowest socio-economic group has more than eight times the rate of attempted suicide as the professional from the highest socio-economic grouping. It has been reported (Kennedy and Kreitman, 1973) that the higher socio-economic groups were under-represented in public hospital statistics but this under-representation certainly did
not account for the wide difference in rates between the higher and lower socio-economic groups. The association with overcrowding, social disorganisation, debt, family violence was well recognised.

McCulloch and Philip (1972) argued that in trying to understand suicidal behaviour social economic group membership was largely irrelevant. They suggested that people who exhibit suicidal behaviour as a common experience were more like each other than they were to persons of their own socio-economic standing who do not exhibit this behaviour.

1.2.3. Suicide Intent.

Although the wish to die was by no means a necessary explanation of attempted suicide, suicide intent - the intensity of the wish to die at the time of the act - in relation to this behaviour has remained an important area of study.

It was often difficult to understand what was meant by a serious suicide attempt since many authors confound the degree of an individual's intent to kill himself with the medical consequences of the suicidal act (Motto, 1965; Greer and Lee, 1967; Stengel, 1969). Beck and Kovacs (1975) handled the problem of determining the seriousness of the individual's attempt by conceptualising intent as a dimension. For example, the person who provided strong evidence of the determination to end his life but who suffered little physical damage was conceptualised as high on intent but low on the dimension of medical lethality.
In a study using 227 attempted suicides, Beck, Beck and Kovacs (1975a) showed that the correlation between suicide intent and medical lethality for the entire sample was low. However, when subjects who made accurate predictions about the outcome of their attempt were considered separately from those subjects who made inaccurate predictions, a high positive correlation between suicide intent and medical lethality became apparent.

In general the study supported the conceptual usefulness of the dimension of intent and indicated that when an individual had an accurate conception of the lethality of the suicidal act, the resulting degree of danger to his life was proportional to the suicide intent.

Other workers (Birthchnell and Alarcon, 1971; Card, 1974) have supported the Beck group findings on the relationship between medical lethality and suicidal intent. However, there was also a body of research (Weiss et al., 1961; Heyse et al., 1969; Pallis and Barraclough, 1977; Pierce, 1977) which suggested that medical lethality and suicidal intent may be more closely related.

Together the studies suggest that there was no clear cut relationship between lethality and intent but that it clearly remained of vital importance to be able to identify those individuals who were likely to kill themselves. A high level of suicide intent may be associated with a high risk of future suicide. Although different results have been obtained (Card, 1974), there did appear to be an accumulating body of data (Motto, 1965; Weiss and Scott, 1974; Rosen, 1976)
indicating that attempted suicides of both high lethality and suicidal intent had a greater risk of subsequent suicide compared to those attempters of low intent and lethality.

It has been recognised that individuals who deliberately injure themselves did not accurately reveal their true suicidal intention as a result of direct questioning. This has led to oblique ways of assessing intent (Beck et al., 1974). Analysis of this scale to assess suicide intent identified four dimensions - expectancies and attitudes, premeditation, precautions against discovery and oral communication, each said to have "different antecedents, psychological concomitants and behavioural consequences."

The assessment of suicide intent has been shown to have research and clinical utility. Fox and Weissman (1975) examined the relationship between suicide intent and motivation. Attempters using violent means were shown to have made less impulsive acts, had greater intent to kill themselves and expressed more self-directed hostility and bizarre motivations. On the other hand, self-poisoning attempts were made more impulsively, was of reduced intent and motivations were to make an interpersonal communication with significant others or to re-establish a broken relationship.

1.3. Cognitive Correlates of Suicidal Behaviour.

The role of hopelessness, depression and locus of control has formed in recent years the focus of much clinical and research interest. With particular regard to suicidal behaviour researchers have explored
the use of these variables in adding to the predictive power of clinical evaluative judgements.

1.3.1. Role of Hopelessness in relation to suicidal behaviour.

The concept 'hope' was presented (Stotland, 1969) as a shorthand term for expressing an expectation of goal attainment. Hopefulness was considered to refer to high expectancies, and hopelessness to low expectancies of success. Stotland viewed hopefulness as a factor related to the production of adaptive action and the experience of concomitant positive affect. On the other hand hopelessness was envisaged as linked to maladaptive behaviour and negative affective feeling states.

Beck (1963), in an extensive study of fifty depressed, suicidal patients receiving psychotherapy, observed that suicidal preoccupations seemed related to the patients' conceptualisations of their situation as 'untenable or hopeless'. Suicide was seen as the only possible solution to their desperate or hopeless circumstances. Farber (1968) also observed that suicidal behaviour tended to occur when the outlook to life was hopeless and despairing.

Kobler and Stotland (1964) viewed 'attempted' suicide, suicide threats and suicide ideation as frantic problem-solving positions or as desperate pleas for help or ways of eliciting signs of hope from others. The nature of the response from others determined whether the individual would then produce suicidal behaviour. If the nature of the interpersonal response allowed the individual to retain their
original negative expectation about future outcomes, then suicidal
behaviour was more likely to occur.

The close relationship between the concepts of hopelessness and
helplessness have been noted in the literature (Mandler, 1972; Seligman,
1975; Abrahamson, Seligman and Teasdale, 1978). The learning that
outcomes were uncontrollable and the development of an expectation that
outcomes were uncontrollable has been linked in helplessness research
with the development of motivational, cognitive and emotional deficits.
People later came to attribute these deficits, globally called
helplessness, to a cause which may vary along the dimensions of
stability, specificity, or site - internal or external. According to
the reformulated helplessness hypothesis (Abrahamson et al., 1978) the
kinds of causal attributions people made for lack of control influenced
whether their helplessness would generalise across situations and time.

Mandler (1972) pointed out that the extreme experience of helplessness
led to the state of hopelessness. Helplessness was seen as an immediate
reaction to the situation and somewhat stimulus bound, whereas
hopelessness was a more generalised feeling of not learning what to do
in any situation. Hopelessness and helplessness were seen as related to
dysphoria, lowered self-esteem, affective experience of anxiety, and a
disruption of organised behaviour.

Stotland's (1969) review of the literature on hopelessness argued
strongly against the belief that hopelessness was a diffuse feeling
state and which by its very nature was too vague and unquantifiable to
be systematically investigated. Greene (1981) asserted that attempts to objectify and measure hopelessness did not do so at great cost to the phenomenological richness and complexity of the concept.

Stotland proposed that hopelessness could be readily objectified by defining it as a system of cognitive schemas whose common denominator was negative expectations about the future. Thus, the pessimistic or hopeless individual expected or believed that nothing would turn out right for him, nothing that he did would succeed, that his important goals were unattainable and his worst problems would never be solved. This proposition was clearly related to Beck's (1970) cognitive triad in depressive disorders - a negative attitude toward the self, the future and the outside world.

Several empirical studies support the relationship between hopelessness and suicidal behaviour. Bjerg (1967) in a systematic investigation of suicide notes found that in eighty-one percent of cases the writer regarded himself as having a desire which in his estimation would be impossible to fulfil. Farnham-Diggory (1964) in a comparison of self-evaluation and subjective life expectancy between a suicidal and non-suicidal group showed that it was the suicidal patients who showed a significantly constricted subjective view of the future i.e. a hopeless orientation.

When suicide and non-suicidal patients in life-crisis situations were compared (Ganzler, 1967) on various social and interpersonal perceptions, whilst both groups construed their current situations in negative terms, only the suicidal group were found to rate the future
negatively.

A factor analysis of the Beck Depression Inventory (BDI) (Cropley and Weckowiec, 1966) isolated a factor with high loadings for only two items - hopelessness and suicide wishes. Beck's own analysis of the intercorrelations of individual items of the Beck Depression Inventory showed that suicide wishes correlated most highly with hopelessness.

Minkoff et al (1973) and Melges and Bowlby (1960) have emphasized the importance of hopelessness as a moderator variable in a variety of psychopathological processes. This assertion was endorsed by Erikson, Post, and Page (1975) who substantiated that hopelessness and psychopathology were associated with lowered estimates of the perceived probability of goal-attainment.

Recent empirical efforts have focussed on clearly specifying the relationship between suicide intent and hopelessness. Minkoff et al., (1973) reported findings from sixty-eight consecutive suicide attempters. The cognitive element of negative expectations - one component of the syndrome of depression - was shown to have a stronger association with suicidal intent than depression itself. It was proposed that the high correlation between hopelessness and depression served to explain the well known association between depression and suicidality.

Confirmation and extension of these findings were provided by Wetzel (1976) who reported data on one hundred and fifty-four suicidal subjects. The reported data clearly indicated that hopelessness was
highly correlated with suicidal behaviour and that hopelessness scores differentiated between highly suicidal and the less suicidal individuals.

Garber, Beck, Weissman et al. (1974), used the validated Hopelessness Scale (HS) along with the Beck Depression Inventory (BDI) (Beck, 1970) and Suicide Intent Scale (Beck, Schuyler and Herman, 1974) on samples of attempted suicides. They found that while both depression and hopelessness were related to suicidal intent, the relationship between depression and suicidal intent disappeared when hopelessness was statistically controlled. Hopelessness was shown (Wetzel et al., 1980; Kovacs et al., 1975) to predict suicide intent better than measures of depression and that it accounted for the major portion of the variance between suicide and depression measures.

The link between alcoholism, suicide and hopelessness has also been considered. Alcoholics have been recognised as being at specially high risk for suicide. Dahlgren (1945), Chodorkoff (1964), Koller and Castanos (1968), have all pointed to alcoholism as a suicide-eliciting factor. Although one theory (Palola, et al., 1962) suggested that alcoholism itself was a chronic suicidal behaviour, more recent efforts, have sought to explain alcoholic suicidality by inferring a link with depression (Allman et al., 1972; Woodruff et al., 1973). Links between hopelessness and suicidal behaviour have been supported both by clinical (Beck, 1963) and empirical (Kovacs et al., 1975; Minkoff et al., 1973) studies.

The possibility that a link existed between hopelessness and suicidal
behaviour in alcoholics was examined by Beck, Weissman and Kovacs (1976). The results from their study with a group of alcoholics and non-alcoholics who attempted suicide shed some light on the puzzling association between alcoholism and suicidal behaviour. Again the major source of variance of suicide intent was shown to be hopelessness rather than depression - hopelessness being the key determinant of suicidal intent in both alcoholics and non alcoholics.

It is worthy to note that levels of hopelessness, albeit at lower levels than exists in clinical populations, do exist within the general population (Greene, 1981) with tendencies to a systematic linear increase in hopelessness associated with increasing age and with low socio-economic status.

The generality of the reported relationship between hopelessness, depression and suicidal intent was examined by Pokorny et al. (1975). In a sample of fifty-five attempted suicides a significantly higher correlation between depression and suicide intent than between hopelessness and suicide intent was found. For this group of patients then, hopelessness did not account for the observed relationship between depression and suicidality and was, therefore, inconsistent with other reported studies (Minkoff, 1973). Whilst the authors concluded that whereas the hopelessness - suicidal intent relationship did exist in some circumstances, it did not seem generalisable. It was proposed that demographic differences between samples studied may provide an explanation. It was suggested that in the presence of external social supports negative expectations were less relevant, whereas in the absence of such support negative expectations i.e.
hopelessness became associated with seriousness of suicidal intent.

1.3.2. Depression and Suicidality.

A number of early theorists (Menninger, 1938; Freud, 1950, 1957) have postulated that suicide was one of the usual end points of severe depression. It is clear that depression has been consistently reported as an accompaniment of suicide and 'attempted' suicide but the exact relationship needed some clarification.

Many statistical and clinical studies support the notion that depressed individuals were more likely to exhibit suicidal behaviour. Using a complex actuarial system, Pokorny (1964) investigated the suicide rate over a fifteen year period among former psychiatric patients. Diagnostic categories compared, the suicide rate for depressives was twenty-five times the expected rate and substantially higher than that for other diagnostic groups. Among patients depression was associated with an excess of suicide deaths.

Miles' (1977) survey of psychiatric conditions predisposing to suicide reviewed the incidence of suicide in various reasonably well defined psychiatric conditions. The large majority of suicides were shown to be associated with a small number of psychiatric conditions with the highest suicide rates occurring among those suffering primary affective disorders.

Beck (1967) reported the historical association between suicidal wishes and the depressed state. In one census of patients Beck
reported that suicidal wishes occurred in twelve percent of non-depressed individuals, but that it occurred substantially more (seventy-four percent) in depressed individuals. The intensity of the suicide wish increased with increasing depressive affect.

Findings consistent with those of Beck were reported by Paykel et al (1974) in a prevalence study of suicide feelings in the general population. Of seven hundred and twenty subjects nearly nine percent reported suicidal feelings of some degree. Subjects who reported experiencing suicidal feelings within the last year also reported minor psychiatric symptoms largely those of depression.

To add to the complexity of the relationship, suicidality and depression have emerged as relatively independent factors in some studies (Paykel and Dienelt, 1971) and depression as a clinical state does occur in many individuals who do not show suicidal behaviour. Beck et al. (1973) attempted to refine the nature of the association between depression and suicide. In a study of two hundred and seventy three consecutive attempted suicides, symptoms of depression as assessed on an inventory were examined in order to isolate those which were associated with suicidal wishes.

The authors found that suicidal wishes correlated most highly with cognitive factors such as pessimism, failure and disturbed feeling -anhedonia. Similar results were obtained with suicide ideators (Beck and Lester, 1977) suggesting that differing kinds of suicidal behaviour may be associated with similar psychological phenomena.
1.3.3. Locus of Control - Relation to Depression and Suicidality.

External supports theoretically confer a measure of 'control' over outcomes in life crisis situations. Over the past two decades research involving perceived internal versus external control of reinforcement as a personality variable has been expanding at a healthy rate (Joe, 1971; Lefcourt, 1972; Throop and MacDonald, 1971).

The concept of internal - external control of reinforcement grew out of social learning theory (Rotter, 1954; 1966; Rotter, Chance and Phares, 1972; Lefcourt, 1976; Phares, 1976). Social learning theorists persistently observed that changes in experiences following reinforcement appeared to vary systematically, depending on the nature of the situation and also as a consequence of consistent characteristics of the particular individual being reinforced. The nature of the reinforcement itself, the past history of such reinforcement and the value attached or attributed to that reinforcement were shown as inextricably bound as determinants of a given piece of behaviour. With regard to aversive events (Lefcourt, 1976), it was shown that there was variability in impact upon the individual if some measure of control over these events could be exercised. It was assumed that with internal - external control something approaching a normal curve distribution would obtain in the general population.

When psychopathological conditions are considered, locus of control has been most commonly investigated with respect to depressive disorders. A number of investigators have demonstrated a significant
relationship between clinical depression and internality - externality (Abramowitz, 1969; Calhoun, Cheney and Dawes, 1974; Lamont, 1972a, 1972b; Lamont and Brooks, 1973; Nadith et al., 1975, O'leary et al., 1974). Depression as measured by self-report inventories was found to co-vary significantly with an external locus of control. The relationship between depression and locus of control was by no means simple (Phares, 1972). Lamont (1972a) suggested that the obtained relationship might be explained on the basis of a mood-level response set to the Locus of Control scale. External items were judged as more pessimistic in wording compared to internal items. Endorsement of Questionnaire items were found to reflect the subject's degree of depression and the item - mood level, regardless of Locus of Control orientation. Nevertheless, the general finding that an external Locus of Control was associated with a predominance of negative affective experience (Melges and Weisz, 1971) remained.

Helplessness and locus of control theorists conceptualize perceived control in similar ways. Both theories place great emphasis on the contingency between action and outcome (Rotter, 1966; Seligman, 1975). The perception of control is a process related to the exercise of expectances regarding, or attributions made about causation. Hopelessness is closely related to suicidal behaviour and also relates to expectancies about future outcomes. Locus of control factors should, therefore bear some relationship to suicidal behaviour.

Procuik, Breen and Lussier (1976) have linked hopelessness and locus of control in a study using a student population, and as with earlier workers demonstrated a close association between hopelessness and
depression. Support for the relationship between suicide-proneness and locus of control comes from a number of studies (Williams and Nickels, 1969; Melges and Weisz, 1971; Lambley and Silbowitz, 1973; Weisz, 1977). Boor (1976) reported that cultural characteristics which fostered high perception of external control also fostered suicidal behaviour and provide data to support the supposition that the national suicide rates in the United States were influenced by the degree of perception of control in the population; specifically the higher the degree of externality the higher the suicide rate at least for the younger age groups.

In general a variety of studies (Brannigan et al., 1977, Calhoun, Cheyney and Davis, 1974; Nelson and Phares, 1971; Levenson, 1973) have supported the relationship between psychopathology, poor adjustment and external locus of control taking account of the past history of reinforcement, environmental factors and social learning experiences. These factors are relevant to the study of psychopathology.

1.4. Psycho-social theory and suicidal behaviour.

The understanding of suicidal behaviour, as it is with the understanding of any other aspect of human behaviour, demands insights drawn from different fields of study.

It is recognised that there exist clear associations between completed suicidal other forms of suicidal behaviour and although much of the earlier work focused largely on completed suicide more recently theoretical attention has shifted to include attempted suicide.
The discussion which follows examines the contributions of sociology, psychodynamic and behavioural theory to the understanding of suicidal behaviour.

1.4.1. Sociological explanations of suicidal behaviour.

The theoretical treatment of suicide was of great importance to the establishment of sociology as an academic discipline (Douglas, 1967).

The fundamental sociological analysis of suicidal behaviour largely hinged on the work of Durkheim, a French social philosopher (Durkheim, 1951). Durkheim attempted to generate a strictly sociological explanation of suicide which he considered superior to psychological and individualistic explanations. For Durkheim suicide was defined as death resulting from behaviour that the individual knew would lead to his own death - motives and intent were irrelevant to the definition. The sociological theory propounded, in fact, was aimed at explaining variations in social suicide rates in which the suicide rate as a collective could not be explained on the basis of any individual suicide. The suicide rate was seen as dependent upon factors external to and constraining of individuals. Suicidal potential within groups was low dependent upon how well individuals were integrated and regulated within that group. On the basis of integration (egoism) and regulation (anomie) Durkheim proposed a typology of suicide. Egoism referred to a lack of meaningful social interaction, and anomie to a lack of normative restraints on behaviour. Where low rates of integration and regulation prevailed high rates of 'egoistic' and 'anomic' suicides would be found in society. Maris' (1975) refinement
of Durkheim’s theory proposed that the suicide rate varied inversely with external constraints which had two dimensions, integration and regulation. High social integration and regulation were associated with low suicide rates. ‘Altruistic’ and ‘fatalistic’ suicides were minor causes of suicide representing opposite poles of egoism and anomie and which were arguably said to occur fairly infrequently (Johnson, 1965).

Whilst testing of Durkheim’s hypotheses have largely supported his conclusions, Gibbs (1972) and Douglas (1967) have insisted that the theory was untestable because key variables e.g. ‘social integration’ lacked operational definition. Douglas proposed that suicide had meaning only in so far as the behaviour of individuals who engaged in suicidal behaviour could be observed. This was in direct contrast to Durkheim’s group-derived social meaning of suicide. Douglas’s argument was that ‘situated meanings’ were different from ‘abstracted meanings’. This suggested firstly, that it was difficult to predict or explain specific types of social events such as suicide solely on the basis of their abstract meanings. Secondly, concrete instances of social action were of vital importance to the study of causation. Douglas proposed that sociological work on suicide should be reorientated toward intensive observation, description and analysis of individual cases of suicide which would create a large measure of commonality between the sociological and clinical approaches to understanding suicidal behaviour.

Breed (1963) suggested a relationship among white males and occupational mobility. He posited a structural interaction between the
individual, work failure or success and self esteem as important to the
determination of suicidal behaviour. The proposition took account of
the social dynamics of suicide but clearly failed to recognise that
work-failure was probably associated with a multiplicity of outcomes
including alcoholism, drug addiction, depression and would, therefore,
have poor predictive powers with specific regard to suicide.

Henry and Short's (1954) social-psychological study of suicide
acknowledged the relationship to high suicide rate of high status (Gibbs
and Martin, 1964) and low integration (external restraints) but went one
step further to add internal restraint (frustration - aggression) which
were said to be acting conjointly. Strong internal restraint was said
to be associated with self-directed aggression. The direct relationship
between status and suicide rates has been questioned by several workers
(Sainsbury, 1953; Lalli and Turner, 1968) who found an inverse
relationship between status and suicide i.e. the lowest social classes
have the higher rates of suicide; which was much in keeping with recent
epidemiological findings.

Although it is difficult to choose between the sociological perspectives
presented, the insight that collective behaviour for example, as
reflected in group suicide rates, needed a different level of
explanation than for the individual case (Giddens, 1971) is a unique
contribution of sociology to the study of suicide. It was of equal
importance to recognise that social forces alone could not predict or
explain individual suicidal behaviours.
1.4.2. Suicidal behaviour in Psychodynamic Theory.

There are different basic theoretical approaches to the problem of suicidal behaviours. The psycho-analytic approach was developed out of Freud's original theories in particular those associated with the death instinct. For some Freudian theorists (e.g. Menninger, 1938, Rado, 1951), the aggressive, destructive drive or death instinct (Thanatos) normally fused with the life instinct (Eros) to facilitate sublimation of destructive and aggressive impulses, becomes defused giving rise to aggressive and suicidal behaviour. Menninger distinguished the wish to kill, the wish to be killed and the wish to die as three elements essential to suicidal behaviour with self-directed aggressive acts evolving by a process of regressive-incorporation.

Hendin (1951) on the other hand excluded the postulation of a self-destructive drive and focused more on the frustration of dependency adaptations in depression which lead in turn to self-directed (retroflexed) rage. Zilboorg (1936) had earlier recognised the role of intrapsychically determined hostility and suggested that this usually combined with external/aetiological elements (e.g. separation) which eventually determined a proneness to suicidal behaviour.

Litman, (1967) proposed that there was more to the psychodynamics of suicide than hostility. He argued that suicide-predisposing mechanisms including guilt, anxiety, helplessness, hopelessness and feelings of abandonment were important considerations.
Many psycho-analysts viewed suicide as a failure of adaptation and for them the explanatory speculations about the significance of the death instinct remained a highly controversial aspect of psycho-analytic theory (Putterman, 1961; Furst and Ostow, 1965). Recent psycho-analytic writings recognised the breadth of the concept of suicide in relation to the variety of human behaviour. There has been a shift in emphasis towards understanding the multiple determinants and interacting motivations which produced suicidal behaviour as a final common pathway (Kubie, 1964).

Henry and Short (1954) proposed that a combination of psychoanalytic and sociological orientations could prove valuable in explaining human behaviour. The authors' fundamental psychological assumption - in keeping with frustration-aggression theory - was that an increase in frustration would lead to an increase in aggression either homicidal or suicidal. Henry and Short agreed that the experience of punishment favoured the inhibition of aggression implying that the suicidal individual had experienced more psychological punishment than the non-suicidal individual. The theme of aggression thus seemed a cornerstone of psychoanalytic insights or propositions about suicidal behaviour (Lester, 1972).

A number of studies have examined the relationship of hostility to attempted suicide (Vinoda, 1966; Philip, 1970; Weissman et al., 1973). Vinoda (1966) studied a group of female patients who were admitted to a psychiatric hospital following a suicide attempt. They were compared with fifty psychiatric inpatients and fifty convalescent medical and surgical inpatients. On the general hostility component
of the Hostility and Direction of Hostility Questionnaire (Caine, Foulds and Hope, 1967) the suicide attempters scored significantly more highly than the other groups, almost two standard deviations above the mean for normal subjects. In general suicide attempters were significantly more intropunitive in the direction of hostility than subjects in the comparison groups.

In a reanalysis of Vinoda's data, Murthy (1969), differentiated between mild and serious attempters, the latter of whom particularly females, showed significantly more self-directed (intropunitive) hostility. Data provided by Wiessman (1973), Bancroft et al. (1977) and Leonard (1977) supported the earlier finding with regard to experienced or expressed hostility.

The theme of hostility as it related to suicidal behaviour was further extended by personal construct theorists. Kelly (1961) construed suicide as an 'act to validate one's life'. Kelly proposed that there were two occasions when the constructions a person places on life may convince him that the abandonment of life would be the most sensible thing. The first occasion was when the course of events seemed so obvious in terms of the most unfavourable outcome that there seemed no point in waiting around for it. The second occasion was when all circumstances seemed so utterly unpredictable that the only definite thing one could do was to abandon life altogether.

When an individual's attempt at organising his personal construct system failed, instead of looking outwards he tended to look inwards in an attempt to limit his experiences and to redefine and reconstruct
his system of personal constructs. Landsfield (1971) proposed that suicidal behaviour would occur in the context of decreasing ability to make sense of, interpret or react to one's personal world in particular as it related to other people. Faced with interpersonal threat, guilt and an increasingly meaningless personal world a person reacted with hostility - that is - making events fit predictions rather than making predictions fit events. For the suicide attempter, the suicide attempt (the event) was seen as proof that he was resented or wished dead by some meaningful other(s) (the prediction).

In his psychological theory of suicidal behaviour Shneidman (1981) suggested that an unexpected suicide was a combination of three main ingredients and the presence of an 'igniting spark'. These four elements were described as

i. heightened inimicability.
ii. exacerbation of perturbation.
iii. increased constriction of intellectual focus.
iv. the idea of cessation - the igniting spark.

Inimicability referred to those qualities within the individual which were unfriendly towards the self and were derived from internal conflictual sources. Schneidman propounded two sorts of inimicability - the modal or characterological and the currently experienced level of inimicability. Pressures in physical and psychological health triggered acute exacerbations over and above the modal level of inimicability and were indexed by expressions of loss and failure. The highly suicidal condition was said to contain a state of
heightened inimicability.

The second ingredient, perturbation, described a state of general upset, a sense of heightened inner turmoil - an admixture of anxiety, distress, depression and agitation. Perturbation was considered to involve negative emotional states such as distress and grief, extrapunitiveness, intro-punitiveness, guilt, desertion and with-drawal. It was regarded as a universal but not sufficient concomitant of the suicidal act.

To complete the triad of necessary conditions there was a constriction of intellectual focus when the individual focused on mainly unbearable emotions and ways of escaping. The combination of heightened inimicability, elevated perturbation and increasing constriction allowed the individual to become incipiently suicidal.

The idea of cessation (death, eternal sleep) provided for the incipiently suicidal individual the opportunity to resolve the unbearable self destructive and disturbed state. Once the idea of cessation had entered the conscious mind the suicidal act was considered to have begun.

Furst and Ostow (1965) suggested that suicide was a personal reaction which could only be accounted for in terms of intrapsychic events that constituted the essential, final common pathway to the suicidal act. There were two essential factors. Firstly, there was a drive to self-destructiveness. Secondly, there was a set of psychological mechanisms which normally function to increase the adaptability of
instinctual behaviour, but which under the influence of disease malfunction to direct destructive instincts away from external objects and back upon the self. In constrast to Schneidman's propositions these mechanisms were largely unconscious.

The psychic mechanisms were largely related to fantasy formation determined by the interplay between psychic mechanisms and important wishes and memories. Some fantasies were said to be consistently associated with suicide. These included identification with the lost object when there was a failure in object relations and 'identification in death' occurred sometimes accounting for anniversary suicides when suicide presented itself as a means of regaining sameness.

The fantasy of rebirth often served to make the suicidal act more acceptable to the individual when it was considered as a preliminary to being reborn. For some suicides the wish to return to early anaclytic relationships became the precursor of suicide. At an unconscious level the fantasy of being reunited with (the) mother became distorted such that the image of inhabiting the body of mother became a compelling analogue to being interred making the wish to die ever stronger. Other fantasies included wishes to escape and wishes for revenge.

These determinants of the suicide act were not considered mutually exclusive and in general it was proposed that one or more would be present for any given individual. Litman and Tabachnick (1968) had made propositions regarding the presence of unconscious wishes which
contributed to the drive toward self-destructiveness. To these fantasy mechanisms they added that in general suicidal phenomena represented a failure of adaptation and, simultaneously, an attempt to achieve a new and better adaptation. Positive and negative adaptation had to do with the experience of success and failure. Negative adaptation occurred when the usual psychological mechanisms for dealing with environmental demands failed or were inappropriate and in no way facilitated achieving desired ends. Repeated failure in achieving adaptational ends lead to uncertainty and doubt. It was under such conditions when the individuals identity was threatened that he attempted to reduce himself to a state of nothingness.

Stengel (1977) proposed that the motives and causes underlying suicidal attempts were in essence the same as those of suicide. The interpersonal aspects of the act would be hard to ignore as the aggression directed against others was more manifest in suicide attempts than in suicide.

Of interest here, too, were self-mutilatory behaviours - indirect self-destructive behaviour (Simpson, 1980; Simpson, 1976). Self-mutilating involved behaviour producing physical injury. The acts were usually of low lethality (Pao, 1969; Simpson, 1975) and were typically precipitated by disturbances of interpersonal relations or loss, threatened loss or an abandonment by a significant other.

Menninger (1938) regarded self mutilation as a type of incomplete self-destructive behaviour which allowed the individual to gratify irresistible urges. The individual preserved life by concentrating
the suicidal impulse on part of the self rather than the whole. Rado (1933) had earlier referred to self-cutting as a type of symbolic castration. The sexual significance of this type of behaviour has been explored by several other workers. For women (Deutsch, 1944) this was one means of solving the menstrual conflict - the bleeding involved was a form of vicarious menstruation. For Vereechen (1965), self mutilation was a masturbatory equivalent in an id-weakened individual with poor control of autoerotic and autoaggressive impulses. An interesting view of this type of behaviour was offered by Waltzer (1968) who considered that it represented a compromise between the ambivalent wishes to love and to die. It represented a state of dissociation and depersonalization in which the individual was both participant and observer. From an existential point of view, Yap (1970), suggested that this behaviour occurred within the context of needing to affirm the reality of self in the presence of a core of existential doubt. Several theorists have suggested that some individuals had difficulty in distinguishing the self from the external world (Hartman, Kris and Lowenstein, 1949). Self injurious behaviour arose out of an attempt to establish body reality (Greenacre, 1954) or to trace ego boundaries (Bychowski, 1954).

For the psychodynamic theorist, suicidal behaviour in its various forms, since it is essentially a personal reaction, could be accounted for only in terms of intrapsychic events which contribute to the final pathway - suicidal action. Psychoanalytic observations have to some extent helped our understanding of related unconscious motives but there still remains a clear need for a unitary psychological theory of suicidal behaviour.
A number of major problems remain, however, with psychoanalytic theories. Baechler (1979) argued that the concept of a death wish or an impulse to die were both too ethereal to be based on substantial fact. He added further that the burden of proof belonged to anyone who advanced such hypotheses. His proposition was that a death wish at best explained death but that it certainly did not explain suicide.

Empirical testing of psychodynamic theories have become virtually impossible as there is little consensus on how best to operationalize constructs such as 'ego boundary' or 'body reality' and this, of course, undermines the utility of these hypotheses in understanding the motivations to suicidal behaviour. One of the most important unanswered questions regarding suicidal acts is the reason for this mode of expression for resolving underlying conflicts.

The ethological approach has been proposed as an alternative way of understanding suicidal behaviour (Jones and Barraclough, 1978; Jones et al., 1979). This grew out of earlier suggestions that the suicidal act might act as a social releaser (Stengel and Cook, 1958) Stengel (1962) later wrote that

....the suicidal attempt functions as an alarm system and an appeal for help. It does so almost with the regularity of an innate releasing mechanism.

These notions, of course, take account of the work of Lorenz and Tinbergen on the social behaviour of animals. Naturally, the application of ethological principles to the study of man's behaviour
is fraught with difficulties, but it has become increasingly recognised that such an approach might hold important theoretical and clinical relevance (McKinney and Bunney, 1969; Jones, 1971; White, 1974; Harlow, 1974).

The ethological concept of conservation - withdrawal, it was suggested, might bear relevance to the understanding of suicidal behaviour (Goldney, 1980) as it had proved useful in the understanding of the onset of both physical and psychological illness (Engel, 1962; Schmale, 1972, Schmale and Engel, 1975). From a biological point of view conservation - withdrawal referred essentially to the conserving of energy by reducing incoming stimuli and reducing activity. Goldney (1980) proposed that this concept would seem especially applicable to the understanding of drug overdoses when conservation - withdrawal would take account of wishes to escape from the environment and other feelings at the time of the suicidal act which in some made less demands both on consciousness and on the environment.

By accepting suicidal acts as examples of conservation - withdrawal - relatively undifferentiated responses to stress (or as Henderson (1974) would have it - as developmentally primitive signals for care), appropriate account would be taken of the person, his environment, and the complex of motivations underlying the response.

Arguably conservation - withdrawal as a concept may be too broad to allow more than tentative comparisons but it does provide a different frame of reference from which to examine suicidal acts.
Neuringer (1974) gives a parsimonious summary: he observed

....It may be more productive to think of suicide not as an arbiter of behaviour, but of it as the behaviour itself; a behaviour that may be invoked by any of a large class of stimuli and mediators....suicidal behaviour ought to be thought of as a general response tendency having in different people a differential place in the response tendency hierarchy, and which can be evoked by a wide variety of conditions.

1.4.3. The Behavioural Perspective.

There is little overlap between the vast literature on suicidal behaviour and behavioural theories in general. Psychological theories of suicide have largely neglected behaviourally orientated approaches and dynamically based theories have tended to predominate (Roberts, 1973).

Behavioural theory, learning theory and behaviour modification (Bootzin, 1975) which are sometimes used interchangeably, provide a framework of key postulates underlying the genesis, maintenance and extinction of human behaviour. The theory emphasised the environmental influences on behaviour; it focused more on aspects of overt behaviour (eschewing a disease oriented, medical model) and within this psychological model social reinforcement within the environment shaped and maintained given aspects of behaviour.

'Abnormal' behaviours were thus viewed more as acquired through a learning process as a function of environmental influences rather than
by means of some hypothetical unconscious repressed psychological conflicts. In short individuals learn to adopt suicidal behaviour in the same way as they learn to engage in more adaptive, coping behaviour.

The first systematic attempt to develop a behavioural formulation linking learning theory and suicide was provided by Frederick and Resnik (1971). For these workers suicide threats, attempts and completed suicide were viewed as aspects of suicidal behaviour. The notion of the suicidal person was accordingly challenged and target individuals were seen as engaging in suicidal behaviour. Suicidal behaviours were considered to be learned, and unlearned, in accordance with learning principles - operant conditioning (Skinner, 1938) classical conditioning and observational learning (Bandura, 1969).

Early workers when focusing on the consequences of suicidal behaviour (Hendin, 1950; Rubenstein et al, 1958) made two observations. Firstly, suicidal behaviour might serve the purpose of generating an active response from the environment. Secondly, the suicidal behaviour might have the desirable effect of modifying relationships with important others. Sifneos (1969) and Fawcett et al. (1966), proposed that those patients who discovered the instrumental power of suicidal behaviour would be more prone to make suicidal attempts in the future.

Rather than considering suicidal behaviours as the end product of a series of psychodynamic events, Frederick and Resnick (1971) consider suicidal behaviour from a stimulus - response learning theory point of
Suicidal behaviours were produced as 'a direct multiplicative function of drive or motivation multiplied by those past associations or habits connected with such behaviour'.

In keeping with the principles of associative learning Frederick and Resnick proposed reinforcing alternative competing non-suicidal behaviours such that extinction of suicidal responses could take place. Desensitization, assertive training and relaxation training were seen as useful therapies in the treatment of suicidal behaviour.

The reinforcing consequences of suicidal behaviour has already been touched on. In keeping with earlier propositions Bostock and Williams (1974, 1975) proposed an operant conceptualization. The main consequence of suicidal behaviour was the measure of control it achieved over the behaviour of significant others i.e. suicidal behaviours were seen as interpersonal manipulations or operants.

Inappropriate, suicidal behaviours become instrumental in gaining access to care-giving. Whilst Bostock and Williams (1974) do not propose that all suicidal behaviours could be explained or acquired in this way, they did suggest that a 'large proportion of suicidal behaviour took this form' and that 'some classes of suicidal behaviour were maintained by unwitting reinforcement from environmental contingencies.' The classes of suicidal behaviours were not specified by the authors.

Bostock and Williams (1974) have reported the use of tangible reinforcers and selective social reinforcement to bring suicidal
behaviour under control and to increase more adaptive coping behaviour in a ward based programme. Although the intervention was expensive in time and staff it provided a reasonably sound alternative to often unproductive and inefficient psychodynamically based approaches to changing the behaviour of suicide attempters.

Suicidal behaviours may be considered as maladaptive ways of gaining help (Ansel and McGee, 1971; Frederick and Resnick, 1971; Bostock and Williams, 1975). The authors suggested that the existence of suicide prevention services selected out and reinforced suicidal behaviour as a means of instrumentally eliciting care-giving. Further support for this proposition was provided by Ullman and Krasner (1975) who argued that the suicide prevention centre shaped the low risk individual towards the act of suicide.

While it was clear that among the 'population' of all suicide attempters, there was 'a group whose act was highly operant...' (Henderson et al., 1977), it remained unclear what proportion of suicide attempters fit this category exclusively. Kovacs and Beck (1977) and Goldney et al. (1979) have shown that a sizeable proportion of suicide attempters expressed a wish to die at the time of their suicide attempt, irrespective of the manifest lethality of the act. There are thus motivations associated with suicidal behaviour other than instrumentality and indeed there may be an overlapping relationship with surcease.

Of some interest for the learning theory model of suicidal behaviour, but clearly more related to self-injurious behaviour in psychotics and
the mentally handicapped are two reinforcement based hypotheses examining the motivation of self-injurious behaviour (Carr, 1977).

The first of these is the positive reinforcement hypothesis which states that self-injurious behaviour is a learned operant, maintained by positive social reinforcement, which is delivered contingent upon the performance of the behaviour (Lovaas et al., 1965). Time out procedures designed to remove access to all forms of reinforcement for a fixed period of time, contingent upon the emission of self-injurious behaviour, have been used to eliminate or greatly reduce self-injurious acts (Wolff, Risley, Johnson, Harris and Allen, 1967; Jones, Simmons and Frankel, 1974). The usual interpretation of results of these studies was that self-injurious behaviour decreased because the maintaining social reinforcement had been removed. However, this was difficult to assess since there were no regular measurement of the delivery of social reinforcers during the establishment, maintenance and extinction phases of self-injury. At the same time it was also possible that the time out procedures might constitute aversive stimuli, so that self-injurious behaviour decreased, not because of the removal of social reinforcers, but because of the punishing aspects of the time out procedure.

Carr, Newsom and Binkoff (1976) proposed a negative reinforcement hypothesis which suggested that self-injurious behaviour was maintained by the termination or avoidance of an aversive stimulus following the occurrence of a self-injurious act. In short, the proposition was that self-injurious behaviour was motivated by a wish to escape. Carr et al., (1976) and Jones et al., (1974) have shown
that demands which constituted aversive stimuli were likely to trigger
self-injurious behaviour. This recognition has implications for
procedures such as desensitization and counter conditioning which may
be used to bring the behaviour under control.

With regard to suicidal behaviour Ferster (1974) considered the
verbalization of suicidal ideas to be a way of avoiding or escaping
from aversive stimuli. The subsequent reinforcement of these
verbalizations from the social milieu allowed the behaviour to become
established and maintained and used instrumentally to maintain certain
contingencies in their surroundings.

Suicidal behaviour as part of the general behavioural repertoire may
be acquired by imitation learning. In this case the transmission of
the behaviour would be controlled by the anticipation of reinforcement
to come, rather than by immediate reinforcement which the person could
experience in the present set of circumstances. Bandura (1977) has
proposed, in an analysis of the concept of anticipated reinforcement,
that behaviour in man was governed more by the anticipation than the
realization of consequences. This would explain the existence or
persistence of a number of behaviour patterns which never lead to real
reinforcement. The typical completed suicide never lead to real
reinforcement! Frederick and Resnik (1971) have shown that the
anticipation of reinforcement, that is, a reduction in tension or
change in surroundings underpinned the acquisition of suicidal
behaviour. Escape and avoidance motivation was shown to figure in a
sizeable proportion of suicidal individual assessed after their
attempt (Kovacs, Beck and Weissman, 1975) when the various motives
included escaping from an unpleasant situation or to obtain a change in their surroundings.

Immediate reinforcement expectancies is an important element in the understanding of some suicidal behaviours. There was the distinct possibility that attempted suicide would be repeated if it achieved positive social reinforcement, contingent on the emission of the suicidal behaviour. Many attempts are known to occur in the presence of somebody nearby which would allow for immediate positive reinforcement to occur. The worrying thing was that a failure to obtain social reinforcement could act as an aversive stimulus itself leading to increases in suicidal behaviour.

Whilst the learning theory approach would provide a framework for determining and analysing those contingencies which elicit suicidal behaviour it is considered inadequate as it fails to take account of the cognitive correlates of suicidal behaviour e.g. hopelessness and pessimism. The role of cognitive factors will be further discussed below.

1.4.4 Summary.

Chapter one considered the nature and extent of suicidal behaviour, an ever increasing public health concern, from its historical, social, cultural and clinical contexts. Sociological and psychodynamic theories, whilst having broad general appeal remain difficult to test and the behavioural propositions considered have not yet been utilized widely with suicidal individuals. The clinical context (intra- and
interpersonal) of suicidal action will form the basic focus of the discussion to follow which now turns to examining interpersonal problem-solving in suicidal individuals.
CHAPTER 2.

REVIEW OF THE PROBLEM-SOLVING LITERATURE, SOCIAL ADJUSTMENT AND STRESS IN SUICIDAL BEHAVIOUR.

In order to widen understanding of suicidal behaviour in general, the role of stress factors and factors related to social adjustment have become areas of concern. Their relationship to the problem-solving ability of the suicidal individual would be considered in sections, 2.3.4. and 2.5. The nature of both impersonal and interpersonal problem-solving skills will be reviewed, and the relevance of interpersonal cognitive problem-solving skills to suicidal behaviour will be drawn out in sections 2.1 and 2.2.

2.1. Relevance of problem-solving to suicidal behaviour.

The main aim of this study is to assess the level of means-ends problem-solving ability for social and interpersonal difficulties in suicide attempters using a standardised story-building format.

Approaches to the treatment of the suicidal individual have so far produced unconvincing results (Ettlinger, 1975; Kreitman, 1977) both in terms of the efficacy of treatment programmes - reducing repetition rates - and in terms of delineating those aspects of a given therapy that work and those that are ineffectual.

A readily acceptable observation about the behaviour of the suicidal individual is that he or she usually presents with a variety of acute
and sometimes chronic (in the individual who repeatedly presents with this kind of behaviour) unresolved interpersonal difficulties. A question that comes to mind and which has so far not been adequately addressed relates to whether suicidal individuals have limited or poor interpersonal problem-solving abilities. If this is the case, then are these abilities different from or do they share much in common with other psychopathological and normal groups? Is this a developmentally ordered deficit which becomes manifest under certain conditions as part of a pathological or behavioural decline the end point of which is the production of suicidal behaviour?

None of these questions are readily answerable so that the original research question - assessing the level and kinds of interpersonal cognitive problem-solving skills that are characteristic of this group seems a reasonable starting point.

Before moving on to discuss the relationship between problem solving and human social adjustment it seems important to make explicit an aspect of the nature of patient-therapist, helper-client contact and problem-solving arrangements. Entry into the helper network allows the therapist-helper to provide solutions to problems presented by clients perhaps unwittingly reinforcing thereby already crystallised notions about themselves as poor problem-solvers.

This kind of 'treatment' arrangement seems to have two consequences. Firstly, it increases the probability that the suicidal behaviour will re-occur, in the face of future social/interpersonal disruption to regain admission to the helper network i.e. as an operant (Bostock and
Williams, 1975). Secondly it does not adequately prepare the suicidal individual to deal with the variety of real life problems which are bound to be encountered at some future date.

2.2. Problem Solving in Suicidal Behaviour.

Problem solving behaviour in suicidal individuals has become of increasing interest following the recognition of the inadequacies of a number of clinical instruments including the Minnesota Multiphasic Psychological Inventory, the Rorschach and the Thematic Apperception Test, to accurately assess suicidal risk. Problem solving was seen as another possible means of assessing suicide risk (Shneidman, 1957; Neuringer, 1961, 1964a).

The approach of these workers was based on the belief that suicidal phenomena was best understood by carefully examining the cognitive characteristics of suicidal individuals.

The cognitive approach focuses on thinking processes in particular. Shneidman (1957) described the suicidal person as evidencing faulty thinking and incorrect logic. Schneidman related different types of logic to the suicidal behaviour. Four types of logical processes were proposed - catalogic, normal logic, contaminated logic and paleologic. Catalogic was a destructive cognitive process which undermined the independence of the self-concept as it related to the self as perceived by others. Lonely, helpless, fearful and pessimistic individuals who had difficulties in making personal relationships were to be found in this group. Their suicidal act was classified as
referred suicide. Older, widowed or individuals in physical pain made up the surcease suicide group in which normal logic following Aristotelian principles formed the basis of the thinking processes. Death afforded surcease from pain. In the third group - contaminated logic - the semantic error lay in the emphasis on the self as experienced by others. For individuals in this group suicide was believed to afford a passage or transition to another life. In the final group paleological attributions were made during a psychotic phase when the individual experienced delusions or hallucinations.

Beck (1967) had later shown that faulty information processing in which conceptual distortions including, arbitrary inferences, selective abstraction, over generalization, magnification and minimisation and personalisation were critical factors in the development of depressive disorders. Whilst Schneidman's (1957) original propositions have much to recommend them in terms of explaining the diversity of suicidal actions, logical errors of thinking are not exclusive to the suicidal groups. Depression and suicidality it has been shown have close clinical, experiential and practical links so that Beck's notions of a thinking disorder related to the genesis of depression can also be seen as having a crucial role in the development of suicidal behaviours.

The cognitive approach to suicide emphasises the belief that suicidal phenomena can best be understood by examining the cognitive characteristics of suicidal individuals. Cognitive theory posits that depression is the consequence of a negative cognitive set. Depressives hold systematic negative beliefs about themselves, their
world and their future — a negative cognitive triad. Systematic distortions in information processing, illogical thinking, maintain the belief system in spite of contradictory evidence. Examples of the maladaptive cognitive mechanisms employed by the depressive include

i. **Arbitrary inference:** This describes a response set. An event is interpreted in a negative way in the absence of firm evidence.

ii. **Selective abstraction:** This describes a stimulus set. A conclusion is formed regarding a particular event on the basis of an isolated detail. Salient or contradictory evidence is ignored.

iii. **Overgeneralization:** A response in which a belief or rule is formed on the basis of a single event. This rule or belief is then applied in an unjustifiable fashion to other dissimilar situations.

These dysfunctional beliefs, illogical thinking and distorted information processing styles seem to depress the mood and to lead to behavioural and motivational changes typical of the depressive.

With specific regard to the suicidal patient Beck (1976) regarded suicide wishes and suicide attempts as ultimate expressions of the desire to escape when the future was envisioned as filled with suffering. The suicidal patient believed that he could not improve his lot and could not see any way of getting better. The more hopelessness and painful life seemed the stronger the desire to choose
suicide as a rational answer.

Another premise posited by Beck as underlying the suicide wishes was the belief, that since he was worthless and burdensome that others would be better off after his death. The role of hopelessness as a key factor in the production of serious suicidal behaviour has already been considered above (Minkoff et al., 1973; Lester and Beck, 1975). Importantly, recognition of the depressinogenic assumptions underlying the production and maintenance of hopelessness and worthlessness offer crucial entry points into the psychotherapy of the suicidal individual.

A reasonable question to ask is whether the suicidal individual possessed some unique thinking style or cognitive characteristics which impaired his ability to deal with the stresses and problems of life and which diminished his ability to cope during periods of crisis. There have been a number of studies which indicate that the suicidal individual possessed unique cognitive characteristics evidenced as poor problem-solving. A speculation is that suicide may be a problem solving behaviour which occurred when the individual’s coping capacity become overstretched or impoverished.

Neuringer (1964a, 1964b) has shown suicidal individuals to be characterised by thinking that was rigid and inflexible. Dichotomous thinking has also been shown as characteristic of the suicidal individual (Neuringer, 1961, 1967; Levenson and Neuringer, 1971) Shneidman 1957, 1961 and Menninger, 1938 had earlier discussed the rigid and inflexible thinking style of the suicidal individual which
resulted in a restricted ability to develop new or alternative solutions to emotional problems. Helplessness and hopelessness which were derivatives of recurrent difficulties in solving problems lead to the production of escape behaviour—suicidal behaviour.

Neuringer (1961) systematically examined dichotomous thinking in suicidal individuals. Subjects—serious suicide attempters, non-suicidal psychiatric patients and normal control subjects—rated various concepts on the evaluative factor of the Osgood Semantic Differential Scale (Osgood, Suci and Tannebaum, 1957) in order to measure dichotomous thinking. The results suggested that suicidals were more dichotomous on the rated concepts than normals but that they were no different from non-suicidal psychiatric patients. Thus dichotomous thinking was seen as a characteristic of the emotionally disturbed rather than unique to the suicidal individual.

In a later study (Neuringer, 1967) Neuringer demonstrated that suicidal individuals were more dichotomous compared to non-suicidals on the evaluative, activity and potency factors of the semantic differential when suicidal lethality was taken into account.

Levenson (1972) examined the suicidal individual's narrowed range of thinking and conceptualization. Clinical perceptions of the suicidal person suggested that there was a narrowing of the way in which he perceived his environment and to this extent he would probably have difficulty in coping with problem situations which demanded the generation of different alternatives as problem solutions. Levenson (1972) examined restricted conceptualization in serious suicide
attempters, non-suicidal psychiatric patients and normal individuals. The Unusual Uses Test and the Word Association Test (Getzel and Jackson, 1962) were administered. Subjects were required to write down as many different uses for five common objects (Unusual Uses Test) as they could, or to write down as many meanings of each of twenty-five words (Word Association Test).

On both tests the serious suicidal subjects' pattern of scoring was significantly lower than that for the other two groups. To the extent that the tests measured a person's ability to shift frames of reference within an organised structure (Getzel and Jackson, 1962), the suicidal subjects were characterized by a cognitive rigidity which limited the ease with which they could restructure their view of the world. The implication, of this as a pervasive cognitive characteristic is that the suicidal individual would have serious difficulty in coping with problems except in a stereotyped, limited and rigid fashion. The suicidal individual in a crisis situation, given this inability to develop new or alternative solutions, would remain longer in a state of 'emotional disequilibrium'. For Neuringer (1967) and Levenson (1972) these cognitive processes not only influenced the affective state of the suicidal individual but seemed representative of their general cognitive organisation or cognitive style.

Levenson and Neuringer (1971) assessed problem-solving capacity in suicidal individuals. Earlier workers (Menninger, 1938; Schneidman, 1957, 1961, 1969) had linked self-destructive behaviour to diminished problem-solving capacity in which the suicidal individual because of
either temporary or permanent cognitive deficiencies found it difficult to generate alternate solutions to debilitating emotional problems. Levenson and Neuringer (1971) used the Arithmetic Subtest of the Weschler Adult Intelligence Scale (WAIS) and the Rokeach Map Test to show that suicidal adolescents were of diminished problem-solving capacity compared to their non-suicidal peers.

From the studies reviewed there was some support for the notion that cognition was a vital determinant of suicidal behaviour. Certain cognitive characteristics or cognitive styles were more prevalent among individuals who engaged in suicidal behaviours. These characteristics, however, were not solely found in this group but were also found in other psychopathological groups although differing in degree. The cognitive characteristics of the suicidal individual elaborated so far include.

i. confused and incorrect logic (Shneidman, 1957).

ii. rigid, inflexible and dichotomous thinking (Neuringer, 1961; 1964a).

iii. narrowed thinking or narrowed range of conceptualization (Levenson, 1972).

iv. diminished problem-solving capacity (Levenson and Neuringer, 1971)

The research is consistent in so far as each of these cognitive characteristics lead to a breakdown in problem-solving capacity for debilitating emotional problems and in time to the production of suicidal behaviour.
2.3. The Problem-Solving Literature.

2.3.1. Impersonal Problem Solving.

Confronting problems in everyday life is an integral aspect of the human condition. As such, problem-solving is of special interest to professionals involved in helping others solve troublesome interpersonal problems.

Problem-solving refers to a behavioural process - whether overt or cognitive in nature, which made available a variety of potentially effective response alternatives for dealing with the problematic situation. Problem-solving behaviour increased the probability of selecting the most effective response from among varied alternatives (D'Zurilla and Goldfried, 1971) and thus implicated both the generation of alternatives and decision making behaviour.

In a problem-solving network a diverse range of behaviours may be elicited. Diversity was reflected in the shifting of behaviour as the subject sought to adapt his performance to reach a set goal (Vinache, 1974). Combinations of perceptual, cognitive, motor and verbal acts may come into play and these became reorganised depending on the demands of the situation. Since these processes called for regular changes in behaviour, integration and reorganisation of behavioural and cognitive sequences, problem-solving may be regarded as a form of complex learning.

This is in keeping with other definitions of problem-solving (Gagne,
1964) which described problem-solving behaviourally as an act of learning a response or set of responses which altered the situation so that it was no longer problematic to the individual whilst at the same time maximising other positive consequences.

Positive mental health has been defined (Jahoda, 1953, 1958) as the capacity to problem solve in real life situations, where problem refers to a specific situation or set of related situations to which a person must respond in order to function effectively in his environment.

A situation was considered problematic if no response alternative was immediately available to the individual confronted with the situation (Davis, 1966; Skinner, 1953). Included in this definition were all those situations which by virtue of their novel aspects, complexities, ambiguities and conflicting stimulus demands presented circumstances that involved the failure of automatic, effective action, thus requiring problem-solving behaviour to be generated.

Until recently, research into human problem-solving processes has focused predominantly on the measurement of cognitive styles and abilities relevant to non-social problems such as puzzles, anagrams and creativity tasks (Davis, 1966; Duncan, 1959; Simon and Newell, 1971).

Coates et al. (1971) pointed out that the approaches taken in measuring impersonal problem-solving abilities often reflected the theoretical dispositions of the investigators. Such approaches
included the Gestalt approach which emphasised the insightful nature of problem-solving (Asher, 1963; Sheerer, 1963). Principles from information processing theory have been invoked for problem-solving tasks. Posner (1965) provided an information processing analysis of problem-solving suggesting that problem-solving could be regarded as a matter of the storage and transformation of information. Whilst it appears that information theory could lead to a better understanding of problem-solving, a concept of the human problem solver as responding solely to extrinsically defined information and operating mechanically on this basis, is artificial. Memory, past experience, cognitive structures, emotional and motivational characteristics must be taken into account (Vinacke, 1974).

It is possible to distinguish between the problem-solving processes called forth by impersonal tasks and thinking demanded when confronted with interpersonal problems.

Solving problems of an impersonal nature did not allow an individual to become personally involved, except to the extent he is ego-involved in the task as a task - the substance of the task being unrelated to the individual. Such impersonal problems were not designed to tap an individual's personal or interpersonal hopes and aspirations in relationships. Kanfer and Busemeyer (1982) offered further differences between the two kinds of problems. They suggested that studies conducted within the information processing framework (impersonal problems) were concerned with the processing of knowledge rather than with the full repertoire of behaviours needed to cope with the life situation. Simon (1978) and Tversky and Kahneman, (1981)
concluded that the way in which a problem was represented could determine whether an effective solution was found. Real-life problems were said to differ from impersonal laboratory type problems in that they were more complex and often more ill-structured.

In section 2.2 it was shown that the suicidal individual consistently presented a variety of problem-solving characteristics. However, much of this research evidence was based on problem-solving functioning within the impersonal domain. Given that interpersonal problems differed from impersonal problems as they called on different sets of cognitive processes (Simon and Newell, 1971; Kanfer and Busemeyer, 1982), the generalizability of these results to functioning with regard to interpersonal problems was limited.

2.3.2. Interpersonal Cognitive Problem-Solving Skills.

Everyday behaviour is characterised as a continuous interaction with various environments and problems. Platt and Spivack (1973) conceived positive and healthy psychological functioning as being in large part dependent upon an individual's ability to solve interpersonal problems. To this extent this view is consistent with that of Jahoda (1958) for whom the criterion of positive mental health was the ability to solve real-life problems. Spivack has clearly made a distinction between impersonal and interpersonal problems. The success with which an individual handled very human, everyday problems critically determined his emotional well-being.

Spivack et al. (1976) proposed a theory of cognitive problem-solving
which comprise a grouping of interpersonal cognitive problem-solving skills which are considered to mediate social and behavioural adjustment. The quality of resolution of interpersonal problems was said to be due to a complex of interacting factors including social resources, social supports, a set of cognitive skills and the way in which the individual thought the problem through. Spivack and colleagues have defined a number of differing interpersonal cognitive problem-solving skills. They suggested a series of skills rather than a single unitary ability. The significance of each of these abilities in determining the degree of social adjustment was said to differ as a function of age.

The interpersonal cognitive problem-solving skills include,

i. **Problem-sensitivity**: which defined the ability to be aware of problems which arose out of social interactions and a sensitivity to the kinds of social situations out of which interpersonal difficulties may arise. It also involved the ability to examine relationships with others in the here and now.

ii. **Alternative solution thinking**: A close parallel to this is brain-storming (Osborn, 1963). The key feature was the ability to generate a wide variety of potential solutions to the problem. Judgement about what was best was suspended and the skill was to draw from a repertoire of ideas representing differing categories of solution to a given problem.

iii. **Means-ends thinking**: reflected the ability to articulate the step-by-step means necessary to carry out the solution to a given interpersonal problem. The skill encompassed the ability to
recognise obstacles, the social consequences deriving from these solutions and a recognition that interpersonal problem-solving took time.

iv. **Consequential thinking:** considered the consequence of social acts as it affected self and others and included the ability to generate alternative consequences to potential problem solutions before acting.

v. **Causal thinking:** reflected the degree of appreciation of social and personal motivation and involved the realisation that how one felt and acted may have been influenced by (and, in turn, may have influenced) how others felt and acted.

This analysis of interpersonal cognitive problem-solving skills was in keeping with other propositions (D'Zurilla and Goldfried, 1971; Kanfer and Busemeyer, 1982). D'Zurilla and Goldfield (1971) divided the problem-solving process into several stages or sets of cognitive operations. Five general stages - general orientation, problem definition and formulation, generation of alternative, decision making and verification - were proposed. The stage-sequential approach acknowledged (Crutchfield, 1969) that in vivo problem-solving rarely proceeded according to the neatly ordered stages, but allowed for overlap and interaction with each other.

Kanfer and Busemeyer (1982) in their problem-solving/decision making model first defined a general class of situations which may be considered problematic. The problem situation involved a goal state to be achieved, and initial state different from the goal state and considered unsatisfactory, the existence of a set of behaviours that
could be performed or acquired to change the initial state to a goal state, but with the appropriate set of behaviours to be performed currently not readily available to the problem solver. This 'problematic state' produced an interruption in the ongoing behavioural sequence, activating search and selection strategies in order that the goal state be achieved. Problem solving and decision making referred to the behavioural processes used in searching for and selecting operations leading from the initial state to the goal state. Problem solving referred to the rules used to generate alternatives, whilst decision making referred to rules used to select an alternative.

There is all round general agreement between workers as to the relationship that exists between effective problem-solving within the interpersonal domain and the quality of social and emotional adjustment.

2.3.3. The development of Interpersonal Cognitive Problem-solving Skills:

Interpersonal cognitive problem-solving skills are thought to be skills learned or acquired through experience with significant others, particularly childrearers (Butler and Meichenbaum, 1982; Spivack, Platt and Shure, 1976). These authors suggested that an adult in an intimate parental role had a significant impact on the evolution of this ability. Furthermore, the social nature of the processes themselves suggested that the social system within which the child grew must play a significant if not primary role in their development.
Aldous et al. (1971) focussed on the family as a problem-solving unit highlighting the fact that families from different social classes differed in ability to deal with problem situations. Minuchin, Chamberlain and Grambard (1967) described the tendency not to resolve problems in a study of the disorganised family unit which included a disturbed and delinquent adolescent. Reiss (1971) described the effective problem-solving family as consisting of members who were ready to see problem situations as complex and open for exploration.

Chilman (1966) summarised the childrearing patterns characteristic of families with emotionally healthy offspring. Healthy childrearing families were sensitive to causes in their child's behaviour, open and free in verbal communication which was mostly used to exert control, unrepresive and unpunitive to requests for sexual information and were flexible and open to new experiences. The family orientation that supported and guided personal problem-solving, in a low anxious, open-minded atmosphere was most conducive to healthy development.

Two studies examined the relationship between parental behaviour and the quality of a child's problem-solving thinking style. Busse (1967) made observations on parental teaching style for intellectual problems and also measured childrearing attitudes. A better-problem solving approach, in the child, was related to non-overbearing, guiding, mainly positive and verbal parental handling. Bearinson and Cassel (1975) showed that children exposed to predominantly 'person-orientated' mothers, that is, mothers who were oriented toward and appealed to human needs, were more sensitive to the perspective of the other person during communication, compared to children exposed to
predominantly 'position-orientated' (mother appeals to rules or merely demands conformity) mothers.

The evidence suggested that there were styles in family methods of coping with problems. Some methods were probably more effective than others, in terms of immediate successful problem-solving and for healthy adjusted children. Spivack et al. (1976) concluded that the non-authoritarian family characterised by a tolerance of varied personal viewpoints, that encourages verbalisation about interpersonal issues and problems, provide an optimal environment for the operation of good interpersonal cognitive problem-solving skills among their members and supported childrearing practices that were conducive to the development of such skills.

Another quality of parenting that seemed to abet the development of interpersonal cognitive problem-solving skills was the willingness and ability of the parent to act as a catalyst, model or guide in the child's attempts at problem-solving in social situations.

Spivack et al. (1976) and Kendall et al. (1981) provided evidence to suggest developmental trends between the varied interpersonal cognitive problem-solving skills. Alternative solution thinking is the most significant interpersonal skill among pre-school children and in the middle childhood years. For adolescents, means-ends thinking emerged as the most significant process in association with the generation of alternative problem solutions. In adulthood, means-ends thinking emerged as the central interpersonal cognitive problem-solving skill and this was accompanied by tendencies to spontaneously
conceptualize consequences related to future behaviour.

Although these skills were expected to emerge at different ages, they were not considered one facet of general intelligence as measured by standard IQ tests. Thorndike (1920) had made the early proposal of a social intelligence distinct from conventional intelligence. Further recognition, despite difficulties in measurement, of social intelligence came from Guilford (1967) and O'Sullivan and Guilford (1966), for whom social intelligence reflected the ability to understand the thoughts, feelings and intentions of others and which was measured by tasks with low loadings on a verbal comprehension factor. Correlational data provided by Hoepfner and O'Sullivan (1968) on the relationship between traditional IQ and social intelligence were of a low order and the authors suggested a bivariate triangular distribution of IQ's and social intelligence.

Spivack and Levine (1963) found no relationship between means-ends cognitive scores and total scores on the Wechsler Adult Intelligence Scale for either normal or emotionally disturbed groups. Platt et al. (1974) study of hospitalised and normal adolescents found an insignificant relationship between means-end cognition scores and Otis-Lennon IQ scores. Platt and Spivack (1975a) reported an insignificant correlation between means-end scores and Stanford Achievement Test scores suggesting that this measure of interpersonal cognitive problem solving was independent of educational achievement.

As in younger aged groups, adult interpersonal problem-solving skills appeared to be relatively independent of conventional measures of IQ.
including the scholastic aptitude test, the Quick Test of Intelligence and measures of creativity. It has also been suggested that thinking within the interpersonal domain was not the same as the general ability to think abstractly. At the same time training programs designed to enhance interpersonal problem solving thinking have no effect on IQ scores, and individuals differing widely in IQ scores have shown to benefit from training.

The measurement of interpersonal cognitive problem-solving skills rely heavily on verbal reports as a key to the individual's cognitive processing and performance in problem situations. The central finding, over a number of measures at different age levels, provided by the Spivack group was that the relationship between problem-solving skills (interpersonal) and adjustment held when the effect of IQ was accounted for statistically. Butler and Meichenbaum (1982) agreed that the measures used in these studies were tapping something that was related to adjustment above and beyond general intelligence but perhaps that an individual's verbal abilities including verbal fluency may affect test performance (e.g. Butler, 1979; Intagliata, 1978; Shure et al., 1971).

With some provisos the bulk of research suggested that interpersonal cognitive problem-solving skills were neither personality traits nor one facet of general intelligence. Depending on age and development different skills emerged to play a role in social adjustment. The relationship of these skills to general adjustment and psychopathology will be considered below.
2.3.4. Interpersonal Cognitive Problem-solving and Adjustment.

Adjustment in general implicates abilities to successfully manage everyday interpersonal stresses. Theories of human adjustment specify the quality of social relationship as core ingredients (Shure and Spivack, 1981). Work with children, adolescents and adults - poor and middle class - suggested that there was a key determinant of the quality of social adjustment, a set of mediating skills that defined the ability to think through and solve interpersonal problems.

Supporting the Jahoda, Spivack theories of social, interpersonal adjustment is a growing body of research providing evidence that various maladjusted groups including unstable, delinquent adolescents and adult psychiatric patients (Platt, Altman and Altman, 1973; Platt and Spivack 1970, 1972a, 1972b), heroin addicts (Platt, Sana and Hannon, 1973) and disturbed children (Shure, Spivack and Jaeger, 1971) were deficient when compared to normals on interpersonal problem-solving cognitions.

The evidence indicated that means-ends thinking was intimately related to adjustment during the adolescent years. In attempting to achieve a goal in an interpersonal context, maladjusted groups when compared to more adjusted group were less able to conceptualise a step-by-step plan that incorporated details of action and consideration of potential obstacles and to appreciate a temporal component relevant to dealing effectively with a targeted desire.

The ability to think in terms of means-ends was said not be present in
pre-school children but emerged to relate to adjustment during the middle latency years (Larcen et al., 1972; Shure and Spivack, 1972) and continued as a significant mediator during adolescence.

The most important cognitive problem-solving variable was means-ends thinking which involved the ability to orient oneself to and to conceptualise the step-by-step means of moving toward a stated goal. It contained a number of elements; among them careful planning and insight and forethought to forestall and circumvent potential obstacles. It also involved the recognition that temporal elements were present in particular problem situations and that these elements must be taken into account in planning a successful outcome.

Research on interpersonal problem-solving in adults has focussed mainly on this means-ends variable (Platt and Spivack, 1975). Data relating interpersonal cognitive problem-solving to adjustment in adults highlighted the issue of process versus content and the ability to recognise appropriate means in contrast to the ability to generate such means. Problem-solving was recognised as a cognitive behavioural process in that it dealt with cognitive processes and their relationship to behavioural adjustment (Kendall and Hollon, 1979). The mediating problem-solving skills involved not what one thinks but how one thinks.

The significance of means-ends thinking appeared to change very little from adolescence to adulthood in that there persisted a clear relationship of this variable to adjustment. A series of studies of means-ends thinking comparing psychiatric patients in treatment to
non-patient groups (Platt and Spivack, 1973, 1974a) have consistently found patient groups to be deficient when compared to controls in the ability to address themselves to, then provide solutions to problem tasks reflecting situations in daily life involving an aroused need and stated goal.

Further data comparing psychiatric with non-patient groups has been provided by Platt et al. (1975) and Platt and Spivack (1973). Acutely ill in-patients in a private psychiatric hospital were compared with a control group drawn from among employees at the same institution equivalent in age, education and marital status. Psychiatric patients were again found to be deficient in means-ends cognitions both with respect to the number of means present in their solutions and the percentage of relevant means proposed. In this study IQ estimates were obtained from both groups and were found not to affect group differences.

The general conclusion reached over a wide range of studies of interpersonal cognitive problem-solving in adults suggested that with respect to the relationship between interpersonal problem-solving and adjustment a comparable link existed for adults as it did for adolescents. A measure of development continuity has, therefore, been established. The means-ends thinking skill emerged it appeared in the middle latency period and was consistently more evident in groups of individuals displaying greater levels of adjustment.
2.4. Assessment of Problem-solving.

Strategies used for solving impersonal problems had been assessed to be appropriate to all problems, including those in the social realm (Sarason, 1978). This view of the human problem solver who behaved as an information processing system with regard to social and interpersonal problems has been challenged (Spivack and Shure, 1974). These workers highlighted the growing need to separate the assessment of impersonal problems (mazes, puzzles, anagrams) from social and interpersonal problems of living. The interpersonal problem solving ability related to some extent to early attempts to define a social intelligence (Thorndike, 1970; Guilford, 1967) which reflected competence in interpersonal situations. More recent efforts to discover a unitary domain of behaviour which reflected social intelligence have met with little success (Keating, 1978; Walker and Foley, 1973). Accordingly, within the interpersonal domain the focus has shifted to attempts to delineate a set of discrete inter-related cognitive problem-solving skills hypothesized as important components of social problem-solving.

With regard to impersonal problem-solving many processes have been proposed including the learning approaches (Sheerer, 1963; Maier, 1970) and computer simulations and mathematical models (Newell, Shaw and Simon, 1963). There has been little agreement between experimenters on what constituted the most important variable in problem-solving. Some investigations have focused mainly on the past experience of the problem-solver, whilst others maintained that it was chiefly the way in which the situation was perceived which was
paramount in solving a problem.

There is even less agreement on how the large body of accumulated research on impersonal problem-solving might be married to the growing body of knowledge about interpersonal problem-solving. There is little evidence to support an assumption that impersonal and interpersonal cognitive problem-solving skills tap the same cognitive structures or that individuals who can easily solve impersonal problems are necessarily similarly competent in social situations.

The focus of concern of Study 1 (Chapter 3) is the assessment of interpersonal cognitive problem-solving skills as it relates to suicidal behaviour. The role of assessment in intervention and to research enterprise has long been established as central to any area of applied psychology and important if we agree with Korchin (1976) who has defined assessment as the process by which clinicians make informed decisions.

By social cognition is meant the understanding of our social world and the interpersonal relationships that define it (Kendall, Pellegrini and Urbain, 1981). The kinds of cognitive processes involved in the development of social cognitions are not yet well understood (Shantz, 1975) but a number of processes or abilities, which show developmental trends, have been posited as involved in the development of social understanding. These included the child’s ability to match others affective state and to make inferences about others from available cues (Allport, 1961) and role taking or perspective-taking ability (Kohlberg, 1969; Selman, 1976b). The evolution of role-taking ability
was dependent on the child’s experience of basic social interaction.

A number of measures with some clinical relevance have been developed to assess social understanding. The Chandler Bystander cartoons (Chandler, 1973) for measuring perspective-taking ability and 'egocentrism' (Piaget and Inhelder, 1956) has demonstrated reliable differences in role-taking performance between normal and chronic pre-adolescent delinquent boys and between non-impulsive and impulsive aggressive children and was said to measure social cognitive deficits related to certain global types of maladaptive behaviours such as delinquency. Other assessment forms include the Feffer Role-Taking Task (Feffer, 1959) and the Interpersonal awareness measure (Borke, 1971, 1973) - the first focussing on the ability to take different roles, a kind of social-cognitive decentering, and the latter examines more the ability to discriminate the affective components within the role-taking situation. Selman (1976a, 1980), using an interpersonal understanding task related interpersonal understanding to behavioural competence and positive mental health in children within a clinic population.

Role taking as one aspect of interpersonal behaviour has been considered relatively early in the work of Mead (1934) who proposed that this ability was the essence of social intelligence. The various assessment measures of role taking ability represent an extension of Piagetian theory (Piaget, 1962a,b) related to decentering within the interpersonal sphere. The development of role-taking ability followed a pattern of sequential differentiation and allowed the developing individual freedom from relative egocentrism thereby permitting more
successful social interaction. Piaget (1928) described the acquisition of roletaking skills or decentering as a maturational process occurring out of an active involvement with the environment and the cognitive readjustments this may involve. Flavell (1963) highlighted the role of negative reinforcement in peer interactions as important to the development of role-taking ability.

Still within the realm of developing children, methods for assessing interpersonal problem solving skills i.e. the application of social understanding to conflict areas in social interaction, have evolved increasingly over the past decade. The Pre-school interpersonal Problem-solving (PIPS) test (Shure & Spivack, 1974b) aimed to measure alternative-solution thinking for interpersonal problems in four to five year old children. Spivack et al. (1976), Shure, Spivack and Jaeger, (1971) used the PIPS to demonstrate that among preschool children those rated as more impulsive, inhibited and withdrawn by teachers showed also greater deficits in interpersonal problem-solving. Within the school setting a significant relationship between alternative-thinking ability as measured by the PIPS and behavioural adjustment has been a consistent finding. Well adjusted behaviour was predicted by an ability to produce a wide range of alternative solutions (Spivack, et al., 1976). Unlike poor problem-solvers, the children assessed as good problem-solvers showed a higher proportion of non-forceful aggressive solutions to peer-type problems e.g. a situation in which one child wanted to play with a toy another child has. Black and Black (1979) have broadened the field of child assessment of general problem solving and provided a measure of 'ego-resilience' which incorporated PIPS scores and which included the
ability to respond flexibly, persistently and resourcefully in problem situations.

Other problem-solving assessment measures for children have been developed. These include the childrens Means-End problem solving test (MEPS), the Purdue Elementary Problem-Solving Inventory (PEPSI) and the Social Problem-Solving Assessment Measure (SPSAM). The children's MEPS is intended to measure the ability to carefully plan in sequence the step-by-step procedures or means needed in order to reach a specified goal (Shure and Spivack, 1972). The child was presented with a series of stories portraying hypothetical interpersonal problems. The child was required to provide the various means by which the given problem solution might be achieved. Means-end thinking was proposed as a higher-order aspect of social problem solving relative to alternative-solution thinking. Using this method of assessment ten to twelve year old emotionally disturbed children in a special school (Platt et al., 1974) were shown to have limited 'means' responses and these means tended to be practical, impulsive or aggressive. In contrast, normal children showed more foresight and planning of means.

Middle class children (Shure and Spivack, 1972) produced better means-end thinking cognitions than did lower-class children and Larcen et al. (1972) found that the inability to delay, emotionality, and aggression to be strongly related to deficient means-end thinking in preadolescent institutionalised children.

The Purdue Elementary Problem-Solving Inventory (PEPSI) was designed
to assess the problem solving abilities of elementary school children from various ethnic backgrounds (Feldhusen and Houtz, 1975; Feldhusen, Houtz and Ringenbach, 1972). The test consists of forty-nine items (cartoon slides) chosen to represent everyday life experiences of inner city elementary school children. Each cartoon slide portraying a child in a different real life problem situation is accompanied by an audio tape giving instructions, problem descriptions and alternative solutions. The child checks the 'test' alternative on an answer sheet provided. A sample PEPSI item is given below

...Two girls both want to play with the same doll. One girl is pulling the doll's legs and the other girl is pulling the doll by the arms. What might happen if the two girls keep pulling the doll? a) they will take turns playing with it. b) one of the girls will win. c) the doll may rip.

The items were developed to represent twelve specific component skills assumed to underlie efficient problem-solving behaviours:

a) sensing that a problem exists;
b) defining the problem;
c) clarifying the goal;
d) asking questions;
e) guessing causes;
f) judging if more information is needed;
g) noticing relevant details;
h) using familiar objects in unfamiliar ways;
i) seeing implications;
j) solving single solution problems;
k) solving multiple-solution problems;
l) verifying solutions.
Six social problem-solving factors have been identified on a principal components analysis of the PEPSI. These include an evaluative factor, an ability to sense problems, define problems, to analyse critical details, to see implications and to make unusual associations (Speedie, Houtz, Rengenbach and Feldhusen, 1973). The PEPSI is regarded as a capabilities test which assesses maximal performance. Its multiple choice format precludes an assessment of spontaneous problem-solving thinking but it nonetheless gives fairly precise information about particular abilities or deficits of good and poor problem-solvers.

The final childrens’ problem solving test to be considered here is the Social Problem Solving Assessment Measure (SPSAM) Elias et al., 1978, for young children. Individual children are presented six sets of pictures depicting three types of problematic social situations - being unjustly blamed by a teacher (authority situation), being excluded by a group of peers (peer situation) and wanting something another peer has. A series of standard questions are asked with each set of pictures presented. Scores reflect a number of variables - means, elaborations, outcomes, plans, valence of resolution, initiative taking, and resolution strategy. The SPSAM allows for the evaluation of several aspects of social problem solving and permits an examination of the inter-relations between them. To this extent it represents a difference from other tests of social cognition which treat each skill as discrete.

Children were found to show qualitatively different problem-solving strategies. Their expectancies with regard to outcomes were more negative and the number of means were reduced significantly for the
authority situation relative to the peer situation suggesting that situations have a definite impact on children's problem-solving thinking.

With development and maturity, predictably, increasing demands are made on the individual in social interactions. More detailed, concerned, and thoughtful social cognitions would be needed in interpersonal situations. Studies of adolescent problem-solving (Platt et al., 1974; Spivack and Levine, 1963) suggested that the acquisition of these skills were important to development in general. These skills include the ability to generate solutions to interpersonal problem situations, the ability to conceptualize the step-by-step means of reaching specified goals, and the ability to conceptualize problems from the point of view of the other involved individual i.e. perspective taking.

Spivack and Levine (1963) carried out the early measurement of means-ends problem-solving. This formed part of the assessment of the cognitive processes underlying social cognition and included sensitivity to the existence of life problems, alternative solution thinking, assessing consequences, social cause and effect relations, means-end thinking and role taking. In their assessment of means-end thinking Spivack and Levine (1963) examined in protocols, the steps used in problem-solving (i.e. means) the awareness of obstacles and a recognition of the passage of time to solution. Platt and Spivack (1970) refined the assessment technique. Nine stories mainly of an interpersonal nature were used, e.g. resolving a difficulty in a relationship. Each story had an identifiable aroused need at the
beginning and an end in which the need was satisfied. The respondents were required to provide the middle portion linking the beginning to the stated end. Separate male and female versions of the stories were developed. Four elements were analysed in the stories - means, enumeration of means or striving for the goal, obstacles which may impede progress toward the goal and finally an indication of the passage of a specific amount of time during the steps taken to reach the goal was the fourth element. Platt and Spivack (1970) introduced, the relevancy ratio, a new measure of means-end thinking. The relevancy ratio represented the percentage of relevant means given to the stories and was obtained by dividing the total number of relevant means by the sum of relevant means, irrelevant means and ineffectual means. It reflected the extent to which the respondent used relevant and effective solutions.

Shure and Spivack (1970a; Platt et al., 1974), examined in adolescents the ability to generate options in interpersonal situations. The measurement procedure involved verbally presenting an interpersonal problem situation and the respondents were required to produce as many possible solutions (right or wrong) that they could think of. To help elicit differing solutions to each problem a standardised set of probing questions have been developed. In practice four problem situations were used and a score, based on the number of relevant, discrete, alternative solutions, was derived.

The appreciation of the perspective of others (perspective taking, role taking) involved in the particular situation was also related to successful interpersonal problem-solving (Platt et al., 1974). These
workers used four situations (Feffer and Jahelka, 1968) based on the Thematic Apperception Test (TAT). The subject was first required to tell a story following standard TAT instructions. Each scene was then re-presented and the subject asked to retell the story from the viewpoint of each of his characters. These stories were then scored using a procedure (Schnall and Feffer, 1970) which reflects the extent to which there was increasing coordination between differing versions of the same story and the ability to take into account the internal state of each character.

Consequential thinking - the ability to spontaneously conceptualise consequences before taking action - has also been assessed using the story format (Spivack and Levine, 1963; Platt et al., 1973; Platt et al., 1974). Four situations were presented in which the protagonist was faced with a temptation. The subject was required to complete a story indicating both the tempted protagonist's thoughts prior to a decision and any actions taken subsequently.

For the studies considered, interpersonal problem-solving skills were deemed important to the period of adolescent development with means-end thinking and perspective taking significantly related to social adjustment during the adolescent years.

For adults means-end thinking has emerged as the most significant cognitive problem-solving skill. The Means-End Problem Solving (MEPS) procedure has been the main assessment measure utilized (Platt and Spivack, 1975). The problem solving processes involved were similar to those acquired during normal adolescent development and have
relevance for human adjustment across a broad age range.

More recent research (Heppner et al., 1982) has focused on individual differences in problem-solving styles. Individuals who perceived themselves as effective problem solvers rated themselves as more systematic in decision making and problem solving. In addition, they had a clearer understanding of the problem, were less impulsive and perceived problems as a normal part of life. In an interpersonal problem the perceived successful problem solvers rated themselves as more trusting of the other person. Other differences in problem solving styles took account of the differential involvement of cognitions (e.g. expectations), behaviours (e.g. observing others) and, affect (e.g. hope).

Factor analysis of a Problem Solving Inventory (PSI) developed by Heppner and Petersen (1982) resulted in three factors accounting for sixty nine percent of the PSI variance: systematic approach behaviours, impulsive behaviours and confidence in one's own ability.

2.4.1 Summary.

It appears from the foregoing that the development of specific tests to measure interpersonal functioning at differing levels and ages represented a significant improvement over simply using standard academic tasks to make inferences about problem-solving behaviour in the social domain. The development of specialised assessment procedures is important to informed decision making within applied psychology (Korchin, 1976) and in this regard the development of MEPS
and PEPSI may be considered as important advances.

When measures of interpersonal problem-solving are considered in general it is quite clear that a number of differing approaches have been adopted. For example the MEPS test and the Children's MEPS test are presented as imaginative story telling exercises in which 'problem-solving' instructions are not clearly indicated. In contrast the PIPS is closer to a standardised interview with more explicit problem-solving instructions and thus becomes more a test of ability whereas the MEPS would more tap typical performance. This difference in 'instructional set' (Butler and Meichenbaum, 1981) makes for difficulties in interpreting findings across different measures of interpersonal cognitive problem-solving skills.

In section 2.3.4 the link between problem-solving skills and social adjustment was considered. The discussion now turns to examining briefly the relevance of social and stress factors to the development of suicidal behaviour.

2.5. Social Adjustment and Stress - relevance for Suicidal Behaviour.

The idea that stressful life events (or stress) were crucially related to the onset of illness, both physical and emotional, has long been recognised (Dohrenwend and Dohrenwend, 1974; Gunderson and Rahe, 1974). Larazus (1966) described stress as a psychological problem which

...as a universal human and animal phenomenon, results in intense and distressing experience and appears to be of tremendous influence on behaviour. (p.2).
Lazarus proposed that stress be defined in terms of transactions between individuals and situations and described a number of stress reactions. These stress reactions included, disturbed affect, increased motor behaviour (increased muscular tension, escape actions etc.), changes in the adequacy of cognitive functioning, and physiological change. In the proposed model of stress the concept of threat appraisal was introduced as a process intervening between a stimulus and the stress reaction. The concept of threat is viewed as important to stress analysis as it provided the cognitive mechanism whereby anticipations of future harm to the organism was made.

A large body of research is now available which relates stressful life events and depressive illness (Paykel, 1979; Dean, Lin and Engel, 1981), schizophrenia (Jacobs and Myers, 1976; Brown and Birley, 1968) and suicide attempts (Paykel et al., 1975). The research evidence (Paykel, 1978) suggested that the events usually preceding psychiatric illness were not such major crises as death, life threatening illness or financial ruin, but rather more common domestic disturbances such as interpersonal arguments, marital disruptions, separations and difficulties at work.

In order to examine the relationship between events and suicidal behaviour (Paykel, 1979; Paykel, Prusoff and Myers, 1975) compared a suicide and two control groups. For the six month period preceding their suicide attempts the attempters reported four times as many events as did subjects from the general population and one and a half times as many as depressive controls. Suicide attempters in addition showed an excess of more threatening events outside their control.
The suicide attempters also showed a marked peaking of events in the month and particularly the week before the attempt. Depressives showed a more even spread of events over the six-month period. The authors' conclusion was that their findings indicated 'a strong and immediate relationship between suicide attempts and life events.' This particular study has been criticized on methodological grounds. The diagnostic composition of the suicide and control groups were difficult to ascertain and it was unknown whether depression was present prior to the attempt. However, Slater and Depue, 1981, included general methodological refinements in their study of events contribution to serious suicide attempts and in primary depressive disorder. Their results suggested that the occurrence of serious suicide attempts was strongly associated with an increased rate of independent events i.e. those not influenced by the patients' behaviour, decisions or disorder, in the year preceding the attempt.

The majority of investigations have now adjusted their position from studying simple notions of event occurrence and event magnitude ('life change units'). Instead qualitative aspects of events, especially those reflecting individual perceptions and interpretations, were hypothesized as crucial to the further delineation of the role of stress in behavioural pathology. Mueller, Edwards, Yarvis (1977) and Sarason, Johnson and Siegel (1978) have found that subjective upset ratings were preferable to change units in predicting symptomatology. Further efforts in examining the qualitative aspects of events were provided by Brown and Harris (1978) who attempted to assess the level of 'contextual threat' surrounding stressful events and Paykel (1979) who found that classification of events into simple themes, such as
social exit versus entrance, or desirable versus undesirable, improved the predictability of clinical depression. This willingness of researchers to examine qualitative aspects of events brings closer together the clinical positions held by Beck (1967, 1976) and Abrahamson, Seligman and Teasdale (1978) who held the view that idiosyncratic interpretations of the causes of negative events which emphasize or magnify self blame and hopelessness may lead to depression or suicidality.

Further improvement in the development of life-events research is in the direction of detecting other sources of significant stress. For example, significant stress may stem from the frustrations associated with chronic, ongoing strains rather than from dramatic changes in their life situation. Pearlin and Schooler's (1978) concept of 'life strains' and the concept of 'daily hassles' (Lazarus and Cohen, 1977) represent attempts to tap sources of stress data that were not captured by life-change event scales. Pearlin and Schooler (1978) found that everyday conflicts and frustrations associated with the social-role areas of marriage, parenting, managing personal or domestic finance and employment were related to psychological distress among a group of residents in the community. It was proposed that a consideration of both discrete events and ongoing strains may provide a better idea of cumulative degree of stress experienced by the individual.

Coping responses have been described as the cognitions and behaviours which people use to modify adverse aspects of their environment as well as to minimise the potential threat arising from such aspects
Traditional approaches to coping and adaptation have drawn on notions from psychodynamics and ego psychology and mastery of the environment was seen in terms of intrapsychic mechanisms which allowed individuals to maintain a state of comfort or equilibrium. McGrath (1970) has suggested that adaptation might be more usefully considered in terms of the relationship between external physical and social demands on the person and his resources for dealing with it i.e. the fit between person and environment. Successful personal adaptation or social functioning was said to consist of three components.

i) capabilities and skills to deal with social and environmental demands - coping capabilities.

ii) the motivation to meet the demand that become evident in the environment, and

iii) capabilities to maintain a state of psychological equilibrium such that energies and skills can be directed to meeting external demands in contrast to internal needs.

To the extent that an individual is successful in reducing psychological discomfort in his relationship with his environment he is said to show good adaptation, good person-environment fit or good social functioning.

Social dysfunction (El-Gaaly, 1974) has been studied with suicide attempters. Weissman, Fox and Klerman (1973) found that people who attempt suicide were usually depressed, hostile and immersed in a network of interpersonal relations which were frustrating, maladaptive.
and difficult to resolve. Suicide attempters compared to depressives reported greater levels of social dysfunction (El-Gaaly, 1974) representing poor social judgement. Suicidal behaviour has been described as the final alternative to a very confused, frustrating and anxiety provoking interpersonal environment (Beall, 1969; Karon, 1964). Breed (1967) has shown that compared with non-suicidal individuals, suicides had fewer friends and participated in fewer social interactions. The social interactions they did have were marked by more interpersonal disruptions. Farberow and Devries (1967) indicated that suicidal patients tended to avoid other people because of the fear of disappointment in or of being hurt by others. The loss of a significant other was found to be frequently associated with suicidal acts (Yusin, Sinay and Nitrira, 1972) and clinical observation (Bushing, 1967) highlighted the strong association with suicide of frequent intense disruptions or loss of function in interpersonal relationships.

Study 1 described below, apart from assessing interpersonal problem-solving in suicidal individuals will be devoted to examining the relationship between social dysfunction and social problem-solving ability as these both appear from the literature to be crucially related to coping and adaptation. Study 1 will also include the assessment of life events to take account of their qualitative aspects and to relate these to the experience of depression and hopelessness in suicidal individuals.
CHAPTER 3.

STUDY 1: ASSESSMENT OF INTERPERSONAL COGNITIVE PROBLEM-SOLVING IN SUICIDE ATTEMPTERS.

3.1 INTRODUCTION

The importance of problem-solving for successful daily living has long been recognised (D'Zurilla and Goldfried, 1971; Platt and Spivack, 1972). A number of studies have shown the suicidal individual to present with a variety of acute and chronic unresolved interpersonal problems.

Paykel and Rassaby (1978) using a cluster analysis procedure and working with a population of two hundred and thirty six suicide attempters were able to delineate three main groups. The largest grouping comprised those suicide attempters who deliberately harmed themselves for predominantly interpersonal motivations where there existed unresolved interpersonal problems. A number of other studies have supported this finding. Morgan, Burns-Cox, Pooock and Pottle (1975) found that in their sample of suicide attempters fifty percent related their act of deliberate self-harm to interpersonal upset with a 'key other' person. Other interpersonal problems cited were friendlessness, personal isolation and personal loneliness i.e. there was failure to transact and maintain interpersonal relationships. Social disorganisation (Ovenstone and Kreitman, 1980), general personal turmoil (O'Brien and Farmer, 1980) and acute distress stemming from interpersonal problems (Farmer, 1980) have all been
proposed as associated with suicidal behaviour. Cook, Raskin and Davis (1975) went further in proposing that the socially maladaptive behaviour and the chronic pattern of interpersonal maladjustment associated with suicidal behaviour had their origins in childhood or in the early relationship with the mother. The suicidal individual could, therefore, be seen as lacking in the personal and interpersonal resources for dealing effectively with the demands of his environment.

A wide range of problems have been shown to precede attempted suicide. Among the most common difficulties was the occurrence of a recent serious argument or the disruption of a relationship with a partner in the setting of longer-term relationship difficulties (Hawton and Catalan, 1982). The explanations given by patients for their suicidal behaviour was investigated (Bancroft, Simpkin, Kingston, Cumming and Whitwell, 1979) using a multiple choice format. The problem areas endorsed by patients included attempts to escape unbearable situations, to get relief from a terrible state of mind, to make others understand the desperation of their situation and fear of losing control. The results of this particular study suggested that apart from interpersonal conflicts, interpersonal emotional difficulties also played some part in determining the suicidal behaviour.

In general other psychopathological groups have been shown to be deficient in interpersonal problem-solving abilities (Shure & Spivack, 1976). Platt and Spivack (1972a) examined the problem-solving abilities of psychiatric patients and found that when compared with non-patient controls, the patients were less capable of generating
relevant means that would result in the solution of interpersonal problems. Platt and Siegel (1976) contrasted good and poor problem solvers among psychiatric patients. Problem-solving ability was defined as measured on the Means Ends Problem-Solving Procedure (MEPS) and groups were contrasted on their performance on the Minnesota Multiphasic Personality Inventory (MMPI). Poor problem solvers i.e. patients with low MEPS scores were shown to experience greater degrees of social withdrawal and poor adjustment to social contact and social responsibilities.

Platt and Spivack (1972b) examined in a sample of acutely ill psychiatric patients the relationship between means-ends thinking and premorbid social competence as measured on the Zigler-Phillips scale (Zigler and Phillips, 1962). The results of this study with one hundred and three psychiatric patients identified higher social competence in those patients who produced a greater number of means as well as a greater proportion of relevant problem-solving responses.

Other psychopathological groups showing interpersonal problem-solving deficiencies include heroin addicts (Platt, Scura and Hannon, 1973), narcotic drug abusers (Appel and Kaestner, 1979) and alcoholics (Intagliata, 1979). The nature of interpersonal problem-solving in the depressives as a group, given the association of hopelessness and depression to suicidal behaviour, should provide insights into this aspect of functioning in suicidal subjects.

Early psychological theories (as described; see 1.4.2) of depression focused on the intrapsychic dynamics (Freud, 1950), but more recent
approaches examining psychological factors in depression have emphasized the importance of competence in the interpersonal sphere. Lewinsohn (1974) and Lewinsohn, Biglan and Zeiss (1976) proposed that depression occurred when, as a consequence of inadequate social skills, an individual experienced a low rate of response-contingent social reinforcement. Similarly, Wolpe (1971) and McLean (1976) suggested that depression resulted from an individual's failure in attempts to control the interpersonal environment. All of these studies implicate a problem-solving deficit on the part of depressives in the social interpersonal domain.

Studies of learned helplessness (Seligman, 1975; Seligman, Klein and Miller, 1974) have found that non-depressed students who were exposed to a helplessness induction procedure, that is, experiencing aversive stimuli that they could not control, showed longer response latencies, more failures and required more learning trails on an anagram task than did non-depressed students who had not been similarly exposed to the helplessness induction procedure. This response pattern has arguably been proposed as a laboratory analogue of depression. The generalizability of these findings on impersonal tasks has been questioned (Miller, 1975) whose review of investigations of the psychological deficit in depression concluded that depressed individuals have generally not been differentiated from non-depressed individuals on the basis of their ability to solve impersonal tasks.

A relevant question is whether a distinction could be made between depressed and non-depressed individuals on the basis of their interpersonal problem-solving skills. Gotlib and Asarnow (1979)
compared depressed students in treatment and non-depressed students on their performance in interpersonal based situations using the Means-Ends Problem-solving procedure. A significant negative correlation was found between depression and interpersonal problem-solving ability. Thus, along with other psychopathological groups, depressives were also shown to manifest a deficit in the ability to effectively cope with interpersonal conflict situations. What remained unclear were the qualitative differences between these different groups in their ability to resolve interpersonal difficulties.

The problem-solving characteristics of the suicidal individual in particular have been widely examined (see chapter 2.2.). Problem-solving cognitions were proposed as vital determinants of suicidal behaviour and suicidal individuals were described as possessing unique cognitive characteristics (Neuringer, 1964; Neuringer and Littien, 1971). These characteristics which all had implications for general problem-solving included rigid and inflexible thinking, dichotomous thinking, and a narrowed range of conceptualization. However, the research evidence on which these conclusions were based called (largely) for problem-solving responses to impersonal tasks – for example, the Rod and Frame Test, Unusual Uses Test, Word Association Test, the Rokeach Map Reading Test and the WAIS Arithmetic Sub Test.

The use of the MEPS procedure in this study (Study 1) which taps the interpersonal aspects of problem-solving responses would allow for a more relevant analysis of problem-solving behaviour among suicidal individuals compared to other groups. This interpersonal cognitive
approach to understanding suicidal behaviour allows for a broader analysis of the cognitive characteristics of the suicidal individual with emphasis being placed on effective functioning in critical interpersonal life situations rather than functioning in relation to impersonal tasks: Of added interest in Study 1 are the implications this form of assessment may have for the further assessment of suicide risk using an assessment model which measures risk in terms of the degree of competence in interpersonal problem-solving.

Apart from the assessment of interpersonal problem-solving this study will examine other factors - life experiences, social dysfunction and the cognitive correlates hopelessness, depression and locus of control - as they relate to suicidal behaviour in general.

More specifically, individuals who show poor inter-personal competence may also be expected to evidence degrees of social dysfunction and to experience relatively more stress in their lives. This study will examine the relationship between interpersonal problem-solving behaviour, social dysfunction, and the experience of negative life stress. This form of analysis would allow a variety of indices to be assessed each giving further clinical insights into those factors relevant to the proper assessment of the future risk of the production of suicidal behaviour.

Weissman, Fox and Klerman (1973) have shown that individuals who attempted suicide were usually depressed, hostile and immersed in a network of interpersonal relations which were frustrating, maladaptive and which they felt were unsolvable. Although suicidal individuals
compared to depressives report significantly greater levels of social dysfunction this has not been linked to interpersonal problem-solving ability.

The relationships between social, psychological and environmental factors and illness or maladaptive behaviours have been of clinical research interest for a long time. In general, there is a body of evidence suggesting that environmental events serve as one significant factor in the development of depressive disorders (Depue, 1979). Events associated with long-term negative consequences for the individual tend to be most closely related to the onset of depressive episodes (Brown, 1979) particularly if this involved the real or theoretical loss of someone close (Paykel, 1979). The more specific relation between events and suicidal behaviour may be mediated by the cognitive distortions that occur when depression was part of the experience. Cognitive distortions of hopelessness about the present situation and future outcomes have been shown to be a central feature of both depression and suicidal behaviour. Within this framework, negative life experiences serve to intensify hopelessness and may lead to the production of suicidal behaviour (Beck, Kovacs and Weissman, 1975). Events denoting or perceived as denoting long-term future negative outcomes may be particularly effective in inducing the experience of hopelessness which together with losses within the interpersonal space may heighten the risk of suicidal behaviour. An assessment of these cognitive-affective variables in relation to interpersonal functioning is therefore seen as a crucial part of this study.
A group of suicidal individuals presenting with a suicide attempt for the first time were compared with a normal control group and a group of psychiatric patients attending for out-patient appointments for the first time and with no history of suicidal behaviour. Group comparisons were made on the level of interpersonal problem-solving ability, factors related to negative life stress and social dysfunction and on cognitive-affective indices identified in the literature as closely associated with suicidal behaviour.

The inclusion of a psychiatric control group bridged the gap between normal behaving individuals (i.e. non-psychiatric and non-suicidal) and the group presenting with suicidal behaviour. It would make possible more meaningful comparisons between these two groups in particular a clinical indices such as depression and hopelessness.

The main hypotheses considered are enumerated below.

3.1.1. Main Hypotheses.

1. Suicidal subjects would be more deficient in functioning in the interpersonal sphere as measured on the means ends problem solving task compared to psychiatric and normal subjects.

2. For suicidal subjects those with good means-ends thinking ability would report less social dysfunction than those with poor means-ends ability. The relationship of Means-ends thinking to hopelessness and depression will also be examined.
3. Suicidal subjects would report a higher level of stress in the year prior to the suicide attempt compared to psychiatric and normal subjects.

4. Within the suicide group high intent subjects would report higher levels of stress and more hopelessness and depression than low intent subjects.

5. The relationship of interpersonal thinking ability and stress will be examined. For suicidal subjects those who combined high stress with poor interpersonal problem solving ability would show the greater levels of suicide intent, hopelessness and depression compared to suicidal subjects with other combinations of these variables.

3.2 METHOD.

3.2.1 Subjects.

A total of sixty subjects making up three groups each of twenty subjects, took part in this study.

i) **Suicidal group** (n = 20) subjects presenting with a suicide attempt for the first time.

ii) **Psychiatric control group** (n = 20) subjects with no history of suicide attempt. The psychiatric group consisted largely of patients presenting with a range of non-psychotic depressive
reactions. Patients with phobias and obsessions were unrepre-
sented in this group although these were not exclusion criteria.

iii) Normal control group (n = 20) subjects with no history of
suicide attempt selected from among hospital employees including
nursing assistants, ward clerks, catering trainees (students)
portering staff, and engineer assistants.

The sample consisted of forty-one female and nineteen male subjects
between the ages of nineteen and forty-three. Table 1 gives details
of the demographic characteristics of the sample.

Selection Criteria.

For suicidal subjects only those presenting with a suicide attempt for
the first time (i.e. index attempt) were considered. First time
attempters were chosen mainly because individuals who present with
multiple attempts (repeaters) were shown to have different clinical
and personality characteristics and could be considered a distinct
sub-group (Kreitman, 1977). With reference to the psychological
indices of interest in this study, first time attempters should give a
clearer picture uncontaminated by repeated short or long-term hospital
admissions and treatment. The psychiatric subjects were also chosen
for this reason from the pool of patients attending out-patient
psychiatric and psychology clinics for the first time. The normal
control subjects were selected from hospital employees which apart
from facilitating data collection, controlled for any 'hospitalization
effects' experienced by subjects in the other two groups.
<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>SUICIDAL</th>
<th>PSYCHIATRIC CONTROL</th>
<th>NORMAL CONTROL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M.</td>
<td>28.1</td>
<td>29.2</td>
<td>27.5</td>
</tr>
<tr>
<td>SD.</td>
<td>8.3</td>
<td>6.18</td>
<td>5.75</td>
</tr>
<tr>
<td>Range</td>
<td>19-43</td>
<td>19-42</td>
<td>20-40</td>
</tr>
<tr>
<td>Sex (n)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>6</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Females</td>
<td>14</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>Marital Status (n)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>9</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Married</td>
<td>7</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>Divorced</td>
<td>4</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Formal Education (years)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M.</td>
<td>10.9</td>
<td>11.0</td>
<td>11.6</td>
</tr>
<tr>
<td>SD.</td>
<td>1.21</td>
<td>1.01</td>
<td>1.47</td>
</tr>
<tr>
<td>Employment (n)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployed</td>
<td>5</td>
<td>5</td>
<td>-</td>
</tr>
<tr>
<td>Employed</td>
<td>10</td>
<td>9</td>
<td>18</td>
</tr>
<tr>
<td>Student</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Housewife</td>
<td>3</td>
<td>5</td>
<td>-</td>
</tr>
</tbody>
</table>

M: Means.
SD: Standard Deviation.
Only subjects in the age range 18-44 years were included in this study. The decision to confine the sampling to these age limits was largely based on the selection of patients in the suicidal group since older aged suicidal subjects tended to present with more frank psychotic type depressive illnesses and were more seriously suicidal often using violent physical means to harm themselves. It was concluded that because of these characteristics they should be excluded from this study.

A further selection criterion was to exclude all those subjects with psychotic symptoms or where the presentation was complicated by organic factors.

Subjects were seen for evaluation at two small Psychiatric Hospital centres - Woodlands Day Hospital and Westcoates Hospital, Leicester. The groups did not differ in mean age \( F(2,57) = 0.32 \) (Table 2) with the average age being below thirty years.

### TABLE 2: Summary Table: Analyses of Variance (ANOVA) Means Ages of Normal, Psychiatric and suicidal subjects.

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARES</th>
<th>F-RATIO</th>
<th>F-PROB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>30.10</td>
<td>15.05</td>
<td>0.32</td>
<td>0.73*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>57</td>
<td>2692.50</td>
<td>47.24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>2722.60</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* non-significant.
The mean number of formal schooling years of attendance was used as a guide to general education level. The average length of formal schooling was eleven years with only a few subjects across groups pursuing further education. There was no difference between groups in the mean number of years of formal schooling - $F(2, 57) = 1.30$ (Table 3) - and on the distribution of sexes - chi-square $(2) = 0.15$; non-significant.

TABLE 3: Summary Table: Analysis of Variance (ANOVA: Mean number of years of formal schooling for Normal, Psychiatric and Suicidal subjects.)

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARES</th>
<th>F-RATIO</th>
<th>F-PROB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>4.13</td>
<td>2.07</td>
<td>1.30</td>
<td>0.28*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>57</td>
<td>90.30</td>
<td>1.58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>94.43</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* non-significant.

3.2.2 Procedure.

Twenty first time attempters agreed to participate in this study. In practice their names were notified in a daily register of suicide attempters or direct contact with a 'duty' doctor. Suicide attempters were usually admitted to three different general hospital settings where they were seen by a visiting psychiatrist. A register of all suicide attempts whether seen by a psychiatrist or not was kept in a central register within one psychiatric department. Seven suicide
subjects and five psychiatric control subjects refused to or failed to attend assessment interviews. All subjects were clearly informed of the purpose of the investigation. Suicide subjects were first seen for assessment within three to seven days of their attempt and usually after detoxification and discharge from the general hospital setting. Where possible an initial contact was usually made prior to their discharge from hospital.

Psychiatric controls were selected from patients attending hospital outpatient clinics to see a psychiatrist or psychologist for the first time and all assessments were carried out within seven days of first attendance.

Normal control subjects were drawn from the hospital employee population. Subjects were asked to take part in two interviews when all assessments described below were completed whilst waiting or with the experimenter. Wherever possible and with the permission of subjects relevant information was also collected from relatives, spouse or friend who may be attending with the subject. This was important for data collection on social functioning, suicide intent and the life experience survey. This was only true for suicidal and psychiatric subjects as this arrangement was impractical for the normal controls.

Suicide and psychiatric control subjects tended to use the situation to discuss relevant difficulties and to gain counselling advice.
3.2.2 Test Instruments.

The eight evaluations carried out in this study targeted a number of specific areas of psychological functioning. These areas included a measure of suicide intent applicable to suicide attempters only and assessed the level of suicide intent at the time of the attempt. Indices of mood disturbance were obtained by measures of depression, hopelessness and on a profile of mood states. A personality measure (Locus of Control) the level of social dysfunction and life experiences (events) were also obtained. The MEPS was the measure of interpersonal problem-solving. The rationale of all scales and measures and consideration about their validity are described below.

Beck Depression Inventory. (BDI).

The Beck Depression Inventory (BDI) (Beck, Ward, Mendelson, Mock and Erbaugh, 1961; Beck, 1967) consists of twenty one items written to reflect twenty one different manifestations of depressive experience. Each item consists of a graded series of statements ranked in order of severity of experience of the symptom. The patient is asked to select the single statement in the domain of each item that corresponds most closely with his actual condition. Numerical values from 0-3 are assigned each item to indicate the severity of depression. The total BDI score as obtained by adding the scores of the twenty-one items; the BDI score range is 0-63.

The BDI has a test-retest reliability co-efficient of 0.75 and although it may be subject to voluntary distortions or falsification
on the part of respondents it is said to be one of the best all-round self-report measures of depression available.

The concurrent validity of the BDI when compared with global assessments of depression provided biserial correlation coefficients of 0.65 (226 subjects) and 0.67 (185 subjects) in two separate studies (Beck, et al., 1961).

In a British study (Metcalf and Goldman, 1965), the correlation between the BDI and a global assessment by psychiatrist was found to be 0.67 with 37 patients. The BDI is not used to diagnose depression but only provides a measure of its severity.

Life Experiences Survey.

The Life Experiences Survey (LES) is a 57 item self-report measure (Sarason, Johnson and Siegel, 1978) which allows respondents to indicate events that they had experienced during the past year.

The scale is divided into two sections:
Section 1 is designed for all respondents and consists of a list of 47 items plus three blank spaces in which respondents could indicate other events not listed that they had experienced within the time span under consideration. The events listed in Section 1 refer to life changes that are common to individuals in a wide variety of situations.

The 10 events listed in Section 2 are designed for academic population
and would be excluded for the purposes of this study.

The LES items represent changes frequently experienced by individuals in the general population. Thirty-four events listed are similar in content to those found in the Schedule of Recent Events (Holmes and Rahe, 1967). The other events were included as they represented events which occurred frequently and which were judged to potentially exert a significant impact on the life of those experiencing them.

The format of the LES calls for subjects to rate separately the desirability (Vinokur and Selzer, 1975) and impact of events that they had experienced. Subjects were asked to indicate those events that they had experienced during the past year, as well as whether they viewed the event as being positive or negative and the perceived impact of the particular event on their life at the time of occurrence. Ratings are on a seven point scale from extremely negative (-3) to extremely positive (+3). Summing of the impact ratings of events designated as positive provides a positive change score, and the sum of impact ratings of events designated as negative provides a negative change score. The sum of these two scores gives a total change score, representing the total amount of rated change.

A number of test retest reliability studies have been carried out by the authors and reliability coefficients of between 0.63 and 0.88 were reported. Support for the usefulness of the scale is provided by findings showing that the negative life change score in particular is significantly related to a number of stress-related dependent measures. In addition responses appeared to be relatively free from
social desirability biases, is little influenced by a mood-response set and is capable of differentiating poorly adjusted students from those with no such difficulties.

**Locus of Control.**

The Rotter Internal-External scale (Rotter, 1966) was used as a measure of locus of control. It is an additive scale which consists of twenty-nine items, six of which are filler items in an attempt to conceal the purpose of the questionnaire, and to control to some extent the variance attributable to socially desirable responses (Cone, 1971; Joe, 1971).

Reliability and validity data are provided by Rotter (1966), Hersch and Scheibe (1967), and Harrow and Ferrante (1969). Procuiik and Lussier (1975) have estimated that 69 percent of all published research on the locus of control construct have used the Rotter I.E. Scale. Reported findings indicate that this construct has proven useful in predicting a wide variety of behaviours (Lefcourt, 1976; Phares, 1976).

The scale is scored in the external direction, that is, the higher the score the more external the individual. There is a possible range of scores from 0-23.

**PROFILE OF MOOD STATES.**

The Profile of Mood States (POMS) (McNair, Lorr and Droppleman, 1971)
consists of sixty-five 5-point adjective rating scales and represents a rapid, economical method of identifying and assessing transient, fluctuating affective states. This factor-analytically derived inventory measures six identifiable mood states: tension-anxiety; Depression-Dejection; Anger-Hostility; vigor-activity; fatigue-inertia and confusion-bewilderment. For each affective descriptor the subject is required to rate how he felt (0-4) - corresponding with 'not at all', 'a little', 'moderately', 'quite a bit', 'extremely' - during the past week including the day of testing.

A score for each of the six mood factors and a Total Mood Disturbance Score may be obtained. A manual is provided for the administration and scoring of the POMS. Data on the internal consistency, test-retest reliability and factorial validity of the six mood factors are also provided in the manual.

An indication of the internal consistency of the six POMS mood scales was obtained from two clinical studies which formed part of a series of six studies conducted in the development and validation of the POMS. All the indices of the extent to which individual items within the six mood scales measure the same factor are at least 0.90. The results obtained from studies using clinical samples receiving treatment provided support for the test-retest reliability or stability of the POMS with reliability estimates over an average period of three weeks ranging between 0.65 and 0.74 depending on the POMS factor. Evidence for good POMS construct and predictive validity were obtained from brief psychotherapy studies, controlled outpatient drug trials and from studies of emotion inducing conditions.
Social Dysfunction.

Social dysfunction will be assessed using the Social Dysfunction Rating Scale (SDRS; Linn, Sculthorpe, Evje, Slater and Goodman, 1969). It assesses dysfunctional aspects of social adjustment in terms of coping with personal, interpersonal and environmental demands. Lynn et al. (1969) provide definition of the scale items, and reliability and validity data are also provided.

Two reliability studies were carried out by the authors. In the first study, independent ratings were made by two raters on a sample of forty subjects and the intra-class correlations obtained ranged between 0.54 and 0.86. In the second reliability study the total score was compared with data obtained from seven raters independently rating ten schizophrenics. A Kendall rank order correlation - W = 0.91 was obtained for total score reliability.

Validity data was obtained in a study of eighty psychiatric and non-psychiatric outpatients. A correlation of 0.89 was obtained between total SDRS score and the global judgements of three social workers. In addition on the basis of a multivariate discriminant function the scale was able to classify 92 percent of the sample into the correct group - psychiatric and non-psychiatric.

The scale consists of twenty-one, six-point ordered category rating scales and scoring demands a combination of subjective and objective evaluations. The scale provides a total score (SDRS-T), and three factor scores relating to the self system (SDRS-SS), the interpersonal...
system (SDRS-IS) and the performance system (SDRS-PS).

Hopelessness Scale (HS).

This scale consists of twenty true-false statements of which nine are keyed false and eleven keyed true. The hopelessness scale is designed to reflect the respondent's negative expectancies. For each statement, each response is assigned a score of 0 or 1 and the total hopelessness scores is the sum of the scores of the individual items. The possible range of scores is from 0-20. Reliability and validity data have been reported by the developers of the scale (Beck, Weissman, Lester and Trexler, 1974). A coefficient of internal consistency of 0.92 was reported for 294 hospitalized patients and in a study of 62 suicide attempters a concurrent validity coefficient (relationship between HS scores and clinical ratings of hopelessness) of 0.62 was obtained.

Three factors - feelings about the future, loss of motivation and future expectations - were isolated by the authors using a principal components factor analysis with varimax rotation.

Suicide Intent Scale (SIS).

The Suicide Intent Scale (SIS) (Beck, Schuyler and Herman, 1974) was used to measure the intensity of a patient's wish to die at the time of the attempt. The scale is divided into two sections and contains fifteen items. Each item consists of three alternative statements graded in intensity from 0-2. The total score consists of the summed
scores for each item with a possible maximum score of 30.

The first section deals with the circumstances related to the suicide attempt - the factual aspects of the attempt, isolation, timing, precautions against discovery, degree of planning, help seeking after the attempt and communication of intent prior to the act (Eight items).

The next section is a self report based on the patient's construction of his feelings and judgements related to expectations of fatality, lethality and seriousness, notions about reversibility and the level of premeditation.

An inter-rater reliability coefficient of 0.95 has been reported (Beck et al., 1974; Beck, Morris and Beck, 1974). Other studies (Silver, Bohnert and Beck, 1971; Minkoff et al., 1973) have supported the construct validity of the instrument. Silver et al., (1971) showed a significant positive correlation between depression and intent in 45 suicide attempters and Beck et al., (1974) showed that the mean intent score on the 'circumstances' section of the SIS was significantly higher in a group of 31 successful attempters than in a group of 49 unsuccessful attempters.

Social Means-Ends Thinking. (Interpersonal problem-solving).

This variable was measured by the Means-Ends Problem Solving Procedure (MEPS).

The MEPS procedure is an instrument designed to measure an important
component of real life problem-solving. The component measured is the individual's ability to orient himself to, and conceptualize means of moving toward a stated goal.

The procedure makes use of a series of story stems portraying situations in which a need is aroused at the beginning of the story and which is satisfied at the end of the story. The respondent is required to complete the story filling in those events which might have occurred between the arousal and the satisfaction of the stated need.

The means-ends procedure was first introduced by Spivack and Levine (1963) who studied the relationship between interpersonal problem-solving and adjustment. Scoring procedures were developed empirically by three research psychologists and stories are scored for steps in problem solving (means), the number of enumerations given by the subject in reaching the goal, the number of obstacles which might prevent the subject reaching the goal and the indication of the passage of a specific amount of time during the steps taken to reach the goal. The interpersonal problem situations include making friends, dealing with peers, and dating. A sample story is:

....John noticed that his friend seemed to be avoiding him. John wanted to have friends and be liked. The story ends when John's friend likes him again. You begin when he first notices his friends avoiding him.

Effective means were defined as sequential instrumental acts given by the subject to enable the protagonist to reach the stated goal.
successfully. Test-retest reliability, coefficients of internal consistency, validity studies and the factorial structure of the MEPS procedure are reported by Platt and Spivack (1975). Relevant to the issue of construct validity, the MEPS procedure was shown to consistently discriminate groups of individuals differing in their levels of demonstrated adjustment e.g. psychiatric patients from non-patients (Platt and Spivack, 1973), heroin addicts from non-addicts (Platt, et al., 1974). As the MEPS procedure is not meant to be a measure of overall adjustment reported correlations with Adjustment Scales e.g. California Test of Personality-Personal Adjustment, are positive and low. In a factor analytic study conducted with 106 acute psychiatric inpatients and 47 staff members (Platt and Spivack, 1973) three factors - (i) problem solution and production, (ii) interpersonal facilitation, and (iii) sequential thinking - were demonstrated and these accounted for 70 percent of the variance.

Note: All questionnaires and procedures used are given in the Appendices.

The Chart below summarises the assessment which were carried out on each group of subjects.
Assessments carried out on three groups of subjects.

SIS - Suicide Intent Scale.
BDI - Beck Depression Inventory.
SDRS - Social Dysfunction Rating Scale.
LES - Life Experiences Survey.
HS - Hopelessness Scale.
LOC - Locus of Control Scale.
POMS - Profile of Mood States.
MEPS - Means Ends Problem Solving Procedure.

3.3 RESULTS.

The level of suicide intent for suicidal subjects alone was assessed on the Suicide Intent Scale. Table 4 presents the mean, range and standard deviation of the suicide intent scores for this group.

<table>
<thead>
<tr>
<th></th>
<th>SIS</th>
<th>BDI</th>
<th>SDRS</th>
<th>LES</th>
<th>HS</th>
<th>LOC</th>
<th>POMS</th>
<th>MEPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUICIDAL</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>PSYCHIATRIC</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>NORMAL</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

Table 4: Mean (M), Range (R) and Standard Deviation (SD) - Suicide Intent: Suicidal Group n = 20.

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>R</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUICIDE INTENT</td>
<td>15.3</td>
<td>2-26</td>
<td>7.58</td>
</tr>
</tbody>
</table>
All suicide attempts were made by overdosage on some form of medication. Eighty percent of suicidal subjects reported that they took medication usually a tranquilizer or antidepressant prescribed by their family doctor with whom they were in recent contact. All the remaining twenty percent took analgesics bought over the counter except in one case where a spouse’s slimming tablets were used.

The majority of suicidal acts occurred in the home setting - (nineteen of twenty cases). With regard to the expressed motivation for the suicidal behaviour sixty percent of subjects expressed a desire to 'remove the self from a situation of some turmoil or distress'. The remaining forty percent expressed the mixed motivations of 'wishing to escape' and to 'influence the behaviour of another person with whom they had a relationship'. The relationship of intent to other clinical measures will be considered later in this section.

3.3.1 Interpersonal Problem Solving.

(a) Quantitative Aspects.

It was hypothesized that suicidal subjects would be most deficient in problem-solving in the interpersonal sphere compared to psychiatric and normal control subjects. In terms of their quantitative aspects groups were compared on the number of RELEVANT MEANS (RM) for five Means Ends Problem-solving stories -

i) regaining a lost girlfriend.
ii) making new friends in a new neighbourhood
iii) getting married
iv) retrieving lost friends' attention, and
v) avenging an insult.

A relevant mean referred to a discrete step which was effective in enabling the story participant to reach the resolution stage or specified goal in the story.

The number of IRRELEVANT MEANS (IM) and a RELEVANCY RATIO (RR) were also computed. The relevancy Ratio is the ratio of relevant means to all story directed responses i.e. the sum of all relevant means, irrelevant means and no-means.

Irrelevant means were defined as responses that described some action that was instrumental in not reaching the stated goal.

(i) Relevant Means.

In order to evaluate the comparability of the groups a number of analyses of variance were carried out. Table 5 gives the mean number of Relevant Means, Relevancy ratios and the mean number of irrelevant means for the three samples suicidal (SUI), psychiatric control (PSYCH) and normal control (NOR)
TABLE 5: MEANS (M), STANDARD DEVIATIONS (SD) FOR RELEVANT MEANS, RELEVANCY RATIO AND IRRELEVANT MEANS.

<table>
<thead>
<tr>
<th>Source</th>
<th>SUI</th>
<th>PSYCH</th>
<th>NOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevant Means</td>
<td>M</td>
<td>4.40</td>
<td>7.10</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>3.34</td>
<td>2.71</td>
</tr>
<tr>
<td>Relevancy Ratio</td>
<td>M</td>
<td>0.61</td>
<td>0.84</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>0.32</td>
<td>0.24</td>
</tr>
<tr>
<td>Irrelevant Means</td>
<td>M</td>
<td>0.45</td>
<td>0.85</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>0.61</td>
<td>1.66</td>
</tr>
</tbody>
</table>

SUI : Suicidal group
PSYCH : Psychiatric control
NOR : Normal control

A one-way analysis of variance was used to compare groups on the mean number of relevant means produced. The overall significant F value suggested differences between the means. Table 6 gives a summary.

TABLE 6: ANOVA SUMMARY TABLE: RELEVANT MEANS.

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>F. Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>177.43</td>
<td>88.72</td>
<td>8.58*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>57</td>
<td>589.55</td>
<td>10.34</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>766.98</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < 0.01

To test the hypothesis that suicidal subjects were more deficient in reporting relevant means, planned comparisons using t-tests were
carried out. Suicidal subjects were significantly poorer at producing relevant means than both psychiatric \( t(57) = 2.35; p<0.01 \) and normal subjects \( t(57) = 3.62; p<0.001 \). A post hoc comparison (Scheffe's procedure) of relevant means for psychiatric and normal subjects suggested no significant differences although the trend was for normal subjects to produce more relevant means.

(ii) Relevancy Ratio.

The mean Relevancy Ratios (Table 7) for the three groups were compared.

TABLE 7: ANOVA SUMMARY TABLE: RELEVANCY RATIO.

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>F. Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>1.23</td>
<td>0.6179</td>
<td>10.25*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>57</td>
<td>3.44</td>
<td>0.0603</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>4.67</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* \( p< 0.001 \)

Planned comparison between the means suggested that the relevancy ratio for suicidal subjects was significantly smaller than that for both psychiatric \( t(57) = 4.45, p<0.001 \) and normal subjects \( t(57) = 2.95, p<0.002 \).

A post hoc comparison was carried out between the relevancy ratio
means for normal and psychiatric subjects. There was no significant difference.

(iii) Irrelevant Means.

Comparisons between the three groups were made on the proportion of subjects presenting at least one irrelevant mean. Table 8 lists the proportion of subjects by group. None of the pair-wise comparisons reached significance. The average number of irrelevant means for each group is given in Table 8.1. There was a significant difference between normal and suicidal subjects (U = 139, p<0.025).

TABLE 8: FREQUENCY TABLE: IRRELEVANT MEANS.

<table>
<thead>
<tr>
<th>No. Irrelevant Means</th>
<th>0</th>
<th>1 or &gt;1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suicidal</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>Psychiatric</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>Normal</td>
<td>18</td>
<td>2</td>
</tr>
</tbody>
</table>

Non significant.
TABLE 8.1: MEAN AND MEAN DIFFERENCES: IRRELEVANT MEANS.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suicidal</td>
<td>0.45</td>
<td></td>
</tr>
<tr>
<td>Psychiatric</td>
<td>0.85</td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>0.10</td>
<td>0.35*</td>
</tr>
</tbody>
</table>

Suicidal  Psychiatric  Normal

U = 139
* p < 0.025

(iv) Sufficient Narratives.

The narratives recorded were coded as either sufficient or insufficient. A sufficient narrative contained relevant means leading to the stated outcome. The mean number of sufficient narratives by group are given in Table 9.

TABLE 9: MEANS, STANDARD DEVIATION AND RANGE: SUFFICIENT NARRATIVES.

<table>
<thead>
<tr>
<th></th>
<th>SUI</th>
<th>PSYCH</th>
<th>NOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>3.0</td>
<td>4.55</td>
<td>4.40</td>
</tr>
<tr>
<td>S.D.</td>
<td>1.72</td>
<td>0.76</td>
<td>1.04</td>
</tr>
<tr>
<td>Range</td>
<td>0-5</td>
<td>3-5</td>
<td>2-5</td>
</tr>
</tbody>
</table>
In keeping with the main hypothesis that suicidal subjects would be more deficient at interpersonal problem solving than the other two groups, it was expected that this difference would also hold true for the number of sufficient narratives. Comparison of the mean number of sufficient narratives (Table 10) suggested significant differences between the groups (f(57) = 9.49; p < 0.01). Suicidal subjects produced significantly less sufficient narratives than both psychiatric t(57) = 3.95, p<0.001 and normal controls t(57) = 3.57, p<0.001 and there was no difference between psychiatric and normal subjects.

### Table 10: ANOVA Summary Table: Sufficient Narratives.

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>F. ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>2</td>
<td>29.23</td>
<td>14.62</td>
<td>9.49*</td>
</tr>
<tr>
<td>Within</td>
<td>57</td>
<td>87.75</td>
<td>1.54</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>116.98</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < 0.01

b) Qualitative Aspects:

In order to further evaluate the nature of problem-solving deficits associated with suicidal behaviour further analyses which would take account of the qualitative aspects of the narratives were carried out. The qualitative aspects considered included
i) Emotional relevant means: where an emotion that led to relevant instrumental action was acknowledged.

ii) Introspection: introducing the element of 'Thinking' or 'introspection' before providing a relevant action.

iii) Enumeration of means: where the subject explained or gave some additional details concerning a particular step in the narrative

iv) Time: where the subject specified an amount of time elapsing between the beginning and end of the story.

v) Obstacles: where the subject recognised a difficulty or obstacle in reaching the stated goal. The obstacle may be either internal or external.

i) Emotional Relevant Means:

A Chi-square analysis comparing the proportion of subjects by group making at least one reference to an emotion leading to a relevant instrumental action was carried out.

Table 11: FREQUENCY TABLE: EMOTIONAL RELEVANT MEANS: SUICIDAL VERSUS PSYCHIATRIC.

<table>
<thead>
<tr>
<th>No. Emotional Means</th>
<th>0</th>
<th>1 or &gt;1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suicidal</td>
<td>18</td>
<td>2</td>
</tr>
<tr>
<td>Psychiatric</td>
<td>8</td>
<td>12</td>
</tr>
</tbody>
</table>

\[ \text{Chi-square (1) } = 8.90, \text{ } p > 0.01 \]

The proportion of suicidal subjects making at least one reference to
an emotional instrumental mean was significantly (chi-square (1) = 8.90; p<0.01) less than that for psychiatric subjects.

Similarly comparisons were carried out between suicidal versus normal subjects and between psychiatric versus normal subjects. A significantly greater proportion of normal subjects (chi-square (1) = 12.60, p<0.01) compared to suicidal made at least one emotional reference (Table 12).

| TABLE 12. FREQUENCY TABLE: EMOTIONAL RELEVANT MEANS SUICIDALS VERSUS NORMALS. |
|:-----------------|------|------|
| No: EMOTIONAL MEANS | 0 | 1 or >1 |
| SUICIDAL | 18 | 2 |
| NORMAL | 6 | 14 |
| Chi-square (1) = 12.60 p<0.01 |

There was no difference between normal and psychiatric subjects (Table 13)

| TABLE 13. FREQUENCY TABLE: EMOTIONAL RELEVANT MEANS PSYCHIATRIC V NORMAL. |
|:-----------------|------|------|
| No: EMOTIONAL MEANS | 0 | 1 or >1 |
| PSYCHIATRIC | 8 | 12 |
| NORMAL | 6 | 14 |
| chi-square (1) = 0.11, not significant. |
The data on introspective responses were subjected to chi-square analyses comparing in group-pairs the proportion of such responses (Tables 13.1, 13.2, 13.3). There was no difference between suicidal versus psychiatric and psychiatric versus normal subjects. There was, however, a significant difference in the proportion of introspective responses between suicidal versus normal subjects (chi-square(i) = 5.10, p < 0.01)

**TABLE 13.1. FREQUENCY TABLE: INTROSPECTION SUICIDAL V PSYCHIATRIC.**

<table>
<thead>
<tr>
<th>No:</th>
<th>EMOTIONAL MEANS</th>
<th>0</th>
<th>1 or &gt;1</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUICIDAL</td>
<td>16</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PSYCHIATRIC</td>
<td>12</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

Chi-square (1) = 1.07
Non-significant.

**TABLE 13.2. FREQUENCY TABLE: INTROSPECTION SUICIDAL V NORMAL.**

<table>
<thead>
<tr>
<th>No:</th>
<th>EMOTIONAL MEANS</th>
<th>0</th>
<th>1 or &gt;1</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUICIDAL</td>
<td>16</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>NORMAL</td>
<td>8</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

Chi-square (1) = 5.10, p < 0.05
TABLE 13.3: FREQUENCY TABLE: INTROSPECTION
PSYCHIATRIC V NORMAL.

<table>
<thead>
<tr>
<th>No: EMOTIONAL MEANS</th>
<th>0</th>
<th>1 or &gt;1</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYCHIATRIC</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>NORMAL</td>
<td>8</td>
<td>12</td>
</tr>
</tbody>
</table>

Chi-square (1) = 0.90
Non-significant.

iii) Enumeration of Means:

Here the groups were compared on the ability to elaborate or add details concerning particular steps in the narrative. As could be seen from inspection of Table 14 there was no difference between the groups in the proportion of subjects making such responses. An identical small proportion of subjects from each group tended to elaborate relevant means.

TABLE 14. FREQUENCY TABLE: ENUMERATION OF MEANS
SUICIDAL V PSYCHIATRIC V NORMAL.

<table>
<thead>
<tr>
<th>No: EMOTIONAL MEANS</th>
<th>0</th>
<th>1 or &gt;1</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUICIDAL</td>
<td>14</td>
<td>6</td>
</tr>
<tr>
<td>PSYCHIATRIC</td>
<td>14</td>
<td>6</td>
</tr>
<tr>
<td>NORMAL</td>
<td>14</td>
<td>6</td>
</tr>
</tbody>
</table>

Non-significant.

The mean number of enumerations were then considered for each group
(Table 15). Again there was no significant differences but there was a trend for suicidal subjects to produce fewer enumerations than the other two groups.

### Table 15: Mean and Range: Enumerations of Means.

<table>
<thead>
<tr>
<th></th>
<th>Suicidal</th>
<th>Psychiatric</th>
<th>Normal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>0.40</td>
<td>0.55</td>
<td>0.50</td>
</tr>
<tr>
<td>Range</td>
<td>0-2</td>
<td>0-3</td>
<td>0-2</td>
</tr>
</tbody>
</table>

Non-significant.

### iv) Time.

Solving interpersonal problems often involved the consideration of time elements. It was expected that poor problem solvers would make more reference to time than good problem solvers. The data was submitted to a Kruskal-Wallis one-way ANOVA and differences between means were assessed (Table 16).
<table>
<thead>
<tr>
<th></th>
<th>MEANS</th>
<th>MEAN DIFFERENCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUICIDAL</td>
<td>0.60</td>
<td>-</td>
</tr>
<tr>
<td>PSYCHIATRIC</td>
<td>1.55</td>
<td>-</td>
</tr>
<tr>
<td>NORMAL</td>
<td>2.65</td>
<td>-</td>
</tr>
</tbody>
</table>

Key: SUI - Suicidal, PSYCH - Psychiatric.

H(2) = 16.804, p < 0.001

U = 104.0, p < 0.01**

U = 64.5, p < 0.001**

U = 130.0, p < 0.05*

There was an overall significant difference between the mean number of time reference between groups (H(2) = 16.8, p < 0.001). Normal subjects produced significantly more time references than both psychiatric (U = 130, p < 0.05) and suicidal subjects (U = 64.5, p < 0.001). Psychiatric subjects produced significantly more time references on average (U = 104, p < 0.01) than suicidal subjects.

The difference between groups in the proportion of subjects making at least one time reference was also considered (Tables 17, 17.1, 17.2). A significantly smaller proportion of suicidal subjects compared to psychiatric (Chi-square (1) = 6.55, p < 0.01) and normal subjects (Chi-square (1) = 10.67, p < 0.01) made at least one reference to time.
### TABLE 17: FREQUENCY TABLE: TIME REFERENTS
**SUICIDAL V PSYCHIATRIC.**

<table>
<thead>
<tr>
<th>TIME REFERENTS</th>
<th>0</th>
<th>1 or &gt;1</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUICIDAL</td>
<td>13</td>
<td>7</td>
</tr>
<tr>
<td>PSYCHIATRIC</td>
<td>4</td>
<td>16</td>
</tr>
</tbody>
</table>

Chi-square (1) = 6.55  
*p < 0.01.*

### TABLE 17.1: FREQUENCY TABLE: TIME REFERENTS  
**SUICIDAL V NORMAL.**

<table>
<thead>
<tr>
<th>TIME REFERENTS</th>
<th>0</th>
<th>1 or &gt;1</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUICIDAL</td>
<td>13</td>
<td>7</td>
</tr>
<tr>
<td>NORMAL</td>
<td>2</td>
<td>18</td>
</tr>
</tbody>
</table>

Chi-square (1) = 10.67  
*p < 0.01.

### TABLE 17.2: FREQUENCY TABLE: TIME REFERENTS  
**PSYCHIATRIC V NORMAL.**

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1 or &gt;1</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYCHIATRIC</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>NORMAL</td>
<td>2</td>
<td>18</td>
</tr>
</tbody>
</table>

Chi-square (1) = 0.20  
*non-significant.*

130
v) Recognition of Obstacles.

Comparisons between the groups on the recognition of obstacles to problem solving were considered. This was seen as a relevant aspect of problem solving behaviour as it took account of the subjects' ability to anticipate and plan to avoid difficulties which would thwart goal-directed action. The groups were compared on the proportion of subjects recognising at least one obstacle (Tables 18, 18.1 and 18.2).

**TABLE 18: FREQUENCY TABLE: RECOGNITION OF OBSTACLES**

<table>
<thead>
<tr>
<th>SUICIDAL V PSYCHIATRIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. OBSTACLES</td>
</tr>
<tr>
<td>SUICIDAL</td>
</tr>
<tr>
<td>PSYCHIATRIC</td>
</tr>
</tbody>
</table>

Chi-square (1) = 0.28
non-significant.

**TABLE 18.1. FREQUENCY TABLE RECOGNITION OF OBSTACLES**

<table>
<thead>
<tr>
<th>SUICIDAL V NORMAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. OBSTACLES</td>
</tr>
<tr>
<td>SUICIDAL</td>
</tr>
<tr>
<td>NORMAL</td>
</tr>
</tbody>
</table>

Chi-square (1) = 3.91
p<0.05
TABLE 18.2. FREQUENCY TABLE RECOGNITION OF OBSTACLES: PSYCHIATRIC V NORMAL.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1 or &gt;1</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYCHIATRIC</td>
<td>17</td>
<td>3</td>
</tr>
<tr>
<td>NORMAL</td>
<td>13</td>
<td>7</td>
</tr>
</tbody>
</table>

Chi-square (1) = 1.20 non-significant.

Of the analyses only the comparison between suicidal and normal subjects reached significance (chi-square (1) = 3.91, p<0.05) with suicidal recognising a smaller proportion of obstacles. Across subjects there was a low tendency to recognise obstacles in general with means of 0.05, 0.25 and 0.35 obstacles for the suicidal, psychiatric and normal groups respectively.

3.3.2 Affective functioning.

It was hypothesized that suicide attempters would be more hopeless and depressed than psychiatric and normal control subject. The three scales measuring affective responding - Hopelessness Scale (HS), Beck Depression Inventory (BDI), and the Profile of Mood States (POMS) were considered in this evaluation. The POMS was further analysed by subscales.

(a) Hopelessness.

The mean hopelessness scores and their comparisons are given in Table 19 and Table 20 respectively.
TABLE 19: MEANS AND STANDARD DEVIATIONS: HOPELESSNESS.

<table>
<thead>
<tr>
<th></th>
<th>SUICIDAL</th>
<th>PSYCHIATRIC</th>
<th>NORMAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEAN</td>
<td>12.75</td>
<td>11.15</td>
<td>3.80</td>
</tr>
<tr>
<td>SD</td>
<td>6.03</td>
<td>5.33</td>
<td>2.04</td>
</tr>
</tbody>
</table>

A oneway ANOVA was used to compare the mean hopelessness scores by group (Table 20). The significant overall F-ratio ($F(2,57) = 19.65; p < 0.001$) suggested differences between the groups.

TABLE 20: ANOVA SUMMARY TABLE: HOPELESSNESS.

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARES</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>2</td>
<td>911.23</td>
<td>455.61</td>
<td>19.65*</td>
</tr>
<tr>
<td>Within groups</td>
<td>57</td>
<td>1321.50</td>
<td>23.18</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>2232.73</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significant
p < 0.001

To test whether suicidal subjects were reporting higher levels of hopelessness than the psychiatric and normal subjects, planned comparisons were carried out using t-tests. Suicidal subjects were not significantly more hopeless than psychiatric subjects but normal subjects were reporting significantly less hopelessness than suicidal subjects ($t(57) = 5.88 \, p<0.001$).
An unplanned comparison using Scheffe's procedure was made between psychiatric and normal subjects. Psychiatric subjects like the suicidal subjects were reporting significantly ($S(57) = 4.8, p < 0.01$) more hopelessness than normal subjects. Table 21 summarises the comparisons.

**TABLE 21: COMPARISON OF MEAN HOPELESSNESS SCORES.**

<table>
<thead>
<tr>
<th></th>
<th>SUICIDAL</th>
<th>PSYCHIATRIC</th>
<th>NORMAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUICIDAL</td>
<td>12.75</td>
<td>-</td>
<td>1.60</td>
</tr>
<tr>
<td>PSYCHIATRIC</td>
<td>11.15</td>
<td>-</td>
<td>7.35*</td>
</tr>
<tr>
<td>NORMAL</td>
<td>3.80</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Significant result
** p < 0.001
* p < 0.01 : Scheffe's procedure.

(b) Depression (BDI).

Table 22 outlines the mean range and standard deviation of BDI scores by group. The mean BDI scores for the suicidal and psychiatric groups were both within the moderate depressed range according to the Beck scoring criteria. Scores for the normal subjects were within the non-depressed range.
TABLE 22: MEAN, RANGE, STANDARD DEVIATION: DEPRESSION (BDI).

<table>
<thead>
<tr>
<th></th>
<th>SUICIDAL</th>
<th>PSYCHIATRIC</th>
<th>NORMAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEAN</td>
<td>22.55</td>
<td>21.55</td>
<td>3.95</td>
</tr>
<tr>
<td>RANGE</td>
<td>0-52</td>
<td>2-39</td>
<td>0-35</td>
</tr>
<tr>
<td>SD</td>
<td>14.48</td>
<td>12.26</td>
<td>7.98</td>
</tr>
</tbody>
</table>

A one-way ANOVA (Table 23) of depression scores produced a significant mean effect for group (F (2,57) = 15.49; p < 0.001). The difference between the main depression scores for suicidal and psychiatric subjects did not reach statistical significance (t(57) = 0.27).

TABLE 23: ANOVA SUMMARY TABLE: DEPRESSION.

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARES</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>2</td>
<td>4378.13</td>
<td>2189.07</td>
<td>15.49*</td>
</tr>
<tr>
<td>Within group</td>
<td>57</td>
<td>8054.85</td>
<td>141.31</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>12432.98</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significant
* p < 0.001

A planned comparison between the mean depression scores for suicidal and normal subjects showed a significant difference (t(57) = 4.95; p < 0.01) with suicidals being significantly more depressed. A similar finding was shown between psychiatric and normal subjects (S(57) =
11.90, p < 0.01). A summary of the comparison of means is given in Table 24.

**TABLE 24: COMPARISON OF MEAN DEPRESSION SCORES (BDI).**

<table>
<thead>
<tr>
<th></th>
<th>SUICIDAL</th>
<th>PSYCHIATRIC</th>
<th>NORMAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUICIDAL</td>
<td>22.55</td>
<td>-</td>
<td>1.00</td>
</tr>
<tr>
<td>PSYCHIATRIC</td>
<td>21.55</td>
<td>-</td>
<td>17.60*</td>
</tr>
<tr>
<td>NORMAL</td>
<td>3.95</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Significant result
** p<0.001
* p<0.01 : Scheffe's procedure.

(c) Profile of Mood States - Depression Score: POMS (D).

The POMS depression sub-scale score was analysed as part of the assessment of affective functioning. The means, standard deviation and range for the POM (D) Score are given in Table 25.

**TABLE 25: MEAN, RANGE, AND STANDARD DEVIATIONS: POMS (D) SCORE.**

<table>
<thead>
<tr>
<th></th>
<th>SUICIDAL</th>
<th>PSYCHIATRIC</th>
<th>NORMAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEAN</td>
<td>31.90</td>
<td>27.65</td>
<td>4.30</td>
</tr>
<tr>
<td>RANGE</td>
<td>6-59</td>
<td>1-43</td>
<td>0-13</td>
</tr>
<tr>
<td>SD</td>
<td>16.39</td>
<td>14.58</td>
<td>3.85</td>
</tr>
</tbody>
</table>
A oneway ANOVA (Table 26) of POMS(D) scores produced a significant main effect for group ($F(2,57) = 25.46, p < 0.001$). Suicidal subjects POMS(D) scores were not significantly different from that of Psychiatric subjects ($t(57) = 1.57$).

**TABLE 26: ANOVA SUMMARY TABLE: POMS(D) SCORES.**

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARES</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>2</td>
<td>8709.53</td>
<td>4354.82</td>
<td>25.46**</td>
</tr>
<tr>
<td>Within group</td>
<td>57</td>
<td>9748.55</td>
<td>171.03</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>18458.18</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Significant**

$p < 0.001$

POMS(D) scores for suicidal versus normal subjects were significantly different ($t(57) = 6.67, p < 0.001$) Psychiatric subjects were also significantly more POMS(D) depressed than normal subjects ($t(57) = 13.08, p < 0.01$). A summary of the mean POMS(D) comparisons is given in Table 27.
TABLE 27: COMPARISON OF MEAN POMS(D) SCORES.

<table>
<thead>
<tr>
<th></th>
<th>SUICIDAL</th>
<th>PSYCHIATRIC</th>
<th>NORMAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUICIDAL</td>
<td>31.90</td>
<td>-</td>
<td>3.25</td>
</tr>
<tr>
<td>PSYCHIATRIC</td>
<td>27.65</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>NORMAL</td>
<td>4.30</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Significant result

** p < 0.001

* p < 0.01 : Scheffe’s procedure.

3.3.3: Profile of Mood States (POMS)

The Profile of Mood States provides assessments of Tension - POMS(T), Depression - POMS(D), Anger - POMS(A), Vigour - POMS(V), Fatigue - POMS(F), and Concentration - POMS(C). A total mood dysfunction score (TMD) is also provided. Table 28 gives the means, standard deviations and range of POMS scores by subscale and group.
<table>
<thead>
<tr>
<th></th>
<th>SUICIDAL</th>
<th>PSYCHIATRIC</th>
<th>NORMAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TENSION</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>22.20</td>
<td>22.35</td>
<td>5.35</td>
</tr>
<tr>
<td>Range</td>
<td>5-30</td>
<td>4-36</td>
<td>0-16</td>
</tr>
<tr>
<td>SD</td>
<td>10.31</td>
<td>8.53</td>
<td>3.92</td>
</tr>
<tr>
<td>Mean</td>
<td>31.90</td>
<td>27.65</td>
<td>4.3</td>
</tr>
<tr>
<td><strong>DEPRESSION</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>6-59</td>
<td>1-43</td>
<td>0-13</td>
</tr>
<tr>
<td>SD</td>
<td>16.39</td>
<td>14.58</td>
<td>3.85</td>
</tr>
<tr>
<td>Mean</td>
<td>16.4</td>
<td>15.05</td>
<td>5.05</td>
</tr>
<tr>
<td><strong>ANGER</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>1-41</td>
<td>1-43</td>
<td>0-17</td>
</tr>
<tr>
<td>SD</td>
<td>10.11</td>
<td>12.13</td>
<td>4.31</td>
</tr>
<tr>
<td>Mean</td>
<td>8.65</td>
<td>9.05</td>
<td>16.75</td>
</tr>
<tr>
<td><strong>VIGOUR</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>0-19</td>
<td>0-29</td>
<td>7-28</td>
</tr>
<tr>
<td>SD</td>
<td>6.67</td>
<td>7.84</td>
<td>4.37</td>
</tr>
<tr>
<td>Mean</td>
<td>17.05</td>
<td>15.02</td>
<td>6.05</td>
</tr>
<tr>
<td><strong>FATIGUE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>4-28</td>
<td>0-28</td>
<td>0-23</td>
</tr>
<tr>
<td>SD</td>
<td>7.64</td>
<td>8.93</td>
<td>5.96</td>
</tr>
<tr>
<td>Mean</td>
<td>17.20</td>
<td>14.25</td>
<td>5.7</td>
</tr>
<tr>
<td><strong>CONCENTRATION</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>4-27</td>
<td>0-28</td>
<td>1-19</td>
</tr>
<tr>
<td>SD</td>
<td>6.63</td>
<td>8.46</td>
<td>4.82</td>
</tr>
<tr>
<td>Mean</td>
<td>97.00</td>
<td>85.05</td>
<td>8.90</td>
</tr>
<tr>
<td><strong>TMD</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>2-184</td>
<td>-19-168</td>
<td>-24-51</td>
</tr>
<tr>
<td>SD</td>
<td>46.18</td>
<td>52.90</td>
<td>18.64</td>
</tr>
</tbody>
</table>
The group POMS profiles are displayed diagrammatically below (Fig. 1).

Fig 1: PROFILE OF MOOD STATES.

POMS Factors

T - Tension
D - Depression
A - Anger
V - Vigour
F - Fatigue
C - Concentration

Suicidal
Psychiatric
Normal
(a) Profile of Mood States - Tension: POMS-T

The POMS-T scores were subjected to a one-way ANOVA. There was a significant difference between groups $F(3,57) = 29.47$, $p<0.001$ - Table 29).

**Table 29: ANOVA Summary Table: POMS-T**

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARES</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>2</td>
<td>3819.63</td>
<td>1909.82</td>
<td>29.47**</td>
</tr>
<tr>
<td>Within group</td>
<td>57</td>
<td>3694.30</td>
<td>64.81</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>7513.93</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Significant
p < 0.001

Planned comparisons between the group means suggested significant differences between the suicidal and normal group (suicidal > normal : $t(57) = 6.68$, $p < 0.001$). Psychiatric subjects were no different from suicidal subjects but were significantly different from normals ($S(57) = 8.05; p < 0.01$). The comparison of means summary is given in Table 30.
TABLE 30: COMPARISON OF MEAN POMS-T SCORES.

<table>
<thead>
<tr>
<th></th>
<th>SUICIDAL 22.20</th>
<th>PSYCHIATRIC 22.35</th>
<th>NORMAL 5.35</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUICIDAL</td>
<td>22.20</td>
<td>-</td>
<td>-0.15</td>
</tr>
<tr>
<td>PSYCHIATRIC</td>
<td>22.35</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>NORMAL</td>
<td>5.35</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

** p < 0.001  
* p < 0.01 : Scheffe's procedure.

(b) Profile of Mood States - ANGER: POMS-A

There was a significant difference between groups in this POMS factor \( (F(2,57) = 8.60, p < 0.0005) \). The ANOVA summary is given in Table 31.

TABLE 31: ANOVA SUMMARY TABLE: POMS-A.

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARES</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>2</td>
<td>1537.63</td>
<td>768.82</td>
<td>8.60**</td>
</tr>
<tr>
<td>Within group</td>
<td>57</td>
<td>5094.70</td>
<td>89.39</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>6632.33</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p < 0.001

The suicidal group reported significantly more ANGER than the normal group \( (t(57) = 3.80, p < 0.001) \) with a non-significant difference with
psychiatric subjects. Psychiatric subjects also reported significantly more POMS-A than normal subjects \((S(57) = 9.46, p < 0.01)\). The comparisons of group means are given in Table 32.

### TABLE 32: COMPARISON OF MEAN POMS-A.

<table>
<thead>
<tr>
<th></th>
<th>SUICIDAL</th>
<th>PSYCHIATRIC</th>
<th>NORMAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUICIDAL</td>
<td>16.40</td>
<td>-</td>
<td>1.35</td>
</tr>
<tr>
<td>PSYCHIATRIC</td>
<td>15.05</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>NORMAL</td>
<td>5.05</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

** p < 0.001  
* p < 0.01 : Scheffe’s procedure.

(c) Profile of mood states - VIGOUR: POMS-V

It was expected that suicidal and psychiatric subjects would report less POMS-VIGOUR than normal subjects. A one-way ANOVA indicated significant group difference \((F(2,57) = 10.04, p < 0.0002 : \text{Table 33})\).

### TABLE 33: ANOVA SUMMARY TABLE: POM-V SCORE.

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARES</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>2</td>
<td>848.63</td>
<td>424.32</td>
<td>10.04*</td>
</tr>
<tr>
<td>Within group</td>
<td>57</td>
<td>2408.10</td>
<td>42.25</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>3256.73</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < 0.0002
The summary of the comparison of mean POMS-V is given in Table 34. Suicidal subjects reported significantly less POMS-VIGOUR than normal subjects \((t(57) = 3.97, p < 0.001)\). There was a small non-significant difference between psychiatric and suicidal subjects with psychiatric tending to report less POMS-VIGOUR. Psychiatric subjects also reported significantly less POMS-VIGOUR than normal subjects \((S(57) = 6.52, p < 0.01)\). Table 34 is the summary comparison table of mean POMS-VIGOUR factor scores.

**TABLE 34: COMPARISON OF MEAN POMS-V SCORES.**

<table>
<thead>
<tr>
<th></th>
<th>SUICIDAL</th>
<th>PSYCHIATRIC</th>
<th>NORMAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUICIDAL</td>
<td>8.65</td>
<td>-</td>
<td>-0.25</td>
</tr>
<tr>
<td>PSYCHIATRIC</td>
<td>8.90</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>NORMAL</td>
<td>16.75</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

** ** p < 0.001  
* p < 0.01 : Scheffe's procedure.

(d) **Profile of Mood States - FATIGUE: POMS-F**

There was a significant difference between groups on a one way ANOVA \((F(2,57) = 11.98, p < 0.001)\). This is summarised in Table 35.
TABLE 35: ANOVA SUMMARY TABLE: POM-F.

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARES</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>2</td>
<td>1387.63</td>
<td>693.82</td>
<td>11.98*</td>
</tr>
<tr>
<td>Within group</td>
<td>57</td>
<td>3301.10</td>
<td>57.91</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>4688.73</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < 0.001

Table 36 gives the summary of the comparisons between mean POMS-F. Suicide subjects reported, significantly more POMS-F than normal subjects (t(57) = 4.57, p < 0.001). Suicidal subjects were not significantly different from psychiatric subjects. Psychiatric subjects reported significantly higher mean POMS-F scores than normals (t(57) = 7.62, p < 0.01).

TABLE 36: COMPARISON OF MEAN POMS-F SCORES.

<table>
<thead>
<tr>
<th></th>
<th>SUICIDAL 17.05</th>
<th>PSYCHIATRIC 15.20</th>
<th>NORMAL 6.05</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUICIDAL</td>
<td>17.05</td>
<td>-</td>
<td>1.85</td>
</tr>
<tr>
<td>PSYCHIATRIC</td>
<td>15.20</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>NORMAL</td>
<td>6.05</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

** p < 0.001
* p < 0.01: Scheffe's procedure.
There were significant differences between groups on this factor (one-way ANOVA: $F(2,57) = 16.72$, $p < 0.001$). The ANOVA summary is given in Table 37.

**TABLE 37: ANOVA SUMMARY TABLE: POMS-C**

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARES</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>2</td>
<td>1547.43</td>
<td>773.72</td>
<td>16.72*</td>
</tr>
<tr>
<td>Within group</td>
<td>57</td>
<td>2637.15</td>
<td>46.27</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>4184.58</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*$p < 0.001$

Planned comparisons between the group mean POMS-C scores indicated that suicidal subjects were marginally poorer at POMS-CONCENTRATION than psychiatric subjects ($t(57) = 1.65$, $p < 0.052$) and significantly poorer than normal subjects ($t(57) = 5.63$, $p < 0.001$). Psychiatric subjects were also significantly poorer on this measure compared to normals ($S(57) = 6.80$, $p < 0.01$). Table 38 provides a summary of the comparison between groups or mean POMS-C.
TABLE 38: COMPARISON OF MEAN POMS-C SCORES.

<table>
<thead>
<tr>
<th></th>
<th>SUICIDAL</th>
<th>PSYCHIATRIC</th>
<th>NORMAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUICIDAL</td>
<td>17.80</td>
<td>-</td>
<td>3.55*</td>
</tr>
<tr>
<td>PSYCHIATRIC</td>
<td>14.25</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>NORMAL</td>
<td>5.70</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* p < 0.052  
** p < 0.01  
*** p < 0.0001: Scheffe's procedure.

(f) Profile of Mood States - Total Mood Dysfunction: POMS-TMD

A significant ANOVA indicated that there were differences between the groups (F(2,57) = 25.96, p<0.001: Table 39).

Table 39. ANOVA Summary table: POMS-TMD

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARES</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>2</td>
<td>91354.90</td>
<td>45677.45</td>
<td>25.96*</td>
</tr>
<tr>
<td>Within group</td>
<td>57</td>
<td>100284.75</td>
<td>1759.38</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>191639.65</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < 0.001

Comparison between groups indicated that the suicidal subjects were not significantly different from psychiatric in POMS-TMD but that both
the suicidal \((t(57) = 6.64 \ p < 0.001)\) and psychiatric subjects \((S(57) = 41.98 \ p < 0.01)\) had significantly higher mean POMS-TMD values. This is summarised in Table 40.

**TABLE 40: COMPARISON OF MEAN POMS-TMD SCORES.**

<table>
<thead>
<tr>
<th></th>
<th>SUICIDAL 97.00</th>
<th>PSYCHIATRIC 85.05</th>
<th>NORMAL 8.90</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUICIDAL</td>
<td>97.00</td>
<td>-</td>
<td>88.10**</td>
</tr>
<tr>
<td>PSYCHIATRIC</td>
<td>85.05</td>
<td>-</td>
<td>76.15*</td>
</tr>
<tr>
<td>NORMAL</td>
<td>8.90</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

** p < 0.001  
* p < 0.01 : Scheffe's procedure.

The degree of association between the two measures of affective functioning - the Beck (BDI) and the Profile of Mood States (POMS) - was examined. This was deemed of relevant clinical interest. Only data from the two clinical samples \((n = 40)\) were used in this analysis. Table 41 presents the Pearson Product moment correlation coefficients for the two mood measures.
### TABLE 41: PEARSON CORRELATION COEFFICIENTS COMBINED GROUPS: BDI AND POMS BY FACTOR.

<table>
<thead>
<tr>
<th>Factor</th>
<th>BDI</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>POMS - T</td>
<td>0.55</td>
<td>0.001</td>
</tr>
<tr>
<td>POMS - D</td>
<td>0.62</td>
<td>0.001</td>
</tr>
<tr>
<td>POMS - A</td>
<td>0.41</td>
<td>0.008</td>
</tr>
<tr>
<td>POMS - V</td>
<td>-0.42</td>
<td>0.007</td>
</tr>
<tr>
<td>POMS - F</td>
<td>0.63</td>
<td>0.001</td>
</tr>
<tr>
<td>POMS - C</td>
<td>0.65</td>
<td>0.001</td>
</tr>
<tr>
<td>POMS - IMD</td>
<td>0.66</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Tables 42 and 43 present the Pearson correlation coefficients for the groups taken separately.

### TABLE 42: PEARSON CORRELATION COEFFICIENTS SUICIDAL GROUP: BDI AND POMS BY FACTOR.

<table>
<thead>
<tr>
<th>Factor</th>
<th>BDI</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>POMS - T</td>
<td>0.44</td>
<td>0.052</td>
</tr>
<tr>
<td>POMS - D</td>
<td>0.58</td>
<td>0.007</td>
</tr>
<tr>
<td>POMS - A</td>
<td>0.33</td>
<td>0.154</td>
</tr>
<tr>
<td>POMS - V</td>
<td>-0.18</td>
<td>0.453</td>
</tr>
<tr>
<td>POMS - F</td>
<td>0.56</td>
<td>0.011</td>
</tr>
<tr>
<td>POMS - C</td>
<td>0.63</td>
<td>0.003</td>
</tr>
<tr>
<td>POMS - IMD</td>
<td>0.59</td>
<td>0.006</td>
</tr>
</tbody>
</table>
Inspection of Tables 42 and 43 indicate that for the psychiatric group the mood measures were moderately to highly correlated on all factors. The pattern of correlation for the suicidal group is much less consistent with the BDI showing non-significant association with POMS-A and POMS-V scores. Where there were significant correlations these were of relatively moderate size.

3.3.4 Social Dysfunction

Social dysfunction was assessed on the Social Dysfunction Rating Scale (SDRS) which provided a total score (SDRS-T), and three factor scores relating to the self-system (SDRS-SS), Interpersonal System (SDRS-IS) and the Performance System (SDRS-PS).

The mean, range and standard deviations for the form SDRS scores are given in Table 44:
<table>
<thead>
<tr>
<th></th>
<th>SUICIDAL</th>
<th>PSYCHIATRIC</th>
<th>NORMAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SDRS-SS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>14.55</td>
<td>11.90</td>
<td>7.00</td>
</tr>
<tr>
<td>Range</td>
<td>4-20</td>
<td>6-17</td>
<td>4-14</td>
</tr>
<tr>
<td>SD</td>
<td>6.42</td>
<td>3.24</td>
<td>2.77</td>
</tr>
<tr>
<td><strong>SDRS-IS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>20.60</td>
<td>14.30</td>
<td>7.85</td>
</tr>
<tr>
<td>Range</td>
<td>8-21</td>
<td>8-24</td>
<td>6-13</td>
</tr>
<tr>
<td>SD</td>
<td>5.43</td>
<td>4.10</td>
<td>2.37</td>
</tr>
<tr>
<td><strong>SDRS-PS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>40.30</td>
<td>28.50</td>
<td>17.90</td>
</tr>
<tr>
<td>Range</td>
<td>10-58</td>
<td>13-47</td>
<td>13-44</td>
</tr>
<tr>
<td>SD</td>
<td>15.59</td>
<td>8.77</td>
<td>7.27</td>
</tr>
<tr>
<td><strong>SDRS-T</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>75.45</td>
<td>54.70</td>
<td>32.75</td>
</tr>
<tr>
<td>Range</td>
<td>26-102</td>
<td>27-81</td>
<td>23-69</td>
</tr>
<tr>
<td>SD</td>
<td>23.18</td>
<td>13.19</td>
<td>10.31</td>
</tr>
</tbody>
</table>

a) **SDRS-T**

It was hypothesized that suicidal subjects would on average report more social dysfunction than the other two groups. Tables 45 and 46 report on the comparison of mean SDRS-T scores.
There was a significant main effect for groups $F(2,57) = 32.69$, $p < 0.001$. Planned comparisons between the mean SDRS-T score for the suicidal group were made with the psychiatric and normal groups. Table 46 summarises these comparisons. The mean SDRS-T score for the suicidal group was significantly larger than that for the psychiatric ($t(57) = 3.93$, $p < 0.001$) and normal group ($t(57) = 8.03$, $p < 0.001$).

There was also a significant difference between the psychiatric and normal groups ($S(57) = 16.52$, $p < 0.01$) with psychiatric subjects reporting more total social dysfunction.

### Table 45: ANOVA Summary Table: SDRS-T

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARES</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>2</td>
<td>17601.03</td>
<td>8800.51</td>
<td>32.69**</td>
</tr>
<tr>
<td>Within group</td>
<td>57</td>
<td>15545.15</td>
<td>272.72</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>33146.18</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significant

**$p < 0.001$
TABLE 46: COMPARISON OF MEAN SDRS-T SCORES.

<table>
<thead>
<tr>
<th></th>
<th>SUICIDAL 75.45</th>
<th>PSYCHIATRIC 54.70</th>
<th>NORMAL 32.75</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUICIDAL</td>
<td>75.45</td>
<td>-</td>
<td>20.75***</td>
</tr>
<tr>
<td>PSYCHIATRIC</td>
<td>54.70</td>
<td>-</td>
<td>21.95**</td>
</tr>
<tr>
<td>NORMAL</td>
<td>32.75</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*** p < 0.001

** p < 0.01 (Scheffe procedure).

b) SDRS-SS

Tables 47 and 48 detail the comparison of group means on the social dysfunction self-system factor. An ANOVA indicated overall group differences on SDRS-SS scores. (F(2,57) = 14.77; p < 0.001).

TABLE 47: ANOVA SUMMARY TABLE: SDRS-SS

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARES</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>2</td>
<td>586.90</td>
<td>293.45</td>
<td>14.77**</td>
</tr>
<tr>
<td>Within group</td>
<td>57</td>
<td>1132.75</td>
<td>19.87</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>1719.65</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** p < 0.001
There were significant differences between group means in the predicated direction - suicidal > psychiatric; $t(57) = 1.88$, $p < 0.03$, and suicidal > normal; $t(57) = 5.36$, $p < 0.001$. The summary for the comparison of group means is given in Table 48. Psychiatric subjects were assessed as showing significantly greater dysfunction in the self-system ($S(57) = 3.54$, $p < 0.05$) than for normal subjects.

### TABLE 48: COMPARISON OF MEAN SDRS-SS SCORES.

<table>
<thead>
<tr>
<th></th>
<th>SUICIDAL 14.55</th>
<th>PSYCHIATRIC 11.90</th>
<th>NORMAL 7.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUICIDAL</td>
<td>14.55</td>
<td>-</td>
<td>2.65** 7.55***</td>
</tr>
<tr>
<td>PSYCHIATRIC</td>
<td>11.90</td>
<td>-</td>
<td>- 4.90*</td>
</tr>
<tr>
<td>NORMAL</td>
<td>7.00</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

** $p < 0.03$
*** $p < 0.001$
* $p < 0.05$ (Scheffe procedure).

c) SDRS-IS

The groups were compared on the mean assessed SDRS-IS (interpersonal system) scores. A one-way ANOVA indicated significant differences between the groups ($F(2,57) = 37.13$, $p < 0.001$). As was predicted suicidal subjects showed significantly more social dysfunction on this measure compared to psychiatric subjects ($t(57) = 4.26$, $p < 0.001$) and normal subjects ($t(57) = 8.62$, $p < 0.001$).

Tables 49 and 50 summarise the results of the comparison of means.
TABLE 49: ANOVA SUMMARY TABLE: SDRS-IS.

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARES</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>2</td>
<td>1625.70</td>
<td>812.85</td>
<td>37.13**</td>
</tr>
<tr>
<td>Within group</td>
<td>57</td>
<td>1247.55</td>
<td>21.89</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>2873.25</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** p < 0.001

An unplanned comparison between psychiatric and normal subjects also highlighted significant differences between these two groups. Psychiatric subjects reported more dysfunction than normal subjects ($S(57) = 4.68, p < 0.01$).

TABLE 50: COMPARISON OF MEAN SDRS-IS SCORES.

<table>
<thead>
<tr>
<th></th>
<th>SUICIDAL 20.60</th>
<th>PSYCHIATRIC 14.30</th>
<th>NORMAL 7.85</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUICIDAL</td>
<td>20.60</td>
<td>-</td>
<td>6.30***</td>
</tr>
<tr>
<td>PSYCHIATRIC</td>
<td>14.30</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>NORMAL</td>
<td>7.85</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*** p < 0.001

*** p < 0.001

** p < 0.01 (Scheffe procedure)
d) SDRS-PS

Table 51 is the ANOVA summary table indicating significant differences between the groups on this factor of social dysfunction; \( F(2,57) = 20.20, p < 0.001 \). Comparisons between the suicidal, psychiatric and normal subjects confirmed predictions. Suicidal subjects were assessed as performing worse than psychiatric subjects \( (t(57) = 3.35, p < 0.001) \) and normal subjects \( (t(57) = 6.35, p < 0.001) \).

**TABLE 51: ANOVA SUMMARY TABLE: SDRS-PS.**

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARES</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>2</td>
<td>5022.40</td>
<td>2511.20</td>
<td>20.20**</td>
</tr>
<tr>
<td>Within group</td>
<td>57</td>
<td>7085.00</td>
<td>124.30</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>12107.40</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** p < 0.001

Psychiatric subjects were also reporting more dysfunction on the Performance measure than normal subjects \( (S(57) = 8.83, p < 0.05) \). The comparisons between group means is summarised in Table 52.
TABLE 52: COMPARISON OF MEAN: SDRS-PS SCORES.

<table>
<thead>
<tr>
<th></th>
<th>SUICIDAL</th>
<th>PSYCHIATRIC</th>
<th>NORMAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUICIDAL</td>
<td>40.30</td>
<td>11.80***</td>
<td>22.40***</td>
</tr>
<tr>
<td>PSYCHIATRIC</td>
<td>28.50</td>
<td>-</td>
<td>10.60*</td>
</tr>
<tr>
<td>NORMAL</td>
<td>17.90</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*** p < 0.001
*** p < 0.001
* p < 0.05 (Scheffe procedure).

3.3.5 Stress: Life Events.

The experience of stress in the year before the time of assessment was considered. Although the Life Experience Survey (LES) provides a number of positive and negative measures only two were considered in this assessment - the number of Negative Events experienced in the year previous (LES-NNE), and the Negative Impact Score (LES-NI) a measure of the reported effect of the Negative Events on that individuals life. Table 53 gives the means, range and standard deviations for LES-NNE and LES-NI scores by group.
TABLE 53: MEANS, RANGE AND STANDARD DEVIATIONS: LES.

<table>
<thead>
<tr>
<th></th>
<th>SUICIDAL</th>
<th>PSYCHIATRIC</th>
<th>NORMAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>4.95</td>
<td>3.70</td>
<td>1.75</td>
</tr>
<tr>
<td>LES-NNE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>0-15</td>
<td>0-11</td>
<td>0-7</td>
</tr>
<tr>
<td>SD</td>
<td>3.71</td>
<td>2.85</td>
<td>2.07</td>
</tr>
<tr>
<td>Mean</td>
<td>11.65</td>
<td>7.90</td>
<td>3.25</td>
</tr>
<tr>
<td>LES-NI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>0-31</td>
<td>0-27</td>
<td>0-12</td>
</tr>
<tr>
<td>SD</td>
<td>8.58</td>
<td>7.04</td>
<td>3.78</td>
</tr>
</tbody>
</table>

a) Number of Negative Events: LES-NNE.

The group were compared on the number of negative events experienced in the previous twelve month period. An overall significant ANOVA suggested differences between the groups ($F(2,57) = 5.96, p < 0.01$: Table 54)

TABLE 54: ANOVA SUMMARY TABLE: LES-NNE.

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARES</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>2</td>
<td>104.03</td>
<td>52.02</td>
<td>5.96*</td>
</tr>
<tr>
<td>Within group</td>
<td>57</td>
<td>496.90</td>
<td>8.72</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>600.93</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < 0.01
Of the comparisons between groups in the mean LES-NNE scores (Table 55) only the difference between suicidal and normal subjects reached significance (suicidal>normal: $t(57) = 3.43, \ p < 0.001$). There were no statistical differences between suicidal and psychiatric subjects, and between psychiatric and normal subjects although there was a tendency for suicidal subjects to report more Negative Events overall.

**TABLE 55: COMPARISON OF MEAN LES-NNE SCORES.**

<table>
<thead>
<tr>
<th></th>
<th>SUICIDAL 4.95</th>
<th>PSYCHIATRIC 3.70</th>
<th>NORMAL 1.75</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUICIDAL</td>
<td>4.95</td>
<td>-</td>
<td>NS 3.20***</td>
</tr>
<tr>
<td>PSYCHIATRIC</td>
<td>3.70</td>
<td>-</td>
<td>NS</td>
</tr>
<tr>
<td>NORMAL</td>
<td>1.75</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*** $p < 0.001$
NS = non-significant difference (Scheffe's procedure).

b) **Negative Impact Score: LES-NI.**

Analysis of the LES-NI scores gave a significant F-ratio ($F(2,57) = 7.72, \ p < 0.001$) indicating differences between the group means (Table 56).
TABLE 56: ANOVA SUMMARY TABLE: LES-NI.

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARES</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>2</td>
<td>708.30</td>
<td>354.15</td>
<td>7.72**</td>
</tr>
<tr>
<td>Within group</td>
<td>57</td>
<td>2612.10</td>
<td>45.82</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>3320.40</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** p < 0.001

Planned comparisons between the group means indicated that suicidal subjects were experiencing significantly more negative stress than both psychiatric (t(57) = 1.75, p < 0.04) and normal subjects (t(57) = 3.92, p < 0.001). The comparison (Scheffe's procedure) between psychiatric and normal subjects was not significant. These results are summarised in Table 57.

TABLE 57: COMPARISON OF MEAN LES-NI SCORES.

<table>
<thead>
<tr>
<th></th>
<th>SUICIDAL</th>
<th>PSYCHIATRIC</th>
<th>NORMAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUICIDAL</td>
<td>11.65</td>
<td>-</td>
<td>3.75*</td>
</tr>
<tr>
<td>PSYCHIATRIC</td>
<td>7.90</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>NORMAL</td>
<td>3.25</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* p < 0.04
** p < 0.001
NS = Non significant (Scheffe procedure).
3.3.6 Stress and Mood Disturbance: Suicidal Subjects.

The suicidal subjects (n = 20) were divided on the basis of their LES-NI scores as Hi-Stress and Lo-Stress subjects. Subjects were allocated to each group dependent on whether their individual score fell above or below the group mean. On this basis two sub-groups of ten subjects each were formed. With regard to mood functioning scores it was predicted that Hi-Stress suicidals would be more hopeless and depressed than Lo-Stress suicidals. The level of suicidal intent (SIS) was also considered.

The mean hopelessness (HS), depression (BDI) and SIS scores are given in Table 58.

<table>
<thead>
<tr>
<th></th>
<th>HI-STRESS</th>
<th>LO-STRESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HS</td>
<td>15.10</td>
<td>11.20</td>
</tr>
<tr>
<td>BDI</td>
<td>24.30</td>
<td>20.80</td>
</tr>
<tr>
<td>SIS</td>
<td>16.50</td>
<td>14.10</td>
</tr>
</tbody>
</table>

A series of t-tests was carried out on the data comparing the mean scores. There was no difference between Hi-Stress and Lo-Stress subjects on mean depression (BDI) and suicidal intent (SIS) scores. The difference between the suicidal sub-groups on hopelessness (HS) reached borderline significance t(18) = 1.67, p < 0.056 - Hi-Stress
suicidal subjects showed moderately significantly greater levels of hopelessness than Lo-Stress subjects. The summary overall non-significant trend was for Hi-stress suicides to be more depressed, hopeless and to report stronger suicide intent than Lo-stress suicides.

3.3.7 Locus of Control

The Rotter I.E Locus of Control (LOC) scale was utilized to assess subjects' perception of reinforcement. It was expected that the two clinical groups would not differ significantly from each other but that they would differ significantly from the normal group. Table 59 gives the mean LOC scores together with the range and standard deviations.

TABLE 59: MEAN, RANGE AND STANDARD DEVIATION: LOC.

<table>
<thead>
<tr>
<th></th>
<th>SUICIDAL</th>
<th>PSYCHIATRIC</th>
<th>NORMAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEAN</td>
<td>12.00</td>
<td>13.40</td>
<td>11.80</td>
</tr>
<tr>
<td>RANGE</td>
<td>7-16</td>
<td>10-18</td>
<td>5-18</td>
</tr>
<tr>
<td>S.D.</td>
<td>2.45</td>
<td>2.33</td>
<td>3.91</td>
</tr>
</tbody>
</table>

The results of a oneway ANOVA are given in Table 60A and the means are compared in Table 60B.
TABLE 60A: ANOVA SUMMARY TABLE: LOC

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARES</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>2</td>
<td>30.40</td>
<td>15.20</td>
<td>1.70*</td>
</tr>
<tr>
<td>Within groups</td>
<td>57</td>
<td>508.00</td>
<td>8.91</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>538.40</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Non-significant

Because of the non-significant F only a priori comparisons were carried out.

TABLE 60B: COMPARISON OF MEAN LOC SCORES.

<table>
<thead>
<tr>
<th></th>
<th>SUICIDAL 12.00</th>
<th>PSYCHIATRIC 13.40</th>
<th>NORMAL 11.80</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUICIDAL</td>
<td>12.00</td>
<td>-</td>
<td>1.40</td>
</tr>
<tr>
<td>PSYCHIATRIC</td>
<td>13.40</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>NORMAL</td>
<td>11.80</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* p < 0.04.

As predicted there was no statistical difference between suicidal and psychiatric mean LOC score although psychiatric subjects tended to score higher on average. There was also no difference between suicidal and normal subjects. However, psychiatric subjects mean LOC score was significantly higher (t(57) = 1.69; p < 0.04) than normal
subjects (see Table 60B).

3.3.8 Interpersonal problem solving and social adjustment: suicidal subjects.

Suicidal subjects were divided into good problem solvers and poor problem-solvers on the basis of their MEPS Relevant Means Scores. On the basis of individual scores falling above or below the mean two sub-groups - Good Problem Solvers (n = 9) and Poor Problem Solvers (n = 11) were formed.

Interpersonal problem solving examines functioning in the social domain. It was therefore expected that those subjects with poor problem-solving ability should also report poorer social adjustment. The total Social Dysfunction Rating Scale Score (SDRS-T) and the factor scores (SDRS-SS, SDRS-IS and SDRS-PS) were used in this analysis. Table 61 gives the mean Social Dysfunction Scores for good and poor problem solvers.

### TABLE 61: MEAN SOCIAL DYSFUNCTION SCORES: GOOD AND POOR PROBLEM SOLVERS.

<table>
<thead>
<tr>
<th>MEPS PROBLEM SOLVING</th>
<th>MEAN SOCIAL DYSFUNCTION</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOOD (n=9)</td>
<td>POOR (n=11)</td>
<td></td>
</tr>
<tr>
<td><strong>SDRS-T</strong></td>
<td>62.90</td>
<td>84.30</td>
</tr>
<tr>
<td><strong>SDRS-SS</strong></td>
<td>11.00</td>
<td>15.72</td>
</tr>
<tr>
<td><strong>SDRS-IS</strong></td>
<td>18.22</td>
<td>22.54</td>
</tr>
<tr>
<td><strong>SDRS-PS</strong></td>
<td>33.66</td>
<td>45.72</td>
</tr>
</tbody>
</table>
In general good problem-solvers reported significantly less social dysfunction than poor problem-solvers \( t(18) = 2.28 \ p<0.01 \). There was also significant differences between the sub-groups in SDRS factor scores. On the self system (SDRS-SS; \( t(18) = 2.10, \ p<0.025 \)) and Performance System (SDRS-PS; \( t(18) = 1.82, \ p<0.04 \)) good problem-solvers were reporting less social dysfunction. There was no difference between the suicide sub-groups in the Interpersonal System (SDRS-IS) factor. A similar analysis carried out with the Psychiatric sample highlighted no significant differences between good and poor problem-solvers as defined by their MEPS group means.

3.3.9 Interpersonal Problem-Solving, Stress and mood disturbance in suicidal subjects.

Problem-solving functioning is known to be disrupted during conditions of high experienced stress and when the mood is disturbed. As an extra analysis it was decided to examine in suicidal subjects the experience of stress, and mood indices of Hopelessness (HS) and Depression (BDI). In addition the Suicide Intent Scores (SIS) were also analysed by level of problem-solving.

The mean stress scores - Life Experiences Survey - Negative Impact (LES-NI), HS, BDI and SIS scores are given in Table 62.

Poor problem-solvers showed a trend towards greater experience of stress, hopelessness and depression and less serious suicidal intent: however, none of these differences reached statistical significance.
TABLE 62: STRESS, HOPELESSNESS, DEPRESSION AND SUICIDE INTENT: GOOD AND POOR PROBLEM-SOLVERS.

<table>
<thead>
<tr>
<th>MEPS PROBLEM SOLVING</th>
<th>GOOD</th>
<th>POOR</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>STRESS</td>
<td>LES-NI</td>
<td>10.66</td>
<td>13.00</td>
</tr>
<tr>
<td>HOPELESSNESS</td>
<td>HS</td>
<td>11.30</td>
<td>13.90</td>
</tr>
<tr>
<td>DEPRESSION</td>
<td>BDI</td>
<td>18.20</td>
<td>26.10</td>
</tr>
<tr>
<td>SUICIDE INTENT</td>
<td>SIS</td>
<td>16.40</td>
<td>14.36</td>
</tr>
</tbody>
</table>

A similar non-significant trend for stress, hopelessness and depression was found for psychiatric control subjects.

3.3.10 Combined effect of high stress and poor problem-solving: Suicidal subjects.

In order to test the hypothesis predicting higher levels of social dysfunction (SDRS-T), suicide intent (SIS), depression (BDI), and hopelessness in suicidal subjects who combined high stress with poor interpersonal problem-solving, subjects were divided on the basis of their MEPS relevant means scores (above and below the mean) and LES negative impact scores (above and below the mean). This resulted in the formation of four sub-groupings.

i) Good problem-solvers under High Stress (n=4) (GPS-HS)
ii) Poor problem-solvers under High Stress (n=6) (PPS-HS)
iii) Good problem-solvers under Low Stress (n=6) (GPS-LS), and
iv) Poor problem-solvers under Low Stress (n=4) (PPS-LS).
Subjects under high stress with poor problem-solving abilities were compared on mean levels of suicide intent, degree of hopelessness, depression and social dysfunction, with the average of the other three sub-groupings combined (Tables 63, 64, 65, 66).

**TABLE 63: MEAN SUICIDE INTENT SCORES FOR HIGH AND LOW SUB-GROUPS ON STRESS AND PROBLEM-SOLVING.**

<table>
<thead>
<tr>
<th></th>
<th>MEAN SUICIDE INTENT</th>
<th>MEAN DIFFERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPS-HS</td>
<td>16.60</td>
<td></td>
</tr>
<tr>
<td>GPS-HS</td>
<td>15.10</td>
<td>2.30*</td>
</tr>
<tr>
<td>PPS-LS</td>
<td>13.20</td>
<td></td>
</tr>
<tr>
<td>GPS-LS</td>
<td>14.60</td>
<td></td>
</tr>
</tbody>
</table>

* non-significant.  
\[ t(18) = 0.52 \]

**NB.** Difference Score = (PPS-HS) - (GPS-HS + PPS-LS + GPS-LS) / 3

**TABLE 64: MEAN HOPELESSNESS SCORES FOR HIGH AND LOW SUB-GROUPS ON STRESS AND PROBLEM-SOLVING.**

<table>
<thead>
<tr>
<th></th>
<th>MEAN HOPELESSNESS</th>
<th>MEAN DIFFERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPS-HS</td>
<td>16.30</td>
<td></td>
</tr>
<tr>
<td>GPS-HS</td>
<td>13.20</td>
<td>5.00*</td>
</tr>
<tr>
<td>PPS-LS</td>
<td>11.00</td>
<td></td>
</tr>
<tr>
<td>GPS-LS</td>
<td>9.80</td>
<td></td>
</tr>
</tbody>
</table>

* significant.  
\[ t(18) = 1.85, p < 0.04 \]
**TABLE 65: MEAN DEPRESSION SCORES FOR HIGH AND LOW SUB-GROUPS ON STRESS AND PROBLEM-SOLVING.**

<table>
<thead>
<tr>
<th></th>
<th>MEAN DEPRESSION</th>
<th>MEAN DIFFERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPS-HS</td>
<td>31.50</td>
<td></td>
</tr>
<tr>
<td>GPS-HS</td>
<td>13.50</td>
<td>13.14*</td>
</tr>
<tr>
<td>PPS-LS</td>
<td>19.60</td>
<td></td>
</tr>
<tr>
<td>GPS-LS</td>
<td>22.00</td>
<td></td>
</tr>
</tbody>
</table>

* significant.  
\( t(18) = 2.13, p < 0.02 \)

**TABLE 66: MEAN SOCIAL DYSFUNCTION SCORES FOR HIGH AND LOW SUBGROUPS ON STRESS AND PROBLEM-SOLVING.**

<table>
<thead>
<tr>
<th></th>
<th>MEAN SOCIAL DYS</th>
<th>MEAN DIFFERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPS-HS</td>
<td>83.00</td>
<td></td>
</tr>
<tr>
<td>GPS-HS</td>
<td>61.70</td>
<td>12.50*</td>
</tr>
<tr>
<td>PPS-LS</td>
<td>86.00</td>
<td></td>
</tr>
<tr>
<td>GPS-LS</td>
<td>63.80</td>
<td></td>
</tr>
</tbody>
</table>

* non-significant.  
\( t(18) = 1.05, p < 0.15 \)

Suicidal subjects who combined High stress with poor problem-solving were shown to have significantly higher scores on hopelessness \( (t(18) = 1.85, p < 0.04) \) and depression \( (t(18) = 2.13, p < 0.02) \). Although high
stress - poor problem solving subjects tended to score higher on social dysfunction and suicide intent these differences did not reach statistical significance.

3.4 Discussion.

A major issue examined in Study 1 was the nature of interpersonal problem-solving skills in suicide attempters compared to similar functioning in a normal and psychiatric control group. This discussion will focus firstly on the quantitative aspects of social interpersonal problem-solving and secondly on the qualitative aspects.

3.4.1 Interpersonal Problem-solving: Quantitative aspects.

At a quantitative level of analysis the results of Study 1 showed that suicide attempters of comparable years of formal education produced significantly fewer relevant means for solving interpersonal problems than either normal or psychiatric control subjects. Psychiatric controls did not differ significantly from normals in the number of relevant means produced. These results extend the work of Spivack and his associates (Platt and Spivack, 1974; Spivack and Shure, 1974) by identifying another psychopathological group in which an interpersonal problem-solving deficit was present. Spivack and co-workers had shown that institutionalised psychiatric patients performed more poorly on interpersonal tasks (i.e. the MEPS) than non-institutionalised normal controls.

It has been proposed that normal and psychiatric patient groups
differed on a number of variables including institutionalization. These differences were said to explain the differences in performance on social problem-solving tasks (e.g. Platt and Spivack, 1972). It is well known that prolonged hospitalization has devastating effects on social performance and social thinking (Barton, 1958) and there is some support for the idea that the longer the hospitalization period the greater the deleterious effects on social problem-solving. This effect of the external environment has been used to explain normal versus psychopathological group differences.

Institutional effects were minimized in the two groups (suicide attempters and psychiatric outpatients) under consideration in this study. The quantitative differences in interpersonal problem-solving ability demonstrated between these groups could not, therefore be explainable on the basis of this hospitalization effect.

This finding allows two questions to be considered. Firstly, explanations other than institutionalization must be sought when interpreting these between-group differences. Secondly, since a number of psychopathological groups are now known to be deficient in interpersonal problem-solving skills, it would be of some importance to examine whether these groups could be discriminated on the basis or level of this ability i.e. is the difference one of degree. However, other factors may be at work e.g. affective disturbance, stress etc.. These factors will be considered later on in the discussion.

Whilst suicidal subjects generated significantly less relevant means than both normal and psychiatric subjects this was not true for
psychiatric compared to normal subjects, although there was a tendency for the normal group to produce the greater number of relevant means. The suggestion is that as the effects of hospitalization and institutionalization are either absent or minimised in the early stages of psychopathology interpersonal problem-solving ability between psychiatric and normal subjects is not markedly different. However, the identified difference shown for the suicidal subjects suggests that for this group, factors related to the development of interpersonal problem-solving ability (intrinsic factors) in contrast to environmental factors (extrinsic factors), may be more important at this stage for explaining the difference.

Platt and Spivack (1973) and Platt et al. (1975) have shown that normal subjects produced significantly more relevant means than acutely ill inpatients and acutely ill predominantly psychotic inpatients. These results could be seen as conflicting with the results of Study 1 of no difference in MEPS thinking between normal subjects and outpatient psychiatric patients. However, it may well be that the psychiatric status of the Platt and co-workers subjects may explain the difference in results. Supportive of this idea is the Platt and Siegel (1976) finding that poor problem-solvers (interpersonal problems) were also more severely impaired in terms of psychopathology when compared to the good problem solvers among psychiatric patients. Within groups of acutely ill psychiatric patients means-ends thinking ability was also shown to relate to premorbid social competence - another index of psychopathology (Platt and Spivack, 1972b).
In terms of the assessed relationship between relevant means and all story directed responses including no means and irrelevant means (relevancy ratio), suicidal subjects differed significantly from both psychiatric and normal subjects producing a smaller relevancy ratio overall. Again there was no difference on this measure between normal and psychiatric subjects.

Other quantitative aspects of MEPS thinking considered in Study 1 were the number of irrelevant means and sufficient narratives produced. The relative presence of irrelevant means given in narratives gave an indication of both the effectiveness of solutions generated with regard to specific problems and also highlighted difficulties subjects had in building appropriate instrumental bridges between the beginning of a story and arriving at the stated goal.

On average psychiatric subjects produced the largest number of irrelevant means compared to suicidal and normal subjects. However, on closer examination of the pattern of scoring for psychiatric subjects this was achieved by a small number of psychiatric subjects producing a large number of irrelevant means. For all groups considered a greater though non-significant proportion of suicidal subjects produced at least one irrelevant means suggesting that this tendency was more characteristic of the suicidal than the other two groups. Suicidal subjects also differed significantly from normal but not psychiatric subjects in the mean number of irrelevant means produced. There was no difference on this measure between normal and psychiatric subjects.
With regard to sufficient narratives containing relevant instrumental means leading to the achievement of the stated goal again suicidal subjects were shown to produce significantly less such narratives than both the psychiatric and normal groups. Psychiatric subjects did not differ from normal subjects. At this level of analysis suicidal subjects found significant difficulty in responding effectively to the interpersonal problem situations set. Although suicidal subjects responded with effective means on an average of three out of the five story stems the difficulties were not centred on any one story. Psychiatric and normal subjects responded effectively to at least 4.4 stories on average. This result pointed to a general diminished interpersonal problem-solving capacity in suicide attempters.

So far suicidal subjects have been shown to be less effective in producing relevant means and sufficient narratives to interpersonal problems compared to normal or psychiatric subjects. Before considering the implications of these findings, some limitations of the research, and possible explanations of the results, the discussion will first turn to examining the qualitative aspects of interpersonal problem solving.

3.4.2 Interpersonal problem-solving: Qualitative aspects.

Rather than confining the investigation to the generation of problem-solving thought narratives were also examined at a qualitative level to include consideration of qualitative variables such as introspection, the recognition of obstacles, time references, emotional relevant factors and the ability to elaborate upon problem-
solving cognitions. In keeping with the main hypothesis it was expected that suicidal subjects would produce inferior qualitative responses. The scoring of emotional instrumental means - where a feeling state instigated relevant instrumental action - is an elaboration of the Shure and Spivack scoring categories and has been used to discriminate narcotic drug abusers in good standing from those in poor standing (Appel and Kaestner, 1979). It assesses whether the experience and recognition of negative affect or the anticipation or positive affect would lead to appropriate problem-solving action.

Only a very small proportion of suicidal subjects recognised, acknowledged or anticipated an emotion that lead to relevant instrumental action. In this regard they were significantly different from psychiatric and normal subjects for whom emotionally motivated instrumental acts featured in a high proportion of narratives. The psychiatric subjects were not different in this regard from normal subjects. Although most of the MEPS story stems had some emotional feeling embedded these were not equally elaborated instrumentally by suicidal subjects as by subjects from the other two groups. There was therefore a clear difference between the suicidal and the other subjects in the ability to focus on intrapersonal elements of experience and functioning.

Of interest too at a qualitative level were differences between the groups in the degree to which the idea of thinking through before carrying out an action (introspection) was introduced in problem-solving responses. Suicidal acts are in many cases regarded as impulsive and unplanned (Williams, Davidson and Montgomery, 1980). This
may also be related to the poor recognition that a certain amount of
time was needed to see problem solutions through. The recognition of
time elements is considered further below.

The results suggested that suicidal subjects were significantly less
introspective about problem solutions than normal subjects but not
psychiatric subjects. There were fewer references to an element of
thinking in their narratives. Psychiatric subjects did not differ
significantly from normal subjects in this regard although the trend
was for normal subjects to produce more instances of thinking
associated with specified means.

In association with this suicidal subjects were also shown to make
fewer references to the passage of time in their solutions compared to
the normal and psychiatric groups. In addition although there was no
difference between the normal and psychiatric groups in the number of
subjects making at least one time reference, normal subjects produced
significantly more such references on average. Suicidal subjects
differed in this regard in both the average number of time references
made and in the number of subjects reporting the need for the passage
of time to achieve desired goals.

Whereas none of the groups differed in the number of enumeration of
means, i.e. giving additional details regarding particular steps in
the story, differences were identified between the groups in their
ability to identify possible obstacles or difficulties anticipated in
reaching stated goals.
Suicidal subjects were significantly different from normal subjects in recognising obstacles with only one suicidal subject (five percent) making any reference to obstacles compared to normal subjects (thirty-five percent). Of interest too is the result that only fifteen percent of psychiatric subjects made references to obstacles and although this was not statistically different from suicidal subjects the average number of references to obstacles was greater for psychiatric than for suicidal subjects.

It seems quite clear from the pattern of results reported that major differences in interpersonal problem-solving competence exist between the groups particularly when comparing suicidal and normal subjects. The extent of the difference in level or degree was not so wide ranging when suicidal subjects were compared with psychiatric subjects although in the critical area of problem-solving means-end thinking shown in the literature to relate to adjustment status, suicidals were clearly most deficient.

3.4.3 General Considerations and Implications.

Taken together the summary picture of comparisons between the suicidal and normal groups on interpersonal problem-solving ability, when both quantitative and qualitative analyses are considered, suggests that suicidal subjects.

a) produced significantly fewer relevant instrumental means

b) recorded a higher mean number of irrelevant means.
c) produced significantly less sufficient narratives containing relevant instrumental means.
d) were less dependent on emotional feelings to instigate relevant problem-solving behaviour.
e) were significantly less introspective about problem solutions.
f) paid less regard to the recognition of the passage of time related to solving problems, and
g) recognised or anticipated fewer obstacles to means offered as solutions.

Major differences of kind and degree therefore exist in interpersonal problem-solving competence between suicidal and normal subjects. Suicidal subjects were clearly deficient with respect to the generation of means of solving interpersonal problems. If this means-ends thinking ability is related to the ability to cope with or in interpersonal situations this would confer a significant social disadvantage upon suicidal subjects.

Coping, adaptation and problem-solving have been linked in the literature. Mechanic (1970) described personal adaptation as having three fundamental levels - coping capabilities, motivation to meet environmental demands and the maintenance of psychological equilibrium. The ability to plan, to prepare for probable difficulties and to try a variety of hypotheses in resolving important problems were behaviours considered important to adaptation, coping and adjustment. Effective participation in the social environment depended upon interpersonal skills that provide for the maintenance of stable relationships linked to a style of thinking which permitted
diversity and flexibility of ideas.

Coping was deemed to be related to the problem-solving efforts made by an individual when the demands he faced were highly relevant to his welfare and when those demands taxed his adaptive resources. Problem-solving capabilities were further implicated when the individual had to operate under conditions of incomplete information, inadequate knowledge of the relationship between means and ends so that the individual could predict with confidence the consequences of choosing a given course of action, and difficulties in formulating a criterion for use in selecting the best option.

With the foregoing in mind one proposition is that for the suicidal subjects the relatively diminished production of relevant means-ends thought represented a generalized deficit in interpersonal coping capabilities. This reduced ability to produce interpersonal problem-solving cognitions could also be said to represent a thinking style which allowed only for the inflexible production of a narrow range of means with which to achieve the inter-personal goals.

The suicidal individual’s narrowed range of thinking and conceptualization in response to impersonal problems has already been discussed (see Chapter 2.2). The results of Study 1 on means-ends thinking extend these findings to include functioning in interpersonal domain.

A further consideration is the influence of affective experience on interpersonal problem-solving. Lazarus (1966) pointed out that under
conditions of high stress or relatively intense emotional feeling
developmentally earlier and simpler forms of coping behaviours were
more likely to occur than were novel and complex behaviours.
Furthermore, individuals were unlikely to improve in performance under
these conditions and it was very much more likely that long-
established, over-learned patterns of responses would be produced
rather than newer ones specifically modified to meet situational
demands.

With regard to the means-ends performance of suicidal subjects it
could not be clearly determined from the results whether the means
offered by suicidal subjects were "developmentally primitive" compared
to those offered by subjects in the control groups. However, it was
noted that at least one suicidal subject saw "taking an overdose of
tablets" to effect a reconciliation with his estranged girlfriend as
an effective means.

Taking account of the affective dimension it was quite conceivable
that the experience of feelings of depression and hopelessness could
be contributing in a negative way to means-ends performance. This
theme would be further discussed below, but for the present, although
suicidal subjects were significantly different from psychiatric
subjects in means-ends thinking, no difference was demonstrated
between these groups in terms of depression and hopelessness. In
addition although psychiatric subjects differed from normal subjects
in the level of affective disturbance present no differences between
these two groups were demonstrated on the basis of interpersonal
problem-solving. These comparative results would suggest that the
deficits demonstrated in suicidal subjects could not be explained by reference to affective disturbance alone.

This is an important finding since it is a well known practise to use clinical indices e.g. degree of depression, etc. when assessing the level of suicidal risk. The assessment of interpersonal problem-solving ability thus provides an additional index for assessing suicidal risk. At this point it would be relevant to recognise that other psychopathological groups e.g. alcoholics, heroin addicts and maladjusted adolescents, have also shown interpersonal problem-solving deficits. It may well be that these groups differ in the degree of the deficit. It has also been recognised that these groups were at high risk for suicidal behaviour so that the problem-solving deficit identified may very well apply equally across groups as an additional measure not only of adjustment status but also of suicide risk.

3.4.4 Limitations of the MEPS Procedure in interpersonal problem-solving assessment.

The discussion will now turn to examining some limitation of the MEPS procedure for assessing interpersonal problem-solving.

There are several issues related to the use of the MEPS procedure as a measure of social problem-solving thinking. The first of these relates to 'instructional set'. Butler and Meichenbaum (1979) regarded the MEPS as essentially a projective procedure dependent on imaginative story-telling exercises in which there was no attempt to induce a problem-solving set. This procedure would therefore only allow for assessing the individual's spontaneous tendency to generate
problem-solving thought and as such is more geared towards assessing typical performance (Wallace, 1966) rather than maximal problem-solving capabilities.

Given this distinction made between abilities and typical performance the results of this study are limited in so far as no determination could be made as to whether the problem-solving deficit demonstrated in suicidal individuals represented a lack of knowledge of possible strategies or a deficit in the tendency or set to produce problem-solving thought.

It is of clear relevance too, to consider whether this deficit is related to developmental history or whether it becomes disrupted under stressful life conditions or crises.

If the deficit represented a failure of social adjustment in this regard the MEPS would only tap one aspect of social problem-solving known to be of importance to adjustment and social development in adulthood. Other aspects of problem-solving behaviour not covered by the MEPS procedure and which might be needed to be assessed in the suicidal group include the areas of alternative solution thinking, problem sensitivity, consequential and causal thinking which have been shown by Spivack and co-workers to be important at earlier periods of development. This form of assessment would involve moving away from observational strategies (Fiske, 1971) which only give information about how the individual typically thinks, to assessment of capabilities which would target for assessment the component abilities or skills (broader than just means-ends thinking) that subjects could
be assumed to possess depending on the quality of responding on a range of tests each designed to tap one specific ability.

In this way social problem-solving (abilities/deficits) profiles could be generated and used as a means to discriminate groups in a more comprehensive way. The Purdue Elementary Problem-Solving Inventory (PEPSI; see 1.1) is a good example of multiple assessment of twelve specific social problem-solving behaviours in children and consideration should be given to adapting such a form of (i.e. capabilities) assessment to the adult population.

Capabilities tests such as the PEPSI assess maximal performance in specific areas of problem-solving cognition and would provide a wider range of specific information about the particular abilities or deficits of good and poor problem-solvers. Thus should allow for better discrimination among samples of problem-solvers.

Developmentally related problem-solving deficits may in fact, be much wider than those identified by the MEPS procedure and unless these can be carefully elaborated may limit the range of remediation undertaken subsequently.

Another key issue is whether the MEPS procedure taps an adequate or representative range of interpersonal situations. Added to this it is not known whether the situations used were sufficiently sensitive to call for the best problem-solving strategies on the part of the respondent. It is also unclear to what extent the cognitive and behavioural reactions to the MEPS test situations are representative.
of that individual's reactions to real-life problems. It has been shown that the ability to solve hypothetical problems did not transfer to real-life problem-solving (McClure, Chinsky and Larcen, 1978). An individual may have ability to recognise possible solutions but may not have the ability to put these solutions into practice in the real world.

Human beings can normally be considered as active explorers and problem-solvers. Social interpersonal problems, unlike impersonal problems operate within a dynamically changing inter and intrapersonal matrix which demands adjustment, compromise and readjustments and the realization that the same solutions may be ineffectual for a similar problem at another time. The defined problem or goal-state may change as a function of time, the behaviour of other persons, the emergence of other problem-related stresses or by the execution of component processes.

The MEPS procedure it is recognised, is aimed at measuring a limited aspect of problem-solving behaviour and it does not allow for insights into whether individuals were using trial and error strategies, the kinds of alternative solutions they consider and the process of decision making all of which suggests that the MEPS is limited in so far as it fails to capture the richness of problem-solving behaviours in general. The static model of problem-solving is also limited by its assumption of an unchanging domain of problem situations. As such, the results may not be generalizable to the more dynamic problem-solving situation in which increasing attention is paid to the personal relevance of problems, their continuity over time, the range
of outcome possibilities, flexibility of solutions, uncertainty and other factors which are characteristic of human problem-solving efforts. For example, the means given in the individual response may reflect the only solution considered, or it may be the best solution arrived at after careful consideration of consequences. The MEPS procedure does not easily lend itself to this form of analyses.

If, as Simon (1957) suggested, most individuals have a tendency to select the first 'satisfactory' alternative that suggested itself without consideration of further problem-solving thinking to select better alternatives, it would be of value to identify those individuals who use the effective problem-solving strategy of selecting the 'best' alternative. The indices provided by the MEPS does not give information about this important aspect of problem-solving.

Although the MEPS procedure allows for the examination of the cognitive characteristics of the problem-solver e.g. relevant thinking, introspection, failures in responding (i.e. no means provided), it is important to note that within the interpersonal domain (perhaps not so with impersonal problems) emotional functioning as motivators of problem-solving action is a vital consideration. Suicidal subjects have been shown in Study 1 to be different from the other groups in the extent to which the recognition or acknowledgement of some emotional feelings lead to relevant instrumental action. If the production of relevant instrumental action could be assumed to be related to the modification of such emotional feeling given their poor problem-solving abilities, the suicidal subjects would possibly
experience debilitating affective disturbance for longer periods compared to good problem-solvers.

The widening of the problem-solving assessment criteria to include the analysis of 'emotionally' motivated relevant instrumental problem-solving behaviour as a qualitative score might add to the predictive utility of the procedure. The inclusion of the problem-solver's competence in the recognition, identification and sensitivity to emotional feeling states as part of the general assessment may help bridge two component facets in human function - those which emphasize cognitive events and those which focus on emotional events.

The development of analyses which would take other qualitative aspects of problem-solving performance into account may also be a useful extension of the procedure. Such qualitative indices would help to highlight any relationship between level of problem-solving thought and the quality of such problem-solving cognition. In addition such a form of analysis may allow more solidly-based competence judgements to be made by assessors.

The role of disturbed affect and other stressors as they influence the problem-solving process have relevance to this discussion and are considered below.

3.4.5 Affective disturbance and interpersonal problem-solving.

The mean levels of experienced depression for both suicidal and psychiatric subjects were within the mild to moderate range according
to Beck scoring criteria. In terms of the level of hopelessness suicidal subjects were not significantly different from the psychiatric subjects and for both groups the levels of depression and hopelessness were significantly excessive compared to normal subjects. The pattern of scoring on the Profile of Mood States (POMS), which examined six areas of affective functioning, was similar to the above with no difference between the two psychopathological groups both of which reported a total mood dysfunction scores significantly in excess of normal scores. Examination of the POMS factor scores showed that the difference between the suicidal and psychiatric subjects was only seen on the POMS - concentration factor with suicidal subjects reporting significantly greater disturbance in concentration.

At a global level, these findings suggest that a significant degree of psychopathology existed for the psychiatric group and equally for the suicidal group. This has clear implications for both the assessment and clinical treatment of suicidal behaviour itself (often seen as acting-out or manipulative) and for whom different provisions e.g. referral to social services, are made.

Taken together with the summarised results on problem-solving, suicidal subjects experiencing a comparable level of affective disturbance to psychiatric subjects (Depression and Hopelessness) were shown to be performing worse on a measure of interpersonal problem-solving. The problem-solving deficit indentified in suicidal subjects could not, therefore, be explainable on the basis of psychopathology or of hospitalization effects (absent in this study) the two reasons most often cited in the literature to explain differences in
functioning between normal and psychopathological groups.

The analyses of the difference between good and poor problem-solvers (see Table 62) were carried out using the standard indices of affective disturbance (depression and hopelessness). In addition the level of suicide intent and the rated negative impact of life events were included as behavioural and cognitive indices of affective disturbance or responding. For the suicidal group, good and poor problem-solvers were shown not to be significantly different on any of these indices. However, the trend was for poor problem-solvers to be more depressed and hopeless and to report a greater negative impact stress score. Contrary to expectations and against predictions good problem-solvers showed a non-significant trend to report higher suicide intent.

There is a clear issue as to why individuals who share the same degree of psychopathology showed differing extents of suicidality i.e. the willingness to engage in suicidal behaviour. A number of possible explanations might conceivably account for this. Firstly, for the suicidal subjects the expectation of treatment and the relief felt after the suicide attempt might have been sufficient to build a floor under hopelessness resulting in lowering the degree of assessed hopelessness to within that experienced by non-suicidal psychiatric subjects. This is clearly not an adequate explanation since new psychiatric patients may have also been similarly influenced by the expectation of treatment. Secondly, it might well be that other factors present only in the suicidal group act as the trigger for the suicidal attempt e.g. the faulty expectation that the suicide attempt
was a viable alternative solution to the then current problematic situation.

3.4.6 Social adjustment and Interpersonal problem-solving.

In general suicidal subjects showed significantly greater social dysfunction that subjects in the other two groups at all three levels of social dysfunction and adjustment assessed - the self system, interpersonal system and performance system. Social dysfunction was also significantly greater in psychiatric compared to normal subjects. There was, therefore, support for the idea that psychopathological groups in general show significant social dysfunction and poor social adjustment.

The presence of significantly elevated levels of social dysfunction suggested that suicidal subjects were either finding it more difficult to cope in general or because of a specific deficit in coping ability e.g. in interpersonal problem-solving were unable to effectively influence social contingencies around them resulting in increased levels of social disorganisation.

With this question in mind the suicidal group was divided into good and poor problem-solvers and then compared on the level of social dysfunction. Poor problem-solvers showed a significant tendency to higher social dysfunction in general and more specifically in the self and performance system compared to good problem solvers. That is, in those areas which concerned past accomplishments and specific future plans, friendships, social life, work and satisfaction derived there
from, poor problem-solvers showed the greater dysfunction.

There was no difference between good and poor problem-solvers in the interpersonal system which was biased toward assessing anxiety, hostility, manipulation and suspiciousness. Of some interest too, is the finding that psychiatric subjects divided into good and poor problem-solvers showed no differences in assessed social dysfunction by factor suggesting that the relationship of poor problem-solving to greater social dysfunction was specific to the suicidal group. This is not to suggest a causal link between suicidal behaviour and social dysfunction as clearly the pattern of increasing social dysfunction may only be evidence of the process - intrapsychic and interpersonal - that leads to the production of suicidal behaviour. This theme is further developed below.

3.4.7 Combined effects of high stress and poor problem-solving.

Compared to normal subjects, suicidal subjects reported a significantly greater number of negative life events in the year preceding the suicide attempt. They did not differ in this regard from psychiatric patients. Although psychiatric subjects reported a larger number of negative events than normal subjects this difference was not significant. The result was consistent with findings reported by Paykel et al (1974) - suicide attempters reporting the greater total number of negative events compared to normals in the six months prior to the attempt and with a marked peaking of events in the month before. In contrast, however, to the results of the Paykel study, this study was concerned with the general presence of negative events.
over the preceding year and highlighted the need to consider not just
the short-term presence of such events but their cumulative and
perhaps debilitating effects over a longer period. Negative life
changes in the areas of health, finances and interpersonal
relationships have reported depressionogenic and other cumulative
effects that manifest themselves over several months (Brown and
Harris, 1978).

It may well be that the more recent exposure to negative events act as
trigger factors to suicidal behaviour with their long term presence
having a generally undermining effect on personal coping resources.
Personal coping resources include dispositional characteristics such
as the sense of environmental mastery, attributional style as well as
social problem-solving skills. Other studies (O'Brien and Farmer,
1980) have shown that the suicidal individual continued to report a
high rate of stressful events following the suicide attempt. This
suggests that the suicidal behaviour may itself mark a brief and
ineffectual interruption in a chain of recurring negative stressful
events and supports the idea that unless the individual's coping or
interpersonal problem-solving abilities improve then that individual
would continue in a state of turmoil with the suicidal behaviour
itself taking on the nature of a stressful life event!

Suicidal subjects were shown to be significantly different from both
the psychiatric and normal subjects in the rated negative impact of
recorded stressful events. This is an interesting finding suggesting
that although the suicidal subjects were not reporting greater numbers
of negative events than psychiatric subjects they rated the presence
of these events as more stressful (negative impact score). This implicates differences in appraisal, attributional style and coping between the groups. The finding further highlights the crucial importance of assessing the qualitative aspects of stress reflecting individual perceptions and interpretations (Mueller, Edwards and Yarvis, 1977; Sarason et al., 1978). The interpretation of events rather than their mere occurrence shaped the nature and intensity of dysfunctional responses. What makes for the difference in rating events impact? At least two possibilities exist. Firstly, it is possible that suicidal individuals have a consistent tendency to make more extreme endorsements regarding how stressful changes in their life may be. Or secondly suicidal subjects, on the recognition after trial and error problem-solving that their coping resources were not adequate to deal effectively with the environmental and other demands, then perceived the persistence of such events as increasingly stressful. The data does not allow for a choice to be made between these two possibilities.

The first proposition suggests that suicidal individuals in terms of personal resources have a relatively stable characteristic affecting their expectancy for coping and for exerting environmental mastery. The development of a sense of environmental mastery has important implications for attenuating the effect of stressors. Bandura’s (1977, 1978) model of adaptational behaviour proposed that feelings of self-efficacy were related to the generalised expectancy to be able to cope successfully with current or prospective stressors. Active coping was said to reduce exposure to stressors or to moderate the effects of current stressors with performance based feedback
incrementing the feelings of self-efficacy. Individuals who were high on the dimension of self-efficacy typically persisted in active efforts to reduce stress whilst those who saw themselves as possessing less of this characteristic lacked persistence and tended to use defensive avoidant strategies for coping. Within this framework the comparatively poor interpersonal problem-solving abilities of suicidal individuals sets the context for coping and for making self-directed attributions of poor or diminished self-efficacy.

The second proposition focuses more on the suicidal individuals’ realistic assessments (rather than assumptions) about himself. Feedback about performance allows for judgements to be made about coping. The recognition of the inability to cope leads to increased stress. It has been shown that undesirable events over which the respondent had control were not related to stress, whereas events perceived as uncontrollable had adverse effects (McFarlane, Norman, Streiner, Roy and Scott, 1980). Controllability was related to the mobilization of effective problem-solving coping responses. Billings and Moos (1981) have described several styles of coping - cognitive coping, active behavioural coping and avoidance. In this regard the suicidal individual would be considered ineffective in cognitive or behavioural coping tending more to produce escape-avoidance coping of which the suicidal act was a prime example.

For the suicidal individual both tendencies described should lead to greater experience of hopelessness, depression and suicide intent. To examine for this possibility high-stress (i.e. perceived stress) suicidal subjects well compared to low stress suicidal subjects. In
keeping with predictions, the results showed a trend for high stress subjects to be more hopeless, depressed and for reporting more suicide intent, but with only the difference on hopelessness reaching statistical significance. Rather than suggesting a cause-effect relationship between stress and indices of affective disturbance it is proposed that high stress and lowered mood are in mutual negative feedback.

The relationship between mood, stress and problem-solving was next considered. For suicidal subjects, those who combined high stress with poor problem-solving ability reported significantly higher levels of depression and suicide. Poor problem-solvers under high stress also reported higher (but non-significant) levels of suicide intent. The pattern of scoring related to social dysfunction was less straightforward. Irrespective of level of stress, poor problem-solvers reported significantly higher levels of social dysfunction, a result consistent with results discussed above regarding poor problem solving and social dysfunction. Thus, in terms of mood disturbance high stress and poor problem-solving could be acting synergistically with good problem-solving moderating the effects of stress.

An additional index assessed in this study was locus of control. An external locus of control was related to the degree to which an individual felt in control of environmental contingencies and reinforcement. It was expected that suicidal subjects would be more external in direction of Locus of Control compared to the other two groups. The results suggested that suicidal subjects were no more external than normal or psychiatric subjects. The interesting finding
was not that suicidals were external but that the normal subjects were not markedly different in this regard. This suggests that an external locus of control may take on more critical significance when it combines with other personal attributes such as poor problem-solving and poor social adjustment. Bandura (1977) has emphasized the positive relationship of a belief in self-efficacy and coping. There is a conceptual relationship (Rotter, 1966; Lefcourt, 1976) between locus of control and self-efficacy as both link reinforcement to the individuals’ own behaviour. The suicidal individual who is a poor problem solver and of external locus of control would tend to hold negative efficacy expectations shown to be linked to the experience of helplessness, hopelessness and depression (Seligman, 1975) all of which have been implicated in suicidal behaviour.

3.4.8 A model for the development of suicidal behaviour.

So far it has been shown that poor problem-solvers under high stress were shown to be reporting higher levels of hopelessness, depression and suicide intent. It is thus possible to make some propositions regarding the route to the production of suicidal behaviour. In the presence of high stress poor problem-solvers are ineffective in dealing with life’s difficulties leading to the experience of hopelessness and depression and suicide ideation. Good social problem-solving skills are assigned a stress-buffering and mediational role. That is, in the presence of high stress, effective and appropriate problem-solving skills allows for the production of active behavioural and problem-focused coping resources designed to minimize the effect of stressors and to promote adequate environmental
adjustment. Positive performance-based feedback reduces perceived stressors and further enhances self-efficacy expectations about future outcomes. This individual would be said to be coping (Path A; Fig. 2).

Individuals following Path B (Fig. 2) are those poor in problem-solving. Ineffectual and avoidant-coping strategies allow for negative attributions about stressors to be made increasing their salience and impact. It is the recognised failure to cope which leads in time to depression, increasing hopelessness and suicide ideation. The experience of negative affect feeds back into the psychological system of personal resources in deficit, further increasing the probable occurrence of stressors and their presumed impact. The high-stressed poor problem-solver is at risk for suicidal behaviour and the continued presence of stress and poor coping tips the balance in favour of suicidal action.

The identified social problem-solving deficit may be presumed to have occurred at an earlier point in the developmental history of the individual. Interpersonal cognitive problem-solving has shown developmental trends (Spivack and Shure, 1975) and that family rearing-practices and schooling experiences had significant influences on later social problem-solving development (Bearison and Cassel, 1975; Weinstock, 1967a; 1967b).

The model for the development of suicidal behaviour described has direct implications for the treatment and prophylaxis of these individuals. At a primary level of prevention, training parents in
Fig 2: Schematic Model of Route to Suicidal Behaviour.
better social problem-solving may be the preferred site of intervention. The increasing incidence of suicidal behaviour in the younger aged suggests that they may not be an unwise option.

At a secondary level of prevention, the model would suggest at least two sites of intervention. Firstly, there is the site of affective disturbance in which the experience of hopelessness and depression would be key targets. The methods of cognitive therapy may be appropriately applied in this case.

Secondly, there is the site in which social dysfunction and poor social problem-solving are the most salient features. Problem-solving training is indicated in this case. Study II of this research effort focuses on the application of these two strategies - cognitive therapy and problem-solving training - and aims to assess their effectiveness with regard to suicidal behaviour. But because of their feedback loop nature and reciprocal influence, Problem-solving Training and Cognitive Therapy would be expected to interact beneficially, e.g. Problem-solving Training may change helplessness cognitions.

The next sections review the psychotherapeutic strategies for dealing with suicidal behaviour and further examines the relevance of problem solving training and cognitive therapy in the management of suicidal behaviour.
CHAPTER 4.
Review of Psychotherapeutic strategies in suicidal behaviour.

Suicidal behaviour poses a major public health problem. In England and Wales hospitals provide care for 104,000 cases of deliberate self harm per year (Office of Health Economics, 1981). These make up some twenty percent of all acute medical admissions (Morgan, 1979). The risk for repetition and for completing suicide have been widely reported (Kennedy and Overstone, 1974; Hawton, 1979; Kennedy, 1972).

Prophylactic intervention distinguishes between primary, secondary and tertiary prevention. These concepts arose historically out of medicine. The concepts of prevention, intervention and postvention of suicide were introduced by Shneidman (1969). Prevention and intervention are roughly synonymous with the public health concepts of primary and secondary prevention respectively. The World Health Organisation (1968) suggested a number of preventative measures to deal with this behaviour. These included, prevention of a fatal outcome of suicidal acts, prevention of repetitions, prevention of first suicidal attempt, prevention of the desire to attempt suicide and the identification and care of high-risk groups.

The prevention of suicide (at least the secondary prevention of suicide) was in fact practised in antiquity (Choron, 1968). Early preventative efforts were compounded by moral and ethical considerations but one of the earliest arrangements in the present era was the Anti-Suicide Bureau established by the Salvation Army in London in 1905 (Levine and Kay, 1971). Other developments since then
include the Samaritan Organisation, suicide prevention centres in the United States, crises intervention centres and the mobilization of psychiatric emergency services.

This chapter reviews treatment programmes and intervention strategies designed to reduce suicidal behavioural acts.

4.1 Psychotherapeutic strategies.

Psychotherapeutic strategies, or more narrowly, psychodynamically-based strategies, take the point of view that suicidal behaviour was usually motivationally multidetermined and instigated by motives which were largely unconscious and rooted in early childhood conflictual experiences. The behaviour was said to signal a regressive return under stress to an earlier developmental level of psychological organisation in which the ego-functions of reality-testing and impulse control were disorganised (Mintz, 1961).

Mintz suggested that the first concern of psychotherapy with the suicidal person was the preservation of life. The established psychotherapeutic relationship should provide an atmosphere which encouraged the confidential ventilation by the patient of his feelings of hopelessness and despair. Particularly, during a suicidal crisis the therapist extends the hope and encouragement to the patient that he would change in time with treatment. This treatment approach was supported by Kiev (1975) who considered that a meaningful patient-therapist relationship, in which warmth, sympathy, understanding and an orientation to reality were the most salient ingredients, was
important to the treatment of suicidal behaviour. For Kiev the depressed suicidal patient needed, in treatment, to increase self-reliance and to strengthen the capacity to tolerate rejection.

Kovacs, Beck and Weissman (1975) considered the use of suicide motives in the psychotherapy of suicidal individuals. They proposed that the reasons given by a patient for his suicide attempt may provide a promising point of entry for psychotherapy. Rather than focussing on regressive transferences these authors adopted a more practical approach. When a patient attempted suicide to change his environment, the various manipulative motives would be clarified so that the therapy session would seek to effect better interpersonal communication or the more adaptive expression of hostility. On the other hand if the motive was to escape or seek surcease then the patient's hopelessness would become the therapeutic focus.

Apart from individual psychotherapeutic strategies - in which elicited mothering responses, transference, countertransference, and regression form the active ingredients of the facilitative patient-therapist relationship - group approaches to the treatment of the suicidal individual have also been reported.

Horwitz (1976) indicated that the presence of an acute crisis, marked depression or suicidal potential were contraindications for group therapy. Many group psychotherapists disagree with this assertion (Rosen, Asimos, Motto and Billings, 1973; Billings, Rosen, Asimos and Motto, 1974). These workers have reported positive experiences in developing and working with groups of suicidal individuals. Billings
(1974) reported a systematic examination of the group approach to managing suicidal behaviour. Compared with other treatment settings - individual treatment, day hospital treatment, and traditional group therapy - the specialised suicide group, which served to foster healthy identity and for reducing alienation and isolation, was statistically more superior. The group therapy method was deemed a sensible and economical treatment modality for the suicidal population providing a caring, empathic and supportive communication network with the group members sharing the responsibility for experiences they held in common both within sessions and outside in the community.

Comstock and McDermott (1975) have reported descriptively their experiences with treating 105 suicidal individuals in groups on either a short-term or long-term basis. The specific goals of the group included focusing on suicidal preoccupation, and developing habits of self-observation and analysis with increased acceptance of responsibility. The dangers of impulsive behaviour were emphasized and methods for dealing with dependency and helplessness were considered.

The primary task of the short-term groups was the confrontation of suicidal preoccupation in group members. This was facilitated by focussing on current problems and the situational difficulties of members. The group leaders did not engage in problem-solving as such but played active, directive roles emphasizing alternatives to suicidal behaviour, psychological-mindedness and reflection to combat impulsivity. Within group sessions members were supported in their direct expression of anger so that they avoided the internalization of
anger which, it was hypothesized, led to suicide. Depressive affect, self depreciation and helplessness were dealt with in an ego-defending way i.e. stressing areas of competence, rather than by further, possibly anxiety-provoking, exploration.

In the long-term groups greater attention was placed on group dynamics and group processes and this allowed clear transferences to develop. The therapists were less directive and were more concerned with exploring negative affect and interpreting patient resistances.

For the 105 patients treated using group therapy methods there was only one death and a four percent repetition rate after a year's follow-up period.

Similar short-term and long-term insight oriented groups were described by Alfaro (1970). The long term psychotherapy group was described as dynamically oriented with therapy focused on inner motivations, dreams, fantasies and interactions. Interaction was particularly stressed, as severed or disordered communication in significant interpersonal relationship was seen as an important contributor to the production of suicidal behaviour. The short term crisis orientated group, on the other hand, was structured to help patients during the crisis phase and to provide support until alternative help becomes available in the clinic or community. No data was presented for the methods described.

At the Los Angeles Suicide Prevention Centre Farberow (1972) described the formation of a number of group therapy programmes. The general
programmes recognised the basic feelings of the self-destructive person, such as general feelings of worthlessness, inadequacy, shame, loneliness, guilt, anger and anxiety. The proposition was that these needs, all of which referred to being unloved and unlovable, could be best met with caring, concern and companionship using the resources of the group approach to treatment.

Farberow described patients with characterological difficulties in whom frustrated dependency, inadequacy and high levels of anxiety in interpersonal relationships were salient experiences. These patients were admitted to a long-term insight-orientated group run on Adlerian rather than Freudian lines. Therapy thus focused on the individuals as functioning social beings whose behaviours were directed toward social survival and self-realization (Sponitz, 1971). Where intrapsychic dynamics were explored and psychological phenomena interpreted these were used to facilitate social re-orientation rather than simply for the counteracting of fears. Farberow described the groups as unified because of their concern with death - imminent, intended, ruminated or attempted i.e. the fact of suicide made for cohesiveness. The top priority remained the preservation of life.

Farberow (1972) also described a drop-in nongroup the specific purpose of which was to provide a haven for lonely, distressed people. This allowed temporary attachment. There was a deliberate avoidance of efforts to commit the person to the group and other dropins and therapists may change from session to session. Therapists only assumed responsibility for conducting the hour of drop-in therapy using whatever methods were deemed appropriate at the time and were
usually active, directing, questioning and guiding. Full responsibility for their cases remained with the referring agent.

Hipple (1982) concluded in his review of group treatment of suicidal clients that this particular approach despite positive documentation was still underutilised. There was recognition that the majority of reports were largely anecdotal so that controlled evaluation of the efficacy of the group approach method remains to be done.

4.2. Crisis Intervention and Community Care.

Many psychologists have, reasonably, argued that life involved passing through a series of crises each critical to later adjustment and development. Psychosocial growth (Erikson, 1959), transitional stages, developmental tasks were all concepts which have psychological meaning in relation to development as a whole. Sequentially ordered developmental crises and accidental crises were said to be critical to maturation, personality growth and for the establishment of effective defensive and coping mechanisms. Rapoport (1962) described three interrelated conditions which produced the crisis state. Firstly there was a hazardous event which threatened the individual. Secondly the threat was regarded as more damaging if it was symbolically linked to earlier stresses which resulted in increased vulnerability or conflicts. And, thirdly, the person was unable to respond with adequate coping mechanisms. The sum result was that emergency mechanisms are called into play when former adaptation was disrupted in the face of perceived threats capable of overwhelming the coping resources.
Although crisis intervention as a therapeutic technique has been utilized with increasing regularity the proper formulation of crisis theory and the clarification of associated techniques have not been developed until recently (Aguilera and Messick, 1974; McGee, 1974; Taplin, 1971). Korchin (1976) concluded that crisis intervention was more an orientation than a systematic body of theory, knowledge and practice.

The concept of crisis has considerable popular appeal. It recognised the possibility that crisis reactions may be elicited by a range of stressful life situations or events. The probability of a crisis response was a function of the individuals cognitive appraisal of the situation as a threat and of his adaptive capacity to deal with it, since none of the situations were crisis inducing on a priori grounds. Caplan (1964), described the crisis state as temporary and self-limiting which may lead to resolution or continuing distress both affective and cognitive. Unresolved crises were said to have a tendency to return.

Several models of crisis intervention have emerged drawing upon experience in short-term psychological, social casework, problem-centred and reality-orientated methods. The aims were to effect relief of present distress, to restore previous levels of functioning, to help the family and to help develop strategies for coping in the future. It differed from traditional long-term psychotherapy as it did not aim to restructure the basic personality.

The generic approach to crisis intervention (Aguilera and Messick,
1974) focused on the characteristic course of the particular kind of crisis rather than on the psychodynamics of each individual in crisis. A treatment plan was directed toward an adaptive resolution of the crisis and the specific intervention measures were designed for all members of a given group rather than for the unique situation of the individual. This differed from the individual approach in which the emphasis was on a professional assessment of the interpersonal and intrapsychic processes of the person in crisis and intervention planned to meet the unique needs of the individual. The generic approach included direct encouragement of adaptive behaviour, general support, environmental manipulation and anticipatory guidance.

Crisis intervention has been closely associated with suicide prevention. Farberow, (1974) described suicide as the epitome of crisis. In the recent past two decades the proliferation of suicide prevention centres confirms the increasing importance of this technique as a general community response. The effect of Suicide Prevention Centres and the work of the Samaritans have been evaluated in the United States and Great Britain respectively. These organisations provide a 24 hour telephone and counselling service to the public.

Bagley (1968) compared suicide rates in two sets of English towns, matched as closely as possible on social class, population structure and change, percentage of new houses built and poor housing conditions. The experimental towns were chosen on the basis of having a Samaritan suicide prevention centre in operation, whereas the ecologically matched control towns had no suicide prevention services.
The 24 hour crisis service were manned by either clergymen or trained laymen who offered advice or judged the need to make a further appropriate referral, for example to a psychiatrist. When the pre-Samaritan and post-Samaritan years were considered there was a 5.8 percent decline in suicide rates for Samaritan towns whereas there was an increase in rates for control towns of 19.8%. A significant effect on the suicide rate by the Samaritan Organisation was said to have been demonstrated.

However, Jennings et al. (1978) have been unable to replicate these findings although they used more rigorous methods for matching Samaritan and control towns. The authors' suggested that their methodology was an improvement on Bagley's earlier work as it excluded more sources of variation by closer matching of Samaritan and control towns. The findings of the Jennings et al. (1978) study 'seriously undermined the scientific case for the Samaritans' effectiveness in reducing the suicide rate.'

Although suicide prevention centres in the United States may differ in a number of ways from the Samaritans they also provide a means of checking effectiveness of such services on the high risk population. Lester (1974) examined changes in suicide rate between 1960 and 1969 in twenty-four American cities of which only sixteen contained suicide prevention centres. The cities were matched on population size. Suicide prevention centres were shown to have no statistically significant effect on the suicide rate.

Results from studies of other Suicide Prevention Centres in the United States and Europe are mixed. Two studies - Litman and Farberow (1969)
and Rengel (1969) reported a drop in suicide rates. Litman and Farberow (1969) suggested that the fall in the suicide rate in Los Angeles County after 1963 compared with no such fall in either California or the United States as a whole was due to the presence of the Los Angeles Suicide Prevention Centre.

Ringel (1969) reported that the 37 percent drop in the suicide rate in Vienna between 1953 and 1968 could be attributed in part to the suicide prevention centre there in contrast to other parts of Austria which had no comparable service.

On the other hand, Bridge et al., (1977) analysed data from one hundred counties of North Carolina fifteen of which had suicide prevention centres. They used regression analysis to estimate the effects of a large number of demographic and social variables simultaneously. Their conclusion was that the centres had no significant effect on the suicide rate.

Many of these studies have been critised on methodological grounds by Auberbach and Kilmann (1977). The lack of adequate controls is a recurring criticism. Where there was careful matching of experimental and control towns on economic, social and demographic characteristics, it is quite feasible that reduction in suicide rate could have been a function of these changes in the community that prompted development of the suicide prevention organisations as of the impact of the service itself. Insufficient information on the elements of the 'treatment' or service offered apart from that implied from the telephone crisis counselling model, was often not available or
explicit.

In contrast to the emergency telephone counselling service described above, Walk (1967) evaluated the effect of a 'community care' service on the suicide rate in Chichester, England. The service involved mental health workers providing home care rather than conventional inpatient psychiatric treatment. For the two age/sex groups considered (15-59; 60 and above) the community care service had no effect on suicide rates when compared to national rates.

The stated aim of suicide prevention centres is to reduce suicide rates or prevent suicide altogether. It remains in doubt whether they would influence attempted suicide rates. Chowdhury and Kreitman (1973) and Kreitman and Chowdhury (1973a) found attempted suicide patients and Samaritan clients to differ in a number of ways. Samaritan clients were mainly men who were more socially isolated. Suicide attempters were aware of the existence of helping agencies (Kreitman and Chowdhury, 1973b) and had been in touch with one or more of these agencies in the weeks preceding the attempt - general practitioners, social worker, Samaritans (Bancroft et al., 1977), but took an overdose or injured themselves rather than going to these agencies.

It has been suggested (Clum et al., 1979) that the focus of suicide prevention centres - namely the prevention of suicide, may be unrealistic as the population at high risk for suicide may be beyond the asking-for-help phase which is usually the target of such centres. Clum et al., (1979) proposed that the criterion for evaluating
effectiveness be changed from suicide prevention to attempted suicide with secondary rather than primary prevention the focus of treatment.

A number of studies have examined the effect of after care services on the repetition rates for suicidal behaviour. Greer and Bagley (1971) followed up suicide attempters one to two years after their suicide attempt. They compared 47 patients who were discharged with no treatment, 76 who had one or two psychiatric contacts and 88 who received more prolonged psychiatric treatment. At follow-up 39 percent, 26 percent and 20 percent of the patients within respective groups had made a further attempt.

Choudhury et al., (1973) assessed patients in Edinburgh who had already made repeated attempts. A special aftercare service staffed by psychiatrists and social workers carried out weekly outpatient clinics, domiciliary visits where necessary and an emergency call service. Patients who failed to keep appointments were contacted. This special service was compared with a normal psychiatric outpatient service with non-attenders not being pursued. After six months no significant difference was found between repetition rates of patients in the experimental group and those who received normal care. A similar outcome was reported (Gibbons et al., 1978) at a one year follow-up for patients receiving task-centered casework compared to those who had received conventional care. When brief problem oriented therapy was used (Hawton et al., 1981a) on a domiciliary basis and compared with outpatient psychiatric treatment for suicide attempters there were no outcome differences between either repetition rates or in measures of psychological distress and social functioning. Welu
(1977) had earlier suggested that a domiciliary 'out-reach' programme in which treatment was carried out by a nurse, social worker or community worker was more effective in reducing repetition rate when compared to routine outpatient psychiatric follow-up.

Ettlinger (1975) carried out a large scale study in Sweden with suicide attempters. It was an outcome evaluation study working in the traditions of clinical psychiatry with a social psychiatric orientation. Six hundred and seventy patients making up an experimental group were offered psychiatric, social and psychological help. They were compared with 681 patients who were admitted to the same facility and treated traditionally, three years previously. After five to six years there were no differences between the groups both in terms of further attempts and completed suicide. Similar disappointing results were reported by Kreitman (1977) who attempted to alter attempted suicide rates with aggressive after-care case identification. In spite of considerable successes in establishing and maintaining contact, there was no significant reduction in suicidal behaviour.

In a concerted attempt at secondary prevention, Kreitman (1977) described a new service for suicide attempters. The service was staffed by a full time psychiatrist and psychiatric social worker who held three regular outpatient clinics weekly in the centre of Edinburgh and in one peripheral area of the city characterised by high rates of suicidal behaviour. Patients who failed to keep appointments were visited at home usually during the same day and an emergency call facility in collaboration with the Samaritans was also arranged. In
short, patients in the special after-care service received provision of a service 24 hours a day, seven days per week. Control patients received standard routine follow-up appointments from the Edinburgh Regional Poisoning Treatment Centre. The results suggested clearly that the experimental after-care service was delivered, that is, it reached the patients for whom it was designed. However, with some reservations, it was concluded that there was no difference between the experimental and control groups in the rate of repetition although there were reductions in the psychiatric morbidity and improvements in the social condition of patients entering the experiment.

The studies so far considered present a mixed picture, largely pessimistic with regard to effectiveness in either reducing suicide in particular or suicidal behaviour in general. Hirsch et al., (1982) in their review concluded unequivocally that suicide prevention centres including the Samaritans did not lower the incidence of suicide. This was not to say that these services were not fulfilling a useful community mental-health function but this was not reflected in suicide rates. Attempts at secondary prevention - domiciliary visits, domiciliary outreach, aggressive case finding, task oriented case-work - have all with some few exceptions met with disappointing, even depressing results.


For the behaviourist, behaviour is largely seen as a function of the situation or environment and abnormal behaviour is said to be acquired through the same learning processes as normal behaviour.
Within this general framework suicidal behaviours are considered as learned. In their propositions concerning the reduction of suicidal acts Frederick and Resmick (1971) proposed that non-reinforcement be utilized in order to extinguish the behaviour whilst at the same time reinforcing non-suicidal, tension reducing and competing responses. Frederick and Resnick also considered desensitization and assertive training as useful in the treatment of suicidal behaviour. It was specifically suggested that aversion therapy was contra-indicated as it might intensify the drive to complete the act in the absence of alternative substitute responses. Desensitization on the other hand was useful in reducing anxiety during a crisis when the relaxation response would become an alternative to the suicide response.

Bostock and Williams (1974) considered the operant characteristics of attempted suicide and reported the case of a twenty year old single female university student. The patient presented with repeated suicidal behaviours which were learned maladaptive behaviours for coping with feelings of distress and tensions. The suicidal behaviours included wrist cutting and inappropriate ingestion of tablets. A systematic behavioural programme, managed in hospital and designed to consistently ignore maladaptive behaviour and to reward any appropriate behaviours including appropriate verbalizations, was carried out. Therapist attention was made contingent on the production of appropriate verbalization about feelings, their appropriate expression and adequate control. Verbalizations of symptoms were discouraged by the withdrawal of therapist attention. Although treatment was not uneventful the authors demonstrated a significant reduction in suicidal behaviours which were maintained at
Ullmann and Krasner (1975) regarded as appropriate to the treatment of suicidal behaviour, many of the behavioural treatment strategies applicable to self-injurious behaviour and self-mutilation. For example, Miron (1971) reported the case of various behaviour modification techniques - with holding attention, time-out, and token-reinforcement - in the treatment of self-injurious behaviours among institutional retardates. The common theme of re-education or relearning in this population was deemed to have some applicability (Lester, 1972) to the management of suicidal behaviours.

Liberman and Eckman (1981) reported a clinical trial designed to evaluate the effectiveness of a package of behavioural techniques for dealing with the interpersonal and anxiety problems encountered by the suicide attempter. The behaviour therapy approach was considered advantageous as it was more action-orientated and was more acceptable to disadvantaged groups. This behavioural package was contrasted with insight-oriented therapy.

Twenty-four subjects were randomly allocated to either behaviour therapy (social skills training, anxiety management training and family contracting) or insight orientated therapy (individual therapy, psychodrama, group therapy and family therapy). The results suggested that intensive and structured treatment, although brief in duration (ten days) with regular and frequent follow-up, significantly reduced suicide attempts, suicidal ideation, and depression in patients presenting with repeated suicidal behaviour. The behavioural approach
was shown to be more effective than the insight oriented method both at the end of inpatient treatment and during the follow-up period of nine months. Other findings by these workers are of some interest. The majority of their patients reported having a family member or a close friend who made a suicide attempt prior to their first suicide attempt. The patients were also determined from detailed behavioural analysis, not to be in the deep throes of an acute crisis. These two observations taken together suggests that suicidal behaviour as a coping response to stress was made, in part, on the basis of social learning. Suicidal behaviours and gestures were characterological responses which manipulatively controlled social relationships for people lacking in verbal and relational skills. Appropriate remedy of these deficiencies using behaviour therapy offered some solution to this intractable problem.

Two other behavioural intervention strategies are worthy of mention - patient monitoring and video confrontation. Prye et al., (1973) negotiated a therapeutic contract with their patients in which a definite commitment was made as to how long the patient was willing to stay alive. If a definite commitment, verbalized confidently and without qualification was made, then the therapist was assured that the patient was no longer suicidal. Where there was hesitation, a time limited decision was negotiated. On this basis of 'contracting to live' the authors reported zero fatalities among 600 patients over a five year period.

Resnik et al., (1973) employed the video tape - confrontation technique. This Self Exposure Experience (SEE) allowed the patient,
after two psychotherapy sessions, to be confronted with the consequences of the suicide attempt by means of viewing segments of videotape which were recorded upon admission as an emergency. A record of the patient’s condition, on life-saving measures and family reactions were depicted. The confrontation was meant to challenge the denial of despair and suicide intent and the Self-Exposure Experience sessions were deemed to act as a negative reinforcement of suicidal behaviour.

Fontaine (1982) discussed the relevance of a functional analysis for the treatment and prevention of suicidal behaviour. A functional analysis (Kanfer and Saslow, 1965) takes into account, stimulus, organismic, response variables and their assessed consequences. De Catanzaro (1980) supported the idea that suicide was a learned behaviour. The high incidence among humans was related to the high development of their learning capacities and learning was said to determine the method, moment and place of suicide.

Murphy and Robins (1968) identified four different levels of suicidal communications:

i) a direct search for attention from others;

ii) an aggressive act;

iii) a warning to others to prepare themselves for his forthcoming death; and

iv) the verbal expression of obsessive/depressive ideas without the ulterior motive of hurting others.

Inherent in the first three is the clear possibility of affecting others to obtain positive social reinforcement. Ferster (1973)
considered the verbalisation of suicidal ideas to be a way of escaping from or avoiding aversive stimuli.

Fontaine (1982) proposed that the study of immediate reinforcement, linked to its contingencies, obtained by the suicidal behaviour was an important element in the prevention of repeated attempts. The probability of a repetition was increased if positive social reinforcement was received contingent on the production of the suicidal behaviour. From a therapeutic point of view a more profitable principle would be to use the social reinforcement of therapeutic attention to support the person himself and not his suicidal behaviour. To this end notions of cognitive theory, learning, modelling and the anticipation of reinforcement were relevant.

4.4. Clinical psychiatric and related management approaches.

A reasonable starting point for this discussion on psychiatric and related interventions with suicidal behaviours would be to identify the relevance of psychiatric disorder to the production of suicidal acts.

Recent research has established that a sizeable proportion of suicides suffered from an unequivocal and treatable depressive illness and that most of these suicides had contacted a medical agency during a period immediately preceding a suicidal act. The association between depression and suicidal behaviour thus takes on important practical and clinical significance.
Studies in which patients with a manic-depressive or endogenous type of depressive illness were followed up produced a consistent finding that some 15 percent die by suicide. For example, Miles (1977) reviewed some thirty follow-up studies of patients with a depressive illness. Sainsbury (1982) estimated that about fifty percent of suicides in England and Wales would be depressives. This is largely in keeping with the 60 percent observed in a consecutive sample of assessed suicides (Barraclough, Bunch, Nelson and Sainsbury, 1974).

The work of Robins, Murphy, Wilkinson, Gassner and Kayes (1959) provided evidence supporting the idea that a high proportion of those who commit suicide had suffered a primary depressive illness. Their work was based on diagnostic interviews with the relatives of 134 suicides in St Louis and concluded that some 94 percent had a definite mental illness. A survey in Sussex and Portsmouth (Barraclough et al., 1974) of one hundred consecutive suicides showed that some 93 percent had an identifiable mental disorder of which 77 percent presented with a depressive disorder. The diagnoses of mental illness was made by an independent panel of three consultant psychiatrists. As far as clinical features go suicides compared to a random sample of endogenous depressives tended to rate their depressive symptoms as more severe (Barraclough and Pallis, 1975) and the suicides manifested more insomnia (Rosen, 1970; Farberow and McEvoy, 1966). The significant consideration here was that more than half of suicides had been shown to have a readily treatable illness, with particular features of depression denoting suicide risk. These observations afford considerable scope for preventive intervention.
With regard to attempted suicide, a number of investigations using statistical techniques—principal components and cluster analysis—have identified a severely depressed group of patients who made serious attempts in circumstances where detection or discovery were unlikely (Bagley, 1973; Henderson, Hartigan, Davidson, Lance, et al., 1977; Kiev, 1976). Moreover, the diagnoses of manic depression or primary depressive illness or a high score on a depression scale were shown to be most positively associated with seriousness of intent to die (Birtchnell and Alaroon, 1971; Silver, Bohnert, Beck and Marcus, 1971; Pallis and Sainsbury, 1976).

Pallis (1977) assessed 151 consecutive suicide attempters admitted to the Chichester District Hospital. Ratings on the Beck Depression Inventory, a Suicide Risk Scale and on the medical seriousness of the attempt were obtained. The intent to die was significantly correlated with the suicide risk scores, the medical seriousness rating and also with the number and severity of depressive symptoms. The pattern of depressive symptoms ascertained suggested that patients who made a serious attempt more resembled patients who completed suicide rather than attempted suicides in general and more patients whose attempts were rated as serious subsequently completed suicide than those whose attempts were rated as less serious.

Thus both seriously suicidal patients and completed suicides commonly suffer from a primary depressive illness so that recognising those cases that have such illness is of vital importance when assessing the likelihood of suicide and the acquisition of the skills needed to identify those most at risk is therefore an important part of attempts.
at prevention.

The success of prevention would largely depend on the ability of the primary care team to recognise the depressed patient with those characteristics denoting risk, to provide adequate antidepressant treatment and to organise efficient aftercare. This is of particular importance and relevance since more than half of the suicidally depressed individuals contact their general practitioner in the month before death (Barraclough et al., 1974) and a high proportion of depressed suicide attempters (Bancroft, Casson, Harvard-Watts and Reynolds, 1977) see their doctors just prior to the act providing therefore ample opportunities for prevention.

Newson-Smith and Hirsch (1979) examined whether the majority of suicide attempters were mentally ill as this has always been a long-standing controversy. They noted the high level of psychiatric symptoms occurring over the four week period before an overdose and that at least for some patients the overdose was the final act after a period of distress. Patients were clinically assessed using the Present State Examination (Wing, Cooper and Sartorious, 1974) and the 60 item version of the General Health Questionnaire (GHQ) (Goldberg, 1972) following an overdose covering the four week period before the overdose. Of the 51 patients studied the most frequently identified syndrome was simple depression in 73 percent of cases. Assessments were carried out as soon as possible after recovery, one week and three months later. In general suicidal patients with a low level of psychiatric disturbance showed considerable improvement in their mental state one week later. However, patients with a moderate or
high level of symptoms showed less symptom resolution by one week
with those showing the highest level of disturbance needing or
receiving psychological help by three months after the overdose.

There was, therefore, the clear suggestion that completed suicides,
serious suicide attempters and a sizeable proportion of attempted
suicides present with psychiatric symptoms to varying degree, most
notably depression. Opportunities for symptom relief would seem a
vital step towards prevention and indeed further repetition of the
suicidal behaviour. There, therefore, remains to be examined the
kinds of psychiatric and related interventions that may be appropriate
for dealing with these individuals.

Arguably, the treatment of suicidal behaviour begins in the emergency
setting recognising that the patient is at increased risk for
repetition over the next three months and that the emergency
intervention may be life saving (Stengel, 1964). The principal aim of
all emergency interventions is to begin the process of involving the
suicidal patient in a relationship with a helping person (Bassuk and
Gerson, 1979) particularly since it is recognised that the suicidal
behaviour is often precipitated by the imagined, threatened or real
loss of a major attachment (Fawcett, Leff and Bunney, 1965). The
practice of psychiatry within an emergency setting allows for early
assessment of individual and social risk factors which include social
isolation, recent bereavement, family history of suicide, male sex and
increasing age, previous history of suicidal behaviour, severe
depression, chronic alcoholism and disabling physical disability. The
psychiatric contact within the emergency setting also importantly
allows for the planning of treatment and referral. The role of crisis intervention and therapies has already been described elsewhere. Psychiatric inpatient care of suicidal patients, either in a psychiatric hospital or psychiatric unit in a general hospital may be necessary for a small percentage of patients who present with a high risk for future attempts or pose particularly difficult management problems. These patients include those with serious psychiatric disorders especially depression with serious suicidal ideation and those patients who need a short period of removal from stress and for whom the mobilization of additional community resources may be necessary before they could begin to cope with their difficulties (Paykel, Hallowell, Dressler, Shapiro and Weissman, 1974; Hawton and Catalan, 1982).

Medication is often an addition to crisis therapies and initially may be the primary treatment method, the choice of drug regimen depending on the identification of a drug-responsive syndrome. The practical value of applying advances in the treatment of depression to suicide prevention is well illustrated by considering the potential benefits of the use of Lithium. Barraclough (1972), drawing upon the work of Coppen et al., (1971) which demonstrated the prophylactic value of lithium in recurrent depression, suggested that recurrent depressives figure in significant numbers among suicidal individuals and that their appropriate treatment with antidepressants would clearly have implications for suicide prevention. Greenblatt (1977) has shown that the quickest and surest way of removing the suicidal depressive from danger was by admission to hospital and by giving electro convulsive therapy.
Hawton et al. (1981a) described outpatient and domiciliary treatment for patients following a suicide attempt. The study was carried out in Oxford and the effectiveness of home-based treatment was compared with outpatient treatment. Therapists included psychiatrists, social workers and psychiatric nurses. Patients treated at home found treatment more acceptable and accepted more appointments compared to outpatients but there was no difference in outcome between the two forms of treatment in either repetition or a measure of psychological distress and social functioning. In keeping with the trend to involve therapists other than psychiatrists in the management of suicidal behaviour, Gibbons, Butler, Urwin and Gibbons (1978b) described a study in which social workers providing an experimental service were able to demonstrate effectiveness in reducing social problems and the need for continuing psychiatric treatment in a group of self-poisoning patients of moderate or low risk of repetition.

In terms of psychiatric service provision there is need to consider the role of specialist centres or Poisoning Units of which there is only one in the United Kingdom. Advocates (Kreitman, 1977; Hill Report, 1965) suggested that routine hospital admission provided for suicide attempters an opportunity for careful assessment in a non-bustling atmosphere compared to emergency wards; it provided a temporary respite and opportunity for supportive care to begin in a non-hostile (Ramon, Bancroft and Skrinshere, 1975) ward atmosphere.

Extension of psychiatric services to the community could be reasonably expected to lead to a reduction in the rate of suicidal behaviour, but there was little evidence to support this (Walk, 1967; Nielsen and
The general practitioner has an important role in the prevention of attempted suicide as a high proportion of these individuals do contact their general practitioners not long before making an attempt. Hawton and Blackstock (1976) reported that general practitioners did detect psychological distress and social difficulties and prescribed psychotropic medication which was often used in the subsequent overdose. This is not to imply that the prescription of psychotropic medication causes the attempt but it is clear (Hawton et al., 1977; Skegg, Doll and Perry, 1977) that proper control of prescriptions of barbiturates has contributed to a reduction in fatal overdoses whereas an increase in the prescription of 'minor' tranquillizers and antidepressants has contributed to some extent to overdoses of these substances.

As or together with crisis intervention centres, traditional psychiatric approaches to the after-care of individuals presenting with suicidal behaviour may be serving a useful community function, given the ever increasing numbers of such individuals and their willingness to return to or retain this pattern of behaviour. The major effect though seems to be more one of symptomatic relief of short term affective disturbance rather than the equipping of these individuals to deal more effectively with future perceived life crises.

For the present the management of suicidal patients who require hospitalization remains the responsibility of psychiatry but there is an increasing tendency to use non-medical therapists and other mental health workers where community based care is required (Gibbons et al.,...
1978a; Termansen and Bagwath, 1975; Welu, 1977).

4.5. Summary.

This chapter examined different therapeutic approaches - group psychotherapy, crisis intervention, behavioural therapy and psychiatric and related care - in the management or treatment of suicidal behaviour and considered their effectiveness particularly in the light of rates of repetition.

It was concluded that group approaches to the treatment of suicidal individuals were undertaken largely in the United States and increasingly in suicide prevention centres which have evolved from merely being accessible and available during times of crisis. Although the group approach represented a positive development it was considered underutilized. Reports on the effectiveness of group approaches were largely anecdotal so that controlled evaluation remains to be done.

With specific regard to the repetition of suicidal behaviour, social and medical support were shown not to be effective in the long term. There were clear improvements in the general social conditions of the patients with a variety of intervention strategies, and some symptomatic relief of emotional difficulties was achieved but these improvements did not reflect in reductions in the rate of future suicidal behaviour.

Achieving contact with people at risk for future suicide i.e. those
with a history of attempts, may be seen as one level of intervention, but this may not lead to significant reduction in the behaviour. Thus in terms of the practical management of the suicidal patient even when the service conditions of availability and accessibility of help were achieved and helpful contact made with the target population, secondary prevention was not helped substantially.

Some authors have proposed that it was not surprising that specific treatments did not significantly reduce the repetition rate since it was felt that we were not dealing with a simple disorder but rather with a multifactional state defined by its outcome and in which personality predisposition, affective state and social factors were crucial interactive components.

From the behavioural standpoint a case has been made for reducing contact with some suicidal individuals where it was presumed that contact with health care agencies and professionals may positively reinforce the suicidal behaviour and increase thereby the probability of its recurrence.

A reasonable proposition is that some suicidal behaviour was produced as a solution to critical life changes (life events) or as a means of exerting some control over perceived uncontrollable outcomes. It may thus be seen as a type of problem-solving behaviour produced when no other alternatives were easily apparent. For these individuals focussing on training in problem-solving for interpersonal problems may be the treatment of choice which maximised prophylaxis.
In addition, hopelessness, as a cognitive-affective experience has been shown to mediate the stress-suicidal behaviour relationship so that cognitive therapy aimed at correcting dysfunctional thinking attitudes may be a powerful alternative form of intervention carrying similar expectation for reducing future acts of suicidal behaviour.

In Study 1 (Chapter 3) suicidal individuals were shown to have a significant deficit in dealing with problems within the interpersonal domain compared to normal control and psychiatric subjects. A pattern of affective disturbance evidenced in the form of experience hopelessness, depression and the tendency to make extreme endorsements about the perceived effects of recent life experiences was also demonstrated. A relationship between poor problem-solving, stress and hopelessness has been presented to account for both the production of suicidal behaviour and the maintenance of the potential to produce future suicidal acts.

The following chapter examines the value of problem-solving training and cognitive therapy in psychopathology and moves on to consider their applications and effectiveness with groups of individuals who produce suicidal behaviour.
In Study 1 it has been shown that both affective disturbance (hopelessness) and cognitive deficits in the interpersonal domain (poor problem-solving ability) were crucially related to the production of suicidal behaviour.

The following sections review the use of cognitive therapy which has relevance for the reduction of negative suicidal preoccupation and hopelessness and the role of problem-solving training in enhancing interpersonal problem-solving ability.

5.1 Problem-solving training in psychopathology.

This section examines the role of problem-solving training in problems of human adjustment. It will consider this form of intervention with a variety of groups including groups of individuals presenting with some psychopathology.

In Chapter 2 the problem-solving literature was reviewed. Interpersonal problem-solving, its development, assessment, the implications for social adjustment of deficits in problem-solving and its relationship to psychopathology in general and to suicidal behaviour in particular were considered. The strategies for the remediation of problem-solving skill deficits form a major emphasis of this study (Study 2).
In Study 1 (Chapter 3) it was shown that with regard to performance on interpersonal tasks suicide attempters compared to psychiatric and normal subjects showed more significant deficits in the generation of problem-solving thought. The model of suicidal behaviour proposed (3.4.8) implicated poor problem-solving ability as crucially involved in increasing the probability that suicidal behaviour would be produced.

It would, therefore, appear that the investigation of procedures to enhance problem-solving capacity in this group of individuals (i.e. suicides) has significant relevance to their future mental health status or at least to their social adjustment in general.

Problem-solving was proposed as an area of special concern for those professionals e.g. Counsellors (Krumboltz, 1965) who were interested in helping others solve life-related problems. It was suggested that counselling be regarded as a problem-solving process applicable to the widest range of clinical problems including those presented by children and adolescents. D'Zurilla and Goldfried (1971) proposed a model of problem solving (Chapter 2) which divided problem-solving into five definable stages - general orientation, problem definition and formulation, generating alternatives, decision making and verification - each consisting of different processes or activities.

Heppner (1978) discussed the nature of a problem solving set - referring to an inferred predisposition that influenced a client to behave in a certain manner, which could be either facilitative or disruptive, depending on whether it caused movement toward or away
from an effective procedure and solution. Three distinct classes of behaviour were identified as associated with the development of an optimal problem-solving set.

The first class of desirable problem-solving behaviours increased the probability that an individual or client would verbally acknowledge the fact that problem situations constituted a normal part of life and to behave as though it was possible to cope with one's problems. There is some evidence (Bloom and Broder, 1950; Lefcourt, 1966; Rotter, 1966) to suggest that those who expressed confidence in their ability to control aspects of their environment tended to be better problem-solvers.

A second class of behaviours associated with a desirable problem-solving set consists of the ability to identify troublesome situations and to label them accordingly. The labels are then said to serve as discriminative stimuli for further problem-solving activity. Not acting on impulse or avoiding the situation made up the third class of problem-solving behaviours. There is much evidence to suggest that good problem-solvers did not act impulsively but engaged systematically in more problem-solving behaviours (Parnes, 1967; Shaftel and Shaftel, 1967). These three classes of behaviours were said to be functionally related to produce a complex chain of events called problem-solving.

It would appear that the development of problem-solving behaviours in clients formed part of the focus of many therapeutic styles. An examination of differing counselling or psychotherapeutic strategies
suggested that a large variety of means have been used to facilitate the development of problem-solving behaviour and to help clients define problems by developing and increasing awareness of information about the self and others. Freud's (1920) method involved analysing the individuals past and unconscious processes to determine the client's needs and conflicts, subsequently bringing this to the level of awareness. Similarly, transactional analysis (Berne, 1961) strives to define the problem by facilitating awareness of various structures and transactions. Other techniques through which therapists may help the acquisition or enhancement of problem-solving skills include appropriate modelling of problem-solving behaviours (Bandura, 1971; Kazdin, 1973; Meichenbaum, 1971), counselling skills such as clarification, reflection, and interpretation, specific training in systematic decision making (Krumboltz, 1965) and training in self-management techniques (Gottman and McFall, 1972; Johnson and White, 1971).

In contrast, the interpersonal problem-solving approach to therapy (Spivack and Shure, 1975) placed the emphasis on adaptive thinking processes. A major hypothesis based on the interpersonal problem-solving model was that training at the level of cognitive processes that presumably mediate competence across a broad range of situations will have built-in generalization as an integral part of treatment. A recurring problem in numerous studies of discrete response training was the lack of generalization of treatment effects (Kazdin, 1975). Problem-solving treatments, however, share in common with other behavioural interventions an emphasis on social learning processes involved in response acquisition (Bandura, 1977). Interpersonal
problem-solving therapy is, therefore, intended to remediate skill deficits and to directly teach component problem-solving abilities as opposed to being directed primarily toward affect release and the uncovering of dynamic complexes and unconscious motivations.

D'Zurilla and Goldfried (1971) proposed that the goals of problem-solving and behaviour modification were the same and that training in problem-solving may be viewed as one of several behaviour modification techniques for facilitating effective behaviour change.

Successful coping with the environment requires a set of interpersonal problem-solving skills which show distinct developmental trends (Platt and Spivack, 1975). Training in interpersonal problem-solving has been undertaken with children as this was seen as essential to establishing better social adjustment (Urbain and Kendall, 1980). Sarason (1968) and Sarason and Ganzer (1969, 1973), used direct training of social skills containing a substantial problem-solving component with institutionalised delinquents. The training centred around common social, educational and vocational problems and considerable emphasis was placed on alternative and consequential thinking. The delinquent boys were encouraged to consider desirable and undesirable ways of coping with social situations. The results showed that both the modelling and discussion approaches had greater positive effects, compared to an untreated control group, on self-descriptions, locus of control, and counsellors behavioural ratings or prosocial and negative behaviour. Decreased recidivism was reported for the two treatment conditions over controls two to three years following intervention. Treatment effects did not differ sign-
Problem-solving training has also been undertaken with children in non-institutional settings. Much of the work is based on the extensive training and assessment of interpersonal cognitive problem-solving skills conducted by Spivack and Shure and their co-workers (see Chapter 2) at the Hahnemann Community Mental Health Centre, Philadelphia (Shure and Spivack, 1978; Spivack, Platt and Shure, 1976, Spivack and Shure, 1974). Spivack, Shure and co-workers have developed problem-solving training programmes which are presented in the form of specific training scripts, consisting of structured daily activities and discussion to teach component interpersonal problem-solving skills including alternative thinking, consequential thinking, and means-ends thinking.

A sequence of 46 short (up to 30 minutes) daily lessons, activities and games made up a training programme for pre-school children (Spivack and Shure, 1974) and were conducted by the pre-school teacher.

The programme first involved teaching a number of skills thought to be pre-requisite for problem-solving - linguistic concepts such as 'if-then' and 'same-different' and the ability to identify basic emotions (happy, angry, sad). The remainder of the programme was devoted to a hypothetical or actual series of interpersonal problem situations divided sequentially to consider enumerating solutions only, enumerating consequences only and pairing specific solutions with specific consequences. Teachers used either specific demonstration or
doll play to illustrate training concepts, and actual problems that arose among the school children were used whenever possible.

On the basis of this programme trained children improved compared to no-treatment controls on several measures including measures of alternative and consequential-thinking as well as on measures of overt behavioural adjustment. Improvements were shown to be maintained at follow-up one year later.

Allen, Chinsky, Larcen, Lochman and Selinger (1976) reported on the results of an intervention programme with third and fourth grade elementary school children in a normal school setting. Three problem solving assessment measures were used - a problem solving measure (PSM), a structured real-life problem situation (SRLPS) and a series of modular in-class measures (ICM). The PSM was a modified version of the Means Ends problem solving procedure (Spivack, et al., 1976). On the PSM the children were presented with hypothetical problem situations, and their responses were scored for the number of alternative solutions, number of specific steps elaborated to implement the solution, and potential obstacles generated that could limit the effectiveness of a given solution.

The SRLPS consisted of a real-life problem in which the child was told that the experimental room was occupied and could not be used, although the experimenter really wanted to play the story telling games with the pupil. A child received a score for the number of solutions generated to the simulated problem.
In-class measures were designed to assess the specific problem-solving skill being taught at a given point in training. Modelling, behavioural rehearsal and role play techniques were used and exercises included teaching divergent thinking, problem identification, alternative thinking, consequential thinking and elaboration of solutions. Alternative solutions and consequences were discussed around common interpersonal problems that arose in school, and children were encouraged to give feedback to one another about the adequacy of their solutions.

Compared to a no-treatment group the results obtained suggested that trained children improved on the problem-solving measure and in their problem solving responses to the SRLPS. On a locus of control scale the trained children improved in the direction of increased feelings of internal control. However, no effect of training was noted on ratings of overt behavioural adjustment on the Walker Problem Behaviour Checklist or on a sociometric measure of peer status. It was suggested that the lack of enhancement of adjustment following training might have been due to the insensitivity of the measures or there might have been a low level of significant behaviour problems to start with as the sample comprised non-referred nine year old school children.

In a study carried out by McClure, Chinsky and Lærøen (1978) an elaborated version of the same training programme was evaluated. Four experimental conditions were used: video tape modelling only, video tape plus discussion, video tape plus role play exercises, and a no-treatment control group. The training conditions generally enhanced
internal locus of control and problem solving on the PSM and on a structured group peer interaction measure. In addition, video-modelling with role play exercises led to higher scores for the peer interaction measure than did conditions involving video tape only, video tape plus discussion, or the no-treatment control group. The overall finding suggested that problem-solving training that combined both observational learning and behavioural rehearsal may be more likely to transfer to everyday social interactions.

Apart from school and classroom situations children clearly learnt a great deal about interpersonal behaviour within their particular families, and therefore the family context provided a logical focus for therapeutic intervention. A number of studies have examined what impact the facilitation of family problem-solving strategies may have on the adjustment of children.

Alexander and Parsons (1973) and Parsons and Alexander (1973) reported on the short-term intervention with adolescent offenders using a social problem-solving model with family therapy. The results of the programme indicated significant improvements on a number of family interaction measures derived from video taped observations of the families during a problem-solving task. The specific interactions measures included measures of activity level (speech production) and verbal reciprocity. The study (Alexander and Parsons, 1973) demonstrated problem-solving treatment superiority over short-term client-centered therapy, a psychodynamic family programme and a no-treatment control. On the second study (Parsons and Alexander, 1973) the treatment group was superior to a no-treatment control group and
to an attentional control group.

Klein, Alexander and Parsons (1977) in their follow-up of the two treatment studies proposed that the ultimate goal of the therapeutic intervention was the training of the family in effective problem-solving techniques in order that the family would more adaptively respond to the developmental changes which occurred during the adolescent years. The two and a half to three and a half year follow-up indicated that the problem-solving intervention resulted in at least one third less court involvement of siblings within problem families. There was also a continued significantly lower rate of recidivism for the original problem adolescents.

Robin, Kent, o'Leary, Foster and Prinz (1977) trained problem-solving skills in mother-child dyads. The objective of treatment was instruction in a four-step problem-solving sequence: defining the problem, listing the solutions, evaluating options, and planning the implementation. During treatment the therapists (graduate students in clinical psychology) taught the dyad to self-monitor negative communication patterns such as teasing, put-downs, interrupting, sarcasm and lack of eye contact and to replace these with effective communication skills - reflective listening, visual and non-verbal attention, appropriate voice tone and verification of meaning. Treatment was carried out over five one hour sessions and methods such as modelling, guided practice, role-playing, feedback and social reinforcement were used to teach problem-solving and communication skills.
Highly significant increases in problem-solving behaviour during audiotaped discussions of hypothetical and real life problems were evident for the treatment group compared to a no-treatment control group. Improvements for the treatment group were noted on measures of problem definition, option listing, evaluation of consequences and agreement to adopt a particular solution, but no improvement was noted in negative behaviour patterns. Non-significant results were also obtained on a check list completed by the parents and adolescents rating the quality and frequency of problem-solving behaviours, communication skills, and specific conflicts at home suggesting a lack of clear cut generalization of treatment effects to the home environment.

A series of studies investigating problem-solving skills in mother-child dyads have been reported by Shure and Spivack (1978). The mother's child-rearing style was measured using six categories of problems e.g. child refusing a request, to which the mother was required to relate everything that was said and done by the child and herself when a recent problem had arisen. The focus of analysis was on the style of communication rather than on content. Mothers were also assessed for means ends thinking, alternative thinking and consequential thinking skills. The children were also assessed on measures of alternative and consequential thinking, a measure of sensitivity to interpersonal problems, and on a teacher's rating scale of the child's school behaviour.

Findings from two studies showed that measures of means-ends thinking in the mothers were related to their tendency to suggest solutions and
to explain consequences to their children when problems arose. Mothers deficient in problem-solving skills tended to apply abrupt commands without explanations. These results were based on mothers' self-report data. Alternative thinking was found to be related to behavioural adjustment for both boys and girls whereas the mother's child rearing style was related to the child's cognitive problem-solving abilities only for girls.

Training in interpersonal cognitive problem solving was carried out with forty mothers and their preschool children aged four to five. Mothers were instructed in the use of problem solving methods with their children. The training led to substantial increases in alternative and consequential thinking by experimental children over a no-treatment control group. Increases in cognitive problem-solving skills in the children were also associated with significant improvements on behaviour ratings completed by pre-school teachers blind to the treatment conditions. There were no differences between trained and untrained children in their sensitivity to interpersonal problems. Trained mothers exhibited significant changes in their childrearing approach moving toward a more effective problem solving style. Although their means ends thinking for mother-child and child-child problems improved this did not generalise to means-ends thinking about the adult problems.

So far a brief consideration of the extensive literature on problem-solving training in children and adolescents suggests that the problem-solving approach as a social competence-building model of primary prevention is viable even for children as young as four and...
five years of age. The studies reviewed also suggest that family-oriented problem-solving interventions were effective and have potential applicability for the purposes of primary prevention as well as remediation of interpersonal disturbances in children and adolescents. When families were available, teaching problem-solving skills to the entire family unit appeared to offer the greatest payoff in terms of reduced recidivism and prevention of sibling delinquency. When only the delinquent youth was available, problem solving treatment offered a promising adjunct to traditional and behavioural methods and was perhaps a viable alternative.

In keeping with the stated developmental slant this section now turns to examining the value of problem-solving training with adult groups including psychopathological groups. It has been considered that there are two possible levels of intervention for therapists or counsellors in assisting individuals confronted by problems. Firstly, the therapist may help by identifying solutions for the specific problem situation presented, or secondly, by providing the client with a set of generalisable problem-solving skills that would allow for the solution of a wide range of future problems. With regard to the preparation of individuals to deal more competently with problems, Krumboltz and Thoresen (1976) wrote

\[\ldots\text{A major responsibility of counsellors is teaching how to make decisions and solve problems. The concern is not merely with finding a solution to today's problem but also with teaching a method that people can use to solve future problems. (p.368).}\]
For D'Zurilla and Goldfried (1971) the acquisition of problem solving skills was seen as part of self-management training. Siegel and Spivack (1973, 1976) reported on the development of a problem solving training programme for chronic psychiatric patients. This grew out of the initial success with preschool-age children which suggested that other maladjusted groups of different ages might benefit from a structured, educational programme designed to teach interpersonal cognitive problem solving. A growing number of research studies have provided evidence that various maladjusted groups such as adolescents, and adult psychiatric patients (Platt, Altman and Altman, 1973; Platt and Spivack, 1970, 1972a, 1972b, 1972c) and heroin addicts (Platt, Scura and Hannon, 1973) were deficient when compared with normals in interpersonal problem-solving cognition.

Chronic psychiatric patients display social incompetence across a wide range of social situations either because of motivational disturbances that arose out of institutional exposure or because of a defect state, one consequence of psychotic illness. The hope was that a cognitive problem-solving programme might teach them general cognitive strategies of use in coping more successfully with other people and dealing with problems that arose within the interpersonal matrix.

Siegel and Spivack (1973) gave a descriptive report on the use of problem-solving training with twenty chronic patients in extended aftercare programmes after hospitalization with treatment being carried out both on an individual and group basis. The training exercises which made up the programme were grouped into four stages.
1. The ability to recognise problems.
2. The ability to define problems.
3. The ability to think of alternative solutions to problems.
4. The ability to decide which of the alternative solutions is the best way to solve problems.

The programme consisted of a number of game-like exercises intended to teach the steps in problem solving and to provide practice in mastering each of the steps.

The authors discussed the efficiency of the programme in changing problem-solving thinking with patients exposed to the programme becoming better able to think of alternate solutions to hypothetical real-life problems when compared with matched controls.

Siegel and Spivack (1976) reported on twelve chronic psychiatric patients six of whom received the experimental problem solving treatment and six making up a no-treatment control group. The groups were matched on sex and age. Patients in the experimental group were treated individually by the senior author over a mean of 13.8 sessions (range 10-18 sessions). All subjects were pre- and post-tested on several dependent measures - recognition of problems, a test of reflection-impulsivity, optional thinking, means ends thinking, awareness of consequences, and causal thinking. The small number of subjects did not allow for matching on pre-test measures, and because of some attrition statistical treatment of the data was inconclusive. The most relevant finding, however, was that experimental subjects, compared to controls, showed more significant positive change in
optional or alternative thinking ability from pre to post-treatment. This was the main finding in common with reports on similar programmes with pre-school children suggesting that alternative thinking ability may be enhanced in a wide variety of populations.

Coche and Flick (1975) have also carried out problem-solving training in small groups lasting eight sessions. Forty one hospitalized psychiatric patients were compared with 23 patients who participated in play-reading groups but received no training and forty control patients who received pre- and post-tests but no training. Hospitalization alone was shown to improve the patients' functioning on the criterion test of problem-solving - means ends problem-solving - but the problem-solving training groups showed more significant improvements in problem-solving. More disturbed patients made slightly greater gains than less disturbed ones as measured on the Minnesota Multiphasic Personality Inventory, Sc Scale. The duration of hospitalization was shorter for those patients in the experimental and placebo groups than for control patients. The results of this study were supportive of the findings of Platt and Spivack in general and the authors suggested that hospitalized psychiatric patients needed to learn problem-solving first and make an adequate adjustment to environmental demands before being ready to deal with more complex personal problems.

Coche and Douglas (1977) later examined the therapeutic effect of problem-solving and play reading groups. A similar approach to training psychiatric patients in interpersonal problem-solving was used (Coche and Flick, 1975) and this was compared again with a no-
treatment control and a play reading group. Analysis of the results showed that the experimental condition which focused on training four problem-solving components was more successful in improving impulse control, self-esteem and feelings of competence. The play reading condition was as helpful as the problem-solving groups in reducing depression and general psychopathology. The control patients showed significantly less improvement than did patients in other treatment conditions.

Still remaining with psychopathological groups, Intagliata (1978) showed that compared to normal adults, alcoholic subjects demonstrated a significant deficiency in problem-solving skill. Drawing on the earlier work of Spivack (1975) he suggested that such problem-solving skill deficiency should be amenable to positive change and explored the impact of a problem-solving skills programme with an alcoholic population. In addition to the standard alcoholism treatment programme hospitalized alcoholics (n = 32) received ten sessions of group therapy structured to improve interpersonal problem-solving thinking skills. Control subjects (n = 32) participated only in the standard alcoholism treatment programme. Comparison of treatment effects showed that the special treatment group made significantly more improvement in means-ends thinking. Further comparison in a structured discharge interview demonstrated that treatment subjects were significantly more likely to anticipate and plan ahead for post-discharge problems than did control subjects. At a follow-up one month after discharge the majority of treatment subjects contacted had made practical use of the problem-solving principles learned during group treatment sessions.
This is an important study as together with the results offered by Platt (1975) the findings suggest that the drug-addict population may be very appropriate targets for problem-solving skill training. Within the specific alcoholic population the training related to increases in anticipatory problem solving behaviour and to generalizations from training sessions into real life problem situations both within the hospital and after discharge.

Problem-solving training has also been used effectively with students to improve their skill in generating alternatives. Dixon, Heppner, Petersen and Ronning (1979) assessed the effects of intensive problem-solving training on outcomes relevant to counselling. Treatment consisted of didactic presentations, group discussions in five one and a half hour sessions designed for systematic training in five stages of problem-solving. Training was shown to affect measures of the quantity of alternatives generated but not the quality of generated alternatives. Trained subjects modified their perception about their problem-solving behaviour, and ascribed themselves characteristics of effective problem solvers who were less likely to use random and impulsive problem solving techniques. In general, the results from this workshop approach to training indicated improved ability by participants to make available a variety of response alternatives for dealing with a problematic situation when qualitative indices were considered, but no evidence was found to support the students' improved ability to increase the probability of selecting the most effective response from among these alternatives.

Within student counselling, Mendonca and Siess (1976) evaluated the
efficacy of anxiety management and problem-solving training in helping clients deal with anxious vocational indecision. The hypothesis was that vocational indecision may result from cognitive problem-solving operations that were lacking or inhibited by anxiety. Small groups of subjects were given training in anxiety management (Paul and Shannon, 1966), problem-solving training (D'Zurilla and Goldfried, 1971) and a combination of anxiety management and problem solving. Two control groups were used - a discussion placebo group and a no-treatment control.

The main finding was that combined training in anxiety management and problem-solving was more effective than either method alone and more effective than control conditions in two main areas - vocational exploratory behaviour (Jones and Krumboltz, 1970) and problem-solving behaviour. Problem-solving counselling was second to the combination training in significantly improving overall performance on problem solving tasks (Mendonca, 1974), especially information gathering.

For our purposes these results raise two important issues. Firstly, the differences in effectiveness of the three methods of counselling have implications for the model of effective responding (Goldfried and D'Zurilla, 1969). The generally superior results obtained with combination training suggests that both defective problem-solving skills and performance were crucial interacting components of the anxious indecision exhibited by the clients who participated. Secondly, the results have some bearing on the usefulness of problem-solving training. The goal of training was to develop cognitive behaviours for identifying the effective response in problematic
situations. Subjects made the most improvements with respect to discrimination of concrete information and the generation of concrete alternatives and showed improved ability in investigating and becoming aware of their vocational plans. The feasibility of training clients in specific problem-solving skills has been corroborated in other studies (Evans and Cody, 1969; Stone, Hinds and Schmidt, 1975).

A number of training and therapeutic programmes, or parts of broader programmes in the area of interpersonal problem-solving have been described in the literature. Although they do not focus specifically on the training of interpersonal cognitive problem-solving skills as a means of effecting behavioural adjustment, they do involve interpersonal problem-solving and thinking skills integral to the problem solving process.

Howe and Achterman (1975) described a See Lab training programme which, broader in its goals than training in problem-solving, attempted to teach an appreciation of the varied dynamics of human behaviour and relationship skills with a focus on children in educational environments. A significant element of the programme was reflective listening consisting of non-judgemental reactions to others in a problem situation. Methods for dealing with problems which confront different groups of people were also provided. No data on programme effectiveness were provided but it was noted that the problem-solving sections of the See Lab programme have in common with problem-solving training the encouragement of the generation of ideas about the possible cause(s) of a problem via reflective listening or by requesting enumeration of possible solutions.
The Family Contract Game (Blechman, 1974) is a training procedure using a board game to guide family members through steps in solving concrete interpersonal problems between individual family members. The assumption of the training programme was that the consequences of family conflict may be reversed if the family setting could be brought under the stimulus control of the Family Contract Game structured to teach more efficient problem-solving following five logical steps (Aldous, 1971). These steps included identification and definition of the problem, collection of information relevant to the problem, innovation of active alternatives, choice of course of action, and evaluation of the consequences of action. Communication in the game was aimed at avoiding conflict-based interactions e.g. denial of responsibility, excuses, unresponsiveness. The game setting attempted to alter the social environment by providing rules of procedure and therapist support and guidance so that discussion focussed on a problem in operational terms and attempted to identify a solution. The Family Contract Game conceives of family problems as wholly social in nature and no reference was made to the problem-solving skills in relation to carrying out this process or to change. The programme was said to have primary preventive intentions and could be applied to families whose approach to life was concrete and who had poor social skills. A small study of effectiveness (Bleckman and Olson, 1975) suggested some positive effects of training on parental ratings of child problems and on problem-solving interactions during training.

The Goldfried and Goldfried (1975) Problem-solving training procedure recognised that for any therapeutic technique to be effective in dealing with the complex issues of human adjustment that it must take
account of important cognitive and other mediational processes. As stated above Goldfried and Goldfried proposed five steps in the problem-solving process - general orientation, problem definition and formulation, generation of alternatives, decision making and verification. They considered that people differed in the stage in which they typically had difficulty and that the training should focus on the area in which the client was weakest. Modelling and reinforcement were integral aspects of training and the guidelines offered very closely approximate elements of interpersonal cognitive problem-solving programmes. Data on the efficiency of training components of the problem solving sequence were provided by Nezu and D’Zurilla (1981), Nezu and D’Zurilla (1979).

5.2 Overview of Beck’s Cognitive Theory applied to depression and suicide.

The preceding section examined behavioural change and the acquisition of new pieces of behaviour with regard to problem-solving in the interpersonal domain. To this extent problem-solving may be defined as a behavioural process (D’Zurilla and Goldfried, 1971) and training in problem-solving as a form of self-control training which increased the probability of effective responding in problematic situations. Whilst cognitive activity is clearly defined as part of this process, this kind of cognitive activity is conceptually distinct from those kinds of cognitions which bear relevance to the experience of depression where depression is, arguably regarded as a primary disorder of thinking with disturbances of mood (affect) and behaviour as secondary. It is to the latter conceptualization of cognitive processing that we now turn.
This section presents an overview of Beck's cognitive theory of depression and suicide, cognitive therapy applications in depressive disorder, considerations of its efficacy, cognitive explanations of depression, and their relevance in the treatment of suicidal behaviour. The relationship of depression to suicidality has been considered above (1.3.2) and whilst in the majority of suicide attempts the presence of a depressive disorder may not necessarily be demonstrated, some cognitive aspects of depressive functioning, especially the presence of hopelessness (Minkoff, et al., 1973; Beck, Kovacs and Weissman, 1974; Beck, Weissman, Lester and Trexler, 1974) bears critically on the production of the suicidal act. Hopelessness may be defined in terms of a system of negative expectancies held by an individual and concerning himself and his future life. To this extent it is appropriate to consider the value of cognitive therapy approaches as espoused by Beck in the treatment of suicidal behaviour.

However, before considering the cognitive explanations of the development of depression and suicide wishes, alternative formulations coming out of the psychodynamic school, the behavioural school and proponents of the helplessness school of thought will first be discussed.

The first attempt at a behavioural analysis of depression was provided by Skinner (1953). Depression was described as a weakening of behaviour due to the interruption of established sequences of behaviour which have been positively reinforced by the social environment. This conceptualization of depression as an extinction phenomena, and as a reduced frequency of emission of positively
reinforced behaviour, has been central to all behavioural formulations of depression. Ferster (1966) suggested that diverse factors such as sudden environment changes, punishment and aversive control, and shifts in reinforcement contingencies can give rise to depression i.e. a reduced rate of positively reinforced behaviour. Large segments of behaviour can be under the restricted control of very limited aspects of the environment. In such situations abrupt shifts in the controlling environment may result in a failure to elicit many performances within the individuals' behavioural repertoire. As an illustration, Ferster cites the classical clinical example of two spinster sisters who live in seclusion until one dies, whereupon the survivor lapses into depression. Presumably most of the reinforcers essential to the maintenance of the depressed individual's behavioural repertoire are no longer available.

This analysis suggests that an abrupt shift in reinforcement contingencies which entail a major loss of positive reinforcement may lead to a depressive response. Although, for Skinnerians, behaviours are ultimately sustained by positive reinforcement, it is known that varying amounts of behaviour are controlled by negative reinforcers which facilitate escape or avoidance. The suicidal individual's attempts to find surcease, the ruminative preoccupation with the idea of suicide, and the suicidal act of whatever degree of severity may be seen as forms of escape or avoidance. To the extent that behaviour is controlled by negative reinforcers, less behaviour is emitted that could result in positive reinforcement. Ferster emphasized the idea that loss of reinforcing behaviour or a reduction in the frequency of reinforcing behaviour were the common denominators in the development
of depressive reactions.

Lewinsohn (1974a, 1974b) views depression as a psycho-pathological condition with deficient social skills as the common antecedent. Lewinsohn does not dispute the possibility that biological factors may underlie some forms of depression but argues for the likelihood that some social and environmental factors may be sufficient to instigate other forms of depression. In common with the mainstream of behaviourist tradition Lewinsohn contends that the depressive is on a long drawn out extinction schedule.

Several additional assumptions are posited. The first is that low rates of response contingent positive reinforcement elicits depressive behaviour. In contrast, only if reinforcement is contingently received, that is, dependent on the behaviour of the depressive, will it have positive or therapeutic value. Low rates of contingent positive reinforcement are said to act as unconditioned stimuli for eliciting negative mood changes (dysphoria) fatigue and the other depressive symptoms. A second assumption is that depressive behaviours are initially maintained by the attention and concern (sympathy) aroused in others. Subsequently, however, the depressive behaviours have an aversive impact on others and this results in their withdrawal and thus in a reduction in the number of potentially reinforcing events available to the depressive. Depressive are thought to differ from non-depressives in terms of the instrumental skills needed to elicit reinforcers.

Lewinsohn and co-workers (Lewinsohn and Graf, 1973; Lewinsohn and
Libet, 1972; MacPhillamy and Lewinsohn, 1974) have demonstrated inverse correlations between reported levels of positive events and self-reported mood. However, these correlational findings do not establish a causal link between events and mood. In the Lewinsohn and Libet study, time lagged correlations between pleasant activities and mood were examined for causality. The pattern of results were equally compatible with a negative - mood - reduces - reinforcing behaviour interpretation as with Lewinsohn's preferred interpretation i.e. reduced - reinforcement - leads - to negative - mood.

Studies involving observation of interpersonal behaviours indicate that depressives elicit less reinforcement from others and appear to exhibit lower levels of social skills (Lewinsohn and Shaffer, 1971; Lewinsohn, Weinstein and Aper, 1970; Libet and Lewinsohn, 1973). These findings are typically regarded as supportive of the idea that a deficit in social skills is a causal factor in depression. However, the studies were carried out with individuals who were currently depressed. It is entirely possible that the observed deficit in social skills were components, rather than causes of the depressive syndrome. Direct tests of Lewinsohn's theory have also been equivocal (Blaney, 1977) Hammen and Glass (1975) induced depressed and non-depressed college students to increase activities according to pre-arranged behavioural schedules. No increase in mood was evident, despite increases in presumably reinforcing activity. The equally basic premise that depression is a response to low rates of positive reinforcement has been challenged. Seligman (1975) observed that diminished rates of reinforcement tended to elicit frustration and increased response rates rather than diminished response frequency.
From the cognitive viewpoint, the major criticism of behavioural theories of depression is that they under-estimate the role of idiosyncratic content and individual differences in information processing, processes which may have major implications for both aetiology and intervention.

Two other theories of depression will now be briefly considered the psychodynamic and helplessness models. Psychodynamic theories of depression have traditionally focused on the role of retroflected anger, that is, anger turned against the self-following a real or fantasied loss (Abraham, 1949; Freud, 1917). Depression is seen as a consequence of the turning against the self (where the self represents the lost and incorporated object) of the anger precipitated by symbolic loss or rejection. The existence of hatred and anger largely exists outside of conscious awareness. Supportive evidence for the dynamic theory has been equivocal. Studies of manifest dream content have revealed a preponderance of themes of loss or failure, rather than anger and hostility (Beck and Ward, 1961; Hawi, 1976). Examination of the content of free association fantasies (Beck, 1963) again failed to show excessive covert hostility but did indicate many themes of personal incompetence and failure. When projective stimuli were used (Beck, 1961) the depressed individuals were shown to identify more with the victim than with the aggressor. Beck concluded, drawing upon the evidence provided from dream material, free association and projective identification, that the data may best be interpreted as reflecting a belief in personal incompetence and failure rather than internalized anger.
The dynamic hypothesis regards depression as the product of unconscious anger. It may therefore be expected that levels of overt anger and overt depression would be inversely related, whereas increases in the overt expression of anger should co-vary with clinical improvement. Friedman (1970) found the exact opposite however, to be the case. Measures of overt hostility and covert hostility - guilt, resentment, internalised anger - were positively intercorrelated with one another and were negatively correlated with improvement. Weissman, Prusoff and Tonks (1971) have questioned the basic idea that depressives show less overt hostility than non-depressives and showed that depressives often evidenced intense anger which was overtly expressed in relationships with immediate family members.

The learned helplessness model of depression is rooted in the experimental findings during laboratory experiments with dogs (Ovemier and Seligman, 1967; Seligman 1974, 1975; Majer and Seligman, 1976). Dogs given experiences in which they could not avoid or escape noxious stimulation behaved passively when placed in a new aversive context even though a response was available that would allow escape from the painful event. The prior experience with uncontrollable noxious stimulation was said to result in learned helplessness - a motivational deficit (subsequent failure to initiate escape responses) and interference with the learning of new response - outcome contingencies. The helpless organism is said to have learnt that response and outcome are independent.

Seligman proposed that the learned helplessness phenomenon seen in
animals could be a model for reactive depression in man. Humans exposed to stress perceived as uncontrollable would learn the expectation that future reinforcement would also be outside their control. This learnt expectation would as in the case with animals, lead to the motivational (passivity), cognitive (negative expectations) and emotional (mood change) disturbances seen in depression. In a later reformulation of the helplessness model four additional premises were proposed, which if they co-occurred were sufficient for depression to occur. Of the four premises most interest has been shown in the 'maladaptive attributional style' which predisposed the individual to respond in a depressive way to the presence of noxious events and to the absence of positive outcomes. The attributions could vary on three dimensions - stable/unstable, global/specific and internal/external - with attributions to negative outcomes based on stable (unchanging), global (wideranging) and internal (personal) cognitions producing generalizable depressive deficits.

Results of studies examining the attributional reformulation are variable. Hargreaves (1982) found virtually no support using depressed in-patients, outpatients and day patients with a score of at least fifteen on the B.D.I. inventory, whereas Raps, Peterson, Reinhard and Seligman (1982) found that clinical depressives but not schizophrenics had a maladaptive attributional style.

In section 2.2 mention was made of faulty information processing as it related to the problem-solving characteristics or thinking style of suicidal individuals. In general Beck's cognitive therapy is based on
the theory that affect and behaviour are largely determined by the way in which the individual structures his experiences. The primary factor underlying the cluster of manifestations associated with depression (Beck, 1967, 1971, 1976) appears to be the activation of idiosyncratic cognitive patterns which lead to distortions in thinking. Beck, (1976) described three main components in his cognitive approach to emotional disorders including depression. The first component describes a negative cognitive set in which depressed individuals are seen as evidencing negative beliefs regarding themselves, their world and their future - the negative cognitive triad.

The second component identifies the presence of systematic distortions in information processing which are seen as maintaining belief in the validity of these negative views despite contradictory environmental evidence. The systematic logical errors in thinking include selective abstraction (a tendency to form a conclusion on the basis of an isolated detail whilst ignoring contradictory evidence); arbitrary inference (drawing a conclusion in the absence of evidence), overgeneralization (extracting a belief or rule on the basis of a single event), magnification and minimisation (exaggerates the consequences of a negative event or minimises the impact of a positive event), and dichotomous or all-or-none thinking (the tendency to think in absolute terms). This is not an exhaustive list and the categories of thinking styles are not mutually exclusive.

Cognitive theory suggests that these dysfunctional beliefs and distorted information processing styles serve to depress the mood and
lead to behavioural passivity.

The third component refers to a gross change in the cognitive organisation in depression, characterised by a limitation in the number, content and formal qualities of the cognitive response categories, particularly with regard to the depressed individuals' self concept and personal expectancies. These response categories or schemas tend to be global, rigid and negatively toned. A schema was defined (Beck, 1964) as a structure for screening, coding and evaluating impinging stimuli and it is the mode by which the environment is broken down, structured and given psychological meaning. The activation and prepotency of these crude categories tend to disrupt normal information processing and accounts for the cognitive distortions. The individual's inferences regarding external stimuli are seen as being moulded predominately by these negative cognitive schemas.

The theory posits that the depressed affective state is secondary to negative cognitions. Depressive episodes may be externally precipitated, but it is the individuals' perception and appraisal of the event that renders it depression inducing. During the depressive episode feelings of pleasure and joy are replaced by sadness and apathy and the broad range of spontaneous desires and involvement in activities are eclipsed by passivity and desires to escape. At the severe end, hunger and sexual desires become decreased, interest and involvement in usual social activities becomes converted to withdrawal and avoidance, and finally the desire to live in switched off and replaced by wishes to die.
The dominant theme in the statements of depressed people regards the lack of some personal element or attribute considered essential to the individuals happiness - competence in attaining goals, attractiveness, loss of family or friends, good health and status or position in life. Negative self appraisals reflect the ways in which the depressed person perceives his life situation. Although many non-depressed people experience similar deprivations, the depressed person differs in the way the experience is construed. He either misinterprets or exaggerates the loss or else attaches over-generalised or extravagant meaning to it.

In the course of development, the depression-prone individual becomes sensitised to certain unfavourable types of life situations or events such as the loss of some meaningful other or relationship. Later the stressors responsible for the precipitation of adult depressions impinge on this specific vulnerability. The negative self-evaluations originally linked to some discrete loss become reactivated and begin the chain reaction typically seen in depressives with self doubts and gloomy predictions soon expanding to negative generalisations about the self, the outside world and the future. The self castigation, the unwarranted negative conclusions, and ideas that the future cannot be different all militate against the individual’s active exploration of adaptive problem solving strategies. The phenomena of passivity, reduced motivation, despair and wishes to die clearly follow. It is assumed that the characteristic cognitions are not only causally related to the onset of the depressive syndrome but also play a significant role in its maintenance (Beck, 1967). The negative cognitions lead to depressed affect, which, in turn, is reconstrued in
negative terms intensifying the dysphoria and the severity of other symptoms. Distress is aggravated by the physiological concomitants of depression e.g. sleep and appetite disturbance. The various symptoms - dysphoria, decreased physical activity - feedback into the psychological system finally leading to the development of wishes to die and recurrent suicide ideation.

There is considerable overlap between the cognitive, behavioural and helplessness theories considered, but the unique contribution of cognitive theory espoused by Beck lies in the focus on particular cognitions which are not addressed by the others. In general the role of cognitive factors are also receiving increased attention and behavioural theorists (Bandura, 1977a) are ready to acknowledge this shift. Cognitive processes are recognised as important in the aetiology, maintenance and treatment of depression (Abramson, Seligman and Teasdale, 1978; Beck, 1967, 1976; Derry and Knifer, 1981; Krantz and Hammen, 1979). A core feature of the two major cognitive theories of depression, Beck’s (1967) model and the attributional reformulation of learned helplessness and depression (Abramson, et al., 1978), is the concept of a trait-like depressive cognitive style that characterises some depression-prone individuals and which tends to persist beyond remission of the person’s current depressive episode unless identified and modified (Beck, Rush, Shaw and Emery, 1979). Although Beck, et al. (1979) emphasized that dysfunctional attitudes are relatively enduring cognitive characteristics, they also suggest that the depressive states themselves may exacerbate or increase the dysfunctional attitudes. The Beck conception of the depressive cognitive style is in fact broader than that of Abramson et al. as it
includes not only attributional style and the tendency to place high importance on particular goals but also other cognitive characteristics including an excessive over concern with judgements and evaluations by other people.

The role of cognitions in the development and maintenance of depression has been the subject of much discussion in the literature. Cognitive theorists (Kovacs and Beck, 1978) proposed that dysfunctional cognitions occur early in the sequence of events leading to depression. One clear issue is whether these dysfunctional attitudes are causes or consequences (i.e. symptoms) of depression. Beck (1984) in response to apparent criticism of the causal priority of dysfunctional cognitions has attempted to clarify his position (Coyne, 1982; Coyne and Gotlib, 1983; Simons, Garfield and Murphy, 1984; Silverman, Silverman and Eardley, 1984).

In a study using cognitive therapy or pharmacotherapy with depressives Simons, et al (1984) showed that both groups manifested nearly identical improvement on cognitive measures. These authors concluded that the cognitive distortions which are the focus of cognitive therapy were more like symptoms of depression rather than causes. This is consistent with a view proposed by Coyne (1982) who suggested breaking away from the rigid paradigm which confers causal priority to cognitions. Cognitions, it was proposed, were better conceptualised as a set of relationships which reach out into a larger context with cognitive therapy affording one of several entry points into essentially related psychological and physiological processes.
In his response Beck (1984) clearly de-emphasizes the notion of
cognitions causing depression regarding such a notion as far fetched.
In keeping with Akiskal and McKinney (1975) he views depression as a
result of a variety of innate and environmental factors with cognitive
phenomena as integral parts of the depression. The faulty cognitions
represent a dysfunctional information processing system which form an
important link between hereditary predisposition, developmental
experiences, precipitating events and the manifest signs of
depression. The site of action of both cognitive therapy and
pharmacotherapy is in this information processing system.

Although this issue of cause or consequence remains unresolved much
fruitful work has been done demonstrating the efficacy of cognitive
therapy for depressive disorder. A brief examination of the practice
and efficacy of cognitive therapy now follows.

5.3 Overview of Cognitive Therapy application to suicidal
behaviour and depression.

Depression is the most common psychological disorder accounting for is
much as seventy-five percent of all psychiatric hospitalizations.
There is thus self evident value in developing effective methods of
psychological management for dealing with the depressive disorders.
Although there have been considerable advances in understanding the
psychobiology of depressions and in their treatment using
psychopharmacological methods, Beck (1973) has shown that not all
depressives respond to antidepressant medication. In a review of a
number of controlled studies on the effectiveness of chemotherapy Beck
found that 60-65 percent of subjects showed a definite therapeutic
response to medication, but a sizeable proportion of up to 40 percent were not helped initially. Apart from drug unresponsiveness many drug responsive patients have personal objections to taking medication and discontinue before the therapeutic course is run. It is also distinctly possible that in the long run reliance on medication may undermine the individual's utilization of his own psychological resources for coping. This is in keeping with attribution theory (Shapiro and Morris, 1978) which suggests that if individuals attribute improvements to drug-related effects they would be more unlikely to develop coping mechanisms for dealing with future depressive episodes. With regard to the suicidal depressed patient positive change may result from the cognitive therapy approach which seeks to reduce the central core of hopelessness and generalised negative expectancies associated with suicidal behaviour.

Cognitive therapy is an active, directive, time-limited and structured approach to a variety of psychological disorders including depression, anxiety, phobias and pain. It is based on the theory that affect and behaviour are largely determined by the way in which the individual structures his experience. The therapeutic techniques are designed to identify, test in reality and correct distorted conceptualizations and dysfunctional beliefs or schemas underlying the faulty cognitions (Beck, Rush, Shaw and Emery, 1979). The learning experiences allow for practice of a number of operations including monitoring negative cognitions, recognising the link between cognition, affect and behaviour, to identify and alter underlying faulty assumptions and to practice alternative ways of thinking. In contrast to conventional psychotherapy, cognitive therapy focuses on present problems and

263
behavioural strategies which may be used are mainly a series of small experiments aimed ultimately at producing cognitive change i.e. changes in behaviour are used to effect the major aim of cognitive therapy - change in maladaptive thinking style.

An increasing number of studies have evaluated the relative efficacy of cognitive therapy methods with both depressed volunteers and depressed clinic patients (Shipley and Fazio, 1973; Taylor and Marshal, 1977; Shaw, 1977). Shipley and Fazio (1973) compared cognitive therapy which included training in problem-solving with an interest-support control group. The subjects were mildly depressed student volunteers. Treatment with cognitive therapy resulted in significantly greater improvements. Taylor and Marshall (1977) compared cognitive therapy, a behavioural treatment, a combined cognitive-behavioural treatment, and a no-treatment approach in reducing depression in college student volunteers. All three treatments were found to produce significantly greater improvements than the control condition. There was no significant difference between the cognitive and behavioural conditions, but the combined treatment was more effective than either given alone.

Shaw (1977) has compared Beck's cognitive restructuring treatment of depression to a behavioural treatment programme based on Lewinsohn's (1974) model. There was in addition an attention-placebo condition consisting of non-directive discussion of the subject's feelings about their depression and a no-treatment control group. Unlike the Taylor and Marshall study in which clients were seen on an individual basis, Shaw treated subjects in small groups over a period of four weeks.
University students with a Beck Depression Score of eighteen and above and who were interested in the project were included in the study. Subjects in the cognitive therapy group evidenced greater improvement on self-report measures and clinical ratings of depression. The behaviour therapy and non-directive therapy groups both showed improvement relative to the no-treatment control group but were no different from each other. At one month follow-up the difference between the cognitive therapy and behaviour therapy groups were no longer significant.

These findings together appear to indicate that combined cognitive-behavioural, more strictly cognitively oriented behavioural, interventions may be superior to either pure cognitive or strict behavioural interventions with mild to moderately depressed college volunteers. Further evidence about the efficacy of cognitive-behaviour therapy with clinic populations is also available. (Rush, Katami and Beck, 1975; Blackburn, Bishop, Glen, Whalley and Christie, 1981; Rush, Beck, Kovacs and Hollon, 1977).

Rush, Katami and Beck (1975) utilized cognitive and behavioural strategies in treating three outpatient chronic depressives. The authors reported decreases in depression on the Beck Depression Inventory reflecting treatment efficacy but there were no experimental controls. Rush et al. (1977) compared individual cognitive therapy with pharmacotherapy in the treatment of primary, non-bipolar, non-psychotic, outpatient depressives (Feighner, Robins, Guze, Woodruff, Winokur and Munoz, 1972). Depressed outpatients receiving cognitive therapy attended for a maximum of twenty sessions over twelve weeks.
Depressives treated with pharmaco-therapy for twenty minute sessions receiving imipramine hydrochloride (75-250 mg/day) and non-specific supportive contact. Over the twelve-week active treatment period both groups evidenced improvement in depressive symptoms assessed by the Beck Depression Inventory, the MMPI-D scale and the Hamilton rating scale for Depression. Depressives treated with cognitive therapy, however, showed significantly greater improvements. Follow-up at three to six months showed that the improvements were maintained over time. A more recent study (Murphy, Simons, Wetzel and Lustman, 1984) attempted to replicate the findings of superiority of cognitive therapy over pharmacotherapy. Blackburn et al. (1981) reported results which supported the Rush et al. (1977) findings using a British sample of hospitalized depressives and depressed patients referred by their General Practitioners. For the hospitalized depressives the combination of drugs and cognitive behaviour therapy produced more change in depressive symptomatology than either cognitive behaviour therapy or drugs alone which did not differ significantly from each other. In the General Practitioner sample, combined treatment was equally effective as cognitive behaviour therapy alone and both of these treatment modalities were superior to drugs alone. The authors suggested that the difference in results between the two studies - Rush et al. (1977) (cognitive behaviour therapy - superior to drugs) and Blackburn et al. (1981) (mixed results depending on sample) - could be explained on the basis that the drug regime was individually tailored to their patients and was therefore more effective.

Murphy et al. (1984) reported on the efficacy of cognitive therapy and
pharmacotherapy in the treatment of seventy moderately to severely depressed psychiatric outpatients. Four treatments were contrasted - cognitive therapy, tricyclic antidepressants, cognitive therapy and tricyclic antidepressant and cognitive therapy plus an active placebo. The improvements demonstrated did not differ as a function of the different treatment modalities. Either cognitive therapy or antidepressant drug treatment was deemed effective in the treatment of outpatient primary non-bipolar depressives.

Several issues have arisen out of this work. The study did not consider the necessity of a placebo group and it has been suggested that the majority of the drug group patients might have been placebo responders (Quinton and Stewart, 1984). Another issue involves the selection of therapy. If both therapies are equally effective which should be the treatment of choice? Clearly treatments may have inhibiting and facilitating effects on each other. It would be of some importance to know under what circumstances these factors become operative.

5.4 Summary.

Two broad approaches to psychological treatment were presented in this Chapter - Interpersonal problem-solving training and Cognitive Therapy. Interpersonal problem-solving training was shown to have useful application in improving the social adjustment of a number of maladjusted groups shown to be deficient in problem-solving ability. The use of this method of treatment with suicidal individuals also shown to be poor problem-solvers in the interpersonal domain (Study 1)
warrants further investigation.

Cognitive theory (Beck, 1967, 1976) has provided an heuristic model for describing the origin, development and maintenance of depression with the seat of action sited in the information processing system and with dysfunctional attitudes as integral and important manifestations of the depressive disorder.

A combination of cognitive and behavioural techniques based on cognitive theory may be effective both in the group and individual treatment of non-psychotic, non-bipolar depressives. It was suggested that the methods of cognitive therapy could be appropriate to the treatment of the cognitive - behavioural manifestations of hopelessness - a core of negative expectancies - shown to be associated with suicidal behaviour.

The application of these two methods of treatment to individuals presenting with suicidal behaviour forms the basis of Study 2 (Chapter 6).
CHAPTER 6.

STUDY 2: COGNITIVE AND BEHAVIOURAL STRATEGIES IN THE MANAGEMENT OF SUICIDAL BEHAVIOUR.

6.1 INTRODUCTION.

The preceding sections (Chapter 5) considered the application of problem-solving training as a behavioural intervention and cognitive therapy for a wide range of psychiatric and related conditions. Problem-Solving Training has been successfully utilized with drug addicts (Platt and Spivack, 1975), alcoholics (Intagliata, 1978) and mixed psychiatric patients (Siegel and Spivack, 1976; Coche and Flick, 1976) and the efficacy of cognitive therapy (Beck et al., 1979) has been considered with unipolar non-psychotic depressive patients.

The present study (Study 2) compared the relative efficacy of Problem-Solving Training and Cognitive Therapy for individuals who have made a suicide attempt. In particular, in the case of Problem-Solving Training this represents an extension of the application of interpersonal cognitive problem-solving training methods. These two methods of treatment will be compared and contrasted with suicidal subjects receiving the 'usual treatment' - psychiatric outpatient treatment and follow-up (Psychiatric After Care). This latter strategy avoids the ethical dilemma of placing suicidal subjects in no-treatment control groups (Clum et al., 1979).

The results of Study 1 suggested that within the interpersonal domain
suicidal individuals were poorer at problem-solving in general. A number of training programmes have developed out of the research work examining basic interpersonal cognitive problem-solving skills. These training programmes share the common goal of teaching or enhancing directly one or more problem solving skills. The general assumption is that once these skills are improved there should follow alterations in social behaviours leading to better interpersonal adjustment and, for the purposes of Study 2, reductions in suicidal behaviour.

Larcen et al (1974) have shown that the ability to generate alternative solutions was correlated with belief and increases in internal control. McClure (1975) has reported that increases in alternative-solution thinking was associated with greater persistence when faced with failure. The individual showing suicidal behaviour was often caught up in a network of intense emotion and threat the consequence of which is to narrow the range of effective solutions the suicidal individual is able to generate. Under conditions of high drive means ends thinking may become disrupted leading to judgemental errors based on unexplored and unanticipated consequences. The hope was, with some justification, (Shure and Spivack, 1973) that a Problem-Solving Training programme designed to teach general problem solving strategies to suicidal individuals would facilitate better coping behaviour and improvements in general ability to deal with problems that arise within the interpersonal matrix.

The methods of cognitive therapies for the emotional disorders are well documented (Beck, 1976; Beck et al., 1979). Within the cognitive framework depressed and suicidal patients are said to hold a negative
conception of themselves, the outside world and the future. The suicidal individual, like the depressive, sees himself as deficient and inadequate, consistently construes his experiences in a negative way and believes that current difficulties would continue indefinitely. Shaw (1977) evaluated the therapeutic efficacy of cognitive therapy with depressed patients and demonstrated significant reduction in depressive symptoms including hopelessness and suicidal wishes. Nidiffer (1980) reported the successful treatment of a single case of suicidal depression using combined cognitive and behavioural strategies to improve coping with interpersonal, academic, and financial problems and to facilitate the production of more frequent positive self-statements. Beck et al. (1979) have described specific cognitive techniques for dealing with suicidal patients. The overall cognitive therapy objective is the systematic modification of faulty patterns of thinking. Suicidal individuals will be given instruction in dealing with automatic thoughts, suicidal impulses and dysfunctional cognitions related to hopelessness.

A review of the literature suggests that both Problem-Solving Training and Cognitive Therapy should provide valuable entry points into the treatment of suicidal individuals in particular. Study 2 was designed to assess the efficacy of these treatments in reducing suicidal behaviour and changing related symptomatology (hopelessness, depression, etc.) compared to a control group receiving the 'usual' psychiatric treatment. The second purpose of the study was to conduct a comparative evaluation of the two main treatment programmes. The main hypotheses of the study were (i) that the cognitive therapy and Problem-Solving Training treatments would result in greater
improvements than the psychiatric outpatient treatment condition, and (ii) that there would be no difference in outcome between the Cognitive Therapy and Problem-Solving Training treatments.

6.2 Method

6.2.1 Subjects.

Three groups each of sixteen subjects participated in Study 2.

i) 16 suicidal subjects receiving Cognitive Therapy (CT)

ii) 16 suicidal subjects receiving Problem-Solving Training (P-ST)

iii) 16 suicidal subjects receiving Psychiatric After Care (PAC)

The demographic characteristics of the three groups are given in Table 67. The total sample of 48 suicidal attempters consisted of 10 males and 38 females with an age range of 19 to 40 years.
TABLE 67: DEMOGRAPHIC CHARACTERISTICS OF THE THREE TREATMENT GROUPS - COGNITIVE THERAPY (CT), PROBLEM-SOLVING TRAINING (P-ST), AND PSYCHIATRIC AFTER CARE (PAC).

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>CT</th>
<th>P-ST</th>
<th>PAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGE (years)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>29.00</td>
<td>28.69</td>
<td>29.68</td>
</tr>
<tr>
<td>SD</td>
<td>6.23</td>
<td>6.54</td>
<td>6.08</td>
</tr>
<tr>
<td>RANGE</td>
<td>19.00-40.00</td>
<td>20.00-40.00</td>
<td>21.00-39.00</td>
</tr>
<tr>
<td>SEX (n)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MALES</td>
<td>4.00</td>
<td>3.00</td>
<td>3.00</td>
</tr>
<tr>
<td>FEMALES</td>
<td>12.00</td>
<td>13.00</td>
<td>13.00</td>
</tr>
<tr>
<td>MARITAL STATUS (n)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SINGLE</td>
<td>5</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>MARRIED</td>
<td>8</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>DIVORCED</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>FORMAL EDUCATION (years)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>11.25</td>
<td>11.28</td>
<td>10.56</td>
</tr>
<tr>
<td>SD</td>
<td>1.45</td>
<td>1.48</td>
<td>1.21</td>
</tr>
<tr>
<td>RANGE</td>
<td>10.0-15.0</td>
<td>9.5-15.0</td>
<td>9.0-14.0</td>
</tr>
<tr>
<td>EMPLOYMENT STATUS (n)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNEMPLOYED</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>EMPLOYED</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>STUDENT</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>HOUSEWIFE</td>
<td>6</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

M - Mean
SD - Standard Deviation.

The groups did not differ in mean age (F (2,45 = 0.11) with the average age being just below thirty years (Table 68).
The mean number of years of formal schooling was used as an index of educational level. The average length of formal schooling was just over eleven years with only eight percent pursuing any further education. There was no difference between the groups in the mean number of years of formal schooling - $F(2, 45) = 1.26$ (Table 69).
The level of suicide intent was assessed for all subjects on the suicide intent scale (SIS). All suicide attempts were by drug overdose usually a 'minor' tranquillizer of hypnotic rather than with antidepressants. Escape motives for the suicide attempt were the most frequently admitted. Table 70 presents the descriptive statistics for suicide intent. There was no difference between the groups on the mean degree of suicide intentionality - (F (2,45) = 0.73) - (Table 71).

6.2.2 Selection criteria.

These selection criteria overlap with the criteria given in Study I (3.2.1 - 3.2.2).

(i) patients for whom the current attempt was the first ever attempt at suicide

(ii) a clear willingness to participate in the study and a commitment to attend and complete all research questionnaires

(iii) patients presenting with drug addiction, recognisable psychotic illness, organic or major medical problems were excluded

(iv) of age between 18 and 44 years.
TABLE 70: SUICIDE INTENT: MEAN (M), RANGE (R), AND
STANDARD DEVIATION (SD).

<table>
<thead>
<tr>
<th></th>
<th>CT</th>
<th>P-ST</th>
<th>PAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>12.56</td>
<td>12.31</td>
<td>13.62</td>
</tr>
<tr>
<td>SD</td>
<td>2.96</td>
<td>2.41</td>
<td>4.18</td>
</tr>
<tr>
<td>R</td>
<td>7.0-18.0</td>
<td>8.0-17.0</td>
<td>4.0-19.0</td>
</tr>
</tbody>
</table>

TABLE 71: ANOVA SUMMARY: MEAN SUICIDE INTENT.

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARES</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>2</td>
<td>15.54</td>
<td>7.77</td>
<td>0.73</td>
</tr>
<tr>
<td>Within groups</td>
<td>45</td>
<td>481.13</td>
<td>10.69</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>47</td>
<td>496.67</td>
<td>10.55</td>
<td></td>
</tr>
</tbody>
</table>

Non-significant.
6.2.3 Procedure.

Subjects in the cognitive therapy (CT) and Problem-solving Training groups were usually obtained either by direct referral from Psychiatrists involved in the clinical assessment of suicidal patients after their suicide attempt or from a central record of patients who had made a suicide attempt. Thirty-two of 47 patients assessed were deemed to fit the inclusion criteria and were then randomly assigned by the experimenter to either the CT or P-ST group.

Subjects in the Psychiatric After Care (PAC) group were selected from a pool of patients attending as psychiatric out-patients for general psychiatric problems or following an overdose. In practice it was not difficult to identify potential PAC patients with the help of an appointments secretary and cross-referencing with the central suicide attempt record. Of 41 patients so identified and assessed thirty-two fitted the inclusion criteria. These thirty-two patients were then randomly assigned by the experimenter to either (a) an Assessment group or (b) a no-assessment group. The Assessment group formed the PAC group of subjects who were then included in the study and assessed in the same way as CT and P-ST subjects.

Subjects in the three groups were matched on age and self-reported depression as measured on the Beck Depression Inventory (BDI).

6.2.4 Dependent measures.

A number of authors (Kreitman, 1977) have commented on the narrowness of considering repetition of the suicide attempt as the sole measure
of outcome in studies using suicidal subjects. It was therefore decided that a wider range of outcome measures would be used. These are listed below together with the frequency of the assessment

(i) Beck Depression Inventory (BDI) Beck (1967): (see 3.2.3)

(ii) Hopelessness Scale (HS) Beck et al (1974): (see 3.2.3)

(iii) Scale for Suicide Ideation (SSI) Beck, Kovacs and Weissman (1979):

This scale was designed to quantify the intensity of current conscious suicidal ideation. The 19-item scale assesses the frequency and duration of suicidal thoughts as well as the patients’ attitude toward them; the extent of the wish to live and the wish to die, the current desire to make an active suicide attempt, details of plans where applicable, and subjective feelings of control regarding the suicidal ideation. The SSI is designed to be administered in a semi-structured interview format. The scale was found to have high internal consistency (KR - 20 : r = 0.90) and moderately high correlations with clinical ratings of suicidal risk (r = 47 with hopelessness). Factor analysis yielded three factors: active suicidal desire, specific plans for suicide, and passive suicidal desire accounting for 35.9, 10.9 and 9.8 percent of the variance respectively.

(iv) The Suicide Intent Scale (SIS) Beck, Schuyler and Herman (1974) - (see 3.2.3)

(v) Level of Social dysfunction: Social Dysfunction Rating Scale SDRS - (see 3.2.3)

Three stories selected from the MEPS manuals were used to assess social and emotional means ends thinking before and at the end of treatment. (See 3.2.3).

Suicidal Behaviour Record (SBR).

A careful record of any suicidal behaviour would be kept as reported either by the subject or relative. Where any doubt existed provision was available for checking the suicide attempt record book.

Below is a summary of the assessments carried out and their timing

<table>
<thead>
<tr>
<th>Measure</th>
<th>Pre-Test</th>
<th>Weekly</th>
<th>Post-Test</th>
<th>6 month Follow up</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 BDI</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2 HS</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3 SSI</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>4 SIS</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5 SDRS</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>6 MEPS</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>7 SBR</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

See text for explanation of abbreviations

0 - No
1 - Yes
For CT and P-ST subjects, time was set aside before the beginning of group sessions for filling research questionnaires. Where a subject failed to attend questionnaires were completed at the subject's home when the experimenter visited within the next day.

For PAC subjects, assessments were completed either before the session with the psychiatrist or when no attendance was scheduled for that week, at the subject's home. The same arrangements for PAC subjects obtained if for some reason there was a failure of attendance.

In order to match the data collected for the other two groups a similar pattern of weekly or otherwise scheduled data collection was adhered to for PAC subjects. Where treatment was terminated either by therapist or patient before week eight, data collection was continued as planned.

6.2.5 Treatments

Group Cognitive Therapy (n = 8:x2)

This study (Study 2) included two experimental groups - Cognitive Therapy and Problem-Solving training and one control group - Psychiatric After Care. For the experimental groups all the Cognitive Therapy (CT) group were treated by methods outlined by Kovacs et al., (1975); Beck, (1976) and Beck et al., (1979). There was usually a general orientation which highlighted the crucial link between thought, behaviour and affect. The major focus of the cognitive intervention strategies was to deal with suicidal motivations (reasons for the suicide attempt), suicidal wishes (wishes to die), generalised feelings of hopelessness and depressively toned cognitions and affect.
Essentially treatment included an initial discussion of simple negative thoughts and obvious interpretation errors then moving to learning to recognise and change more complex underlying erroneous assumptions and beliefs. A range of strategies including cognitive rehearsal, indentifying automatic negative thoughts and homework assignments were used. A more detailed description of the treatment package is given in the Appendix No.10.

Group Problem-Solving Training (n=8x2)

The Problem-Solving training (P-ST) group received a treatment package adapted from the work on training presented by Siegel and Spivack, (1976) and Coche and Flick, (1975). There was usually a general orientation towards examining life issues and suicidal pre-occupations within a problem solving frame of reference. Patients were given training in recognising problems, bringing up a problem, clarifying a problem, presenting solutions, selecting a viable option and discussing the feasibility and consequences, decision making, reality testing and reporting back to the group. Problems within the interpersonal domain as well as relevant other psychological difficulties i.e. how to feel less isolated, were targets for problem-solving training. A detailed description of the Problem Solving Training Procedure is given in the Appendix No.9.

Subjects in the Psychiatric After Care (PAC) group received a typical consultation lasting thirty minutes on average and treatment consisted of either symptomatic pharmacotherapy and/or supportive psychiatric contact.
6.2.6 Therapists.

For practical reasons in implementing the study the experimenter conducted all treatment sessions for Cognitive Therapy and Problem-solving Training whilst this allowed for minimising sources of therapist variability it introduced an obvious source of criticism of the design - experimental bias.

In order to help reduce this bias therapist behaviour and adherence to the treatment manuals were monitored by a senior Psychiatrist during the running of two pilot groups. It was not feasible to repeat this monitoring during the experimental stage. There was a clear determination on the part of the experimenter to behave consistently in each treatment group.

The experimenter was a fully trained clinical Psychologist of some years' experience and has used both methods of treatment as part of routine clinical practice with individual clients as well as with small groups.

A Senior Registrar in Psychiatry acted as therapist providing Psychiatric After Care (PAC). There was previous opportunity for observing the clinical practice of the Psychiatrist with patients presenting after suicidal behaviour. The psychiatrist was aware of the experimenter's interest and there was agreement that there would be no active attempt to discover those patients who formed the PAC group. The assessment of a larger number of PAC subjects than was required helped further to 'hide' the true PAC subjects.
Subjects in the PAC group were seen on an individual basis. It was recognised that this form of treatment, although it accurately represented the usual circumstances of after-care given to this group of patients, did not allow for similar group experiences to which subjects in the experimental groups were exposed. It was felt, however, that if the experimental treatments were to be compared with the 'usual treatment' then the individual therapy format had to be preserved.

6.3 RESULTS.

6.3.1 Interpersonal problem-solving.

(i) Quantitative aspects:

Table 72 gives the means and standard deviations for three quantitative measures of problem-solving - relevant means, irrelevant means and the relevancy ratio - taken before (pre-) and after treatment (post-). The pretreatment assessment of problem solving was based on three MEPS story stems (two social and one emotional problem). The post-treatment assessment was based on a different set of three stories combined in the same way (i.e. two social and one emotional problem). Table 72 considers social problems alone.
A one-way ANOVA was carried out to test for differences between the groups on pre-assessment production of relevant means. No significant differences between the groups were highlighted ($F(2,45) = 0.14$; Table 73).

### Table 72: Means (M) and Standard Deviations (SD) - Relevant Means (RM) Irrelevant Means (IM) and Relevancy Ratio (RR) - Pre- and Post-Assessments: Social Problems.

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>0.29</td>
<td>0.15</td>
<td>0.14</td>
</tr>
<tr>
<td>Within Groups</td>
<td>45</td>
<td>45.69</td>
<td>1.02</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>47</td>
<td>45.98</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Non-significant.
An ANOVA of post-assessment relevant means showed that there were significant differences between groups ($F(2,45) = 6.78; p < 0.005$; Table 74).

**TABLE 74: ANOVA SUMMARY: POST-ASSESSMENT RELEVANT MEANS.**

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>F. Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>13.17</td>
<td>6.58</td>
<td>6.78**</td>
</tr>
<tr>
<td>Within Groups</td>
<td>45</td>
<td>43.81</td>
<td>0.97</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>47</td>
<td>56.98</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** ** $p < 0.005$

At post-assessment (Table 75) P-ST subjects were producing significantly more relevant means than both CT subjects ($t(28) = 2.51; p < 0.008$) and PAC subjects ($t(28) = 3.58; p < 0.001$). There was no significant difference between CT and PAC subjects ($t(28) = 1.07; N/S$) on the mean number of post-assessment relevant means produced.
The degree of change in the mean production of Relevant Means between pre- and post-assessments was considered for each group (Table 76). Both the CT (t(15) = 1.96; p < 0.034) and the P-ST groups (t(15) = 6.33; p < 0.001) significantly improved their performance in the positive direction. There was a non-significant reduction in mean Relevant Means production for PAC subjects. On a comparative basis, the most significant improvement occurred in the P-ST group.

** TABLE 76: PRE-POST-CHANGES: RELEVANT MEANS. **

|        | PRE- | POST- | CHANGE 
|--------|------|-------|--------
| CT     | 1.75 | 2.19  | + 0.87**
| P-ST   | 1.87 | 3.06  | + 1.19***
| PAC    | 1.94 | 1.81  | - 0.13

** p < 0.034
*** p < 0.001
The mean pre- and post-assessment Relevancy Ratios were compared (Tables 77 and 78). There were no significant differences between groups both before \( F(2,45 = 1.66; \text{N/S}) \) although the P-ST subjects were improving in the right direction (Table 72).

**TABLE 77: ANOVA SUMMARY: RELEVANCY RATIO: PRE-ASSESSMENT.**

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>F. Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>0.07</td>
<td>0.04</td>
<td>0.33</td>
</tr>
<tr>
<td>Within Groups</td>
<td>45</td>
<td>5.58</td>
<td>0.12</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>47</td>
<td>5.65</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Non-significant.

**TABLE 78: ANOVA SUMMARY: RELEVANCY RATIO: POST-ASSESSMENT.**

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>F. Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>0.31</td>
<td>0.15</td>
<td>1.66</td>
</tr>
<tr>
<td>Within Groups</td>
<td>45</td>
<td>4.17</td>
<td>0.19</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>47</td>
<td>4.48</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Non-significant.

A comparison of pre-post- changes in mean relevancy ratio was
considered for each group (Table 79). Only the P-ST group was shown to significantly improve on this measure (t(15) = 2.45; p < 0.014) with only minimal or no change occurring on this measure in the other two groups.

** TABLE 79: PRE- POST- CHANGES: RELEVANT RATIO. **

<table>
<thead>
<tr>
<th></th>
<th>PRE-</th>
<th>POST-</th>
<th>CHANGE SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>0.68</td>
<td>0.73</td>
<td>0.05</td>
</tr>
<tr>
<td>P-ST</td>
<td>0.74</td>
<td>0.91</td>
<td>0.17**</td>
</tr>
<tr>
<td>PAC</td>
<td>0.77</td>
<td>0.77</td>
<td>0.00</td>
</tr>
</tbody>
</table>

** p < 0.014

A comparison was made between the groups on the number of subjects producing at least one relevant mean - both pre- and post- assessment frequencies were considered (Tables 80 and 81).

** TABLE 80: FREQUENCY OF IRRELEVANT MEANS: PRE-ASSESSMENT. **

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1 or &gt; 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>P-ST</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>PAC</td>
<td>10</td>
<td>6</td>
</tr>
</tbody>
</table>

Chi-square (2) = 0.18
Non-significant.
There were no significant differences between the groups on the frequency of irrelevant means either at intake (chisquare (2) = 0.18, N/S) and at post-assessment (chi-square (2) = 1.31; N/S).

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1 or &gt; 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>P-ST</td>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>PAC</td>
<td>9</td>
<td>7</td>
</tr>
</tbody>
</table>

Chi-square (2) = 1.31
Non-significant.

When the number of irrelevant means was examined as a proportion of all means produced (i.e. the sum of relevant and irrelevant means) no difference existed between the groups at pre-assessment (Table 82). At post-assessment (Table 83) subjects in the P-ST group produced significantly proportionately less irrelevant means than subjects in PAC group (z = 1.64; p < 0.05). No difference was shown between the P-ST and CT subjects and between CT and PAC subjects.
TABLE 82: IRRELEVANT MEANS AS A PROPORTION OF TOTAL MEANS. PRE-ASSESSMENT.

<table>
<thead>
<tr>
<th></th>
<th>RM</th>
<th>IM</th>
<th>TOTAL</th>
<th>PROPORTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>28</td>
<td>6</td>
<td>34</td>
<td>0.18</td>
</tr>
<tr>
<td>P-ST</td>
<td>30</td>
<td>7</td>
<td>37</td>
<td>0.19</td>
</tr>
<tr>
<td>PAC</td>
<td>31</td>
<td>6</td>
<td>37</td>
<td>0.16</td>
</tr>
</tbody>
</table>

Non-significant.

RM: Relevant means.

IM: Irrelevant means.

TABLE 83: IRRELEVANT MEANS AS A PROPORTION OF TOTAL MEANS. POST-ASSESSMENT.

<table>
<thead>
<tr>
<th></th>
<th>RM</th>
<th>IM</th>
<th>TOTAL</th>
<th>PROPORTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>35</td>
<td>5</td>
<td>40</td>
<td>0.125</td>
</tr>
<tr>
<td>P-ST</td>
<td>49</td>
<td>4</td>
<td>53</td>
<td>0.075*</td>
</tr>
<tr>
<td>PAC</td>
<td>29</td>
<td>7</td>
<td>36</td>
<td>0.190</td>
</tr>
</tbody>
</table>

* z = 1.64; p < 0.05
ii. Qualitative aspects:

Three qualitative problem-solving measures were obtained - time referents, introspections and obstacles.

There were no significant differences between the groups at pre-assessment in the frequency of time referents (Table 84) with very few such citations across all groups.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1 or &gt; 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>15</td>
<td>1</td>
</tr>
<tr>
<td>P-ST</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>PAC</td>
<td>14</td>
<td>2</td>
</tr>
</tbody>
</table>

Chi-square (2) = 0.45; N/S

At post assessment, however, a significant difference (chi-square (2) = 6.74; p < 0.05) between groups on the frequency of time referents was obtained (Table 85) with the most change occurring in the CT and P-ST groups.
TABLE 85: TIME REFERENTS: POST-ASSESSMENT.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1 or &gt; 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>P-ST</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>PAC</td>
<td>14</td>
<td>2</td>
</tr>
</tbody>
</table>

Chi-square (2) = 6.74; p < 0.05

When within group changes in frequency of time referents were considered from pre- to post-assessment only the changes occurring in the P-ST group reached statistical significance (chi-square (2) = 4.99; p < 0.05). Tables 86, 87 and 88 give the within group time referents pre- and post assessment comparisons.

TABLE 86: FREQUENCY OF TIME REFERENTS: PRE-POST-COMPARISONS: CT.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1 or &gt; 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRE-</td>
<td>15</td>
<td>1</td>
</tr>
<tr>
<td>POST-</td>
<td>10</td>
<td>6</td>
</tr>
</tbody>
</table>

Chi-square (1) = 2.93; N/S.
TABLE 87: FREQUENCY OF TIME REFERENTS: PRE- POST-COMPARISONS: P-ST.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1 or &gt; 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRE-</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>POST</td>
<td>7</td>
<td>9</td>
</tr>
</tbody>
</table>

Chi-square (1) = 4.99; P < 0.05.

TABLE 88: FREQUENCY OF TIME REFERENTS: PRE- POST-COMPARISONS: PAC.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1 or &gt; 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRE-</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>POST</td>
<td>14</td>
<td>2</td>
</tr>
</tbody>
</table>

N/S

On post-assessment comparisons between groups on the frequency of time referents there was no significant different between P-ST and CT groups and between CT and PAC. There was, however, a significant difference at post-assessment between the P-ST and PAC subjects (Table 89) with P-ST subjects producing significantly more frequent time references (chisquare (1) = 4.99; p < 0.05).
TABLE 89: TIME REFERENTS: POST-ASSESSMENT COMPARISON: P-ST VS PAC.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1 or &gt; 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-ST</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>PAC</td>
<td>14</td>
<td>2</td>
</tr>
</tbody>
</table>

Chi-square (1) = 4.99; P < 0.05

As with time referents the frequency of pre-assessment introspections was generally low with no significant differences across groups (Table 90).

TABLE 90: INTROSPECTION: PRE-ASSESSMENT: SOCIAL PROBLEMS.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1 or &gt; 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>13</td>
<td>3</td>
</tr>
<tr>
<td>P-ST</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>PAC</td>
<td>14</td>
<td>2</td>
</tr>
</tbody>
</table>

Chi-square (2) = 0.33. N/S

At post-assessment there was an overall significant difference (chisquare (2) = 8.68; p < 0.025) between groups in the frequency of introspections (Table 91).
TABLE 91: TIME REFERENTS: POST ASSESSMENT: SOCIAL PROBLEMS.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1 or &gt; 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>P-ST</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>PAC</td>
<td>13</td>
<td>3</td>
</tr>
</tbody>
</table>

Chi-square (2) = 8.68; P < 0.025

Inspection of the data suggested that the bulk of frequency changes occurred in the CT and P-ST groups. Within group comparisons of pre-post frequency of introspections showed no significant difference for the CT and PAC groups (Tables 92, 93). There was a significant difference (chisquare (1) = 8.29; p < 0.005) between pre- and post assessment frequency of introspections for the P-ST group (Table 94).

TABLE 92: INTROSPECTIONS: PRE-POST COMPARISONS:CT.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1 or &gt; 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRE-</td>
<td>13</td>
<td>3</td>
</tr>
<tr>
<td>POST-</td>
<td>7</td>
<td>9</td>
</tr>
</tbody>
</table>

Chi-square (1) = 3.33; N/S.
TABLE 93: INTROSPECTIONS: PRE- POST- COMPARISONS P-ST.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1 or &gt; 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRE-</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>POST-</td>
<td>5</td>
<td>11</td>
</tr>
</tbody>
</table>

Chi-square (1) = 8.29; P < 0.005

TABLE 94: INTROSPECTIONS: PRE- POST- COMPARISONS: PAC.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1 or &gt; 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRE-</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>POST-</td>
<td>13</td>
<td>3</td>
</tr>
</tbody>
</table>

Non-significant.

There were no significant differences between the CT and P-ST groups and between the CT and PAC groups on post-assessment introspection frequency. There was, however, a significant difference (chi-square (1) = 6.22; p < 0.05) between the P-ST and PAC groups on post-assessment frequency of introspections (Table 95) P-ST subjects produced significantly more frequent introspections at post-assessment.
TABLE 95: INTROSPECTIONS: POST-ASSESSMENT COMPARISON: P-ST VS PAC.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1 or &gt; 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>P-ST</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>PAC</td>
<td>13</td>
<td>3</td>
</tr>
</tbody>
</table>

Chi-square (1) = 6.22; P < 0.05

The groups did not differ significantly at pre-assessment on the frequency of recognition of obstacles (Table 96). Overall very few obstacles were cited.

TABLE 96: RECOGNITION OF OBSTACLES: PRE-ASSESSMENT.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1 or &gt; 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>P-ST</td>
<td>15</td>
<td>1</td>
</tr>
<tr>
<td>PAC</td>
<td>14</td>
<td>2</td>
</tr>
</tbody>
</table>

Chi-square (2) = 0.45: N/S.

At post-assessment there was a tendency for all groups to produce a moderate but non-significant increase in the frequency of recognition of obstacles (Table 97).
None of the change scores by group from pre- to post-assessment reached statistical significance suggesting no real overall improvement for any of the groups on this particular measure.

### 6.3.2 Emotional Problem Solving

(i) Quantitative aspects:

Table 98 gives the means and standard deviations for relevant means and the Relevancy ratios for emotional problems. Irrelevant Means were not scored for emotional problems. In each set of three story stems one was an emotional problem. The results were thus based on two separate emotional problems included at pre- and post-assessment respectively.
The groups did not differ significantly at pre-assessment on the number of relevant emotional means produced. At post-assessment both CT and P-ST subjects had made improvements in the direction of increased production of relevant emotional means compared to PAC subjects where no such improvement was made. At post-assessment CT subjects produced significantly more relevant emotional means (t(27) = 1.80; p < 0.041) than PAC subjects. The difference between P-ST and PAC groups was not significant at post-assessment. P-ST subjects were not significantly different from CT subjects at post-assessment.

The mean change and direction of change by group from pre- to post-assessment on the mean number of relevant emotional means is given in Table 99. Both the CT (t(15) = 1.58; p < 0.06) and P-ST groups (t(15) = 1.46; p < 0.08) have made positive change although the level of significance of such changes were outside conventional statistical levels.
Comparisons of the mean pre- and post-assessment Relevancy ratios for emotional problems showed no statistical differences between the groups at the two assessment points (Table 98 and 100). It was noted however, that the greatest degree of improvement on this measure occurred in the CT group ($t(15) = 1.46; p < 0.08$).

### Table 99: Within Groups Pre-Post-Assessment Changes: Relevant Emotional Means.

<table>
<thead>
<tr>
<th></th>
<th>Pre-</th>
<th>Post</th>
<th>Change</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>0.75</td>
<td>1.06</td>
<td>+0.31</td>
<td>0.06</td>
</tr>
<tr>
<td>P-ST</td>
<td>0.69</td>
<td>0.94</td>
<td>+0.25</td>
<td>0.08</td>
</tr>
<tr>
<td>PAC</td>
<td>0.75</td>
<td>0.69</td>
<td>-0.06</td>
<td>N/S</td>
</tr>
</tbody>
</table>

### Table 100: Within Groups Pre-Post-Assessment Changes: Relevancy Ratios- Emotional Problems.

<table>
<thead>
<tr>
<th></th>
<th>Pre-</th>
<th>Post</th>
<th>Change</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>0.56</td>
<td>0.81</td>
<td>+0.25</td>
<td>0.08</td>
</tr>
<tr>
<td>P-ST</td>
<td>0.62</td>
<td>0.69</td>
<td>+0.07</td>
<td>N/S</td>
</tr>
<tr>
<td>PAC</td>
<td>0.62</td>
<td>0.75</td>
<td>+0.13</td>
<td>N/S</td>
</tr>
</tbody>
</table>
ii) Qualitative aspects:

As with social problems, time referents, the frequency of introspections and the recognition of obstacles were considered as qualitative aspects of emotional problem-solving.

The number of subjects making at least one reference to time was generally low across groups both at pre- and post-assessments. There were no significant differences between the groups although within a very narrow frequency range CT and P-ST subjects showed positive improvements (Tables 101, 102).

TABLE 101: TIME REFERENTS: PRE-ASSESSMENT; EMOTIONAL PROBLEMS.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1 or &gt; 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>13</td>
<td>3</td>
</tr>
<tr>
<td>P-ST</td>
<td>15</td>
<td>1</td>
</tr>
<tr>
<td>PAC</td>
<td>14</td>
<td>2</td>
</tr>
</tbody>
</table>

Chi-square (2) = 1.14: N/S.
None of the within group changes in the frequency of time referents from pre- to post-assessment reached statistical significance.

The pre- and post-assessment frequency of subjects producing at least one introspection are given in Tables 103 and 104.

### Table 102: Time Referents: Post-Assessment; Emotional Problems

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1 or &gt; 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>P-ST</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>PAC</td>
<td>15</td>
<td>1</td>
</tr>
</tbody>
</table>

Chi-square (2) = 3.28; N/S.

### Table 103: Introspections: Pre-Assessment; Emotional Problems

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1 or &gt; 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>13</td>
<td>3</td>
</tr>
<tr>
<td>P-ST</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>PAC</td>
<td>14</td>
<td>2</td>
</tr>
</tbody>
</table>

Chi-square (2) = 0.33; N/S.
TABLE 104: INTROSPECTIONS: POST-ASSESSMENT; EMOTIONAL PROBLEMS.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1 or &gt; 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>P-ST</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>PAC</td>
<td>13</td>
<td>3</td>
</tr>
</tbody>
</table>

Chi-square (2) = 1.41: N/S.

There were no overall differences between the groups both at pre- and post-assessment in the frequency of subjects producing at least one introspection. None of the between or within group comparisons reached statistical significance but in general there was a trend for CT and P-ST subjects to make proportionately more frequent use of introspections than PAC subjects.

As with social problems, the frequency of subjects recognising at least one obstacle to problem solution for emotional problems was generally low overall with no significant differences between the groups at the two points of assessment. Tables 105 and 106 give the frequencies for the recognition of obstacles. The change in the ability to recognise obstacles was moderate and non-significant and occurred in the P-ST and CT groups only.
### TABLE 105: RECOGNITION OF OBSTACLES: PRE-ASSESSMENT EMOTIONAL PROBLEMS.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1 or &gt; 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>15</td>
<td>1</td>
</tr>
<tr>
<td>P-ST</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>PAC</td>
<td>15</td>
<td>1</td>
</tr>
</tbody>
</table>

Chi-square (2) = 0.55: N/S.

### TABLE 106: RECOGNITION OF OBSTACLES: POST ASSESSMENT EMOTIONAL PROBLEMS.

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1 or &gt; 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>13</td>
<td>3</td>
</tr>
<tr>
<td>P-ST</td>
<td>13</td>
<td>3</td>
</tr>
<tr>
<td>PAC</td>
<td>15</td>
<td>1</td>
</tr>
</tbody>
</table>

Chi-square (1) = 1.34: N/S.
6.3.2.1 Results Summary - Problem Solving.

1. Social Problems

a) Relevant Means:

There was no difference between the groups at pre-assessment. At post-assessment (Post-treatment) P-ST subjects were producing significantly more Relevant Means than both the CT and PAC groups. The CT and P-ST subjects showed significant improvement in their production of Relevant Means from Pre- to Post-Assessment. No such significant change was noted for the PAC group.

b) Relevancy Ratio:

In general there was no significant difference between the groups at both pre- and post-assessments. Of the three groups only the P-ST subjects showed significant improvement on this measure from Pre- to Post-Assessment.

c) Irrelevant Means:

There was no difference between the groups in the frequency of Irrelevant Means both at Pre- and Post-Assessment.

At Post-assessment the P-ST group was producing significantly proportionately less Irrelevant Means than the PAC group. None of the other group comparisons reached significance.

d) Time Referents:

Significant Pre- Post changes in the frequency of Time referents was noted only in the P-ST group. The CT group made substantial
but non-significant improvement with the PAC group showing no change at Post-assessment. The P-ST group produced significantly more Time Referents than the PAC group at Post-assessment. The other group comparisons did not reach significance.

e) Obstacles:
No significant within or between group changes from Pre- to Post-assessment were noted for any of the groups.

2. Emotional Problems.

a) Relevant Means:
At Post-assessment the CT group produced significantly more relevant means than the PAC group. The other group comparisons did not reach significance. Only the CT and P-ST groups made significant improvements in Relevant Means production from Pre- to Post-Assessment.

b) Relevancy Ratio:
There were no significant between group differences at Pre- and Post-assessment. The greatest degree of improvement was noted in the CT group.

c) Time:
None of the between and within group comparisons at Pre- and Post-assessment were significant.

d) Introspection:
There were no significant differences between the groups at Pre-
and Post-assessments.

e) Obstacles:

A modest but non-significant trend for increased recognition of obstacles was noted for the CT and P-ST groups.

6.3.3 Suicide Ideation.

Data on suicide ideation was collected on a weekly basis: Table 107 gives the descriptive statistics for the pre-treatment (PT), weekly, End of Treatment (EOT), and Follow-up (FU) scores by group.

<table>
<thead>
<tr>
<th>WEEK</th>
<th>CT</th>
<th>SD</th>
<th>M</th>
<th>SD</th>
<th>P-ST</th>
<th>M</th>
<th>SD</th>
<th>PAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT</td>
<td>12.62</td>
<td>5.20</td>
<td>13.37</td>
<td>5.12</td>
<td>12.14</td>
<td>3.53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>10.87</td>
<td>4.96</td>
<td>11.56</td>
<td>4.52</td>
<td>11.71</td>
<td>3.93</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>8.62</td>
<td>4.25</td>
<td>10.31</td>
<td>4.88</td>
<td>9.78</td>
<td>4.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>7.43</td>
<td>4.15</td>
<td>8.75</td>
<td>4.17</td>
<td>9.14</td>
<td>3.68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>6.19</td>
<td>3.19</td>
<td>7.69</td>
<td>4.11</td>
<td>7.56</td>
<td>4.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>4.94</td>
<td>3.29</td>
<td>5.69</td>
<td>3.42</td>
<td>6.36</td>
<td>3.87</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>3.50</td>
<td>2.53</td>
<td>4.56</td>
<td>3.01</td>
<td>5.14</td>
<td>3.16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>2.87</td>
<td>2.65</td>
<td>3.81</td>
<td>2.93</td>
<td>4.43</td>
<td>2.44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EOT</td>
<td>2.69</td>
<td>2.33</td>
<td>2.94</td>
<td>2.35</td>
<td>3.14</td>
<td>2.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FU</td>
<td>2.25</td>
<td>2.74</td>
<td>1.50</td>
<td>2.28</td>
<td>4.64</td>
<td>2.90</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A univariate analysis of variance was performed on the Pre-treatment suicide ideation data (Table 108). No significant differences between the groups were revealed $f(2,45) = 0.64$; N/S.

**TABLE 108: ANALYSIS OF VARIANCE**
**SUICIDE IDEATION: PRE-TREATMENT.**

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARE</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROUP</td>
<td>2</td>
<td>19.54</td>
<td>9.77</td>
<td>0.45</td>
</tr>
<tr>
<td>ERROR</td>
<td>45</td>
<td>977.93</td>
<td>21.73</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>47</td>
<td>997.47</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Non-significant.

A repeated measures analysis of covariance with the relevant pre-treatment scores as the covariate was used to analyse the suicide ideation data. The design for this analysis included one between and one within subjects factor. The between subjects factor was treatment with three levels - Cognitive Therapy (CT), Problem-solving Training (P-ST) and Psychiatric After Care (PAC). The within subjects factor was evaluation period with nine levels, weeks 1 - 7, End of Treatment (week 8), and Follow-Up.

Table 109 is the Analysis of Covariance table and shows a significant ($F(2,42) = 6.12; p<0.005$) main effect for treatment.
A significant main effect (Table 110) for evaluation period ($F(8,36) = 32.03; \ p<0.0005$) was also demonstrated in this analysis. The interaction effect between treatment and evaluation period was not significant ($F(16,70) = 1.31; \ N/S$)

**TABLE 109: REPEATED MEASURES ANALYSIS OF COVARIANCE: SUICIDE IDEATION TREATMENT (GROUP) MAIN EFFECT.**

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARE</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>WITHIN CELLS</td>
<td>42</td>
<td>714.59</td>
<td>17.01</td>
<td></td>
</tr>
<tr>
<td>REGRESSION</td>
<td>1</td>
<td>2818.58</td>
<td>2818.58</td>
<td>165.66***</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>1</td>
<td>53.44</td>
<td>53.44</td>
<td>3.14*</td>
</tr>
<tr>
<td>GROUP</td>
<td>2</td>
<td>208.38</td>
<td>104.19</td>
<td>6.12**</td>
</tr>
</tbody>
</table>

* $p < 0.08$
** $p < 0.005$
*** $p < 0.0005$

**TABLE 110: MAIN EFFECTS SUMMARY. SUICIDE IDEATION**

<table>
<thead>
<tr>
<th>EFFECT</th>
<th>DF</th>
<th>F-RATIO</th>
<th>SIGNIFICANCE LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>TREATMENT (GROUP)</td>
<td>2,42</td>
<td>6.12</td>
<td>0.005</td>
</tr>
<tr>
<td>EVALUATION PERIOD (TIME)</td>
<td>8,36</td>
<td>32.03</td>
<td>0.0005</td>
</tr>
<tr>
<td>INTERACTION (GROUP x TIME)</td>
<td>16,70</td>
<td>1.31</td>
<td>0.218</td>
</tr>
</tbody>
</table>
To assess for difference between groups, the group means were compared at three evaluation points - Mid-treatment (week 4), End of Treatment and at Follow-up. A univariate analysis of Covariance (ANCOVA) was carried out on the data at each of these points and group differences were evaluated using a t-statistic (Kerlinger and Pedhazur, 1973) for the adjusted means. Table 111 is the analysis of covariance table for the mid-treatment data suggesting a significant $F(2,44) = 3.59; \ p < 0.03$ effect for group.

**TABLE 111: UNIVARIATE ANALYSIS OF COVARIANCE: SUICIDE IDEATION: MID-TREATMENT.**

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARE</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>WITHIN CELLS</td>
<td>44</td>
<td>182.96</td>
<td>4.15</td>
<td></td>
</tr>
<tr>
<td>REGRESSION</td>
<td>1</td>
<td>466.85</td>
<td>466.85</td>
<td>112.27***</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>1</td>
<td>13.32</td>
<td>13.32</td>
<td>3.20</td>
</tr>
<tr>
<td>GROUP</td>
<td>2</td>
<td>29.84</td>
<td>14.92</td>
<td>3.59*</td>
</tr>
</tbody>
</table>

* \ p < 0.03  
*** \ p < 0.0005

Table 112 gives the observed and adjusted means and Table 113 gives the comparisons between adjusted means. At Mid-assessment there were no differences in mean levels of reported suicide ideation between the CT and P-ST groups ($t(44) = 0.90$) and between the P-ST and PAC groups ($t(44) = 0.88$). The CT group, however, reported significantly less suicide ideation than the PAC group ($T(44) = 1.78 \ p < 0.05$).
The analysis of covariance for the End of Treatment Suicide Ideation data is reported in Table 114 and this analysis suggested no significant differences between the treatment groups ($F(2,44) = 1.26$; N/S) at this point of treatment.
### TABLE 114: UNIVARIATE ANALYSIS OF COVARIANCE
SUICIDE IDEATION: END OF TREATMENT

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARE</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>WITHIN CELLS</td>
<td>44</td>
<td>171.68</td>
<td>3.90</td>
<td></td>
</tr>
<tr>
<td>REGRESSION</td>
<td>1</td>
<td>80.63</td>
<td>80.63</td>
<td>20.67***</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>1</td>
<td>1.95</td>
<td>1.95</td>
<td>0.50</td>
</tr>
<tr>
<td>GROUP</td>
<td>2</td>
<td>9.82</td>
<td>4.91</td>
<td>1.26</td>
</tr>
</tbody>
</table>

*** p < 0.0005

Table 115 gives the observed and adjusted means and Table 116 details the difference comparisons between these adjusted means.

### TABLE 115: OBSERVED AND ADJUSTED MEANS
SUICIDE IDEATION: END OF TREATMENT

<table>
<thead>
<tr>
<th>GROUP</th>
<th>OBSERVED</th>
<th>ADJUSTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>2.69</td>
<td>2.68</td>
</tr>
<tr>
<td>P-ST</td>
<td>2.94</td>
<td>2.72</td>
</tr>
<tr>
<td>PAC</td>
<td>3.44</td>
<td>3.66</td>
</tr>
</tbody>
</table>
Table 116: Adjusted Means Comparisons
Suicide Ideation: End of Treatment

<table>
<thead>
<tr>
<th></th>
<th>CT</th>
<th>P-ST</th>
<th>PAC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.68</td>
<td>2.72</td>
<td>3.66</td>
</tr>
</tbody>
</table>

CT 2.68 - 0.04 0.98
P-ST 2.72 - - 0.94
PAC 3.66 - - -

Not significant.

The univariate analysis of covariance on the Follow-up suicide ideation scores reported in Table 117 suggests significant differences again at this point of evaluation (F(2,42) = 8.38; p < 0.001).

Table 117: Univariate Analysis of Covariance
Suicide Ideation: Follow-Up

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F-Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within Cells</td>
<td>42</td>
<td>234.03</td>
<td>5.57</td>
<td></td>
</tr>
<tr>
<td>Regression</td>
<td>1</td>
<td>66.18</td>
<td>66.18</td>
<td>11.88**</td>
</tr>
<tr>
<td>Constant</td>
<td>1</td>
<td>1.53</td>
<td>1.53</td>
<td>0.27</td>
</tr>
<tr>
<td>Group</td>
<td>2</td>
<td>93.43</td>
<td>46.72</td>
<td>8.38**</td>
</tr>
</tbody>
</table>

** p < 0.001
The observed and adjusted means for the Follow-up Suicide Ideation scores are given in Table 118. Comparisons between the adjusted follow-up means (Table 119) suggested very significant differences between the CT and PAC groups (T(42) = 2.71; p < 0.005) and between the PST and PAC groups (T(42) = 3.72; p < 0.005). The CT and PST groups were reporting significantly less suicide ideation at follow-up than the PAC group. There was no difference between the CT and P-ST groups.

### Table 118: Observed and Adjusted Means
Suicide Ideation: Follow-up

<table>
<thead>
<tr>
<th>GROUP</th>
<th>OBSERVED</th>
<th>ADJUSTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>2.25</td>
<td>2.27</td>
</tr>
<tr>
<td>P-ST</td>
<td>1.50</td>
<td>1.33</td>
</tr>
<tr>
<td>PAC</td>
<td>4.64</td>
<td>4.80</td>
</tr>
</tbody>
</table>

### Table 119: Adjusted Means Comparisons
Suicide Ideation: Follow-up

<table>
<thead>
<tr>
<th></th>
<th>CT</th>
<th>P-ST</th>
<th>PAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>2.27</td>
<td>-</td>
<td>0.94</td>
</tr>
<tr>
<td>P-ST</td>
<td>1.33</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>PAC</td>
<td>4.80</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

P < 0.005
The suicide ideation observed mean scores for the three main evaluation periods together with the Pre-treatment means are displayed graphically in Figure 3.

FIGURE 3: MEAN REPORTED LEVELS OF SUICIDE IDEATION BY GROUP AT FOUR OF TEN ASSESSMENT POINTS.

PT - PRE-TREATMENT
W4 - MID TREATMENT
EOT - END OF TREATMENT
FU - FOLLOW-UP

CT
P-ST
PAC
6.3.3.1 Results Summary: Suicide Ideation.

At Pre-Treatment there was no difference between the groups on the assessed level of Suicide Ideation. Overall there was a significant main effect for Treatment and Evaluation Period.

At Mid-Treatment only the difference between the Cognitive Therapy and Psychiatric After Care groups reached significance with the Cognitive Therapy group reporting less Suicide Ideation. Other comparisons between the groups were not significant at this evaluation period.

At the End of Treatment there was no significant difference between the groups on level of suicide ideation with all groups reporting clear reductions.

By Follow-Up both the Cognitive Therapy and Problem-Solving Training groups reported significantly less suicide ideation than the Psychiatric After Care group which showed a trend for increasing suicide ideation compared to End Of Treatment levels. There was no difference between the Cognitive Therapy and Problem-Solving Training groups.

6.3.4 Depression (BDI).

The BDI Depression score was also collected on a weekly basis. Table 120 gives the descriptive statistics for the Pre-Treatment (PT) weekly, End of Treatment (EOT) and Follow-up (FU) scores by group.
A univariate analysis of variance was performed on the Pre-Treatment BDI Depression data (Table 121). No significant differences between the groups in the severity of depression was shown ($F(2,45) = 0.03; N/S$).
The BDI Depression scores were analysed using a repeated measures analyses of covariance with the relevant Pre-treatment scores as covariate. As with the Suicide Ideation data the design for the analysis included one between subject factor i.e. treatment with three levels, and one within subject factor - evaluation period with nine levels.

Table 122 is the analysis of covariance table showing no significant main effect for treatment ($F(2,42) = 1.83; N/S$).

Significant main effects (Table 123) for evaluation period ($F(8,36) = 54.38; p < 0.0005$) and for the interaction between evaluation period and treatment ($F(16,74) = 1.74; p < 0.059$) were demonstrated.
TABLE 122: REPEATED MEASURES ANALYSIS OF COVARIANCE:
DEPRESSION: TREATMENT (GROUP) MAIN EFFECT

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARE</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>WITHIN CELLS</td>
<td>42</td>
<td>2205.10</td>
<td>52.50</td>
<td></td>
</tr>
<tr>
<td>REGRESSION</td>
<td>1</td>
<td>9746.82</td>
<td>9746.82</td>
<td>185.64***</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>1</td>
<td>0.53</td>
<td>0.53</td>
<td>0.01</td>
</tr>
<tr>
<td>GROUP</td>
<td>2</td>
<td>192.22</td>
<td>96.11</td>
<td>1.83</td>
</tr>
</tbody>
</table>

*** p < 0.0005

TABLE 123: MAIN EFFECT SUMMARY.
DEPRESSION

<table>
<thead>
<tr>
<th>EFFECT</th>
<th>DF</th>
<th>F-RATIO</th>
<th>SIGNIFICANCE LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>TREATMENT (GROUP)</td>
<td>2,42</td>
<td>1.83</td>
<td>0.173</td>
</tr>
<tr>
<td>EVALUATION PERIOD (TIME)</td>
<td>8,36</td>
<td>54.37</td>
<td>0.0005</td>
</tr>
<tr>
<td>INTERACTION (GROUPxTIME)</td>
<td>16,70</td>
<td>1.74</td>
<td>0.059</td>
</tr>
</tbody>
</table>

Differences between the groups were assessed at three evaluation points - at Mid-treatment, End of Treatment and at Follow-up. Table 124 is the covariance table for Mid-treatment depression scores. At
Mid-treatment there was no significant difference between the groups in the self-reported level of depression ($F(2,44) = 1.87; \text{N/S}$).

**TABLE 124: UNIVARIATE ANALYSIS OF COVARIANCE**

**DEPRESSION: MID-TREATMENT**

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARE</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>WITHIN CELLS</td>
<td>44</td>
<td>514.87</td>
<td>11.70</td>
<td></td>
</tr>
<tr>
<td>REGRESSION</td>
<td>1</td>
<td>1448.01</td>
<td>1448.01</td>
<td>123.74***</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>1</td>
<td>0.02</td>
<td>0.02</td>
<td>0.0002</td>
</tr>
<tr>
<td>GROUP</td>
<td>2</td>
<td>43.68</td>
<td>21.84</td>
<td>1.87</td>
</tr>
</tbody>
</table>

$p < 0.0005$

Table 125 gives the observed and adjusted means for the Mid-treatment depression scores and Table 126 gives the differences between adjusted means.

**TABLE 125: OBSERVED AND ADJUSTED MEANS**

**DEPRESSION: MID-TREATMENT**

<table>
<thead>
<tr>
<th>GROUP</th>
<th>OBSERVED</th>
<th>ADJUSTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>16.06</td>
<td>16.07</td>
</tr>
<tr>
<td>P-ST</td>
<td>18.00</td>
<td>18.24</td>
</tr>
<tr>
<td>PAC</td>
<td>18.14</td>
<td>17.86</td>
</tr>
</tbody>
</table>
TABLE 126: ADJUSTED MEANS COMPARISONS
DEPRESSION: MID-TREATMENT

<table>
<thead>
<tr>
<th></th>
<th>CT 16.07</th>
<th>P-ST 18.24</th>
<th>PAC 17.86</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>16.07</td>
<td>-</td>
<td>2.17</td>
</tr>
<tr>
<td>P-ST</td>
<td>-</td>
<td>-</td>
<td>0.38</td>
</tr>
<tr>
<td>PAC</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Non-significant.

The analysis of covariance for the End of Treatment BDI depression data is reported in Table 127. There is a highly significant difference between the groups at this point in treatment ($F(2,44) = 5.86; p < 0.006$).

TABLE 127: UNIVARIATE ANALYSIS OF COVARIANCE
DEPRESSION: END OF TREATMENT

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARE</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>WITHIN CELLS</td>
<td>44</td>
<td>431.53</td>
<td>9.81</td>
<td></td>
</tr>
<tr>
<td>REGRESSION</td>
<td>1</td>
<td>376.60</td>
<td>376.60</td>
<td>38.40***</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>1</td>
<td>13.50</td>
<td>13.50</td>
<td>1.38</td>
</tr>
<tr>
<td>GROUP</td>
<td>2</td>
<td>114.88</td>
<td>57.44</td>
<td>5.86**</td>
</tr>
</tbody>
</table>

** $p < 0.006$
*** $p < 0.0005$
Details of the End of Treatment Depression Observed and adjusted means are given in Table 128 and comparison between adjusted means are displayed in Table 129. At the End of Treatment the CT group was significantly less depressed ($t(44) = 2.71; p < 0.005$) than the PAC group: the P-ST subjects were also significantly less depressed than the PAC subjects ($t(44) = 2.11; p < 0.025$). There was no difference in terms of improvement between the CT and P-ST groups ($t(44) = 0.60; N/S$).

**TABLE 128: OBSERVED AND ADJUSTED MEANS**

**DEPRESSION: END OF TREATMENT**

<table>
<thead>
<tr>
<th>GROUP</th>
<th>OBSERVED</th>
<th>ADJUSTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>5.69</td>
<td>5.57</td>
</tr>
<tr>
<td>P-ST</td>
<td>6.37</td>
<td>6.37</td>
</tr>
<tr>
<td>PAC</td>
<td>9.06</td>
<td>9.18</td>
</tr>
</tbody>
</table>

**TABLE 129: ADJUSTED MEANS COMPARISONS**

**DEPRESSION: END OF TREATMENT**

<table>
<thead>
<tr>
<th></th>
<th>CT</th>
<th>P-ST</th>
<th>PAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>5.57</td>
<td>-</td>
<td>0.80</td>
</tr>
<tr>
<td>P-ST</td>
<td>6.37</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>PAC</td>
<td>9.18</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

** p < 0.005
At the follow-up evaluation (Table 130) the univariate analysis of covariance suggested significant differences in mean level of depression between the groups ($F(2,42) = 8.17; p < 0.001$).

**TABLE 130: UNIVARIATE ANALYSIS OF COVARIANCE**

**DEPRESSION: FOLLOW-UP**

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARE</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>WITHIN CELLS</td>
<td>42</td>
<td>311.16</td>
<td>7.41</td>
<td></td>
</tr>
<tr>
<td>REGRESSION</td>
<td>1</td>
<td>231.58</td>
<td>231.58</td>
<td>31.26***</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>1</td>
<td>5.81</td>
<td>5.81</td>
<td>0.78</td>
</tr>
<tr>
<td>GROUP</td>
<td>2</td>
<td>121.11</td>
<td>60.53</td>
<td>8.17**</td>
</tr>
</tbody>
</table>

** ** $p < 0.001$

*** $p < 0.0005$

The Follow-up Depression observed and adjusted means are given in Table 131 and comparisons between the adjusted means are detailed in Table 132. At Follow-up the CT group was significantly ($t(44) = 2.54; p < 0.01$) less depressed than the PAC group; the P-ST group was also reporting significantly ($t(44) = 2.96; p < 0.005$) less depression than the PAC group. There was no difference between the CT and P-ST groups ($t(44) = 0.42; N/S$). Thus the differences that obtained at the End of Treatment between the groups in terms of relative improvements in depression were maintained at Follow-up.
### TABLE 131: OBSERVED AND ADJUSTED MEANS
**DEPRESSION: FOLLOW-UP**

<table>
<thead>
<tr>
<th>GROUP</th>
<th>OBSERVED</th>
<th>ADJUSTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>7.44</td>
<td>7.44</td>
</tr>
<tr>
<td>P-ST</td>
<td>6.81</td>
<td>6.91</td>
</tr>
<tr>
<td>PAC</td>
<td>10.79</td>
<td>10.67</td>
</tr>
</tbody>
</table>

### TABLE 132: ADJUSTED MEANS COMPARISONS
**DEPRESSION: FOLLOW-UP**

<table>
<thead>
<tr>
<th></th>
<th>CT</th>
<th>P-ST</th>
<th>PAC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7.44</td>
<td>6.91</td>
<td>10.67</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GROUP</th>
<th>DIFFERENCE</th>
<th>p-VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>-0.53</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>P-ST</td>
<td>-3.76</td>
<td>&lt;0.005</td>
</tr>
<tr>
<td>PAC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < 0.01
** p < 0.005

The BDI depression observed mean scores for the three mean evaluation periods together with the pre-treatment means are displayed graphically in Figure 4.
FIGURE 4: MEAN REPORTED LEVELS OF DEPRESSION (BDI) BY GROUP AT FOUR OF TEN ASSESSMENT POINTS.

PT - PRE-TREATMENT
W4 - MID TREATMENT
EOT - END OF TREATMENT
FU - FOLLOW-UP

CT - ○ - ○ - ○
P-ST - - - - - - - - - - - -
PAC - · · · · · · · · · · · ·
6.3.4.1 Results Summary: Depression

At Pre-Treatment there was no difference between the groups on the self-reported level of depression. The repeated measures Analysis of Covariance suggested no significant main effects for Treatment. There were however, significant main effects for Evaluation Period and for the Interaction.

At Mid-Treatment all group reported reductions in the level of depression with no significant differences between the groups.

At the End of Treatment, however, the Cognitive Therapy and Problem-Solving Training groups were reporting significantly less depression than the Psychiatric After Care group. The Cognitive Therapy and Problem-Solving Training groups were not significantly different.

The Cognitive Therapy and Problem-Solving Training groups were also not different in the level of reported depression at Follow-Up. However, both of these groups reported significantly less depression than the Psychiatric After Care group at this point.

6.3.5 Hopelessness

Descriptive statistics for the Hopelessness data collected on a weekly basis are given in Table 133.
TABLE 133: HOPELESSNESS: DESCRIPTIVE STATISTICS
PRE-TREATMENT (PT), WEEKLY, END OF TREATMENT (EOT)
AND FOLLOW-UP (FU) SCORES.

<table>
<thead>
<tr>
<th>WEEK</th>
<th>CT M</th>
<th>SD</th>
<th>P-ST M</th>
<th>SD</th>
<th>PAC M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT</td>
<td>11.94</td>
<td>2.59</td>
<td>11.94</td>
<td>2.78</td>
<td>11.87</td>
<td>3.16</td>
</tr>
<tr>
<td>1</td>
<td>11.50</td>
<td>2.87</td>
<td>10.80</td>
<td>3.23</td>
<td>11.20</td>
<td>2.98</td>
</tr>
<tr>
<td>2</td>
<td>10.44</td>
<td>2.45</td>
<td>9.67</td>
<td>3.11</td>
<td>10.27</td>
<td>2.68</td>
</tr>
<tr>
<td>3</td>
<td>8.81</td>
<td>2.07</td>
<td>8.87</td>
<td>2.56</td>
<td>9.20</td>
<td>2.76</td>
</tr>
<tr>
<td>4</td>
<td>7.75</td>
<td>2.26</td>
<td>8.00</td>
<td>2.30</td>
<td>9.06</td>
<td>2.89</td>
</tr>
<tr>
<td>5</td>
<td>6.31</td>
<td>2.35</td>
<td>7.60</td>
<td>1.92</td>
<td>8.06</td>
<td>2.34</td>
</tr>
<tr>
<td>6</td>
<td>5.81</td>
<td>2.43</td>
<td>6.40</td>
<td>2.10</td>
<td>7.13</td>
<td>2.17</td>
</tr>
<tr>
<td>7</td>
<td>4.81</td>
<td>2.48</td>
<td>5.60</td>
<td>1.88</td>
<td>6.53</td>
<td>2.42</td>
</tr>
<tr>
<td>EOT</td>
<td>4.44</td>
<td>2.19</td>
<td>4.56</td>
<td>1.71</td>
<td>5.69</td>
<td>2.27</td>
</tr>
<tr>
<td>FU</td>
<td>4.12</td>
<td>2.12</td>
<td>4.87</td>
<td>1.54</td>
<td>7.00</td>
<td>3.16</td>
</tr>
</tbody>
</table>

A univariate analysis of variance performed on the Pre-Treatment Hopelessness data (Table 134) highlighted no statistically significant differences between the groups ($F(2,45) = 0.05; N/S$).
TABLE 134: ANALYSIS OF VARIANCE
HOPELESSNESS: PRE-TREATMENT

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARE</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROUP</td>
<td>2</td>
<td>0.79</td>
<td>0.39</td>
<td>0.05</td>
</tr>
<tr>
<td>ERROR</td>
<td>45</td>
<td>373.12</td>
<td>8.29</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>47</td>
<td>373.91</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Non-significant.

The Hopelessness Scores were analysed using a repeated measures analysis of covariance with the Pre-treatment scores as covariate.

There was a statistically significant (Table 135) main effect for treatment ($F(2,42) = 3.41; p < 0.04$), a highly significant main effect for evaluation period $F(8,36) = 53.24; p < 0.0005$ (Table 136) and the interaction main effect (treatment x evaluation period) was also significant ($F(16,70) = 1.77; p < 0.05$).
TABLE 135: REPEATED MEASURES ANALYSIS OF COVARIANCE
HOPELESSNESS: TREATMENT (GROUP) MAIN EFFECT.

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARE</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>WITHIN CELLS</td>
<td>42</td>
<td>562.00</td>
<td>13.38</td>
<td></td>
</tr>
<tr>
<td>REGRESSION</td>
<td>1</td>
<td>1261.45</td>
<td>1261.45</td>
<td>94.27***</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>1</td>
<td>0.39</td>
<td>0.39</td>
<td>0.002</td>
</tr>
<tr>
<td>GROUP</td>
<td>2</td>
<td>91.32</td>
<td>45.66</td>
<td>3.41*</td>
</tr>
</tbody>
</table>

* p < 0.04  
*** p < 0.0005

TABLE 136: MAIN EFFECT SUMMARY:  
HOPELESSNESS

<table>
<thead>
<tr>
<th>EFFECT</th>
<th>DF</th>
<th>F-RATIO</th>
<th>SIGNIFICANCE LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>TREATMENT (GROUP)</td>
<td>2,42</td>
<td>3.41</td>
<td>0.04</td>
</tr>
<tr>
<td>EVALUATION PERIOD (TIME)</td>
<td>8,36</td>
<td>53.24</td>
<td>0.0005</td>
</tr>
<tr>
<td>INTERACTION (GROUPxTIME)</td>
<td>16,70</td>
<td>1.77</td>
<td>0.05</td>
</tr>
</tbody>
</table>

Differences between the groups were assessed at three key evaluation points - Mid-Treatment, End of Treatment and at Follow-up.
Table 137 gives the analysis of covariance for the Mid-treatment hopelessness scores. At Mid-treatment there was no significant differences between the groups with regard to the reported level of experienced hopelessness ($F(2,44) = 2.48; p < 0.09$).

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARE</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>WITHIN CELLS</td>
<td>44</td>
<td>105.44</td>
<td>2.40</td>
<td></td>
</tr>
<tr>
<td>REGRESSION</td>
<td>1</td>
<td>176.49</td>
<td>176.50</td>
<td>73.65</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>1</td>
<td>0.01</td>
<td>0.01</td>
<td>0.002</td>
</tr>
<tr>
<td>GROUP</td>
<td>2</td>
<td>11.89</td>
<td>5.94</td>
<td>2.48*</td>
</tr>
</tbody>
</table>

* $p < 0.09$

Tables 138 and 139 give the observed and adjusted means and the differences between adjusted means for the Mid-treatment hopelessness scores.
The End of Treatment univariate analysis of covariance highlighted no significant differences ($F(2,44) = 2.25; p < 0.118$: Table 140) between the groups. The observed and adjusted means used in this analysis are given in Table 141 and the adjusted means comparisons are made in Table 142.
### TABLE 140: UNIVARIATE ANALYSIS OF COVARIANCE
HOPELESSNESS: END OF TREATMENT

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARE</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>WITHIN CELLS</td>
<td>44</td>
<td>124.06</td>
<td>2.82</td>
<td></td>
</tr>
<tr>
<td>REGRESSION</td>
<td>1</td>
<td>69.25</td>
<td>69.25</td>
<td>24.56***</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>1</td>
<td>0.16</td>
<td>0.16</td>
<td>0.06</td>
</tr>
<tr>
<td>GROUP</td>
<td>2</td>
<td>12.67</td>
<td>12.67</td>
<td>2.25*</td>
</tr>
</tbody>
</table>

*** p < 0.0005  
* Non-significant

### TABLE 141: OBSERVED AND ADJUSTED MEANS
HOPELESSNESS: END OF TREATMENT

<table>
<thead>
<tr>
<th>GROUP</th>
<th>OBSERVED</th>
<th>ADJUSTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>4.44</td>
<td>4.44</td>
</tr>
<tr>
<td>P-ST</td>
<td>4.56</td>
<td>4.63</td>
</tr>
<tr>
<td>PAC</td>
<td>5.69</td>
<td>5.62</td>
</tr>
</tbody>
</table>
TABLE 142: ADJUSTED MEANS COMPARISONS
HOPELESSNESS: END OF TREATMENT

<table>
<thead>
<tr>
<th></th>
<th>CT</th>
<th>P-ST</th>
<th>PAC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4.44</td>
<td>4.63</td>
<td>5.62</td>
</tr>
</tbody>
</table>

CT  4.44 - 0.19 1.18
P-ST 4.63 - - 0.99
PAC 5.62 - - -

Non-significant

At Follow-up evaluation (Table 143) the univariate analysis of covariance suggests significant differences in the mean levels of experienced hopelessness between the groups (F(43,2) = 8.52; p < 0.001).

TABLE 143: UNIVARIATE ANALYSIS OF COVARIANCE
HOPELESSNESS: FOLLOW-UP

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARE</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>WITHIN CELLS</td>
<td>43</td>
<td>174.69</td>
<td>4.06</td>
<td></td>
</tr>
<tr>
<td>REGRESSION</td>
<td>1</td>
<td>68.80</td>
<td>68.80</td>
<td>16.94***</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>1</td>
<td>0.04</td>
<td>0.04</td>
<td>0.01</td>
</tr>
<tr>
<td>GROUP</td>
<td>2</td>
<td>69.20</td>
<td>34.60</td>
<td>8.52**</td>
</tr>
</tbody>
</table>

** p < 0.001
*** p < 0.0005

333
Table 144 gives the Follow-up hopelessness observed and adjusted means; Table 145 gives the adjusted means comparisons.

At Follow-up the Cognitive Therapy group reported significantly lower mean levels of hopelessness than the Psychiatric After Care group ($t(43) = 3.68; p < 0.005$) and the Problem-Solving Training group also reported significantly less hopelessness than the Psychiatric After Care group ($t(43) = 2.66; p < 0.005$). There was no significant difference in mean level of experienced hopelessness between the Cognitive Therapy and Problem-Solving Training groups ($T(43) = 1.01; \text{N/S}$).

<table>
<thead>
<tr>
<th>GROUP</th>
<th>OBSERVED</th>
<th>ADJUSTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>4.12</td>
<td>4.09</td>
</tr>
<tr>
<td>P-ST</td>
<td>4.87</td>
<td>4.90</td>
</tr>
<tr>
<td>PAC</td>
<td>7.00</td>
<td>7.00</td>
</tr>
</tbody>
</table>

TABLE 144: OBSERVED AND ADJUSTED MEANS
HOPELESSNESS: FOLLOW-UP
### Table 145: Adjusted Means Comparisons

**Hopelessness: Follow-up**

<table>
<thead>
<tr>
<th></th>
<th>CT</th>
<th>P-ST</th>
<th>PAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.09</td>
<td>-</td>
<td>0.81</td>
<td>2.91**</td>
</tr>
<tr>
<td>4.90</td>
<td>-</td>
<td>-</td>
<td>2.10**</td>
</tr>
<tr>
<td>7.00</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**p < 0.005**

The hopelessness observed mean scores for the three main evaluation periods together with the Pre-treatment means are displayed graphically (Figure 5).
FIGURE 5: MEAN REPORTED LEVELS OF HOPELESSNESS BY GROUP AT FOUR OF TEN ASSESSMENT POINTS.

TREATMENT PERIOD

PT - PRE-TREATMENT
W4 - MID TREATMENT
EOT - END OF TREATMENT
FU - FOLLOW-UP

COGNITIVE THERAPY
PROBLEM-SOLVING TRAINING
PSYCHIATRIC AFTER CARE
6.3.5.1 RESULTS SUMMARY: HOPELESSNESS

The Pre-treatment assessment suggested no differences between the groups in level of experienced hopelessness.

At both Mid-treatment and End of Treatment evaluations all groups were reporting reduced hopelessness scores with no significant differences between the groups.

However, at Follow-up both the Cognitive Therapy and Problem-Solving Training groups were significantly less hopeless than the Problem-Solving Training group and not significantly different between themselves.

6.3.6 Social Dysfunction: Total score.

The social dysfunction data was collected at three evaluation points - Pre-Treatment, End of Treatment and at Follow-up. Table 146 gives the descriptive statistics for the social dysfunction total scores with smaller scores indicating more effective social functioning.

<table>
<thead>
<tr>
<th>WEEK</th>
<th>CT M</th>
<th>SD</th>
<th>P-ST M</th>
<th>SD</th>
<th>PAC M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT</td>
<td>67.56</td>
<td>17.85</td>
<td>69.75</td>
<td>16.14</td>
<td>75.25</td>
<td>12.46</td>
</tr>
<tr>
<td>EOT</td>
<td>58.94</td>
<td>15.38</td>
<td>51.00</td>
<td>11.84</td>
<td>57.69</td>
<td>15.82</td>
</tr>
<tr>
<td>FU</td>
<td>51.56</td>
<td>13.22</td>
<td>32.75</td>
<td>7.36</td>
<td>59.69</td>
<td>12.69</td>
</tr>
</tbody>
</table>
A univariate analysis of variance was performed on the Pre-Treatment Social Dysfunction Total Scores (Table 147). No significant difference in social dysfunction between the groups were revealed (F(2,45) = 1.02; N/S).

TABLE 147: ANALYSIS OF VARIANCE
SOCIAL DYSFUNCTION (TOTAL): PRE-TREATMENT

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARE</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROUP</td>
<td>2</td>
<td>502.04</td>
<td>251.02</td>
<td>1.02</td>
</tr>
<tr>
<td>ERROR</td>
<td>45</td>
<td>11015.04</td>
<td>244.80</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>47</td>
<td>11517.08</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Non-significant.

A repeated measures analysis of covariance with the Pre-treatment scores as covariate was used to analyse the Social Dysfunction (TOTAL) data. The between subjects factor was treatment with three levels and the within subject factor was evaluation period with two levels - End of Treatment and Follow-Up.

There was a significant main effect for treatment (F(2,44) = 30.49; p < 0.0005; Table 148). A significant main effect (Table 149) for evaluation period (F(1,44) = 218.72; p < 0.0005) was demonstrated. The interaction effect was also significant (F(4,86) = 25.34; p < 0.0005).
To assess for differences between the groups in mean level of social dysfunction (TOTAL) univariate analyses of covariance were carried out on the data at each of the evaluation points - End of Treatment and
Follow-Up. Group differences were compared using the adjusted means. Table 150 is the analysis of covariance for the End of Treatment data suggesting a significant difference between the groups at this point (F(2,44) = 6.27; p < 0.004).

**TABLE 150: UNIVARIATE ANALYSIS OF COVARIANCE
SOCIAL DYSFUNCTION (TOTAL) : END OF TREATMENT**

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARE</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>WITHIN CELLS</td>
<td>44</td>
<td>2996.57</td>
<td>68.10</td>
<td></td>
</tr>
<tr>
<td>REGRESSION</td>
<td>1</td>
<td>8195.80</td>
<td>8195.80</td>
<td>120.34***</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>1</td>
<td>57.62</td>
<td>57.62</td>
<td>0.85</td>
</tr>
<tr>
<td>GROUP</td>
<td>2</td>
<td>853.56</td>
<td>426.78</td>
<td>6.27**</td>
</tr>
</tbody>
</table>

** p < 0.004
*** p < 0.0005

Table 151 gives the observed and adjusted means and the comparisons between means adjusted for the covariate are given in Table 152. At the End of Treatment the Cognitive Therapy group was reporting significantly higher mean levels of social dysfunction (Total) than the Problem-Solving Training group (t(44) = 2.19; p < 0.025) and the Psychiatric After Care group (t(44) = 1.76; p < 0.05). There was no difference between the Problem-Solving Training and Psychiatric After Care groups on reported level of Social Dysfunction at the End of treatment.
### Table 151: Observed and Adjusted Means
**Social Dysfunction (Total): End of Treatment**

<table>
<thead>
<tr>
<th>GROUP</th>
<th>OBSERVED</th>
<th>ADJUSTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>58.94</td>
<td>61.78</td>
</tr>
<tr>
<td>P-ST</td>
<td>51.00</td>
<td>51.95</td>
</tr>
<tr>
<td>PAC</td>
<td>57.68</td>
<td>53.89</td>
</tr>
</tbody>
</table>

### Table 152: Adjusted Means Comparisons
**Social Dysfunction (Total): End of Treatment**

<table>
<thead>
<tr>
<th></th>
<th>CT</th>
<th>P-ST</th>
<th>PAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>61.78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-ST</td>
<td>51.95</td>
<td>9.83**</td>
<td>1.94</td>
</tr>
<tr>
<td>PAC</td>
<td>53.89</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < 0.05

** p < 0.025

The univariate analysis of covariance on the Follow-up Social Dysfunction (Total) scores is reported in Table 153 and suggests highly significant differences between the groups at this evaluation period (F(2, 44) = 94.20; p < 0.0005).

341
The observed and adjusted means for the Follow-up Social Dysfunction (TOTAL) scores are given in Table 154. Comparisons between the adjusted Follow-up means (Table 155) suggested that the Problem-Solving Training group was reporting significantly less social dysfunction (TOTAL) than both the Cognitive Therapy ($t(44) = 7.95; p < 0.005$) and Psychiatric After Care groups ($t(44) = 9.20; p < 0.005$). There was no difference between the Cognitive Therapy and Psychiatric After Care groups ($t(44) = 1.23; N/S$) on this measure although the trend was in favour of the Cognitive Therapy group reporting less social dysfunction (TOTAL) than the Psychiatric After Care group.
TABLE 154: OBSERVED AND ADJUSTED MEANS
SOCIAL DYSFUNCTION (TOTAL): FOLLOW-UP

<table>
<thead>
<tr>
<th>GROUP</th>
<th>OBSERVED</th>
<th>ADJUSTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>51.56</td>
<td>53.70</td>
</tr>
<tr>
<td>P-ST</td>
<td>32.75</td>
<td>33.46</td>
</tr>
<tr>
<td>PAC</td>
<td>59.69</td>
<td>56.83</td>
</tr>
</tbody>
</table>

TABLE 155: ADJUSTED MEANS COMPARISONS
SOCIAL DYSFUNCTION (TOTAL): FOLLOW-UP

<table>
<thead>
<tr>
<th></th>
<th>CT</th>
<th>P-ST</th>
<th>PAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>53.70</td>
<td>-</td>
<td>20.24**</td>
</tr>
<tr>
<td>P-ST</td>
<td>33.46</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>PAC</td>
<td>56.83</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

** p < 0.005

The Social Dysfunction (TOTAL) observed mean scores for the two evaluation periods together with the Pre-Treatment means are displayed graphically in Figure 6.
FIGURE 6: MEAN ASSESSED LEVEL OF SOCIAL DYSFUNCTION (TOTAL)

TREATMENT PERIOD

PT - PRE-TREATMENT
EOT - END OF TREATMENT
FU - FOLLOW-UP

COGNITIVE THERAPY
PROBLEM-SOLVING TRAINING
PSYCHIATRIC AFTER CARE
6.3.6.1 Social Dysfunction: Self System

The Social Dysfunction ratings were also analysed by factor and a series of multivariate and univariate group comparisons were carried out on the three factors - self system (SDRS-SS), Interpersonal System (SDRS-IS) and the Performance System (SDRS-PS).

**TABLE 156: SOCIAL DYSFUNCTION (SDRS-SS). DESCRIPTIVE STATISTICS PRE-TREATMENT (PT), END OF TREATMENT (EOT) AND FOLLOW-UP (FU) SCORES**

<table>
<thead>
<tr>
<th>WEEK</th>
<th>CT M</th>
<th>CT SD</th>
<th>P-ST M</th>
<th>P-ST SD</th>
<th>PAC M</th>
<th>PAC SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT</td>
<td>12.56</td>
<td>4.35</td>
<td>13.87</td>
<td>2.68</td>
<td>13.94</td>
<td>3.35</td>
</tr>
<tr>
<td>EOT</td>
<td>10.62</td>
<td>3.68</td>
<td>10.94</td>
<td>2.29</td>
<td>10.75</td>
<td>2.64</td>
</tr>
<tr>
<td>FU</td>
<td>9.25</td>
<td>3.13</td>
<td>6.75</td>
<td>2.02</td>
<td>10.56</td>
<td>2.53</td>
</tr>
</tbody>
</table>

A univariate analysis of variance on the pre-treatment SDRS-SS data revealed no differences between the groups (F2,45 = 0.77; N/S) - Table 157.
TABLE 157: UNIVARIATE ANALYSIS OF VARIANCE
SOCIAL DYSFUNCTION (SDRS-SS): PRE-TREATMENT

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARE</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROUP</td>
<td>2</td>
<td>19.29</td>
<td>9.65</td>
<td>0.77</td>
</tr>
<tr>
<td>ERROR</td>
<td>45</td>
<td>560.62</td>
<td>12.46</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>47</td>
<td>579.92</td>
<td>12.34</td>
<td></td>
</tr>
</tbody>
</table>

Non-significant.

A repeated measures analysis of covariance on the SDRS-SS data with the Pre-Treatment scores as covariate showed significant main effects for treatment ($F(2,44) = 11.36; p < 0.0005$) - Table 158, evaluation period ($F(1,44) = 104.99; p < 0.0005$) and the interaction ($F(4,86) = 11.71; p < 0.0005$) - Table 159

TABLE 158: REPEATED MEASURES ANALYSIS OF COVARIANCE
SOCIAL DYSFUNCTION (SDRS-SS): TREATMENT (GROUP)
MAIN EFFECT

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARE</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>WITHIN CELLS</td>
<td>44</td>
<td>95.92</td>
<td>2.18</td>
<td></td>
</tr>
<tr>
<td>REGRESSION</td>
<td>1</td>
<td>1011.70</td>
<td>1011.70</td>
<td>464.07***</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>1</td>
<td>3.03</td>
<td>3.03</td>
<td>0.39</td>
</tr>
<tr>
<td>GROUP</td>
<td>2</td>
<td>49.52</td>
<td>24.76</td>
<td>11.36***</td>
</tr>
</tbody>
</table>

*** $p < 0.0005$
Differences between the groups on the mean level of SDRS-SS were assessed at each of the two evaluation periods - End of Treatment and at Follow-up. A univariate analysis of covariance on the SDRS-SS End of Treatment data suggested no significant differences between the groups at this point ($F(2,44) = 2.24; \ N/S$) - Table 160. The observed and adjusted means and the adjusted means comparisons are given in Table 161 and Table 162 respectively.
### Table 160: Univariate Analysis of Covariance

Social Dysfunction (SDRS-SS): End of Treatment

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F-Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within Cells</td>
<td>44</td>
<td>68.03</td>
<td>1.54</td>
<td></td>
</tr>
<tr>
<td>Regression</td>
<td>1</td>
<td>317.65</td>
<td>317.65</td>
<td>205.43***</td>
</tr>
<tr>
<td>Constant</td>
<td>1</td>
<td>1.19</td>
<td>1.19</td>
<td>0.77</td>
</tr>
<tr>
<td>Group</td>
<td>2</td>
<td>6.92</td>
<td>3.46</td>
<td>2.24</td>
</tr>
</tbody>
</table>

*** p < 0.005

### Table 161: Observed and Adjusted Means

Social Dysfunction (SDRS): End of Treatment

<table>
<thead>
<tr>
<th>Group</th>
<th>Observed</th>
<th>Adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>10.62</td>
<td>11.30</td>
</tr>
<tr>
<td>P-ST</td>
<td>10.94</td>
<td>10.62</td>
</tr>
<tr>
<td>PAC</td>
<td>10.75</td>
<td>10.39</td>
</tr>
</tbody>
</table>
The univariate analysis of covariance of the Follow-up Social Dysfunction (SDRS-SS) data is reported in Table 163 and reveals highly significant differences between the groups at this evaluation period (F(2,44) = 24.63; p < 0.0005).
The observed and adjusted means for the Follow-up SDRS-SS scores are given in Table 164. Comparisons between the adjusted means (Table 165) revealed that the Problem-Solving Training group was reporting significantly less social dysfunction in the Self System (SDRS-SS) than both the Cognitive Therapy \( (t(44) = 6.34; p < 0.005) \) and the Psychiatric After Care \( (t(44) = 7.41; p < 0.005) \) groups. The trend for the Cognitive Therapy group to report less Self System dysfunction than the Psychiatric After Care group was non-significant \( (t(44) = 1.04; N/S) \).

### Table 164: Observed and Adjusted Means

Social Dysfunction (SDRS-SS)—Follow-Up

<table>
<thead>
<tr>
<th>GROUP</th>
<th>OBSERVED</th>
<th>ADJUSTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>9.25</td>
<td>9.76</td>
</tr>
<tr>
<td>P-ST</td>
<td>6.75</td>
<td>6.51</td>
</tr>
<tr>
<td>PAC</td>
<td>10.56</td>
<td>10.29</td>
</tr>
</tbody>
</table>

### Table 165: Adjusted Means Comparisons

Social Dysfunction (SDRS-SS): Follow-Up

<table>
<thead>
<tr>
<th></th>
<th>CT</th>
<th>P-ST</th>
<th>PAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>9.76</td>
<td>-</td>
<td>3.25**</td>
</tr>
<tr>
<td>P-ST</td>
<td>6.51</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>PAC</td>
<td>10.29</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

** \( p < 0.005 \)
The Social Dysfunction (SDRS-SS) observed mean scores for the two evaluation periods together with the Pre-treatment means are displayed graphically in Figure 7.

6.3.6.2 Social Dysfunction: Interpersonal System

Descriptive statistics for the Social Dysfunction Interpersonal System (SDRS-IS) scores at Pre-Treatment, End of Treatment and at Follow-up are given in Table 166.

<table>
<thead>
<tr>
<th>WEEK</th>
<th>CT M</th>
<th>CT SD</th>
<th>P-ST M</th>
<th>P-ST SD</th>
<th>PAC M</th>
<th>PAC SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT</td>
<td>16.81</td>
<td>6.09</td>
<td>17.00</td>
<td>5.49</td>
<td>20.12</td>
<td>3.36</td>
</tr>
<tr>
<td>EOT</td>
<td>14.62</td>
<td>5.29</td>
<td>13.44</td>
<td>3.72</td>
<td>17.06</td>
<td>4.14</td>
</tr>
<tr>
<td>FU</td>
<td>12.06</td>
<td>4.15</td>
<td>8.50</td>
<td>2.31</td>
<td>17.12</td>
<td>3.70</td>
</tr>
</tbody>
</table>

There was no significant difference ($F(2,45) = 2.11; N/S$) between the groups on the level of Pre-Treatment SDRS-IS (Table 167).
FIGURE 7: MEAN ASSESSED LEVEL OF SOCIAL DYSFUNCTION (SDRS-SS).

EVALUATION PERIOD

PT - PRE-TREATMENT
EOT - END OF TREATMENT
FU - FOLLOW-UP

COGNITIVE THERAPY
PROBLEM-SOLVING TRAINING
PSYCHIATRIC AFTER CARE
TABLE 167: UNIVARIATE ANALYSIS OF VARIANCE
SOCIAL DYSFUNCTION (SDRS-IS): PRE-TREATMENT

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>SUMS OF SQUARES</th>
<th>MEAN SQUARES</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROUP</td>
<td>2</td>
<td>110.79</td>
<td>55.40</td>
<td>2.11</td>
</tr>
<tr>
<td>ERROR</td>
<td>45</td>
<td>1178.19</td>
<td>26.18</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>47</td>
<td>1288.98</td>
<td>27.42</td>
<td></td>
</tr>
</tbody>
</table>

Non-significant

A repeated measures analysis of covariance on the SDRS-IS End of Treatment data with the Pre-treatment scores as covariate revealed significant main effects for treatment ($F(2,44) = 25.07; p < 0.001$) – Table 168, evaluation period ($F(1,44) = 78.94; p < 0.0005$) and for the interaction ($F(4,86) = 8.92; p < 0.005$) – Table 169.

TABLE 168: REPEATED MEASURES ANALYSIS OF COVARIANCE
SOCIAL DYSFUNCTION (SDRS-IS): TREATMENT (GROUP)
MAIN EFFECT

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARE</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>WITHIN CELLS</td>
<td>44</td>
<td>146.40</td>
<td>3.33</td>
<td></td>
</tr>
<tr>
<td>REGRESSION</td>
<td>1</td>
<td>2169.06</td>
<td>2169.06</td>
<td>651.90***</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>1</td>
<td>12.52</td>
<td>12.52</td>
<td>3.76*</td>
</tr>
<tr>
<td>GROUP</td>
<td>2</td>
<td>166.86</td>
<td>83.43</td>
<td>25.07**</td>
</tr>
</tbody>
</table>

* p < 0.06
** p < 0.001
*** p < 0.0005
TABLE 169: MAIN EFFECTS SUMMARY.
SOCIAL DYSFUNCTION (SDRS-IS)

<table>
<thead>
<tr>
<th>EFFECT</th>
<th>DF</th>
<th>F-RATIO</th>
<th>SIGNIFICANCE LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>TREATMENT (GROUP)</td>
<td>2,44</td>
<td>25.07</td>
<td>0.001</td>
</tr>
<tr>
<td>EVALUATION PERIOD</td>
<td>1,44</td>
<td>78.94</td>
<td>0.0005</td>
</tr>
<tr>
<td>INTERACTION (GROUPxTIME)</td>
<td>4,86</td>
<td>8.92</td>
<td>0.005</td>
</tr>
</tbody>
</table>

Group differences on the mean level of SDRS-IS were assessed for the End of Treatment and Follow-up periods. A univariate analysis of covariance on the End of Treatment data revealed a small significant difference between the group for this evaluation period ($F(2,44) = 3.24; p < 0.049$) - Table 170.

TABLE 170: UNIVARIATE ANALYSIS OF VARIANCE
SOCIAL DYSFUNCTION (SDRS-IS):
END OF TREATMENT

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARE</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>WITHIN CELLS</td>
<td>44</td>
<td>109.32</td>
<td>2.48</td>
<td></td>
</tr>
<tr>
<td>REGRESSION</td>
<td>1</td>
<td>775.31</td>
<td>775.31</td>
<td>312.06***</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>1</td>
<td>0.71</td>
<td>0.71</td>
<td>0.28</td>
</tr>
<tr>
<td>GROUP</td>
<td>2</td>
<td>16.12</td>
<td>8.06</td>
<td>3.24*</td>
</tr>
</tbody>
</table>

* $p < 0.049$
*** $p < 0.0005$
Given the low level of overall significance for group differences none of the adjusted means comparisons was expected to reach significance. The overall trend was for the Problem-Solving Training group to show less SDRS-IS social dysfunction than the Cognitive Therapy and Psychiatric After Care groups (Tables 171 and 172).

**TABLE 171: OBSERVED AND ADJUSTED MEANS**
**SOCIAL DYSFUNCTION (SDRS-IS): END OF TREATMENT**

<table>
<thead>
<tr>
<th>GROUP</th>
<th>OBSERVED</th>
<th>ADJUSTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>14.62</td>
<td>15.57</td>
</tr>
<tr>
<td>P-ST</td>
<td>13.44</td>
<td>14.23</td>
</tr>
<tr>
<td>PAC</td>
<td>17.06</td>
<td>15.32</td>
</tr>
</tbody>
</table>

**TABLE 172: ADJUSTED MEANS COMPARISONS**
**SOCIAL DYSFUNCTION (SDRS-IS): END OF TREATMENT**

<table>
<thead>
<tr>
<th></th>
<th>CT</th>
<th>P-ST</th>
<th>PAC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15.57</td>
<td>14.23</td>
<td>15.32</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GROUP</th>
<th>CT</th>
<th>P-ST</th>
<th>PAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>15.57</td>
<td>-</td>
<td>1.34</td>
</tr>
<tr>
<td>P-ST</td>
<td>-</td>
<td>-</td>
<td>1.09</td>
</tr>
<tr>
<td>PAC</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Non-significant.
Table 173 gives the univariate analysis of covariance for the Social Dysfunction (SDRS-IS) follow-up data revealing highly significant differences between the groups - $F(2,44) = 39.48; p < 0.0005$.

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARE</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>WITHIN CELLS</td>
<td>44</td>
<td>202.51</td>
<td>4.60</td>
<td></td>
</tr>
<tr>
<td>REGRESSION</td>
<td>1</td>
<td>342.17</td>
<td>342.17</td>
<td>74.34***</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>1</td>
<td>27.97</td>
<td>27.97</td>
<td>6.07*</td>
</tr>
<tr>
<td>GROUP</td>
<td>2</td>
<td>363.41</td>
<td>181.70</td>
<td>39.48***</td>
</tr>
</tbody>
</table>

* $p < 0.02$
*** $p < 0.0005$

Observed and adjusted means for the Follow-up SDRS-IS data are given in Table 174. Comparisons between the adjusted means (Table 175) reveal that the Problem-Solving Training group was assessed as showing significantly less SDRS-IS social dysfunction than both the Cognitive Therapy ($t(44) = 3.56; p < 0.005$) and Psychiatric After Care ($t(44) = 6.74; p < 0.005$) groups. The Cognitive Therapy group was also reporting significantly less SDRS-IS than the Psychiatric After Care group ($t(44) = 3.17; p < 0.005$).
### TABLE 174: OBSERVED AND ADJUSTED MEANS
SOCIAL DYSFUNCTION (SDRS-IS): FOLLOW-UP

<table>
<thead>
<tr>
<th>GROUP</th>
<th>OBSERVED</th>
<th>ADJUSTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>12.06</td>
<td>12.69</td>
</tr>
<tr>
<td>P-ST</td>
<td>8.50</td>
<td>9.03</td>
</tr>
<tr>
<td>PAC</td>
<td>17.12</td>
<td>15.97</td>
</tr>
</tbody>
</table>

### TABLE 175: ADJUSTED MEANS COMPARISONS
SOCIAL DYSFUNCTION (SDRS-IS): FOLLOW-UP

<table>
<thead>
<tr>
<th></th>
<th>CT</th>
<th>P-ST</th>
<th>PAC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12.69</td>
<td>9.03</td>
<td>15.96</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>CT</th>
<th>P-ST</th>
<th>PAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT 12.69</td>
<td>-</td>
<td>3.66**</td>
<td>3.27**</td>
</tr>
<tr>
<td>P-ST 9.03</td>
<td>-</td>
<td>-</td>
<td>6.93**</td>
</tr>
<tr>
<td>PAC 15.96</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

** p < 0.005

The Social Dysfunction (SDRS-IS) observed mean scores for the Pre-treatment, End of Treatment and Follow-Up data are detailed diagramatically below (Figure 8).
FIGURE 8: MEAN ASSESSED LEVEL OF SOCIAL DYSFUNCTION (SDRS-IS)

PT - PRE-TREATMENT
EOT - END OF TREATMENT
FU - FOLLOW-UP

COGNITIVE THERAPY
PROBLEM-SOLVING THERAPY
PSYCHIATRIC AFTER CARE
6.3.6.3 Social Dysfunction: Performance System

The descriptive statistics for the Social Dysfunction Performance System (SDRS-PS) score at the three evaluation periods - Pre-Treatment (PT) End of Treatment (EOT) and at Follow-Up (FU) are given in Table 176.

### TABLE 176: SOCIAL DYSFUNCTION (SDRS-PS). DESCRIPTIVE STATISTICS PRE-TREATMENT (PT), END OF TREATMENT (EOT) AND FOLLOW-UP (FU) SCORES.

<table>
<thead>
<tr>
<th>WEEK</th>
<th>CT M</th>
<th>CT SD</th>
<th>P-ST M</th>
<th>P-ST SD</th>
<th>PAC M</th>
<th>PAC SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT</td>
<td>38.19</td>
<td>10.25</td>
<td>38.94</td>
<td>10.45</td>
<td>40.87</td>
<td>7.47</td>
</tr>
<tr>
<td>EOT</td>
<td>33.69</td>
<td>9.63</td>
<td>26.75</td>
<td>7.87</td>
<td>33.19</td>
<td>8.83</td>
</tr>
<tr>
<td>FU</td>
<td>30.00</td>
<td>8.91</td>
<td>17.37</td>
<td>47.72</td>
<td>31.87</td>
<td>7.98</td>
</tr>
</tbody>
</table>

The level of Pre-Treatment SDRS-PS was not significantly different between the groups \( F(2,45) = 0.34; \ N/S \) - Table 177.
TABLE 177: UNIVARIATE ANALYSIS OF VARIANCE
SOCIAL DYSFUNCTION (SDRS-PS): PRE-TREATMENT

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARE</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROUP</td>
<td>2</td>
<td>61.54</td>
<td>30.77</td>
<td>0.34</td>
</tr>
<tr>
<td>ERROR</td>
<td>45</td>
<td>4051.12</td>
<td>90.02</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>47</td>
<td>4412.66</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Non-significant.

A repeated measures analysis of covariance (Table 178) on the SDRS-PS data with the Pre-Treatment scores as co-variate suggested significant main effects for treatment ($F(2,44) = 36.11; p < 0.001$), evaluation period (Table 179) ($F(1,44) = 134.15; p < 0.0005$) and for the Interaction ($F(4,86) = 14.29; p < 0.005$).

TABLE 178: REPEATED MEASURES ANALYSIS OF COVARIANCE
SOCIAL DYSFUNCTION (SDRS-PS): TREATMENT (GROUP)
MAIN EFFECT

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARE</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>WITHIN CELLS</td>
<td>44</td>
<td>823.89</td>
<td>18.72</td>
<td></td>
</tr>
<tr>
<td>REGRESSION</td>
<td>1</td>
<td>8259.98</td>
<td>8259.98</td>
<td>441.12***</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>1</td>
<td>0.85</td>
<td>0.85</td>
<td>0.004</td>
</tr>
<tr>
<td>GROUP</td>
<td>2</td>
<td>1352.20</td>
<td>676.10</td>
<td>36.11**</td>
</tr>
</tbody>
</table>

** $p < 0.001$

*** $p < 0.0005$
The differences between the groups in the mean level of SDRS-PS were assessed for the End of Treatment and Follow-up evaluations. A univariate analysis of covariance (Table 180) on the End of Treatment data suggested highly significant differences between the groups at this point ($F(2,44) = 15.23; p < 0.0005$).

### TABLE 180: UNIVARIATE ANALYSIS OF COVARIANCE SOCIAL DYSFUNCTION (SDRS-PS): END OF TREATMENT.

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARE</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>WITHIN CELLS</td>
<td>44</td>
<td>677.38</td>
<td>15.39</td>
<td></td>
</tr>
<tr>
<td>REgression</td>
<td>1</td>
<td>2813.49</td>
<td>2813.49</td>
<td>182.75***</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>1</td>
<td>6.12</td>
<td>6.12</td>
<td>0.40</td>
</tr>
<tr>
<td>GROUP</td>
<td>2</td>
<td>469.01</td>
<td>234.51</td>
<td>15.23***</td>
</tr>
</tbody>
</table>

*** $p < 0.0005$
The observed and adjusted means for the End of Treatment SDRS-PS scores are given in Table 181 and comparisons between the adjusted means are given in Table 182. The comparisons between adjusted means suggested that the Problem-Solving Training group was reporting significant improvements in SDRS-PS than both the Cognitive Therapy ($t(44) = 3.79; p < 0.005$) and the Psychiatric After Care ($t(44) = 2.46; p < 0.01$) groups. There was no statistical difference between the Cognitive Therapy and Psychiatric After Care groups ($t(44) = 1.37; N/S$) with patients receiving psychiatric After Care showing a slight advantage in reduction of SDRS-PS than patients receiving cognitive therapy.

### Table 181: Observed and Adjusted Means
SOCIAL DYSFUNCTION (SDRS-PS): END OF TREATMENT

<table>
<thead>
<tr>
<th>GROUP</th>
<th>OBSERVED</th>
<th>ADJUSTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>33.69</td>
<td>34.64</td>
</tr>
<tr>
<td>P-ST</td>
<td>26.75</td>
<td>27.07</td>
</tr>
<tr>
<td>PAC</td>
<td>33.19</td>
<td>31.90</td>
</tr>
</tbody>
</table>

### Table 182: Adjusted Means Comparisons
SOCIAL DYSFUNCTION (SDRS-PS): END OF TREATMENT

<table>
<thead>
<tr>
<th></th>
<th>CT</th>
<th>P-ST</th>
<th>PAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>34.64</td>
<td>-</td>
<td>7.57**</td>
</tr>
<tr>
<td>P-ST</td>
<td>27.07</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>PAC</td>
<td>31.90</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* $p < 0.01$
** $p < 0.005$
The univariate analysis of covariance for the Follow-Up SDRS-PS data (Table 183) revealed highly significant differences between the groups - $F(2,44) = 49.51$ $p < 0.0005$.

**TABLE 183: UNIVARIATE ANALYSIS OF COVARIANCE**

**SOCIAL DYSFUNCTION (SDRS-PS): FOLLOW-UP**

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>DF</th>
<th>SUM OF SQUARES</th>
<th>MEAN SQUARE</th>
<th>F-RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>WITHIN CELLS</td>
<td>44</td>
<td>822.92</td>
<td>18.70</td>
<td></td>
</tr>
<tr>
<td>REGRESSION</td>
<td>1</td>
<td>1658.58</td>
<td>1658.58</td>
<td>88.68***</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>1</td>
<td>3.87</td>
<td>3.87</td>
<td>0.21</td>
</tr>
<tr>
<td>GROUP</td>
<td>2</td>
<td>1852.02</td>
<td>926.01</td>
<td>49.51***</td>
</tr>
</tbody>
</table>

*** $p < 0.0005$

Table 184 gives the observed and adjusted means for the SDRS-PS Follow-Up date.

Comparisons between the adjusted means (Table 185) show that the Problem-Solving Training group has continued to make more significant improvement in SDRS-PS than both the Cognitive Therapy ($t(44) = 6.06; p < 0.005$) and Psychiatric After Care ($t(44) = 6.11; p < 0.005$) groups. There was no difference between the Cognitive Therapy and Psychiatric After Care groups on assessed SDRS-PS at Follow-Up.
### TABLE 184: OBSERVED AND ADJUSTED MEANS
SOCIAL DYSFUNCTION (SDRS-PS): FOLLOW-UP

<table>
<thead>
<tr>
<th>GROUP</th>
<th>OBSERVED</th>
<th>ADJUSTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>30.00</td>
<td>30.73</td>
</tr>
<tr>
<td>P-ST</td>
<td>17.37</td>
<td>17.62</td>
</tr>
<tr>
<td>PAC</td>
<td>31.87</td>
<td>30.88</td>
</tr>
</tbody>
</table>

### TABLE 185: ADJUSTED MEANS COMPARISONS
SOCIAL DYSFUNCTION (SDRS-PS): FOLLOW-UP

<table>
<thead>
<tr>
<th></th>
<th>CT</th>
<th>P-ST</th>
<th>PAC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>30.73</td>
<td>17.62</td>
<td>30.89</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>CT</th>
<th>P-ST</th>
<th>PAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>30.73</td>
<td>-</td>
<td>13.11**</td>
</tr>
<tr>
<td>P-ST</td>
<td>17.62</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>PAC</td>
<td>30.89</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

** p < 0.005

The observed mean scores for the Social Dysfunction (SDRS-PS) Pre-treatment, End of Treatment and Follow-Up data are displayed in Figure 9.
FIGURE 9: MEAN ASSESSED LEVEL OF SOCIAL DYSFUNCTION (SDRS-PS)

PT - PRE-TREATMENT
EOT - END OF TREATMENT
FU - FOLLOW-UP

COGNITIVE THERAPY
PROBLEM-SOLVING TRAINING
PSYCHIATRIC AFTER CARE
6.3.6.4 Results Summary: Social Dysfunction

At pre-treatment there was no significant differences between the groups in SDRS-TOT and on the SDRS Factor Scores - SDRS-SS, SDRS-IS and SDRS-PS. There was an overall significant main effect for Treatment, Evaluation Period and the Interaction.

At Mid-Assessment and Follow-up, there was a consistent and significant difference between the groups. The Problem-Solving Training subjects were assessed as showing significantly less Social Dysfunction in Total and by Factor Scores. In general there was no difference between the Cognitive Therapy and Psychiatric After Care groups. One departure from this trend was noted for the SDRS-IS data when the Cognitive Therapy group were assessed as showing significantly less social dysfunction on this Factor than the Psychiatric After Care group at the Follow-Up Evaluation Period.

6.3.7. Suicidal Behaviour

The experimenter was also interested in the re-occurrence of suicide attempts and in a range of behaviours which may bear relationship to the future intention to repeat such behaviour e.g. hoarding non-opiate analgesics (see Appendix 13: Suicidal Behaviour Record).

Table 186 gives the Frequency of occurrence of suicidal related behaviours by group. In terms of suicide attempt itself only one such
episode was reported overall recurring in a subject in the Psychiatric After Care group during the Follow-up phase of treatment.

TABLE 186: FREQUENCY OCCURRENCE OF SUICIDAL BEHAVIOUR.

<table>
<thead>
<tr>
<th>SUICIDAL BEHAVIOUR</th>
<th>CT</th>
<th>P-ST</th>
<th>PAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>OVERDOSE</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>EXCESS ALCOHOL</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ANALGESICS</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>PSYCHOTROPICS (SOUGHT)</td>
<td>0</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>PSYCHOTROPICS (EXCESS USE)</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

There was a non-significant tendency for Psychiatric After Care subjects in comparison to subjects in the Cognitive Therapy and Problem-Solving Training groups to use more analgesics and psychotropics. Where analgesics were bought and used there was no evidence of hoarding.

6.4 DISCUSSION

The discussion of the results of Study Two will focus on the range of outcome measures grouped conveniently into:

i. Interpersonal Problem Solving functioning

ii. Cognitive-affective functioning

iii. Social functioning, and

iv. Suicidal behaviour.
Some consideration will also be given to the nature of the treatment groups in relation to their demonstrated therapeutic effects.

6.4.1 Interpersonal Problem-solving Functioning.

The end of treatment results with specific regard to social problems suggested that subjects receiving formal Problem-Solving Training showed significant improvement in this general ability compared to the groups receiving either Cognitive Therapy or Psychiatric After Care.

In particular the Problem-Solving Training group made significant improvement in the production of relevant instrumental means and this was accompanied by a reduction in the frequency in the number of irrelevant means produced. From a quantitative point of view then, Problem-Solving Training was shown to have direct enhancing effects on aspects of problem-solving behaviour in comparison to the effects of alternative treatment strategies on this ability.

Inspection of the results, however, also suggests that the Cognitive Therapy group did show some substantial if not statistically significant improvement in problem-solving as assessed on the MEPS. The clear suggestion then, is that other forms of therapy, Cognitive Therapy in this case, may have some influence on improving interpersonal problem-solving ability. The active ingredients of cognitive therapy will be considered below, but, it is worthy to note at this point that the effect of Cognitive Therapy on problem-solving ability may be mediated in a number of ways:
a) Cognitive therapy - induced improvements in mood state may act to release latent or inhibited problem-solving ability, and

b) Some aspects of Cognitive Therapy (e.g. Alternative Thinking) may act to influence problem-solving cognitions directly.

From the point of view of a quantitative analysis of problem-solving ability, the results showed that a Psychiatric After Care service, which may or may not provide answers to current or prospective problems, did not, even in the face of improvements in mood or affective state, allow for the development of a generative set of skills which could then be applied to another set of problems. Psychiatric after care subjects were shown to have made no significant pre- to post-assessment changes in problem-solving ability or their improvement was significantly less than that seen in the Problem Solving Training group in particular. The mood state/problem solving relationship proposed above is somewhat undermined by this finding.

For the MEPS social problems under consideration apart from the quantitative changes in relevant and irrelevant instrumental means production, changes in the qualitative aspects of problem-solving were also noted after treatment.

The Problem-Solving Training group produced significantly more references to time needed to resolve problems, and significantly more introspections than the Psychiatric After Care group in particular at Post-assessment. At Post-assessment the Problem-Solving Training and Cognitive Therapy groups were not significantly different with regard to
qualitative variables, but within group analysis indicated that the pre-
to post-assessment changes in time referents and introspections reached significance only for the Problem-Solving Training group. The groups were shown not to be different in their ability to recognise obstacles after treatment with none of the small pre- to post-assessment changes reaching statistical significance.

Of the techniques under consideration Problem-Solving Training was therefore shown as standing the best chance of improving those skills shown to be important to problem-solving and problem-resolution.

The finding of limited non-significant change in the production of Introspections particularly in the case of the Cognitive Therapy group is an interesting one. If Cognitive Therapy in one regard could be seen as intended to increase the individual's awareness of internal stimuli i.e. cognitions, then it could be expected that individuals exposed to Cognitive Therapy should become more introspective as a consequence of increased self-monitoring behaviour. There may very well, however, be no one to one relationship between such awareness of internal activity and the paper and pencil production of problem-solving introspections. Clearly, this has relevance both for cognitive therapy and Problem-Solving Training which are aimed at translating internal activity into observable behaviour.

The consideration of emotional problem-solving does not allow much to be added to the overall findings. An insufficient number or range of emotional problems may not have allowed for real differences between the groups to be demonstrated.
The Cognitive Therapy group produced significantly more relevant emotional means than the Psychiatric After Care group at post-assessment. There was no difference between the Cognitive Therapy and Problem-Solving Training groups and between this latter group and the Psychiatric After Care group. At a qualitative level of analysis there were no significant differences between the groups after treatment.

With regard to emotional problem-solving when compared to the subjects receiving Psychiatric After Care, the Cognitive Therapy group did comparatively better than the Problem-Solving Training group producing significantly more relevant emotional means than the Psychiatric After Care group.

One suggestion from this result is that Cognitive Therapy was better at tipping the focus in favour of intra-psychic events as instigators of emotional problem-solving behaviour but only in a narrow way i.e. only with regard to the production of means. We have already seen that with regard to social problems, introspective aspects of performance were not enhanced by exposure to the methods of Cognitive Therapy.

In general all groups tended to show comparatively more change for social than for emotional problems. It may be that the Problem-Solving Training offered was biased toward social problems so that specific training in emotional problem-solving may need to be considered as a solution. It is also clearly possible that skill learnt with regard to social interpersonal problems do not spontaneously generalize to emotional problems in which the focus is intra-personal. Siegel, Platt and Peizer (1976) suggested that compared to social problem-solving,
emotional problem-solving may require more ability to abstract. This ability to abstract is not specifically a skill developed during Problem-Solving Training so it could not be expected to evidence when the individual was called upon to solve emotional problems. Siegel et al (1976) suggested that the inability to deal effectively with emotional problems was the sequel of the inability to problem-solve in the social sphere. The results of Study Two indicate that enhancement of the ability to problem-solve in the social sphere does not necessarily lead to improvement in the ability to problem-solve in the emotional sphere. Emotional problem-solving training should therefore be given consideration in its own right.

In keeping with the overall prediction the Problem-Solving Training and Cognitive Therapy groups did better with regard to improving problem-solving behaviour both at a social and emotional level compared to the Psychiatric After Care group. Such improvements, however, were only reflected in some aspects of problem-solving behaviour.

Problem-Solving Training itself did not affect equally all aspects of problem-solving behaviour. There was a tendency for quantitative aspects (relevant means, irrelevant means) to be more positively influenced than qualitative aspects (time referents, introspections, obstacles). This finding has also been reported in other studies (Intagliata, 1978) suggesting that the elements of training may be biased in favour of quantitative variables and if such training is going to exert all round effects there is a need for a realignment of its emphasis to take account of the qualitative dimension.
Finally, with reference to problem-solving, Clum et al (1979) had proposed that intervention with a distinct problem-solving emphasis may be relevant to the treatment of suicidal individuals. The results of Study Two had so far indicated that the interpersonal problem-solving ability of suicidal individuals assessed as deficient (Study One) compared to normals could be directly enhanced by training and carries with it the potential for reducing current and future suicide risk.

6.4.2 Cognitive affective functioning.

Some attempt has already been made above to link mood state with problem-solving productions. Two areas of cognitive-affective functioning will be considered - hopelessness, a set of negative expectations about future outcomes, and depression which is an important indicator normally used by clinicians to assess suicide risk and to make decisions about treatment.

The results indicated that at both Mid-treatment and at the End of Treatment there was no difference between the groups in reported level of hopelessness. All groups showed a steady decline in hopelessness suggesting that the different forms of treatment had similar therapeutic effects indicated in the magnitude of reduction in the level of hopelessness and in the time course of change.

The reduction in level of hopelessness by the End of Treatment to within normal limits for all groups is an interesting finding. It was expected that the treatments designed either to change cognitive activity (Cognitive Therapy) or to improve problem-solving skills (Problem-
Solving Training) would be more effective at improving negative attitudes about the future than a treatment intervention not specifically designed either to improve skill or change cognitions directly (Psychiatric After Care).

Evidence from other studies (Simons, Garfield and Murphy, 1984; Silverman, Silverman and Eardley, 1984) comparing the efficacy of Cognitive Therapy versus pharmacotherapy for depression have shown that clinical improvements in depressive cognitions was also effected by pharmacotherapy. Blackburn (1982) reporting or the efficacy of cognitive therapy, pharmacotherapy and combined treatment found no differences in treatment effects on levels of hopelessness between the different treatment modalities. Ziess, Lewinsohn and Munoz (1979) compared the effects of cognitive therapy, interpersonal skills training and increased pleasant activities on depression. Although these three treatments were designed to modify different variables, they did not produce differential treatment effects. Other workers have, however, reported on the differential treatment effects of cognitive therapy and pharmacotherapy or hopelessness, Rush, Beck and Kovacs (1977) reported that cognitive therapy was more effective than pharmacotherapy in lowering hopelessness.

The results of Study Two on hopelessness add to the body of evidence suggesting that different treatments did not produce differential treatment effects on this variable.

Cognitive methods were shown not to be essential to the process of instigating or creating the conditions for cognitive change (i.e.
hopelessness). By the End of Treatment Problem-Solving Training and Psychiatric After Care methods were shown to be useful in producing comparative cognitive change. From the Problem-Solving Training point of view it could be seen how improvements in problem-solving ability could affect self-efficacy evaluations which may then in turn lead to reduction in negative expectations about future outcomes. The mechanism by which Psychiatric After Care - largely an unstructured approach - exerts its effects on hopelessness is not easily explainable. One possibility is that the supportive expectations aroused by the psychiatric contact allowed for significant reductions in hopelessness. Frank, Hoehn-Saric and Imber et al (1978) have reported reductions in the level of hopelessness based either on the offer or expectation of therapy. An alternative view would be that hopelessness behaves more like an affective symptom rather than a firmly held (cognitive) belief and would therefore be subject to change under the influence of a wide range of therapeutic strategies.

However, the consideration of the Follow-up results adds to the complexity of their interpretation. Whereas the Cognitive Therapy and Problem-Solving Training groups maintained the improvements in hopelessness gained during treatment, there was a tendency towards increasing hopelessness in the Psychiatric After Care Group.

How are these findings explainable? It would appear that Cognitive Therapy Skills and skills acquired during Problem-Solving Training act either to bolster the individual against the recovery of hopelessness in the face of solvable real-life problems or act as catalysts which allow for the maintenance of early improvements and continues the process of
change outside therapy.

On the other hand Psychiatric After Care subjects, whose problem-solving abilities were assessed as significantly less than those of subjects in the Cognitive Therapy and Problem-Solving Training groups, may have been dependent on being active in treatment to effect changes in hopelessness. Once treatment contact was withdrawn there was then a gradual return to increasing experience of hopelessness.

In general then, it may be true to propose that changes in hopelessness across groups during therapy might have been due to the specific treatment contact and expectancy effects. Where a specific skill was acquired these acted in a prophylactic way modifying the possibility of a return to increasing hoplessness. That is, the nature of the specific treatment contact was important to the establishment of positive long-term change.

Suicidal behaviour is noted for it's re-occurrence and it has been shown that there was a crucial relationship between hopelessness and suicide intent. These results also indicate that it is possible to modify levels of hopelessness and thereby influence the probability of reoccurence of suicidal behaviour using the methods of Cognitive Therapy and Problem-Solving Training.

When depressive affect was considered comparisons between the groups at the Mid-Treatment point indicated no major differences. The group were not specifically different in their reducing levels of reported depression.
By the end of treatment though both the Cognitive Therapy and Problem-Solving Training groups were reporting significantly less depression than the Psychiatric After Care group. This difference between the groups was also maintained at the time of Follow-up.

Problem-Solving Training was clearly as effective as Cognitive Therapy in bringing about stable reductions in depressive affect a result which paralleled those found for hopelessness. The improvements in hopelessness attributed to these two treatment modalities in comparison to Psychiatric After Care was achieved only during the Follow-up phase of treatment. In contrast significant improvements in depression attributed to Cognitive Therapy and Problem-Solving Training occurred by the End of Treatment. The differential effects on hopelessness versus depression of these two treatments suggested that changes in affective functioning occurred at a faster rate than changes in the cognitive aspects of functioning.

A number of clinical implications may be concluded given the reported analyses of the hopelessness and depression data.

a) Cognitive and affective change occurs at different rates i.e. have differing time courses. Clinicians may need to adjust the timing of their assessments to take account of this change characteristic.

b) For some forms of intervention the end of treatment may signal an increasing tendency for a return of symptoms. Both hopelessness and depression tended to show proportionately greater increases after treatment was discontinued for the Psychiatric After Care
than for the Cognitive Therapy and Problem-Solving Training groups for whom such changes were minimal.

c) Changes in cognitive factors (hopelessness) may be instigated by varying treatment modalities. Cognitive changes does not necessarily depend on the specific characteristics of Cognitive Therapy, and

d) For the cognitive and affective variables under consideration in Study Two, Cognitive Therapy and Problem-Solving Therapy were more reliable in effecting a sustained degree of change. This accords well with findings reported by McKnight, Nelson, Hayes and Jarrett (1984) who showed that treatment effectiveness was greatly enhanced when treatment was related to initial assessment findings.

6.4.3 Social Functioning

The assessment of social functioning using the Social Dysfunction Rating Scale (SDRS) provided an overall social dysfunction Total Score (SDRS-Total) as well as a breakdown by factor scores for three systems within the social domain - Self System (SDRS-SS) Interpersonal System (SDRS-IS) and Performance System (SDRS-PS).

The overall analysis of social dysfunction indicated particular trends. By the End of Treatment evaluation all three groups were showing improvements in social functioning. Both the Problem-Solving Training, and Psychiatric After Care groups were reporting significantly less
social dysfunction (SDRS-Total) than the Cognitive Therapy group. The level of overall social dysfunction for the Problem-Solving Training and Psychiatric After Care groups were not significantly different at this point.

At Follow-up, however, the Problem-Solving Training group was assessed as reporting significantly less social dysfunction than both the Cognitive Therapy and Psychiatric After Care groups.

Another interesting change was that in contrast to the End of Treatment assessment no significant difference was found between the Cognitive Therapy and Psychiatric After-Care groups in their now reduced overall level of social dysfunction. In general between the End of Treatment and Follow-up evaluations the trend was for both the Cognitive Therapy and Problem-Solving Training groups to continue to show a decline in Total Social Dysfunction. There was, however, a trend for increasing social dysfunction for the Psychiatric After Care group.

Before considering the implications of these findings the discussion will focus on the analysis of the Social Dysfunction factor scores. The SDRS - Self System took account of attitudes towards the self and future planning. For this factor there was no significant difference between the groups at the End of Treatment in the extent of social dysfunction with all groups showing relatively comparable improvements. The Follow-Up evaluation did, however, highlight clear treatment differences. Subjects receiving Problem-Solving Training were assessed as evidencing significantly less social dysfunction within the SDRS- Self System than both the Cognitive Therapy and Psychiatric After Care groups which
latter showed no significant difference between themselves. In terms of future planning and positive self-evaluations, then, Problem-Solving Training appeared to confer a significant advantage over and above the level of change achieved with Cognitive Therapy or Psychiatric After Care intervention strategies.

Within the interpersonal system (SDRS-IS) - accounting for hostility, dependency, anxiety and manipulative behaviours the pattern of results indicated no differential treatment effects in the extent of change occurring by the End of Treatment; clear differences between the groups emerged at the Follow-Up assessment. In particular the Problem-Solving Training group was assessed as showing significantly less social dysfunction in the Interpersonal System compared to the Cognitive Therapy and Psychiatric After Care groups with the Cognitive Therapy group also rated as showing significantly less SDRS-IS than the Psychiatric After Care group.

In contrast to the trend for the Self-System and Interpersonal System, the analysis of changes within the SDRS - Performance System suggested clear group differences by the End of Treatment. Once again the Problem-Solving Training group was assessed as evidencing more significant improvement in the SDRS - Performance System (work, relationships, friends, finances) than both Cognitive Therapy and Psychiatric After Care. There was no difference between these two treatment groups. A trend for more improvement in SDRS-PS was noted for all groups at Follow-Up with the pattern of group differences assessed at the End of Treatment being maintained at Follow-Up.
The analyses of Social Dysfunction by factor score allowed insights into the nature of change. Demonstrable group differences in the area of functioning related to Social Performance (SDRS-Performance System) in contrast to functioning in the areas related to self-evaluation (SDRS-Self System) and interpersonal relations (SDRS-Interpersonal System) were seen earlier in the course of treatment i.e. by the End of Treatment assessment.

This pattern of results may be taken to suggest:

i) that changes in the areas of self evaluation and in interpersonal relationships, which could be deemed more related to intra-psychic functioning, took longer to crystallise than changes in the Performance System which was more related to overt behaviour.

ii) that the treatment modalities affected changes in social functioning at differential rates. An inspection of the data also indicated that the bulk of change was occurring within the Performance System, and

iii) Problem-Solving Training compared to other treatments was noted to instigate greater improvements in all three systems of social functioning both in terms of the rate at which such changes were noted and in the extent of change.

In general improvements in social functioning may be dependent on the acquisition of relevant skills to apply within the social/interpersonal
sphere. Problem-Solving Training goes some way toward providing such relevant skills accounting for its significant advantage over the two other forms of treatment in instigating improvements in social functioning. Given the emphasis in Problem-Solving Training on goal setting and action planning these results were not surprising.

The observation that changes in the Performance System were noted earlier in the course of treatment may point to the possibility of a feedback relationship between this system and the Self- and Interpersonal Systems. That is, improvements in the behavioural system potentiates improvements in intrapsychic and associated areas of functioning.

6.4.4 Suicidal Behaviour.

So far, consideration has been given to the areas of Interpersonal Problem-Solving, Cognitive-Affective and Social Functioning. The discussion will now turn to examining the treatment effects on aspects of suicidal behaviour - suicide ideation and suicide attempt.

With regard to the experience of suicide ideation by the Mid-Treatment evaluation period the Cognitive Therapy group were reporting more significantly reduced suicide ideation than the Psychiatric After Care group. There were no such differences between the Cognitive Therapy and the Problem-Solving Training groups as well as between this latter group and the Psychiatric After Care group. Compared to the Psychiatric After Care group then, the group receiving Cognitive Therapy were evidencing treatment advantages seen in reduced suicide ideation.
By the End of Treatment, however, there were no differences between the groups with the differing treatments effecting comparable reductions in reported Suicide Ideation. Treatment differences were again noted at the Follow-up evaluation. Both the Cognitive Therapy and Problem-Solving Training groups reported significantly less Suicide Ideation than the Psychiatric After Care group. There was no difference between the Cognitive Therapy and Problem-Solving Training groups. The trend was for reductions in Suicide Ideation noted at the End of Treatment to be either maintained or further reduced by subjects receiving Cognitive Therapy or Problem-Solving Training. On the other hand there was a tendency for suicide ideation to increase compared to the End of Treatment levels for subjects who had received Psychiatric After Care.

Whilst the evaluation of Suicide Ideation relates to the manifest thoughts, wishes and attitudes about suicide evidence of actual recurrences of suicide attempt was also seen as an important outcome measure (Kreitman, 1977; Clum et al, 1979; Ettlinger, 1975).

A descriptive analysis of suicidal behaviour, in particular suicide attempt, showed that there were no episodes of suicide attempt in the Cognitive Therapy and Problem-Solving Training groups. There was a single episode of suicide attempt occurring in the Psychiatric After Care group during the Follow-up period. This episode was self-reported and involved the impulsive swallowing of four tablets (tranquillizers) during a period of increased turmoil related to uncertainties at work. The patient reported the episode four days later to the experimenter. Although medical lethality and suicide intent were absent or low at the time of the episode, and medical agencies were not involved at any
point, this behaviour was recorded by the experimenter as an episode of suicide attempt because of the then expressed motivation.

This 6.25 percent suicide attempt reoccurrence rate in the Psychiatric After Care group compares favourably with earlier work and represents an important and tangible measure of the effectiveness of clinical interventions. Buglass and Horton (1974) reported a repetition rate of between fourteen and seventeen percent per year; and Bancroft and Marsack (1977) reported approximately an eighteen percent repetition rate occurring mainly within a six month period and particularly within three months. Comstock and McDermott (1975) reported a four percent repetition rate after a one-year follow-up of one hundred and five treated patients.

The excess use of analgesics was noted in all groups mainly to highlight the availability of such substances in the lives of these individuals, rather than as evidence of hoarding, or impulse buying with suicidal intent. The frequency of excess use of alcohol and of psychotropics (i.e. more than prescribed dosage) was reported as low across all groups.

The results on suicide ideation and suicidal behaviour suggested:

i. The three forms of treatment strategies were effective in reducing suicide ideation although at differing rates. Cognitive Therapy produced significant reductions in reported suicide ideation by the Middle of Treatment compared to Psychiatric After Care.
ii. Where some particular skill was learnt e.g. Cognitive or Problem-Solving this was deemed to have prophylactic value evidenced in the maintenance or further reduction in levels of suicide ideation in the Cognitive Therapy and Problem-Solving Training groups.

iii. Cognitive Therapy and Problem-Solving Training were more effective in reducing repetition of suicidal behaviour than Psychiatric After Care.

iv. Overall, the identification of significant levels of suicidal ideation following the suicide attempt makes eloquent argument for the psychological after-care of these individuals to be taken seriously. The continued occurrence of suicide ideation following suicide attempt identifies a period of continuing risk - where risk refers both to the probability of repeating the act and to the presence of a range of symptoms (cognitive-affective) representing psychological disturbance.

Cognitive Therapy group members attended an average of 7.5 sessions (range: 6 - 8); the average attendance for the Problem-Solving Training group was 7.38 sessions (range: 5 - 8) and the average attendance for the subjects receiving Psychiatric After Care was 5.5 session (range: 4 - 6).

With regard to the treatments received Cognitive Therapy and Problem-Solving Training represented experimental treatments following clear treatment guidelines. On the other hand the experimenter could effect
the great control over the treatment ingredients offered as Psychiatric After Care. To this extent Psychiatric After Care represented a 'naturalistic' intervention, but as far as could be ascertained the components of this form of intervention included:

i. Receipt of individual treatment

ii. Provision of supportive contact - ventilation/catharsis

iii. Revision or adjustment of medication where appropriate

iv. Review of symptoms - depression and suicide risk

v. Review social functioning and need for social work intervention

vi. Act as link person in case of emergency.

Clum et al (1979) recommended the use of 'usual treatment' comparison groups rather than no-treatment control groups which may have inherent ethical problems in outcome studies of this kind. The use of the 'naturalistic' Psychiatric After Care group was seen as moving some way in this direction.
CONCLUDING REMARKS

This research effort has focussed on two important and related issues:

a. the interpersonal problem-solving characteristics of suicide attempters, and on
b. an examination of three intervention strategies intended to reduce the occurrence of suicidal behaviour.

To this extent a crucial clinical link between assessment strategies and methods of remediation (i.e. treatments), two critical aspects of the endeavours of Clinical Psychologists, was achieved.

Study I identified a skills deficit in interpersonal problem-solving in a group presenting with suicidal behaviour for the first time, compared to mixed psychiatric and normal subjects. This was proposed as extending the earlier finding of a skill deficit in suicidal subjects within the area of functioning on impersonal tasks. The identification of a deficit in interpersonal problem-solving was proposed as an additional index useful in the assessment of suicidal risk. The issue of discriminating an increasing number of psychopathological groups presenting with deficits in interpersonal problem-solving was not addressed in this research.

A schematic model representing a possible route to the production of suicidal behaviour has been proposed to implicate a range of variables.
The crucial relationship between personal coping resources (e.g. problem-solving skills), experienced stress and the production of negative affective experience (hopelessness was highlighted with good interpersonal problem-solving assigned a stress-buffering role.

It is of interest to the clinician that his model suggests differing points of entry for intervention. The two entry points which were of relevance to this research involved enhancing personal coping resources by direct training in interpersonal problem-solving or by changing negative cognitive aspects of poor coping by providing opportunity to engage in cognitive therapy.

Study II examined the effectiveness of these two treatment approaches and contrasted them with the usual received treatment - Psychiatric After Care. Subjects receiving eight weekly sessions of either Cognitive Therapy, or Problem-Solving Training were shown to be significantly improved both in their willingness to return to suicidal behaviour and in their social functioning in general. Compared to Psychiatric After Care, these two methods of intervention marked viable alternatives or entry points to the care of these individuals.

Clearly, since the subject groups were homogeneous for first time attempters, the results may not be generalizable to other groups of suicidal individuals e.g. the chronic repeater and the suicidally depressed. It may well be, however, that the treatment strategies used could with some modifications be adapted to meet the needs of these groups.
Given the large and ever increasing number of individuals who engage in suicidal behaviour it is important to develop not only effective treatment strategies but strategies which are also effective for dealing with the numbers. It is proposed that the short-term group approaches, for which treatment manuals are provided, applied in this research fulfil the two criteria of effectiveness and range of applicability. It is also quite feasible that these methods lend themselves to ease of application by a wider range of suitably trained professional health workers, improving thereby the wider availability of relevant treatments.

Many workers have commented on the inherent difficulties of working with suicidal groups of subjects, referring to the possibility of intensifying suicidal preoccupation, suicidality and depression. The experimenter's experience suggested that the group approach to management might have positive advantages. Specifically, the common experience of suicidal behaviour serves as a common bond facilitative to the development of cohesiveness and to a mutual supportive network. The focus of the therapy sessions must, however, serve to guide group members away from unproductive suicidal preoccupations to the more adaptive consideration of future action.

The specific issue of the active ingredients of each therapy package remains. Problem-Solving Training itself has been proposed as a behavioural intervention. However, some Cognitive Therapists may argue that it is but one strategy used in Cognitive Therapy providing that the aim is that it leads to ultimate cognitive change. To the extent that both experimental therapies have differing emphasis it may be more appropriate to consider them as examples of cognitive behavioural
interventions. At this stage of investigation no clear conclusions could be drawn about the relative contribution to change and its maintenance of the differing treatment elements - problem recognition, alternative solution thinking, cognitive rehearsal, thought catching etc.. It is proposed that this form of analysis could usefully be the focus of future research.

Mention has been made of the natural course of cognitive change as distinct from symptomatic change in the course of therapy. Cognitive change has been shown to follow a comparatively different time course in comparison to symptomatic change. It is suggested that aspects of cognitive change (e.g. hopelessness) may be of equal importance to monitor in this group of individuals as are aspects of symptomatic affective change (e.g. depression). It is also of clear clinical significance to observe that the various treatment modalities may have general therapeutic effects apart from their intended specific effects.

A review of the problem-solving literature with its developmental focus highlighted the role of child-rearing techniques, early schooling and peer experiences in the development of good interpersonal problem-solving skills. The secondary prevention of suicidal behaviour has been the focus of this research. However, with the increasing tendency of the younger aged group to engage in this behaviour suggests that serious consideration be given to examining the possibility of intervention at the family systems level and within the education system. That is, the promotion of healthy adaptive behaviours should not be left solely to health professionals.
Intervention of this sort may be suitably tailored to meet the needs at varying developmental levels each emphasizing aspects of social and interpersonal learning conducive to later successful adaptation. It is proposed that an even greater optimism about future outcomes as regards suicidal actions may depend on such methods of intervention aimed at early prevention through education.
Possible limitations

This additional discussion relates to the assessment ratings carried out using the Social Dysfunction Rating Scale (SDRS). All pre-treatment, post-treatment and follow-up assessments were carried out by the Experimenter (SGF). The main issue which arises from this strategy is experimenter bias.

However the complex pattern of the research evidence on SDRS and affective functioning data would certainly argue against the experimenter bias suggestion. For example changes were shown not to affect social dysfunction in a global way. Different treatments were shown to affect aspects (ie factors) of social dysfunction at differential rates and to differing extent. This pattern of results would have been very difficult to predict.

To avoid the experimenter bias criticism an alternative strategy might have been to devise a self-rating social dysfunction scale. Whilst this has much to recommend it, it was felt that such an undertaking would distract from the main thrust of the research effort. In addition, the nature of some of the social dysfunction data which needed to be collected required subjects to report on negative aspects of their social behaviour including manipulation, dependency and hostility. It was concluded that it would have been difficult to assess social desirability and the honesty with which subjects would report these aspects of their behaviour.
Treatment specific effects

It was felt that treatment specific effects should be further elaborated as there is much interest in the literature as to the specific effects of treatments which, of course, has important implications for treatment recommendations.

(a) With regard to the affective indices, hopelessness, depression and suicide ideation, all treatments effected reductions by the end of treatment. This result could be explained either on the basis of putative treatment effects or that we were dealing with a low suicide risk group in which these "symptoms" have a short life span.

However, the effect of further reductions of affective disturbance continued to occur only in the PST and CT groups after treatment was discontinued suggested that the specific effects of these two treatments related to

(i) acquiring (a) specific skill(s) during treatment which
(ii) continued to exert its effects following treatment discontinuation.

PST was thus shown to share similar therapeutic characteristics as regards positively changing affective disturbance in groups of first time suicide attempters.

(b) The Problem-Solving Training (PST) effects were mainly in terms of improving Interpersonal Problem-Solving skills particularly in the area of the production of Relevant Means. This is a
distinct effect seen in patients receiving this form of treatment compared to those receiving either Cognitive Therapy (CT) or Psychiatric After Care (PAC).

(c) Compared to the CT and PAC groups, in the realm of social dysfunction the significant and specific effects of PST were clearly seen when the SDRS factor scores were examined. In particular, in the SDRS - Performance System (work, friends, relationships) PST instigated improvements were seen by the end of treatment and were maintained to follow-up. The specific effects over and above those of CT and PAC on the SDRS - Self System (future planning, self-evaluation) and SDRS - Interpersonal System (dependency, manipulation) were seen only by follow-up suggesting a slower rate of change in these areas of social functioning arguably dependent upon changes or the SDRS - PS. In contrast to the PAC group CT subjects showed selective improvements in only the SDRS - IS system.

Statistical note

With reference to the statistical assessments carried out to assess pre - post changes (See Tables 86, 87, 88, 92, 93, 94) it is suggested that the McNemar Test for significance of changes would be more appropriate to this data than the Chi-square test reported. Please note that the t-tests reported in Tables 61-65 are one-tailed.
APPENDIX 1.

BECK DEPRESSION INVENTORY
On this questionnaire are groups of statements. Please read each group of statements carefully. Then pick out the one statement in each group which best describes the way you have been feeling the PAST WEEK, INCLUDING TODAY! Circle the number beside the statement you picked. If several statements in the group seem to apply equally well, circle each one. Be sure to read all the statements in each group before making your choice.

1. I do not feel sad
   - I feel sad
   - I am sad all the time and I can't snap out of it
   - I am so sad or unhappy I can't stand it

2. I am not particularly discouraged about the future
   - I feel discouraged about the future
   - I feel I have nothing to look forward to
   - I feel that the future is hopeless and that things cannot improve

3. I do not feel like a failure
   - I feel I have failed more than the average person
   - As I look back on my life, all I can see is a lot of failure
   - I feel I am a complete failure as a person

4. I get as much satisfaction out of things as I used to
   - I don't enjoy things the way I used to
   - I don't get real satisfaction out of anything any more
   - I am dissatisfied or bored with everything

5. I don't feel particularly guilty
   - I feel guilty a good part of the time
   - I feel quite guilty most of the time
   - I feel guilty all of the time

6. I don't feel as if I am being punished
   - I feel I may be punished
   - I expect to be punished
   - I feel I am being punished

7. I don't feel disappointed in myself
   - I am disappointed in myself
   - I am disgusted with myself
   - I hate myself

8. I don't feel I am any worse than anybody else
   - I am critical of myself for my weaknesses or mistakes
   - I blame myself all the time for my faults
   - I blame myself for everything bad that happens

9. I don't have any thoughts of killing myself
   - I have thoughts of killing myself but I would not carry them out
   - I would like to kill myself
   - I would kill myself if I had the chance
10. I don't cry any more than usual
   I cry now more than I used to
   I cry all the time now
   I used to be able to cry but now I can't even though I want to

11. I am no more irritated than I ever an
   I get annoyed or irritated more easily than I used to
   I feel irritated all the time now
   I don't get irritated at all by the things that used to irritate me

12. I have not lost interest in other people
   I am less interested in other people than I used to be
   I have lost most of my interest in other people
   I have lost all of my interest in other people

13. I make decisions about as well as I ever could
   I put off making decisions more than I used to
   I have greater difficulty in making decisions than before
   I can't make decisions at all any more

14. I don't feel I look any worse than I used to
   I am worried that I am looking old or unattractive
   I feel that there are permanent changes in my appearance that
   make me look unattractive
   I believe that I look ugly

15. I can work about as well as before
   It takes an extra effort to get started at doing something
   I have to push myself very hard to do anything
   I can't do any work at all

16. I can sleep as well as usual
   I don't sleep as well as I used to
   I wake up 1 - 2 hours earlier than usual and find it hard to get
   back to sleep
   I wake up several hours earlier than I used to and cannot get
   back to sleep

17. I don't get more tired than usual
   I get tired more easily than I used to
   I get tired from doing almost anything
   I am too tired to do anything

18. My appetite is no worse than usual
   My appetite is not as good as it used to be
   My appetite is much worse now
   I have no appetite at all any more

19. I haven't lost much weight, if any lately
   I have lost more than 5 pounds
   I have lost more than 10 pounds
   I have lost more than 15 pounds

   I am purposely trying to lose weight by eating less
   Yes........ No........
20. I am no more worried about my health than usual
   I am worried about physical problems such as aches and pains,
   or upset stomach, or constipation
   I am very worried about physical problems and it's hard to think
   of much else.
   I am so worried about my physical problems and it's hard to
   think of much else.
   I am so worried about my physical problems that I cannot think
   about anything else.

21. I have not noticed any recent change in my interest in sex
   I am less interested in sex than I used to be
   I am much less interested in sex now
   I have lost interest in sex completely.
APPENDIX 2.

SCALE FOR SUICIDE IDEATION
SCALE FOR SUICIDAL IDEATION

1. Wish to live
   0. Moderate to strong
   1. Weak
   2. None

2. Wish to die
   0. None
   1. Weak
   2. Moderate to strong

3. Reasons for living/dying
   0. For living outweigh for dying
   1. About equal
   2. For dying outweigh for living

4. Desire to make active suicide attempt
   0. None
   1. Weak
   2. Moderate to strong

5. Passive suicidal desire
   0. Would take precautions to save life
   1. Would live life/death to chance
   2. Would avoid steps necessary to save or maintain life

6. Time dimension: Duration of suicide ideation/wish
   0. Brief, fleeting periods
   1. Longer periods
   2. Continuous (chronic) or almost continuous

7. Time dimension: Frequency of suicide
   0. Rare, occasional
   1. Intermittent
   2. Persistent or continuous

8. Attitude toward ideation/wish
   0. Rejecting
   1. Ambivalent; indifferent
   2. Accepting

9. Control over suicidal action/acting-out wish
   0. Has sense of control
   1. Unsure of control
   2. Has no sense of control

10. Deterrents to active attempt (e.g. family, religion, irreversibility)
    0. Would no attempt because of a deterrent
    1. Some concern about deterrents
    2. Minimal or no concern about deterrents
11 Reason for contemplated attempt
0. To manipulate the environment; get attention, revenge
1. Combination of 0 and 2
2. Escape, surcease, solve problems

12 Method: Specificity/planning of contemplated attempt
0. No considered
1. Considered, but details not worked out
2. Details worked out/well formulated

13 Method: Availability/opportunity for contemplated attempt
0. Method not available; no opportunity
1. Method would take time/effort; opportunity not readily available
2a. Method and opportunity available
2b. Future opportunity or availability of method anticipated.

14 Sense of 'capability' to carry out attempt
0. No courage, too weak, afraid, incompetent
1. Unsure of courage, competence
2. Sure of competence, courage.

15 Expectancy/anticipation of actual attempt
0. No
1. Uncertain, not sure
2. Yes

16 Actual preparation for contemplated attempt
0. None
1. Partial (e.g. starting to collect pills)
2. Complete (e.g. had pills, loaded gun)

17 Suicide note
0. None
1. Started but not completed; not thought about
2. Completed

18 Final acts in anticipation of death (e.g. insurance, will)
0. None
1. Thought about or made some arrangements
2. Made definite plans or completed arrangements.

19 Deception/concealment of contemplated suicide
0. Revealed ideas openly
1. Held back on revealing
2. Attempted to deceive, conceal, lie.
HOPELESSNESS SCALE (HS)

Read each statement and decide whether it is true (T) as applied to you or false (F) as applied to you. If it is true, or usually true as applied to you, place a T beside the statement. If it is false or usually false as applied to you, place an F alongside the statement in the space provided.

1. ___ I look forward to the future with hope and enthusiasm.
2. ___ I might as well give up because I can't make things better for myself.
3. ___ When things are going badly, I am helped by knowing they can't stay that way forever.
4. ___ I can't imagine what my life would be like in 10 years.
5. ___ I have enough time to accomplish the things I most want to do.
6. ___ In the future, I expect to succeed in what concerns me most.
7. ___ My future seems dark to me.
8. ___ I expect to get more of the good things in life than the average person.
9. ___ I just don't get the breaks, and there's no reason to believe I will in the future.
10. ___ My past experiences have prepared me well for my future.
11. ___ All I can see ahead of me is unpleasantness rather than pleasantness.
12. ___ I don't expect to get what I really want.
13. ___ When I look ahead to the future, I expect I will be happier than I am now.
14. ___ Things just won't work out the way I want them to.
15. ___ I have great faith in the future.
16. ___ I never get what I want so it's foolish to want anything.
17. ___ It is very unlikely that I will get any real satisfaction in the future.
18. ___ The future seems vague and uncertain to me.
19. ___ I can look forward to more good times than bad times.
20. ___ There's no use in really trying to get something I want because I probably won't get it.
APPENDIX 4.

SOCIAL DYSFUNCTION RATING SCALE.
SOCIAL DYSFUNCTION RATING SCALE.

<table>
<thead>
<tr>
<th>NO</th>
<th>ITEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Low self concept. (feeling of inadequacy not measuring up to self ideal).</td>
</tr>
<tr>
<td>2</td>
<td>Goallessness. (Lack of inner motivation and sense of future orientation). This item is rated on verbal reports regarding specific accomplishments or interests one has in mind for the future.</td>
</tr>
<tr>
<td>3</td>
<td>Lack of satisfying philosophy of meaning of life. (A conceptual framework for integrating past and present experiences).</td>
</tr>
<tr>
<td>4</td>
<td>Self health concern (preoccupation with physical health, somatic concerns).</td>
</tr>
<tr>
<td></td>
<td><strong>Interpersonal system</strong></td>
</tr>
<tr>
<td>5</td>
<td>Emotional withdrawal. (Degree of deficiency in relating to others).</td>
</tr>
<tr>
<td>6</td>
<td>Hostility. (Degree of aggression towards others).</td>
</tr>
<tr>
<td>7</td>
<td>Manipulation. (Exploiting of environment, controlling at others expense).</td>
</tr>
<tr>
<td>8</td>
<td>Overdependency. (Degree of parasitic attachment to others).</td>
</tr>
<tr>
<td>9</td>
<td>Anxiety. (Degree of feeling uneasiness, impending doom).</td>
</tr>
<tr>
<td>10</td>
<td>Suspiciousness. (Degree of distrust or paranoid ideation).</td>
</tr>
<tr>
<td></td>
<td><strong>Performance system</strong></td>
</tr>
<tr>
<td>11</td>
<td>Lack of satisfying relationships with significant persons. (Spouse, children, kin, significant persons serving in a family role).</td>
</tr>
<tr>
<td>12</td>
<td>Lack of friends, social contacts.</td>
</tr>
<tr>
<td>13</td>
<td>Expressed need for more friends and social contacts.</td>
</tr>
<tr>
<td>14</td>
<td>Lack of work. (Remunerative or nonremunerative) (Productive work activities which normally give a sense of usefulness, status and confidence).</td>
</tr>
<tr>
<td>15</td>
<td>Lack of satisfaction from work.</td>
</tr>
<tr>
<td>NO</td>
<td>ITEM</td>
</tr>
<tr>
<td>----</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>17</td>
<td>Expressed need for more leisure, self enhancing and satisfying activities.</td>
</tr>
<tr>
<td>18</td>
<td>Lack of participation in community activities.</td>
</tr>
<tr>
<td>19</td>
<td>Lack of interest in community affairs and activities which influence others.</td>
</tr>
<tr>
<td>20</td>
<td>Financial insecurity.</td>
</tr>
<tr>
<td>21</td>
<td>Adaptive rigidity. (Lack of complex coping patterns of stress.)</td>
</tr>
</tbody>
</table>

**SCORING**

1. Not present  
2. Very mild  
3. Mild  
4. Moderate  
5. Severe  
6. Very severe
APPENDIX 5.

LIFE EXPERIENCE SURVEY
LIFE EXPERIENCE SURVEY

INSTRUCTIONS

Please read very carefully.

i) Listed below are a number of events which sometimes bring about
change in the lives of those who experience them and which
necessitate social readjustment. Please check these events which
you have experienced in recent past and indicate the time period
during which you have experienced each event.

ii) For each item indicate the extent to which you viewed the event as
having either a positive or negative impact on your life.

Use the code below to help you and be sure that all check marks
are directly across from the items which they correspond.

Thank you.

CODE

-3: extremely negative  +1: slightly positive
-2: moderately negative +2: moderately positive
-1: somewhat negative  +3: extremely positive
0: no impact
Time period passed | Rating of impact on your life
---|---
0-6 months | Extremely negative
6-12 months | Moderately negative
12 months | Somewhat negative
12-24 months | No impact
24-36 months | Slightly positive
36-48 months | Moderately positive
48-60 months | Extremely positive

**EVENT**

1. Marriage
2. Detention in jail or comparable institution
3. Death of spouse
4. Major change in sleeping habits (much more or much less sleep)
5. Death of close family member:
   a. mother
   b. father
   c. sister
   d. brother
   e. grandmother
   f. grandfather
   g. other (specify)
6. Major change in eating habits (Much more or much less food intake)
7. Foreclosure on mortgage or loan
8. Death of close friend
9. Minor law violations (traffic tickets, disturbing the peace, etc.)
10. Outstanding personal achievement
12. Female: pregnancy
13. Changed work situation: (different work responsibility, major change in working conditions, working hours, etc.)
14. New Job
15. Serious illness or injury of close family member:
   a. father
   b. mother
   c. brother
   d. sister
   e. grandfather
   f. grandmother
   g. spouse
<table>
<thead>
<tr>
<th>EVENT</th>
<th>Time period passed</th>
<th>Rating of impact on your life</th>
</tr>
</thead>
<tbody>
<tr>
<td>16. Sexual difficulties</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Trouble with employer (in danger of losing job, being suspend,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>demoted, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Trouble with in-laws</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Major change in financial status (a lot better off or a lot</td>
<td></td>
<td></td>
</tr>
<tr>
<td>worse off)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Major change in closeness of family members (increased or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>decreased closeness)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. Gaining a new family member (through birth, adoption, family</td>
<td></td>
<td></td>
</tr>
<tr>
<td>member moving in etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. Change of residence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. Marital separation from mate (due to conflict)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. Major change in church activities (increased or decreased</td>
<td></td>
<td></td>
</tr>
<tr>
<td>attendance)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25. Marital reconciliation with mate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26. Major change in number of arguments with spouse (a lot more or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a lot less arguments)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27. Maried male: Change in wife's work outside the home (beginning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>work, ceasing work, changing to a new job)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28. Married female: Change in husband's work (loss of job, beginning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>new job, retirement etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29. Major change in usual type and/or amount of recreation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30. Borrowing more than £10,000 (buying home, business etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EVENT</td>
<td>Time period passed</td>
<td>Rating of impact on your life</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>--------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>31. Borrowing less than £10,000 (buying car, furniture etc.)</td>
<td>0-6 months</td>
<td>extremely negative</td>
</tr>
<tr>
<td>32. Being fired from job</td>
<td>7-12 months</td>
<td>extremely negative</td>
</tr>
<tr>
<td>33. Male: Wife/girlfriend having abortion</td>
<td></td>
<td>extremely negative</td>
</tr>
<tr>
<td>34. Female: Having abortion</td>
<td></td>
<td>extremely negative</td>
</tr>
<tr>
<td>35. Major personal illness or injury</td>
<td></td>
<td>moderately negative</td>
</tr>
<tr>
<td>36. Major change in social activities, e.g. parties, movies etc.</td>
<td></td>
<td>no impact</td>
</tr>
<tr>
<td>37. Major change in living conditions of family</td>
<td></td>
<td>positive</td>
</tr>
<tr>
<td>38. Divorce</td>
<td></td>
<td>positive</td>
</tr>
<tr>
<td>39. Serious injury or illness of close friend</td>
<td></td>
<td>positive</td>
</tr>
<tr>
<td>40. Retirement from work</td>
<td></td>
<td>positive</td>
</tr>
<tr>
<td>41. Son or daughter leaving home (due to marriage, college etc)</td>
<td></td>
<td>positive</td>
</tr>
<tr>
<td>42. Ending of formal schooling</td>
<td></td>
<td>positive</td>
</tr>
<tr>
<td>43. Separation from spouse (due to work, travel, etc.)</td>
<td></td>
<td>positive</td>
</tr>
<tr>
<td>44. Engagement</td>
<td></td>
<td>positive</td>
</tr>
<tr>
<td>45. Breaking up with boyfriend/girlfriend</td>
<td></td>
<td>positive</td>
</tr>
<tr>
<td>46. Leaving home for the first time</td>
<td></td>
<td>positive</td>
</tr>
<tr>
<td>47. Reconciliation with boyfriend/girlfriend</td>
<td></td>
<td>positive</td>
</tr>
<tr>
<td>Other recent experiences which have had impact on your life.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>List and rate</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 6.

PROFILE OF MOOD STATES
Below is a list of words that describe feelings people have. Please read each one carefully, then fill in the space under the answer to the right which best describes how you have been feeling during the past week including today.

<table>
<thead>
<tr>
<th>The number refers to these choices.</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0: Not at all</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1: A little</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2: Moderately</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3: Quite a bit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4: Extremely</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Friendly                         | 0 1 2 3 4 |   |
2. Tense                            | 0 1 2 3 4 |   |
3. Angry                            | 0 1 2 3 4 |   |
4. Worn out                         | 0 1 2 3 4 |   |
5. Unhappy                          | 0 1 2 3 4 |   |
6. Unsettled                        | 0 1 2 3 4 |   |
7. Lively                           | 0 1 2 3 4 |   |
8. Confused                         | 0 1 2 3 4 |   |
9. Sorrow for things done           | 0 1 2 3 4 |   |
10. Shaky                           | 0 1 2 3 4 |   |
11. Listless                        | 0 1 2 3 4 |   |
12. Peeved                          | 0 1 2 3 4 |   |
13. Considerate                     | 0 1 2 3 4 |   |
14. Sad                             | 0 1 2 3 4 |   |
15. Active                          | 0 1 2 3 4 |   |
16. On edge                         | 0 1 2 3 4 |   |
17. Grouchy                         | 0 1 2 3 4 |   |
18. Blue                            | 0 1 2 3 4 |   |
19. Energetic                       | 0 1 2 3 4 |   |
20. Panicky                         | 0 1 2 3 4 |   |

**MAKE SURE YOU HAVE ANSWERED EVERY ITEM.**
APPENDIX 7.

ROTTER I-E L C SCALE
This questionnaire is designed to explore how certain significant events in society impact various individuals. Each item presents a pair of alternatives (a or b). Select the option you more strongly believe to be true, as far as you're concerned. The choice should reflect your genuine belief, not what you think you should choose or what you wish were true. This is a personal belief measure; there are no right or wrong answers.

Please answer these items carefully but don't spend too much time on any one item. Be sure to select an answer for every choice. For each numbered question, mark an X on the line beside the choice you believe to be more true.

In some instances, you may find that both alternatives seem plausible or neither seems true. In such cases, select the one you more strongly believe to be true. Try to respond to each item independently when making your choice; don't be influenced by your previous choices.

Select that alternative which you personally believe to be true.

I more strongly believe that:

1. [ ] a. Children get into trouble because their parents punish them too much.  [ ] b. The trouble with most children nowadays is that their parents are too easy with them.

2. [ ] a. Many of the unhappy things in people's lives are partly due to bad luck.  [ ] b. People's misfortunes result from the mistakes they make.

3. [ ] a. One of the major reasons why we have wars is because people don't take enough interest in politics.  [ ] b. There will always be wars, no matter how hard people try to prevent them.

4. [ ] a. In the long run people get the respect they deserve in this world.  [ ] b. Unfortunately, an individual's worth often passes unrecognised no matter how hard he tries.

5. [ ] a. The idea that teachers are unfair to students is nonsense.  [ ] b. Most students don't realise the extent to which their grades are influenced by accidental happenings.

6. [ ] a. Without the right breaks one cannot be an effective leader.  [ ] b. Capable people who fail to become leaders have not taken advantage of their opportunities.

7. [ ] a. No matter how hard you try some people just don't like you.  [ ] b. People who can't get others to like them don't understand how to get along with others.

8. [ ] a. Heredity plays the major role in determining one's personality.  [ ] b. It is one's experiences in life which determine what one is like.

9. [ ] a. I have often found that what is going to happen will happen.  [ ] b. Trusting to fate has never turned out as well for me making a decision to take a definite course of action.

10. [ ] a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.  [ ] b. Many times exam questions tend to be so unrelated to course work that studying is really useless.

11. [ ] a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.  [ ] b. Getting a good job depends mainly on being in the right place at the right time.
12. a. The average citizen can have an influence in government decisions.
   b. This world is run by the few people in power, and there is not much the average man can do about it.
13. a. When I make plans, I am almost certain that I can make them work.
   b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.
14. a. There are certain people who are just no good.
   b. There is some good in everybody.
15. a. In my case getting what I want has little or nothing to do with luck.
   b. Many times we might as well decide what to do by flipping a coin.
16. a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.
   b. Getting people to do the right thing depends upon ability; luck has little or nothing to do with it.
17. a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
   b. By taking an active part in political and social affairs the people can control world events.
18. a. Most people can't realise the extent to which their lives are controlled by accidental happenings.
   b. There is really no such thing as 'luck'.
19. a. One should always be willing to admit one's mistakes.
   b. It is usually best to cover up one's mistakes.
20. a. It is hard to know whether or not a person really likes you.
    b. How many friends you have depends upon how nice a person you are.
21. a. In the long run the bad things that happen to us are balanced by the good ones.
    b. Most misfortunes are the result of lack of ability, ignorance, laziness or all three.
22. a. With enough effort we can wipe out political corruption.
    b. It is difficult for people to have much control over the things politicians do in office.
23. a. Sometimes I can't understand how teachers arrive at the grades they give.
    b. There is a direct connection between how hard I study and the grades I get.
24. a. A good leader expects people to decide for themselves what they should do.
    b. A good leader makes it clear to everybody what their jobs are.
25. a. Many times I feel that I have little influence over the things that happen to me.
    b. It is impossible for me to believe that chance or luck plays an important role in my life.
26. a. People are lonely because they don't try to be friendly.
    b. There's not much use in trying too hard to please people, if they like you, they like you.
27. a. There is too much emphasis on athletics in high school.
    b. Team sports are an excellent way to build character.
28. a. What happens to me is my own doing.
    b. Sometimes I feel that I don't have enough control over the direction my life is taking.
29. a. Most of the time I can't understand why politicians behave the way they do.
    b. In the long run the people are responsible for bad government on a national as well as on a local level.
APPENDIX 8.

SUICIDE INTENT SCALE
SUICIDE INTENT SCALE

A. CIRCUMSTANCES RELATED TO THE SUICIDE ATTEMPT

1. Isolation
   0 Somebody present
   1 Somebody nearby in contact (as by 'phone)
   2 No one nearby or in contact

2. Timing
   ( ) Does not apply
   0 Timed so that intervention is probable
   1 Timed so that intervention is not likely
   2 Timed so that intervention is highly unlikely

3. Precautions against discovery and/or intervention
   0 No precaution
   1 Passive precaution such as avoiding others but doing nothing to prevent their intervention (alone in unlocked room)
   2 Active precaution (locked door)

4. Acting to gain help during/after attempt
   ( ) Does not apply
   0 Notified potential helper regarding attempt
   1 Contacted but did not specifically notify potential helper regarding suicide
   2 Did not contact or notify potential helper

5. Final acts in anticipation of death
   0 None
   1 Patient thought about making or made some arrangements in anticipation of death
   2 Definite plans made

6. Degree of planning for suicide attempt
   0 No preparation
   1 Minimal or moderate preparation
   2 Extensive preparation
7. Suicide note
   0 Absence of note
   1 Note written but torn up or note thought about
   2 Presence of note

8. Overt communication of intent before act
   0 None
   1 Equivocal communication
   2 Unequivocal communication

   SELF REPORT

9. Purpose of attempt
   0 Mainly to change or manipulate environment
   1 Components of 0 and 2
   2 Mainly to remove self from environment

10. Expectations regarding fatality of act
    0 Patient thought that death was unlikely or did not think of it
    1 Patient thought that death was possible but not probable
    2 Patient thought that death was probable or certain

11. Conception of method's lethality
    0 Patient did less to himself than he thought would be lethal or did not think about it
    1 Patient was not sure or thought what he did might be lethal
    2 Act exceeded or equalled what patient thought was lethal

12. Seriousness of attempt
    0 Patient did not consider act as a serious attempt to end life
    1 Patient was uncertain whether act was a serious attempt to end his life
    2 Patient considers the act as a serious attempt to end his life

13. Ambivalence towards living
    0 Patient did not want to die
    1 Patient did not care whether he lived or died
    2 Patient wanted to die
14. **Conception of reversibility**

0 Patient thought that death was unlikely if he received medical attention

1 Patient was uncertain whether death could be averted by medical attention

2 Patient was certain of death even if he received medical attention

15. **Degree of premeditation**

0 None - impulsive

1 Suicide contemplated for three hours or less prior to the attempt

2 Suicide contemplated for more than three hours prior to the attempt
APPENDIX 9.

INTERPERSONAL COGNITIVE PROBLEM-SOLVING FOR SUICIDE ATTEMPTERS: TREATMENT GUIDE.
The procedures described below draw largely on the problem-solving training manuals utilized in group psychiatric work by Coche and Flick (1975), Siegel and Spivack (1975) and Platt and Spivack (1976). The procedures were adapted for use with suicidal individuals and recognize the early work of assessing and improving problem-solving skills (Shure, Spivack and Gordon, 1972) with disadvantaged children.

Initial Meeting.

A one-hour meeting is conducted with each individual entering group training. The individual's own problems are explored and a record of identifiable problems is compiled for later use within the group setting.

Some of the initial discussion surrounds preparation for active participation within the group and anxieties and reservations about discussing personal problems openly are tackled. Practical problems about attending group meetings are also examined. This is part of the pretherapy socialization deemed important to encouraging attendance and participation.

A clear description about the purpose of group meetings is discussed with each individual and it is explained that the group experience would be helpful in learning to deal more effectively with real-life interpersonal problems. At this meeting a brief typed description outlining the training programme is given to each individual. This reads:

"The purpose of the Problem-solving Training group is to try to help individuals learn to solve more effectively those real-life problems that may have caused them
difficulty. Many individuals find it difficult to know how to go about solving their problems or otherwise use ineffective or inadequate means to deal with interpersonal difficulties. At times when problems become overwhelming some people attempt to harm themselves as a means of coping. There are a number of steps you may usefully follow when attempting to solve a problem. The training procedures are intended to teach you these steps and to give you practice in mastering each of these steps.

We will consider six problem solving steps. These are as follows:

i) Recognising and bringing up problems:
   Everyone experiences problems as part of real-life although some people are better at solving them than others. The First step in successful problem-solving is to learn how to recognise problems. You will be given exercises aimed to give you practice to be better at recognising problems. You may be required to bring up some of your own problems for discussion at this stage and throughout the group training sessions.

ii) Defining and clarifying problems:
   Secondly, during the sessions you attend you will be given guidance and practice in how to define more clearly problems that you may have in your life that you recognise in Step 1.

iii) Alternative solution thinking:
   The third and vitally important step in problem-solving is learning alternative or different ways of solving problems. There may be more than one way of solving a given problem and some solutions may be clearly better than others. You will be given practice in thinking about alternative ways to solve problems.

iv) Selecting the best solution:
   In this stage you will learn how to evaluate different solutions to problems and
to come to a decision about the best possible solution. You will be given practice in examining the pros and cons of various solutions and in trying to decide on the best alternative.

v) Applying 'Best' Solutions in real life:

You will have regular opportunities to bring up for discussion problems you may be attempting to solve in your life. You will be encouraged to apply solutions discussed in the group to your own real-life problems. Where-ever possible you will be encouraged to report back to the group in how effective putting solutions into practice has been.

vi) Maintaining the problem-solving attitude:

Problems are known to occur throughout life. In order to help yourself be in readiness to deal with life's problems remember the rules of problem-solving by applying them in everyday situations in your daily life. You will be reminded during sessions of the value of problem-solving strategies in daily living."
General notes:

The first Group Session:

The group leader uses the initial session and the first group meeting to introduce the idea that problem-solving plays an important part in relationships. Throughout this and subsequent sessions a number of general themes are emphasized. These include

i) that problems are solvable
ii) that the focus of the programme is on problems of an interpersonal nature
iii) that interpersonal problems are a common part of everyday life for everyone
iv) that group members should see the group as a place to bring immediate problems which they face and group members are encouraged to bring their current problems for discussion
v) that the proper temporal focus of the group is in the present and future and not in the past. The emphasis is on how to solve problems with which they are now faced or which they may face in the future
vi) that when problems seem overwhelming some people attempt to harm themselves as a means of escaping from or coping with problems. This brings the idea of suicidal action into the open and is intended to break down resistance to discuss this behaviour in the group.

The group leader basically acts as a participant observer maintaining the structure of the group, facilitating support between group members and maintaining the problem-solving focus of the group.
The group leader informs group members that in order that they receive more experience in problem-solving they would all be required to bring up problems for discussion and that the group will try to come up with as many possible solutions. The group leader explains that if necessary a record of problems raised would be kept for use in subsequent sessions by the group.

The plan of each session is outlined below.

1. Hand in research questionnaires
2. Report back on set homework assignment
3. Training period using problems raised by group members or hypothetical problems
4. Real life interpersonal problem-solving discussion period including discussion of suicidal wishes
5. Set next homework assignment
6. Fill in any research questionnaires.

Each group session followed the plan described above and is meant to facilitate the development of a structure of expectations with regard to the behaviours required on the part of group members.

The Break-down of Sessions.

Groups were run over eight sessions to cover six aspects of interpersonal problem-solving behaviour. The sessions were structured such that subsequent sessions incorporate and develop themes covered in the previous session(s).

Session 1: Initial group meeting, general orientation.

Session 2: Step 1. Problem-solving: behavioural rehearsal
Recognising and bringing up problems
Recognising and bringing up a problem.

During this session members are encouraged to bring up for discussion problems they may be currently facing. In order to get the group members more used to the idea of bringing up problems it may be useful to initially deal with general problems which members share e.g. facing a job interview, planning a holiday with a friend or family member. Group members are encouraged to think of problems themselves, but if there are difficulties a set of hypothetical problems differing in content but of similar structure to those used in the Means Ends Thinking Procedure (Platt & Spivack, 1975) are used as catalysts, e.g.

"...Jo was having difficulty seeing her boyfriend as much as he wanted as there were great demands on her to work extra hours. This lead to increasing problems between them. Jo wished to keep her boyfriend and reduce the number of arguments between them. The story ends with Jo and her boyfriend reaching an amicable agreement."
Further examples are given below.

Each member of the group is given an opportunity to suggest a way in which he or she is able to tell when they have a problem and to discuss how they may act and feel when they have a problem. In this way a list of common problems that people have may be generated with a focus on those of an interpersonal nature.

Members are encouraged to think of ways in which they are able to recognise when they have a problem including increased worry, anxiety feelings, poor concentration, more irritability, thinking of escaping or running away, increased alcohol consumption and pressure from others.

During the real-life problem discussion period the leader continually focuses on the interpersonal aspects of problems encouraging group members, in a non-judgemental way, to contribute their ideas.

Defining and clarifying problems.

Frequently group members may be unable to present a problem in a clear and concise manner and this may cause confusion both for that person and other group members. On the other hand a number of problems may be presented together in such a way as to obscure the true nature of the difficulty. The inability to define a problem clearly is assumed to add to the interpersonal difficulties and the sense of turmoil experienced and reduces the probability of problem resolution. Group members may state problems in a global and non-specific way e.g. "I can't get on with my friends" or "I can't cope anymore" or "All my girlfriends always leave me" or "I never seem to do anything that's right". The group leader encourages the member to re-state the problem or seeks clarification by asking specific questions. Group members are also
encouraged to ask questions so that they might better understand. Another suggestion is to breakdown larger or multiple problems into more clearly stated manageable units.

Group members are encouraged and given practice in

a. Restating the problem more clearly
b. To seek clarification by asking questions
c. To seek clarification by getting more information
d. To breakdown multiple problems into manageable units
e. To be more specific

It is the responsibility of the group leader to clear-up any existing confusion by re-stating and summarising the problem for the group. Later on as part of the training group members may take it in turns to try to clearly restate problems for the group.

The group begins training in seeking further information about problems necessary for later on when generating solutions is to be considered. Group members are helped to ask questions in a more organised way as intelligent information gathering is one facet of the ability to define problems. The group leader also helps to maintain the clarity of the discussion and keeps the group from wandering away from the problem under consideration.

Alternative solution thinking.

This training session focuses specifically on generating alternative solutions once problems are presented for discussion and clarification. It takes into account that the impaired or diminished capacity of individuals under stress to effectively solve interpersonal problems is often due to a failure to search for alternative solutions.
Many individuals tend to respond to a problem with a predictable pet solution without much regard to its applicability, usefulness and the consideration of alternative approaches - a narrowed range of conceptualization.

Group members are encouraged to produce as many solutions as possible and these are accepted without criticism and no value judgements are placed on the appropriateness of the suggestions made. The following list is an example of alternative solutions generated to the problem of regaining a lost girlfriend. The solutions are not ordered by degree of appropriateness.

- send flowers
- telephone
- wait outside her work
- see her friends
- take an overdose
- seek her forgiveness
- make her jealous
- settle difference
- have discussion
- leave until thinks cool
- play it by ear
- get friend to threaten her
- ring her mother and explain
- invite out for a meal
- date someone else
- pretend to be ill
- find out what to change
- agree to disagree

The idea, that learning to solve problems successfully is increased if individuals gain practice in producing alternative courses of action, is emphasized.

Suicide wishes - expressed, or tapped by clinical questionnaires - may be also classed as problems in their own right and can therefore be equally subjected to the problem-solving process.

As with the other sessions of practice and training frequent social reinforcement and
approval is associated with participation and in this case with presenting possible solutions. The leader determines when it becomes apparent that members have exhausted the possibilities.

Note, that problem-solving skills learnt in early sessions are usually incorporated into the succeeding training sessions so that over the training period increasing opportunity for using the steps in problem-solving is afforded.

Selecting the best alternative solution.

This session orients the group toward evaluating alternative courses of action and involves careful consideration of the possible consequences of each alternative suggested in the previous session. The record of possible alternatives is used as a reference and the group is encouraged to evaluate and discuss the possible advantages and disadvantages of each alternative in turn.

There is clear recognition here that a solution which may be appropriate for one individual may be inappropriate for another and this point is further elaborated when the individual's own problems come up for discussion. The idea of taking time to make a decision is also introduced at this stage and discussion surrounds thinking through problems using the steps so far, reflecting on possible solutions and resisting impulsive action. The session allows for practice in examining the possible consequences of actions and in decision making.

Chosen solutions are not treated as right or wrong but are considered mainly with regard to the specific nature of the problem and to the realistic circumstances of the individual.
Applying the 'best' solutions to real-life problems.

The group experience is designed to train the individual to solve interpersonal problems within a group setting and then to actively encourage use of this skill when dealing with their own interpersonal relationships. To further promote the transfer of problem-solving into real life where appropriate, once a decision about the best solution is made, members take turns in role-playing a sequence of actions leading up to applying their best solution. Role-play acts to promote active participation, strengthens group cohesiveness and increases self-worth as they see their propositions being put into practice.

In between sessions (see Homework Assignments) group members carry out practicing the skills learnt in group sessions in their real life situations drawing on confidence developed during role-play. In the event of the failure of a strategy the individual is encouraged to select another alternative and to try again. The aim is not to exhaust all possible solutions but more to encourage the individual to persist in his efforts. As part of group activity and in order to consolidate the principles of problem-solving members are required to report back to the group the details of their real-life problem-solving efforts. This allows for reinforcement of success, reappraisal of chosen solutions and planning for future action. Later on, in real life, reporting back might be to a friend or relation so that appropriate feedback on problem solving efforts might be gained.

Group members practice putting the following sequence of behaviours into everyday use when approaching real-life interpersonal problems.

1. Write down what you think the problem is e.g.

"My husband is unfair to me; he does not let me see the children"
2. Clearly re-state the problem to yourself - write it down e.g.

   "I wish to see my children every-other week-end"

3. Write down all possible alternatives e.g.

   see solicitor          discuss with social worker
   go to court for access get job, be more stable
   improve home, get bigger place ring ex-husband's girlfriend
   make children ask to see me arrange to meet husband and
   etc.                  discuss.

4. Use your pros and cons balance sheet to carefully examine
   advantages and disadvantages. Remember to think of possible
   obstacles e.g. no work available, may not be free on week-ends,
   not enough money

5. Select the best three alternatives

6. Decide upon which one solution you will attempt first e.g.
   settle existing differences with Husband

7. Choose a good time to approach 'target' person

8. If necessary set an agreed time and place with that individual.
   You are serious in your intentions. Stick to your plan.

9. Try out your solution(s)

10. Get feedback from target person or other relevant person.
     Appraise and record how well you have done
11. If not successful plan and try out another alternative

12. Inform others of your decision to change your behaviour.

Maintenance of the Problem-solving attitude:

The group leader points out that as with any skill continued practice leads to improvement so group members are encouraged to approach more and more problems in their lives using the systematic problem-solving steps described. This keeps problem-solving behaviour alive and increases the chance that it becomes wholly incorporated into the general behavioural repertoire.

The final training sessions reinforces and strengthens problem-solving behaviour. The issue of suicidal behaviour is again specifically raised although this would be part of the discussion within each session during the real life problem-solving discussion period. The idea is not to consider suicidal wishes in isolation but to identify problems which make the individual choose this behaviour as an option and then applying problem-solving principles to those problems.

Homework assignments:

The regular provision of homework assignments is seen as vital to the development and maintenance of interpersonal problem-solving skills. The group leader is careful to provide realistic homework assignments at every stage of training to be carried out between sessions.

In order to consolidate the principles of problem-solving group members bring back to the group reports on the details of their real-life efforts.
The following are some examples of homework assignments:

i) Write down for discussion in the group a short list of problems you are currently facing. These may include problems in relationships or with other group members. Say how you recognise that you have a problem. Try to be specific.

ii) Consider at least one specific problem on your problem list.
Try to write down as many possible solutions to this problem as you can. Remember even when you get stuck thinking just a little bit longer might be fruitful.

iii) For the problem you have chosen write down as many solutions as you can. For each alternative make notes on the possible advantages and disadvantages.

iv) Now that you have practised deciding on the best or most feasible solution try to put this into practice in your own life situation. Record how well you have done. Remember think before acting.

v) Bring back for discussion one situation in your life over the past week in which you put the strategies learnt in the group into practice. Record the steps you took.

Examples of Interpersonal Problems used on training sessions.

1. Tom felt that his parents were interfering too much in his life.
   He felt that now that he was nineteen and had steady work he should be allowed to
decide whether he lived at home. In fact he had been looking for some accommodation. There were mounting tensions at home when his parents discovered his plans.

The story ends with Tom leaving home with the agreement of his parents.

2. Mary was terribly upset and hurt. Her boyfriend had been showing more interest in someone else recently. Mary had become very attached to him over the last six months. Now she was confused as to how she might deal with this.

The story ends with Mary reaching a decision.

3. Philip felt that his friends were encouraging him to drink too much. This was now interfering with his work and caused quarrels with his girlfriend. Philip did not want to lose his friends and wanted to stop drinking.

The story ends with Philip getting his friends to agree to this.

4. Jo was having difficulty seeing her boyfriend as much as he wanted as there were great demands on her to work extra hours. This lead to increasing problems between them. Jo wished to keep her boyfriend and reduce the number of arguments between them.

The story ends with Jo and her boyfriend reaching an amicable agreement.

5. Anne felt that it was unfair that her husband did not let her see the children. It was now six months since their break-up and separation. Anne wanted to see her children every other week-end.

The story ends with Anne getting her husband to agree to this.

Note, that interpersonal problems brought to the group by group members may be
reasonably cast within the MEPS format and used during training sessions. Other problem areas considered are listed below; specific problems used in training would need to be defined within each broad area of interpersonal functioning.

conflicts with work mates.
difficulties with older children.
general family difficulties
dealing with interfering mother-in-law
applying for work in person
borrowing money from friends
jealousy from spouse
lack of affection from spouse
making friends
improving relationship with children
dealing with noisy neighbours
breaking down social isolation
married couple improving social life together
specific marital problems
unreasonable landlord.

Examples of Alternative Solution Thinking

1. Problem: Regaining lost girl friend.

send flowers leave until things cool down
telephone play it by ear
wait outside her work get friend to threaten her
see her friends ring her mother and explain
take an overdose invite out for a meal
seek her forgiveness date someone else
make her jealous pretend to be ill
settle differences find out what to change
have discussion agree to disagree

2. Problem: Separated wife getting to see children every other week-end.

see solicitor
go to court and get access
talk to ex-mother-in-law and get support
talk to husband's current girl-friend
get husband to see woman's point of view
see social worker
try to way lay children from school
write to children and make them dislike father
make children ask to see me
send presents, be nicer to them
write to husband with request
be better person, stop being bitchy
improve home, get bigger place
arrange to meet husband to discuss
wait until children grow up to decide
get job, be more stable
settle differences with husband
APPENDIX 10.

COGNITIVE THERAPY FOR SUICIDE ATTEMPTERS:
TREATMENT GUIDE.
Appendix 10

Cognitive therapy for suicide attempters.

The strategies of cognitive therapy have increasing therapeutic appeal and have been successfully applied to a variety of clinical groups. The efficacy of cognitive therapy for depression in particular in comparison with pharmacotherapy is the subject of many investigations.

The procedures described below take account of the cognitive therapy training manuals and guidelines provided by Beck et al (1979), Beck (1976), Kiev (1975) and Kovacs, Beck and Weissman (1975) for individual patients and the work of Hollon and Shaw (1979) with groups of depressed patients. The procedures are directed at considerations thought to be important when dealing with suicide attempters rather than the suicidally depressed, a group of patients considered rather difficult to deal with in a group format.

Initial meeting.

A one hour meeting is conducted with each patient entering group Cognitive Therapy and apart from providing an opportunity to detect and assess the degree of suicidal intentionality it allows for the preparation of the patient to enter the group activity. Anxieties and reservations about active participation in the group and about discussing personal feelings and problems are considered and wherever indicated appropriate reassurance is given. Practical problems about regular group attendance are also examined. This pre-therapy socialization is deemed important to effective functioning as a group member.
The therapist starts to deal therapeutically with evidenced suicidal wishes in this initial meeting. The reason(s) elicited from the patient for the suicide attempt are recorded and kept for later reference during group sessions.

As with individual cognitive therapy the aim of the initial session is to produce some symptom relief which may lead to an increase in hopefulness on the part of the patient.

Each patient is given a copy of "Coping with Suicidal Wishes and Feelings" to introduce the idea of the crucial relationship between events, thoughts, feelings and suicidal behaviour. This reads:

"Many people may feel overwhelmed by or unable to cope with recurring difficulties that they recognise in their lives. This may lead to recurring THOUGHTS such as:

I can't carry on any longer
There is nothing to look forward to in the future
My future looks black
There is no use in trying any more
I can't ever get the help I need

These thoughts may lead to sad and depressed feelings of gloom and helplessness. In some cases this leads the individual to consider seriously, and to carry out an act of harming himself as a means of coping.

The way an individual feels arises from the way he may interpret and think about what has happened. People are more usually aware of the FEELINGS they experience in a given circumstance or situation. If you BELIEVE that nothing you can do will change a
bad life situation then it is natural to feel dejected and hopeless about the future. Negative beliefs and negative thoughts may play a big part in the decision to give up, not to try any further and to carry out an act of deliberate self-harm.

The group therapy sessions will introduce a number of techniques which you may learn to help you deal more effectively with these negative thoughts. You will learn how to help yourself by first learning how to recognise these AUTOMATIC NEGATIVE THOUGHTS and then to practise applying techniques known to be of value in adjusting these thoughts to better fit reality.

We will consider a number of Cognitive Steps or Techniques including.

1. Techniques for dealing with wishes to attempt suicide or to self-harm:

   There will be opportunity to explore the reasons why group members may choose this form of behaviour at sometimes in their life. You will be given practice in learning how to identify early these negative wishes to self-harm, to examine related negative thoughts and to challenge these thoughts constructively and critically.

2. Techniques for dealing with feelings of hopelessness and helplessness:

   You will be given practice in learning to identify those irrational thoughts which underpin the belief that life was not worthwhile and that attempting to harm yourself was reasonable. You will be given practice in changing these irrational thoughts and replacing them with more rational alternative ones, and
iii. Cognitive rehearsal:

During group sessions and as a regular part of homework assignments to be carried out between sessions you will be given exercises which allow you to rehearse imaginary situations of personal crises. In this way you may learn how to prepare yourself for future similar or related situations."

It is recognised that encouraging a patient to talk about his suicidal ideas and wishes generally helps him to view them more objectively, it provides more information from which therapeutic targets might be set, and it offers the individual some immediate relief.
The First Group Session:

The group leader uses the initial session and first group meeting to introduce the basic idea of cognitive therapy - the relationship of dysfunctional thinking to affect and behaviour. The notions introduced in 'Coping with Suicidal Wishes and Feelings' are further discussed as the basis of a therapeutic strategy. A number of themes are introduced and emphasized throughout subsequent sessions.

i) That the way we think about an event plays a vital role in the way we feel about what happens to us and how we might behave subsequently.

ii) The focus of the group will be on thoughts deemed to be associated with suicidal feelings and wishes.

iii) The group will be the setting in which group members will discuss these negative, automatic and plausible thoughts: this encourages discussion of suicidal wishes and thoughts and helps to erode resistance in this area.

iv) The time perspective of the group will be in the present and future. The past will be of interest only in so far as it helps to clarify the present.

v) That thoughts of future hopelessness and desires to escape from current difficulties which are perceived as overwhelming can lead to suicidal action.

Group discussion surrounds the fundamental goals of group cognitive therapy which include an examination and modification of the suicide attempters' maladaptive belief
system - e.g. about the future (hopelessness) or about making a suicide attempt as the best way to gain help.

Group therapy sessions are so structured that they remain problem-orientated. Each cognitive strategy moves from the general to its specific application in the individual case. The therapist as an active group member uses a number of skills - questioning, guiding, challenging - to explore the thinking style which may lie behind current experiences.

The general structure of sessions, the ground rules for the group meetings, individual goals and expectations and a general discussion of cognitive therapy are key ingredients of the first group session and consolidates discussions of the themes considered in the first individual session.

The plan for each session is outlined below. In general each session followed this structured plan allowing for the development of clear expectations as to how group activity would proceed. This format provided a structure in which each group member would play an active role.

1. Hand in research questionnaires.
2. Set agenda and structure group-therapy time.
3. Review homework from last session.
4. Review progress and current status including reactions to previous session.
5. Cognitive therapy practice session including consideration of suicide ideas and wishes.
6. Assign new homework.
Breakdown of sessions.

Session 1: Initial group meeting and general orientation
Establishing ground rules and expectations
Introduction to the rationale of the cognitive therapy approach.

Session 2: Cognitive therapy: Motives to harm self
Cognitive Rehearsal:
Alternative thinking.

Session 3: Cognitive Therapy: Feelings of Hopelessness and Helplessness
Cognitive Rehearsal
Alternative therapy.

Session 4: Cognitive Therapy: Self-harm wishes and ideas
Cognitive Rehearsal
Self-harm Balance Sheet

Session 5: Cognitive Therapy: Feelings of being overwhelmed; wishes to escape
Cognitive Rehearsal
Self-harm Balance Sheet

Session 6: Cognitive Therapy: Feelings of depression and sadness
Cognitive rehearsal
Thought-catching
Session 7: Cognitive Therapy: Feelings of Failure and rejection

Cognitive Rehearsal

Thought-catching

Preparation for the reactions to termination

Session 8: Termination

Consolidation of the application of cognitive therapy methods in everyday life

Social and mutual supports

Finalise follow-up arrangements

A. Outline of Procedures.

1. Setting Agendas and structuring therapy time.

The therapist collaborates with group members at the beginning of each session to plan an agenda. This allows both therapist and patients to target some specific areas to include for discussion. This is a flexible arrangement and is meant to be used as a structured guide rather than a plan to follow rigidly.

Each member of the group is asked to contribute to agreeing an agenda and this is useful as it ensures that each participant begins the group making some active contribution.

During this time group members can comment on major changes in their circumstances, or in themselves over the preceding week. A note is made of any area of change for later fuller discussion.
The building of an agenda highlights the group concerns for each session and ensures that the group functions with some efficiency.

The group agrees to structure the therapy time in such a way that each member may have an opportunity to bring up a concern for discussion. This is the idea of "going around". This allows that all topics on the agenda are allocated sufficient time such that a conclusion or resolution might be reached with each participant actively contributing. Discussion of those issues not covered are assigned time next session.

The agreed agenda facilitates spontaneous participation and involvement.

Example of agenda

1. Review assessed levels of hopelessness and wishes to self harm (suicide ideation).
2. Elicit thoughts related to 'giving up'
3. Discuss influence of thought content on self-harm feelings
   e.g. 'giving up'
   - 'can't take any more'
   - 'what's the point in trying'
   - 'no one listens to me anyway'
   - 'what's the point in coming to the group'
   - 'it will be the same tomorrow'
4. Discuss the relationship of thinking to behaviour, building on the ideas in 'Coping with Suicide wishes and Feelings'
2. Assessing expectations and reactions to previous sessions.

During this period the therapist actively elicits from each patient his expectations of therapy and how they expect to proceed during treatment. This allows the therapist to directly tap any negative or unrealistic expectations and to clarify any assumptions that may not be met during the course of therapy.

Information gained from this activity may be directly used uncritically to help patients begin to identify some negative themes or distortions in their thinking.

3. Homework Assignments

At the end of each session each patient is assigned an explicit piece of homework to complete before the next session.

Homework may be regarded as mini experiments which build on work introduced during group sessions and which maintains the therapeutic focus and momentum. It is emphasized that continued improvement would depend crucially on the completion of assignments engaged in between sessions.

Each exercise introduced and practised during group session is tailored to fit individual circumstances and assigned as homework. In this way a consolidation and generalization of learning within the group may be facilitated. Homework assignments include

i. Individualised Thought Induction with Cognitive Rehearsal

ii. Individualised thought Induction with Alternative Thinking

iii. Each training exercise under Thought Catching is developed as an individual homework assignment.
The Cognitive techniques are elaborated below. Patients bring back for discussion examples of negative thoughts and rational responses.

Difficulties encountered in carrying out assignments form a focus for in-session discussion. New homework is assigned only if previous assignments have been completed. The therapist pays careful attention to homework completed in order to influence the motivation of patients to continue in their endeavours.

B. Cognitive Techniques

Three cognitive techniques were used in the treatment of suicidal behaviour and were aimed mainly at facilitating examination and exploration of the cognitive organisation of the thinking associated with self-harm wishes and target "symptoms" such as hopelessness (see below). The treatment approach recognises that individuals who present with aspects of suicidal behaviour react adversely to problematic and stressful life situations. As with the depressed patient there may also be a thinking tendency to over-estimate the magnitude of their problems. This may be regarded as a thinking disorder.

The cognitive techniques used were:-

(i) Cognitive Rehearsal
(ii) Alternative thinking
(iii) Thought-catching

1. Cognitive Rehearsal

The aim of this technique is to identify those thoughts (cognitions) associated with self-harm wishes and associated behaviours (e.g. wishes to escape), to cognitively
rehearse confronting and experiencing these thoughts, to treat these thoughts as obstacles to the production of normal behaviour, (i.e. non self-harm) and to rehearse changing such thoughts to more acceptable alternatives. To this extent cognitive rehearsal, alternative thinking, and though catching are overlapping cognitive strategies.

Patients are asked to imagine the thoughts they would have in a problematic or worrying situation and to try to imagine experiencing the typical feelings of uncoping, abandonment, dysphoria, suicide wishes and impulses. This exercise is first practised in the controlled setting of the group under the guidance of the group leader. It is also recognised that some patients may typically wish to avoid facing up to such feelings and emotions. In future times of upset such individuals may be taken by surprise or be overwhelmed when such thoughts and feelings arise. This kind of cognitive rehearsal exercise, therefore, allows patients to become 'desensitized' to such thoughts and is intended to encourage patients to approach the recognition of such thoughts with less dis-ease and with alternative thoughts of being in control or of mastery.

An example of a cognitive rehearsal exercise:

....Try to relax and listen carefully to what I will say to you.
Imagine that you think something bad has happened to you.
Think of something specific
Imagine that you have had a really serious quarrel with your partner
You begin to think 'I can't stand it anymore. Life will be like this forever.'
Imagine that thought getting bigger and bigger in your mind
If it helps think of it growing and growing in size
You think that you cannot control it
At this point the therapist interrupts the Thought Induction procedure and group discussion surrounds.

(a) the clarity with which such thinking is experienced examining for avoidances,

(b) the specific thought(s) that the patients generated, and

(c) the specific feelings associated with such thinking.

The Thought Induction procedure lasts for at least five minutes and the procedure may be repeated later on in the session moving from a general thought shared by the whole group to individual thoughts relevant to each patient's life situation.

The exercise focuses on cognitively rehearsing confronting the typical negative thoughts generated at times of crises and the feelings that are associated with such thinking. These negative thoughts are regarded as the roadblocks or obstacles to the production of more adaptive behaviour.

The session continues with learning to deal more effectively with such thoughts and their consequences by applying the strategy of Alternative Thinking.

2. Alternative Thinking

This strategy may be used on its own but more typically is used in an overlapping way with Cognitive Rehearsal and Thought Catching. The aim is not so much to find alternative solutions but to give patients practice in producing alternative realistic thoughts to replace arbitrary negative conclusions that may underpin the wishes and impulses to suicidal behaviour. Another aim of this strategy is to give practice in examining the systematic negative biases that patients hold when making
interpretations of life events. Patients are given practice in recognising such biases and in substituting more rational and realistic alternative conclusions or interpretations.

The resultant change in thinking is intended to influence positive change in affect and behaviour.

An example of an alternative thinking exercise:

This exercise is done in association with the Thought Induction procedure described above in COGNITIVE REHEARSAL. The Thought Induction procedure brings to the patients minds the heightened conscious awareness of negative thoughts.

....Try to relax once more and listen carefully to what I will tell you.
Imagine that you think something bad has happened to you.
Imagine that you have had a serious quarrel with your partner.
You begin to think 'life will always be like this - miserable'
You become aware that this thought is becoming bigger and bigger.
Now that you are clear in what you are thinking, try to imagine yourself changing that thought into a more positive and realistic one.

* e.g.
'If we both work at getting on, things will get better'
'It is good that we have cleared the air'
'If we get help, things will get better between us'

etc.
Imagine yourself thinking the initially growing negative thought down to size.
Imagine yourself feeling more and more in control.
Note other feelings you begin to experience.

At this point the therapist interrupts the thought induction/alternative thinking procedure and group discussion surrounds:
(a) The clarity with which alternative thinking is experienced; identifying 'avoiders' who tend to be reluctant to give up negative interpretations.

(b) The specific thought generated by the patients if different from the ones suggested during Thought Induction, and

(c) The specific feelings associated with such thinking. This allows the therapist to once again emphasize the crucial link between cognitions, affect and behaviour.

This procedure may be tailored to meet individual needs both during group sessions and homework assignments between group meetings.

Alternative Thinking focuses on and emphasizes the ability of patients to generate alternative thought under conditions where negative expectations may become seemingly overwhelming. It is closely tied to Cognitive Rehearsal and in a typical session these two strategies work in concert.

**Thought Catching.**

This procedure helps further establish for patients the crucial link between thought, feeling and behaviour. Patients are given practice on exercises which are intended to help develop a willingness to identify their thoughts accurately in relation to given situations and experiences. It is recognised that individuals may habitually only focus on how they feel or that they may have difficulty in clearly specifying what they are thinking. The training exercises used in Cognitive Rehearsal and Alternative Thinking may help develop a set in patients to examine their thoughts more critically in relation to how they are feeling.
Training exercises in thought catching are listed below:

(a) Here are a list of feeling words:

<table>
<thead>
<tr>
<th>Feeling Word</th>
<th>Thought</th>
</tr>
</thead>
<tbody>
<tr>
<td>Happy</td>
<td>Energetic</td>
</tr>
<tr>
<td>Content</td>
<td>Frustrated</td>
</tr>
<tr>
<td>Impatient</td>
<td>Dejected</td>
</tr>
<tr>
<td>Ineffective</td>
<td>Lonely</td>
</tr>
<tr>
<td>Tired</td>
<td>Coping</td>
</tr>
<tr>
<td>Criticised</td>
<td>Bright</td>
</tr>
<tr>
<td>Friendly</td>
<td>Unattractive</td>
</tr>
<tr>
<td>Rejected</td>
<td>Wanted</td>
</tr>
</tbody>
</table>

Alongside each feeling word write down a thought that may go along with it. Try to be specific.

This exercise may be both done in the group setting and as individual homework. Discussion surrounds difficulties group members have in taking a feeling perspective and generating relevant thoughts. There are no right or wrong thoughts; the emphasis is to give practice with both negative and positive experiences.

(b) This is a group thought induction exercise focussing on monitoring and changing negative thoughts. The crucial link between thinking and feeling is again highlighted.

....Imagine yourself in a situation in which you feel bad, hopeless - down. Be specific about the situation. Ask yourself what am I thinking. Hold the thought clearly in your mind.
The exercise may be interrupted at this point to discuss the experiences of group members and any difficulties e.g. inability to concentrate, getting too many thoughts at once, or feeling muddled.

The exercise ends with:

....Imagine yourself feeling differently in that situation
Imagine that you have become more hopeful, less down
Ask yourself. What am I thinking now
Note accurately in your mind what you are thinking.

The aim of this part of the exercise is not to emphasis positive thinking but is intended to demonstrate for group members the possibility of breaking out from a cycle of negative expectations and feelings. The exercise may be tailored to be carried out on an individual basis as a homework assignment. The importance of reality testing alternative thinking is drawn out in the next exercise.

(c) In this exercise group members are given practice in developing

(i) A self-questioning style
(ii) Appraising life situations more realistically
(iii) Keeping in touch with reality when making judgements about their situation.

The exercise demands that group members follow a series of steps when appraising and challenging possible arbitrary conclusions.

(i) **Situation:**

Describe accurately: e.g. alone at home at night or sitting next to telephone after
fight with mother.

(ii) What am I feeling?

Try to be clear in what you are feeling. Use the list of feeling words to help you if necessary e.g. failure, rejected.

(iii) What are my thoughts?

Consider the thought(s) you are thinking. Try to be accurate e.g. its pointless going on better to end it with these tablets.

(iv) Is this conclusion accurate?

Here the patient is instructed to list evidence for and against the conclusion (thought). Writing these down is encouraged. The patient gathers realistic evidence to support or challenge the initial conclusion.

(v) Rational Alternative thought:

This guards against the possibility of unwarranted optimism which can lead to future disappointments. The patient is encouraged to use reasonable standards in arriving at judgements or conclusions.

A list of common negative thoughts or self statements to which the patients may add is given overleaf.
I will never be good at anything
Nothing I try ever goes right
Things will always be the same
I wish I can get away from it all
I will never be a good mother (partner)
Nobody wants me anymore
She will never see me again
I will never be happy without _______
No one cares for me
I will never get out of this situation
Things will never change
There's no point in trying anymore
It will be better to get out of it
I'll take these tablets to sleep.

C. Target Experiences associated with self-harm.

These target experiences form the focus of the therapeutic strategies and are carefully incorporated into the framework of the therapeutic procedures practised during group activities and homework assignments.

The therapist starts to deal with suicide wishes in the initial interview. The reasons given for the suicide attempt provide a point of entry for intervention strategies. These reasons or motives often involve attempting to bring about some interpersonal change in an emotionally important person.

The therapist tries to understand the underlying premise on which the decision to make the suicide attempt is based as this enables the therapist to adapt the therapeutic
strategy to the needs of the particular individual. The therapist is thus able to gain access to the faulty assumptions that lead to the production of the impulse to self-harm.

Strategies to help patients make a commitment to postpone a suicide attempt include making up a 'balance-sheet' of the reasons for living versus the reasons for dying. Reasons for living that are still valid but which may have been ignored because of a negative cognitive set are highlighted.

An important goal of cognitive therapy is to learn how to cope with suicidal impulses and how to respond to their occurrence once their presence is detected. Thought Catching and cognitive rehearsal are useful strategies here.

Many patients who make a suicide attempt or entertain suicidal wishes often see their situation as hopeless. It is useful to recognise that suicide attempters may experience varying degrees of hopelessness. Wishes to escape, feelings of being trapped, and thoughts of the situation as unbearable may involve the experience of differing levels of hopelessness.

The sense of hopelessness is first discussed and assessed during the initial interview. Later by careful questioning attempts are made to expose the illogical thinking that may underpin the conclusions reached about the life situation. By exploring the validity of fixed notions the patient is guided into questioning his once fixed belief system or expectations.

This allows the patient to make alternative evaluations of his life situation, to hold different expectations of the future and to recognise that there are choices other than a suicidal act.
The therapeutic strategy used in dealing with hopelessness is based on the premise that the patient is 'locked in by arbitrary conclusions'. It is the engaging the patient in exploring fixed ideas that creates the condition for shifts in behaviour.

The target experiences highlighted during group training include:

(i) Hopelessness and Helplessness
(ii) Self-harm motives
(iii) Self-harm wishes and ideas
(iv) Escape wishes and feelings of being overwhelmed
(v) Depression and sadness
(vi) Feelings of failure and rejection
APPENDIX 11.

INTERPERSONAL PROBLEM-SOLVING (SOCIAL)
Below are five of the ten M.E.P.S. stories (male version).

INSTRUCTIONS

In this procedure we are interested in 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 a story that connects the beginning that is given to you with the ending given you.
In other words, you will make up the middle of the story.
Write at least one paragraph for each story.
Thank you very much.

STORY NO. 2.

H. loved his girlfriend very much, but they had many arguments. One day she left him. H. wanted things to be better. The story ends with everything fine between him and his girlfriend. You begin the story with his girlfriend leaving him after an argument.

STORY NO. 4.

Mr. C. had just moved in that day and didn't know anyone. Mr. C. wanted to have friends in the neighbourhood. The story ends with Mr. C. having many good friends and feeling at home in the neighbourhood. You begin the story with Mr. C. in his room immediately after arriving in the neighbourhood.

STORY NO. 6.

One day A saw a beautiful girl he had never seen before while eating in a restaurant. He was immediately attracted to her. The story ends when they get married. You begin when A first notices the girl in the restaurant.

STORY NO. 8.

John noticed that his friends seemed to be avoiding him. John wanted to have friends and be liked. The story ends when John's friends like him again. You begin where he first notices his friends avoiding him.
STORY NO. 9.

One day George was standing around with some other people when one of them said something very nasty to George. George got very mad. George got so mad he decided to get even with the other person. The story ends with George happy because he got even. You begin the story when George decided to get even.
APPENDIX 12.

INTERPERSONAL PROBLEM-SOLVING (EMOTIONAL)
THE MEP5 PROCEDURE (EMOTIONAL)

Instructions

In this procedure we are interested in 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 a story that connects the beginning that is given to you with the ending given you.

In other words, you will make up the middle of the story.

Write at least one paragraph for each story.

Thank you very much.

Story No. 1.

Mr A woke up one morning feeling extremely nervous and uncomfortable. He felt that something terrible would happen that day. The story ends with Mr A feeling much better in every way, much less nervous and comfortable. In fact he felt quite relaxed. You begin the story where he felt that something terrible would happen.

Story No. 2.

C had been feeling 'blue' and 'down' for days - He couldn't seem to shake the depression that had him in its grip. The story ends with C feeling much happier. You begin the story where he felt 'blue' and 'down'.
APPENDIX 13.

SUICIDAL BEHAVIOUR RECORD
SUICIDE BEHAVIOUR RECORD

NAME: ____________________________

DATE: ____________________________

WEEK NO: ____________________________

INSTRUCTIONS:

The experimenter is interested to know if you have carried out any of the behaviours listed or any other act not listed which may indicate that you attempted to harm yourself in the past week. Read each item carefully. Note which items apply to you and complete the relevant sections of the record. If no item applies to you, return the unfilled record with the Name and Date sections completed.

Thank you.
<table>
<thead>
<tr>
<th>Behaviour</th>
<th>How often</th>
<th>What did you have in mind</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Tried to harm self</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(i) Cut wrist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii) Took overdose</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iii) Other (state)</td>
<td>(a)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(b)</td>
<td></td>
</tr>
<tr>
<td>2. Bought analgesics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(headache tablets)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Visited Family Doctor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>for more tablets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Use more than</td>
<td></td>
<td></td>
</tr>
<tr>
<td>prescribed dose of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>any medication.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Playing with sharp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>instruments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Playing with</td>
<td></td>
<td></td>
</tr>
<tr>
<td>fire arm.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Drove car</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dangerously</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Injected self with</td>
<td></td>
<td></td>
</tr>
<tr>
<td>non-prescribed or</td>
<td></td>
<td></td>
</tr>
<tr>
<td>other substances</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Other action taken</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specify</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(i)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iii)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 14.

SUICIDAL BEHAVIOUR RECORD - SUBJECT SUMMARY SHEET.
<table>
<thead>
<tr>
<th>Week No.</th>
<th>Behaviour</th>
<th>Frequency</th>
<th>Help received</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FU</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
BIBLIOGRAPHY


GOLDNEY, R.D., Attempted Suicide: An ethological perspective. Suicide and Life Threatening Behaviour. 10, 131-141.


KARON, B.P., (1964). Suicidal tendency as the wish to hurt someone else and resulting treatment technique. Journal of Individual Psychology. 20, 206-212.


B24


