

**INSIGHT INTO THE SELF-ABSORPTION PARADOX: THE
DEVELOPMENT OF A MULTI-FACETED MODEL OF SELF-
CONSCIOUS RUMINATIVE AND REFLECTIVE THOUGHT**

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Declaration

I declare that this dissertation is my own account of my research and does not contain work that has been previously submitted for a degree at any institution or for publication, without due acknowledgement.

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ABSTRACT

This thesis investigated the self-absorption paradox. This paradox describes the contradictory association whereby higher levels of self-awareness are simultaneously associated with higher levels of psychological distress and with psychological well-being. In 1999, Trapnell and Campbell explored the self-absorption paradox in relation to private self-consciousness or attention to internal aspects of the self. They concluded that the relationship of self-awareness to psychological distress derived from a ruminative aspect of private self-consciousness, whereas the relationship of self-awareness to psychological well-being was attributed to self-contemplative reflection.

This thesis built on the work of Trapnell and Campbell (1999) in two ways. First, because separate private and public dimensions of self-consciousness have been evidenced, the possibility was explored that ruminative and reflective self-focus would involve both of these dimensions. Trapnell and Campbell's measure of private rumination and reflection was revised to capture the interpersonal (public) and intrapersonal (private) dimensions of self-consciousness. The second extension of Trapnell and Campbell's work was to examine a new typology of coping and adjustment that they suggested, based on different combinations of rumination and reflection. In this thesis, participants categorised as belonging to the groups within the typology were examined on personality traits, psychological symptoms and personal memories.

Study 1 reports the revision of Trapnell and Campbell's (1999) Rumination and Reflection Questionnaire. An exploratory factor analysis of the new scale, in a sample of 353 respondents, identified two general factors of rumination and reflection but there was not strong empirical support for the proposed subfactors of public rumination, private rumination, public reflection, and private reflection. In Study 2, the rumination and reflection factors were substantiated through Confirmatory Factor Analysis in a separate sample of 313 respondents. It was concluded that a method effect, in which differential responding to negatively worded items, contributed to the model.

Study 2 also examined the correlates of rumination and reflection with measures of personality and psychological distress. The pattern of relationships that emerged was consistent with the expectations of the model with a progression from psychological health to psychological distress evident in the associations. It appears that as one moves away from an internally focused, intellectual curiosity (reflection) to externally focused rumination, the stronger is the association with neuroticism and the higher the likelihood of psychological ill-health (i.e., an increase in distressing symptoms).

The results of Study 3 relate to the examination of Trapnell and Campbell's (1999) coping taxonomy. Four groups were formed on the basis of rumination and reflection scores. One group was identified as having an 'adaptable' coping style in that they had a high level of reflection and a low level of rumination. Three other groups were identified as having maladaptive coping styles: a 'repressive' group with low levels of rumination and reflection, a 'sensitiser' group with high levels of rumination and reflection, and a

‘vulnerable’ group with high levels of rumination only. Different styles of coping and adjustment were compared on symptoms of psychological distress, personality factors, and self-consciousness. The pattern of results that emerged was largely consistent with expectations.

Although the adaptable and repressive groups had the lowest levels of rumination and of psychological symptoms, they were still able to be differentiated. As predicted by the model, adaptable individuals were openly curious about themselves. In contrast, repressives were found to be closed to internal experiences, but unexpectedly, repressives were more socially anxious. Examination of the content of memories in the repressive group evidenced strong themes of social comparison.

The sensitiser and vulnerable groups provided patterns of individual differences largely consistent with the proposed taxonomy. As expected, the sensitiser group was higher in private self-consciousness and openness to experience. In contrast, vulnerable individuals were lower in narcissism. However, when recalling personal memories, unlike the vulnerable group, sensitisers did not differentiate between past positive, anxiety or depressive experiences in terms of the time taken to retrieve the memory or in its quality.

The data from the present study indicate that the distinction that Trapnell and Campbell (1999) made between privately focused rumination and reflection was not extended to a publicly focused rumination or reflection. Future directions for research include extending the model to consider other aspects of personality traits associated with rumination and reflection, such as empathy or resilience.

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TABLE OF CONTENTS

Declaration.....	i
Abstract.....	ii
Acknowledgements.....	v
Table of Contents	vi
List of Tables	xiii
List of Figures.....	xv
List of Appendices	xvi
CHAPTER 1 : SELF-AWARENESS AND THE SELF-ABSORPTION	
PARADOX.....	1
Overview and Introduction	1
Psychological Mindedness and Psychological Well-Being	9
Self-Awareness and Psychological Well-Being.....	10
Self-Awareness and Psychological Distress	10
Possible Explanations for the Self-Absorption Paradox	11
The Inflexibility of Self-Attention	11
Self-Regulation of Mood and Behaviour	13
Theoretical Models of the Self-Regulation of Behaviour	16
Summary of Models of the Self-Regulation of Behaviour	19
Measurement of Self-Awareness	21
The Self-Consciousness Scale	21
Definition of Private Self-Consciousness	22
Definition of Public Self-Consciousness	23
Definition of Social Anxiety	24
Gender Differences in Self-Consciousness.....	25
Problems with the Self-Consciousness Scale.....	26
Methodological Criticism of the Self-Consciousness Scale	27
Criticism of the Content of the Self-Consciousness Scale.....	27
Conceptual Criticism of the Self-Consciousness Scale	30
Other areas of Investigation Using the Self-Consciousness Scale.....	31
Self-Consciousness and Clinical Disorders	34
Personality: A Further Understanding of the Self-Absorption Paradox	35
Self-Consciousness, Personality and the Self-Absorption Paradox.....	35
Involvement of Narcissism in the Self-Absorption Paradox.....	38
Summary and Conclusion	40

CHAPTER 2 : INSIGHT INTO THE SELF-ABSORPTION PARADOX: THE ROLE OF RUMINATION AND REFLECTION	42
Rumination and Reflection and the Self-Absorption Paradox	43
Definition of Rumination	44
Definition of Reflection	45
Origins of Reflection and Rumination	45
Self-Focus, Rumination and Psychological Distress	48
Self-Focus and Ruminative Responses	48
Ruminative Thoughts and Symptoms of Psychological Distress	50
Interaction of Rumination and Reflection.....	51
Measuring Rumination.....	53
Rumination on Symptoms.....	54
Rumination on Goals	57
Trapnell and Campbell's (1999) Measurement of Rumination and Reflection	58
Summary and Conclusion	59
CHAPTER 3 : RUMINATION AND REFLECTION IN RELATION TO A MODEL OF COPING AND ADJUSTMENT	63
The Trapnell and Campbell Typology of Coping and Adjustment.....	64
Weinberger, Schwartz and Davidson Typology of Coping and Avoidance	67
Differences in Information Processing Among the Coping Groups	76
The Williams' Model	77
Autobiographical Memory Recall and Rumination	79
Autobiographical Memory Recall and the Repressive Coping Style.....	81
The Coping and Adjustment Typology and Autobiographical Memory	82
Autobiographical Memories and the Concept of the Self.....	83
Summary and Conclusion	84
Plan of Empirical Work	86
CHAPTER 4 : STUDY 1 – A RE-DEVELOPMENT OF THE RUMINATION AND REFLECTION QUESTIONNAIRE	90
Aims	90
Stage 1: Redevelopment of the Rumination and Reflection Questionnaire.....	91
Definitions of Public and Private, Rumination and Reflection.....	92
Identifying and Rewording Items from the Rumination and Reflection Questionnaire.....	93
Independent Examination of the Revised Scale Items.....	95
Results for the First Stage in Revising the Trapnell and Campbell (1999) Rumination and Reflection Questionnaire	97
Stage 2 : Conceptual Investigation of the Private and Public Dimensions of Rumination and Reflection	98
Aims	98
Method	98
Participants.....	98
Materials.....	99
Procedure	99

Results for the Categorisation Task for the Rumination and Reflection	
Items.....	100
Methods of Data Analysis.....	100
Rumination and Reflection Items.....	101
Self-Consciousness Scale Items.....	104
Summary and Discussion of the Categorisation Task.....	108
Stage 3 : Psychometric Properties of the Revised-Rumination and Reflection Scale	109
Aims	109
Hypotheses	110
Bivariate Correlations for Rumination and Reflection	110
Bivariate Correlations for Public and Private, Rumination and Reflection	111
Individual Differences for Order of Scale Presentation, Gender and Student Status.....	112
Method	113
Participants.....	113
Measures	114
Procedure	115
Results for the Psychometric Analysis of the Revised-Rumination and Reflection Scale	116
Methods of Data Analysis.....	116
Preliminary Analyses	117
Results for Research Question 1: Factor Analysis of the Revised-Rumination and Reflection Scale.....	118
Interpretation of the Two Factors from the Revised-Rumination and Reflection Scale	125
Results for Research Question 2a: Analysis of the Rumination Scale.....	126
Preliminary Interpretation of the Rumination Factors	129
Results for Research Question 2b: Analysis of the Reflection Scale.....	130
Preliminary Interpretation of the Reflection Factors	133
Results for Testing the Stability of the Factor Structure of the R-RRS	135
Results for the Examination of the Internal Consistency of Rumination, Reflection, Private and Public Self-Consciousness and Social Anxiety Scales	141
Results for Bivariate Correlations Among Rumination, Reflection, Private Self-Consciousness, Public Self-Consciousness and Social Anxiety	143
Results for Individual Differences in Rumination and Reflection Scores	147
Results for Individual Differences in Public and Private, Rumination and Reflection Scores.....	150
Preliminary Analyses	151
Summary and Discussion of Stage 3.....	154
Results for Research Question 3: Factor Analysis of the Self-Consciousness Scale-Revised Version	155
Methods of Data Analysis.....	155
Principle-Components Analysis of the Self-Consciousness Scale	156
Interpretation of the Self-Consciousness Factors.....	158

Internal Consistency of the Alternative Factors of the Self-Consciousness Scale	160
Bivariate Correlations Among Public and Private, Rumination and Reflection and the Alternative Factors of the Self-Consciousness Scale	160
Results for the Examination of Individual Differences for New-Self-Consciousness Factors.....	163
Preliminary Analyses	164
Results for the Examination of Individual Differences for the Self-Consciousness Subfactors	164
Stage 4 : Summary and Discussion.....	166
Study 1 : Summary and Discussion	168
CHAPTER 5 : STUDY 2 – CONFIRMATION OF THE REVISED-RUMINATION AND REFLECTION SCALE	170
Aims	170
Method	171
Participants.....	171
Measures	172
Personality Measures	173
Symptom Measures.....	175
Procedure	179
Hypotheses	181
Confirmatory Factor Analysis of Rumination and Reflection Subfactors..	181
Bivariate Correlations of Public and Private, Rumination and Reflection	181
Factor Analysis of the Rumination/Neuroticism Items and Reflection/Openness to Experience Items	182
Multiple and Hierarchical Regression Analysis.....	182
Results.....	183
Methods of Data Analysis.....	183
Preliminary Analyses	184
Rumination and Reflection Scores.....	184
Self-Consciousness Scores.....	185
Personality Factor Scores.....	186
Narcissism Scores	186
Brief Symptom Inventory Scores.....	186
Anxiety (A-MMPI) Scores.....	188
Social Desirability Scores	188
Multivariate Outliers	189
Confirmatory Factor Analyses of the Rumination and Reflection Subfactors.....	190
Study 2 : Results	190
The Public Rumination Model.....	191
The Private Rumination Model.....	193
The Public Reflection Model	194
The Private Reflection Model	195
Confirmatory Factor Analysis of the Public and Private Rumination Model..	196
Confirmatory Factor Analysis of the Public and Private Reflection Model	198

Summary of the Confirmatory Factor Analyses for the Subfactors of Rumination and Reflection	199
Confirmatory Factor Analyses of the Rumination and Reflection Factors.....	203
Bivariate Correlations using the Rumination and Reflection Factors.....	204
Correlations Among Rumination and Reflection.....	205
Correlations Among Rumination and Reflection and Aspects of Self-Consciousness	205
Correlations Among Rumination and Reflection and Personality Dimensions.....	205
Correlations Among Rumination and Reflection and Symptoms of Psychological Distress	207
Correlations Among Rumination and Reflection and Social Desirability.....	209
Summarising the Pattern of Correlations	209
Factor Analysis of the Rumination and Neuroticism Items.....	210
Factor Analysis of the Reflection and Openness to Experience Items	211
Multiple and Hierarchical Regression for Predicting Rumination and Reflection	213
Normality Assumptions	214
Hypothesis 4: Estimating the Predictors of Rumination.....	215
Hypothesis 5: Estimating the Predictors of Reflection	216
Study 2 : Summary and Discussion	218
Rumination.....	219
Reflection	219
Study 1 and Study 2 : Combined Summary and Discussion.....	220
 CHAPTER 6 : STUDY 3 – A TYPOLOGY OF COPING AND ADJUSTMENT	 222
Aims	222
Method	224
Participants.....	224
Measures	224
Procedure	224
Formation of the Typological Groups.....	224
The Rumination and Reflection Groups	225
The Weinberger, Schwartz and Davidson (1979) Typology	225
Formation of Mixed Groups – Overlap of Rumination/Reflection Groups with Weinberger et al. (1979) Groups.....	226
Hypotheses for the Rumination and Reflection Groups	228
Social Desirability.....	228
Personality Factors	229
Self-Consciousness	229
Psychological Symptoms	229
Results : Examination of the Differences Among the Typologies on Personality, Psychological Symptoms and Self-Consciousness	230
Rumination /Reflection Group Differences for Social Desirability and Anxiety.....	230
Results for Rumination/Reflection Groups – Personality Factors	231

Results for Rumination/Reflection Groups – Self-Consciousness Factors	234
Results for Rumination/Reflection Groups – Psychological Symptoms	236
Presentation of the Results for the Mixed Group Typology	238
Results for the Mixed Group Typology – Personality Factors	238
Results for Mixed Groups – Self-Consciousness	240
Results for Mixed Groups – Psychological Symptoms	241
Summary and Discussion of the Examination of the Differences Among the Typologies on Personality, Psychological Symptoms and Self- Consciousness	244
Identification of the Two Low Rumination Groups	244
Identification of the Two High Rumination Groups	245
The Typology of Coping and Adjustment	246
Stage 3: Rumination and Reflection Typology and Autobiographical Memory Retrieval	247
Aims	247
Method	247
Participants	247
Measures	248
Selection of Stimulus Cue Words	248
Order of Presentation of Memory Cues	249
Autobiographical Memory Assessment	250
Procedure	251
Coding the Autobiographical Memory Data	252
Hypotheses	253
Individual Differences in Specificity for the Four Rumination and Reflection Groups	253
Individual Differences in Latency for the Four Rumination and Reflection Groups	254
Differences in Category of Memories Retrieved for the Four Rumination and Reflection Groups	254
Results	255
Specificity of Retrieval for the Four Rumination and Reflection Groups	255
Specificity of Retrieval for High vs Low Rumination Groups	258
Latency for the Four Rumination and Reflection Groups	260
Latency of Retrieval for Positive, Anxiety and Depressive Experiences	261
Categorical Analysis of the Specificity Data	262
Autobiographical Memory Study : Summary and Discussion	264
Autobiographical Memory Retrieval for the Adaptable Group	265
Autobiographical Memory Retrieval for the Repressive Group	266
Autobiographical Memory Retrieval for the Sensitiser Group	268
Autobiographical Memory Retrieval for the Vulnerable Group	269
Autobiographical Memory Retrieval Overall	269
CHAPTER 7 : GENERAL DISCUSSION	272
Research Aim 1: Identification of Intrapersonal and Interpersonal Dimensions of Rumination and Reflection	273
Development of the Revised-Rumination and Reflection Scale	273
Self-Consciousness with Rumination and Reflection	276

Individual Differences in Rumination and Reflection	278
The Mechanisms Underlying Self-Consciousness.....	279
Summary of Research Aim 1	280
Research Aim 2: The Examination of the Self-Absorption Paradox	
Through a Ruminative and Reflective Self-Focus.....	280
The Self-Absorption Paradox and a Self-Attentive Trait.....	281
Adaptive and Maladaptive Self-Absorption Explained	282
Self-Regulation and Rumination.....	283
The Progression from Psychological Health to Psychological Distress	284
The Reflection Factor and Psychological Health.....	284
The Rumination Factor and Psychological Health	286
Research Aim 3: To Investigate a Typology of Coping and Adjustment	
Using Different Combinations of Rumination and Reflection	289
The Adaptive Group.....	290
The Repressive Group.....	291
The Sensitiser Group.....	292
The Vulnerable Group.....	294
Evaluation of Typology Overlap with Weinberger et al. (1979) Typology...	294
Autobiographical Memory Retrieval	296
Clinical Implications	297
Methodological Considerations and Directions for Future Research	301
Conclusion	304
References.....	305
Appendices.....	334

LIST OF TABLES

Table	Page
4.1 Final Set of Items for Public and Private, Rumination and Reflection Subscales of the Revised-Rumination and Reflection Scale	94
4.2 Revised-Rumination and Reflection Scale Items, Response Endorsement and Hypothesised Factors	102
4.3 Self-Consciousness Scale-Revised Items, Response Endorsement and Factors	106
4.4 Factor Structures, Means, Standard Deviations and Alpha If Item Deleted of the Revised–Rumination and Reflection Scale Items	124
4.5 Factor Structures, Means, Standard Deviations and Alpha If Item Deleted of the Rumination Scale	128
4.6 Migratory Items between Private and Public Rumination Factors	129
4.7 Migratory Items between Private and Public Reflection Factors	132
4.8 Factor Structures, Means, Standard Deviations and Alpha If Item Deleted of the Reflection Scale	134
4.9 Factor Patterns and Structure Coefficients of the Revised-Rumination and Reflection Scale – Four Factor Solution	137
4.10 Reliabilities, Intercorrelations and Descriptive Statistics of the Revised-Rumination and Reflection Scale and the Self-Consciousness Scale-Revised Version	142
4.11 Reliabilities, Intercorrelations and Descriptive Statistics of Public and Private, Rumination and Reflection and the Self-Consciousness Scale-Revised Version	143
4.12 Means and Standard Deviations for Order, Gender and Status for Rumination and Reflection, Private Self-Consciousness, Public Self-Consciousness and Social Anxiety.....	149
4.13 Means and Standard Deviations for Order, Gender and Status for the Four-Factor Revised-Rumination and Reflection Scale	153
4.14 Factor Loadings, Means, Standard Deviations and Alpha if Item Deleted of the Self-Consciousness Scale-Revised Version	157
4.15 Reliabilities, Intercorrelations and Descriptive Statistics of the Four Factor Revised-Rumination and Reflection Scale and the Alternative Factors of the Self-Consciousness Scale-Revised	162
4.16 Means and Standard Deviations for Gender, Status and Order for the Alternative Factors of the Self-Consciousness Scale-Revised	165

5.1	Bivariate Correlations of Rumination and Reflection with Self-Consciousness, NEO-FFI, and Narcissism	206
5.2	Bivariate Correlations of Rumination and Reflection with BSI Symptoms and Indexes, Social Desirability and Anxiety	208
5.3	Summary of Multiple and Hierarchical Regressions for Variables Predicting Rumination	216
5.4	Summary of Multiple and Hierarchical Regressions for Variables Predicting Reflection	217
6.1	Composition of the Four Rumination and Reflection Groups	225
6.2	Composition of the Four Weinberger et al. (1979) Groups	226
6.3	Crosstabulation of Rumination and Reflection Typology with Weinberger et al. (1979) Typology	227
6.4	Composition of the Mixed Group Typology	228
6.5	Means, Standard Deviations and Univariate F Statistics for Social Desirability and Anxiety for the Four Rumination and Reflection Groups	231
6.6	Means, Standard Deviations and Univariate F Statistics for Personality Factors for the Four Rumination and Reflection Groups .	233
6.7	Means, Standard Deviations and Univariate F Statistics for Self- Consciousness Factors for the Four Rumination and Reflection and Groups	235
6.8	Means, Standard Deviations and Univariate F Statistics for the BSI Symptoms for the Four Rumination and Reflection Groups	237
6.9	Means, Standard Deviations and Univariate F Statistics for Personality Factors for the Mixed Group Typology	239
6.10	Means, Standard Deviations and Univariate F Statistics for the SCS-R for the Mixed Group Typology	241
6.11	Means, Standard Deviations and Univariate F Statistics for the BSI Symptoms for the Mixed Group Typology	243
6.12	Order of Presentation of Memory Cue Words	250
6.13	Mean Specificity Level for Positive, Anxiety and Depression Stimulus Cues for the Four Rumination and Reflection Groups	257
6.14	Mean Specificity Level for Positive, Anxiety and Depression Stimulus Cues for the High and Low Rumination Groups	259
6.15	Mean Response Latency for Positive, Anxiety and Depression Stimulus Cues for the Four Rumination and Reflection Groups	260
6.16	Totals and Percentages across Groups for Specific, Extended and Categorical Memories, with a Positive, Anxiety and Depressive Valence.....	263

LIST OF FIGURES

Figure	Page
4.1	Scree plot for rumination and reflection items..... 119
4.2	Scree plot for rumination and reflection items..... 123
4.3	Scree plot for rumination items..... 127
4.4	Scree plot for reflection items 131
4.5	Scree plot for reflection items 133
4.6	Scree plot for rumination and reflection items..... 136
4.7	Scree plot for rumination and reflection items..... 138
4.8	Scree plot for rumination items..... 139
4.9	Scree plot for reflection items 140
4.10	Scree plot for self-consciousness items..... 156
5.1	Standardised parameter estimates for the public rumination model 192
5.2	Standardised parameter estimates for the private rumination model ... 194
5.3	Standardised parameter estimates for the public reflection model 195
5.4	Standardised parameter estimates for the private reflection model 196
5.5	Standardised parameter estimates for the public and private rumination model 197
5.6	Standardised parameter estimates for the public and private reflection model 199
5.7	Standardised parameter estimates for the public and private rumination model with one method factor 201
5.8	Standardised parameter estimates for the public and private reflection model with one method factor 202
5.9	Scree plot for rumination and neuroticism items 211
5.10	Scree plot for reflection and openness items..... 212

LIST OF APPENDICES

Appendix	Page
A.1 The original Trapnell and Campbell (1999) Rumination and Reflection Questionnaire Items	334
A.2 Study 1 Category definitions, items and answer sheets for the R-RRS and SCS-R	335
A.3 Cover letter included in Study 1 questionnaire package	341
A.4 Study 1 questionnaire	342
A.5 Table of means for the rumination, reflection and self-consciousness dimensions – Study 1	344
A.6 Pattern matrices for rumination and reflection items – 2 factor and 4 factor solutions	345
A.7 Summary of MANOVA analyses of differences between gender, status and order for rumination, reflection, private self-consciousness, public self-consciousness and social anxiety	348
B.1 Cover letter included in Study 2 questionnaire package	350
B.2 Study 2 questionnaire	352
B.3 Table of means for the rumination, reflection, self-consciousness, social desirability and anxiety scales – Study 2	366
B.4 Table of transformation statistics for BSI dimensions – Study 2	367
B.5.1 Rumination and neuroticism items	368
B.5.2 Reflection and openness to experience items	369
C.1 Summary of MANOVA analyses of differences between the four Weinberger et al. (1979) groups for rumination, reflection, personality factors, self-consciousness, and psychological symptoms – Study 3	370
C.2 List of potential stimulus words for autobiographical memory – Study 3	378
C.3 Sign-up form, consent form, and instruction sheet for autobiographical memory study	384
C.4 Examples of specific, extended and categorical memories	386
C.5 Autobiographical Memory Booklet	388
C.6 Table of crosstabulations for inter-rater reliability on memory type	398
D.1 Selection of data analyses output from SPSS for Study 1	399
D.1.1 Stage 2 – Chi-Square Tests for Categorisation Task.....	399
D.1.2 Stage 3 – Factor Analysis of Rumination and Reflection Items	401
D.1.3 Stage 3 – Scale Reliabilities	409
D.1.4 Stage 3 – 3-way MANOVAs for Individual Differences.....	418
D.1.5 Stage 4 – Factor Analysis of the Self-Consciousness Scale	424
D.1.6 Stage 4 – Scale Reliabilities	428
D.1.7 Stage 4 – 3-way MANOVAs for Individual Differences.....	431

D.2	Selection of data analyses output from SPSS for Study 2	435
D.2.1	Confirmatory Factor Analyses for the Rumination and Reflection Models.....	435
D.2.2	Multiple and Hierarchical Regressions	448
D.3	Selection of data analyses output from SPSS for Study 3	452
D.3.1	One-way ANOVA for the Four Rumination and Reflection Groups....	452
D.4	Selection of data analyses output from the Autobiographical Memory study	461
D.4.1	Mixed Design ANOVA for the Four Rumination and Reflection Groups for Specificity	461
D.4.2	Paired Samples T-Tests for Within Group Differences for Specificity	466
D.4.3	Mixed Design ANOVA for the High vs Low Rumination Groups for Specificity	470
D.4.4	Paired Samples T-Tests for Within Group Differences for Specificity	473
D.4.5	Mixed Design ANOVA for the Four Rumination and Reflection Groups for Latency	475
D.4.6	Paired Samples T-Tests for Within Group Differences for Latency.....	480

CHAPTER 1

SELF-AWARENESS AND THE SELF-ABSORPTION PARADOX

Overview and Introduction

Self-consciousness, self-attention, or self-awareness are terms that describe a focus on one's internal processes, that is, on affect, cognition, attitudes, and motives. On one hand, this tendency to self-focus is associated with a healthy state of psychological mindedness, in which an individual is interested in, and has a proclivity for, reflection about their own and others' internal processes and emotions (Hall, 1992). Thus, internal focusing contributes to psychological well-being (Trudeau & Reich, 1995). Yet, paradoxically, this tendency to self-focus is also associated with diverse psychopathological states such as alcohol abuse, depression, anxiety (Ingram 1990a), and other negative mood states (Wood, Saltzberg, Neale, Stone & Rachmiel, 1990). In contemporary psychological literature this contradiction is known as the self-absorption paradox (e.g., Joireman, 2004).

A recent study by Trapnell and Campbell (1999) sought to clarify the self-absorption paradox by differentiating between ruminative and reflective self-focus. This distinction forms the basis of the present thesis. Trapnell and Campbell proposed that the self-absorption paradox emerges in the context of high levels of private self-consciousness, manifested in the thought processes of rumination and reflection. They examined the possibility that a dichotomy

between “neurotic self-attentiveness, or rumination and [an] intellectual self-attentiveness, or reflection” could explain such conflicting findings (p. 287).

Trapnell and Campbell (1999) described the reflective thought process as a positive type of self-attention through which the person strives to gain knowledge about the self (curiosity) and which is reflected in psychological health. By contrast, the ruminative thought process and self-attention unite through a persistent, negative cycle of perceived threats to the self (fear or anxiety). It appears that the psychological distress associated with rumination occurs through the concentration of a ruminative or neurotic type of self-focus.

Trapnell and Campbell (1999) developed the Rumination and Reflection Questionnaire as a self-report measure of rumination and reflection related to the domain of private self-consciousness. Characteristic of private self-consciousness is an *awareness of one's self* involving all things private or personal. This covers, thoughts, feelings, attitudes or motivations that are *internally directed* (Buss, 1980; Scheier & Carver, 1980). The current thesis extended Trapnell and Campbell's line of research to incorporate the public self-consciousness domain. The public domain was included because it is established in the literature that self-awareness is a phenomenon that extends beyond awareness of one's internal experiences to an awareness of one's self *as a social object* (Buss, 1980; Scheier & Carver, 1980). Public self-consciousness is a term given to denote this *externally directed self-focus* whereby a person's understanding of themselves is framed in terms of the opinions of and relatedness to others. It is therefore argued that a comprehensive understanding of ruminative and reflective self-focus and the consequences for the self-

absorption paradox can only be achieved by an examination of both the private and public aspects of self-consciousness.

In order to conduct an investigation into the self-absorption paradox and the relevance of public and private dimensions of self-focused thoughts, it was first necessary to re-develop the item content of the Rumination and Reflection Questionnaire (Trapnell & Campbell, 1999). This re-development was completed in the first part of Study 1 and involved new items being written to represent the public domain of rumination and reflection and existing Rumination and Reflection Questionnaire items being reworded to relate exclusively to the private domain. The second stage of the re-development of the Rumination and Reflection Questionnaire involved a psychometric investigation of the new scale. The first of these studies was conducted through an exploratory factor analysis in Study 1. The second investigation, in Study 2, using confirmatory factor analysis verified only the rumination and reflection factors.

Study 1 also included an exploratory factor analysis of the Self-Consciousness Scale-Revised Version (Scheier & Carver, 1985). This analysis was conducted to examine the subfactors of private self-consciousness and public self-consciousness identified in earlier work. Trapnell and Campbell (1999) had used subfactors of private self-consciousness to make the link between private self-consciousness and rumination and reflection. Therefore, it was considered necessary to replicate this area of Trapnell and Campbell's research.

The new scale, developed in Study 1, was not confirmed as a measure of the private and public dimensions of rumination and reflection in the first part of Study 2. Consequently, the second part of Study 2 assessed only the relationship of the general factors of rumination and reflection to self-reported personality factors (e.g., neuroticism, openness to experience, narcissism), and possible associations with psychological symptoms (e.g., depression, anxiety, hostility). This analysis was related to the second aim of this thesis which was to examine the self-absorption paradox, not only in terms of the intensity of self-focused thoughts, but also in relation to whether their direction had any bearing on psychological health. Therefore, Study 2 involved finding the strongest associations that the factors of rumination and reflection had with aspects of self-consciousness, symptoms of psychological distress, and different personality factors.

Rumination and reflection have been evident in the relationship that self-focused awareness has with both psychological health and psychological distress. A further implication is that these factors are also involved in individual coping styles. Indeed, this was the suggestion made by Trapnell and Campbell (1999). They proposed that a new typology of coping and adjustment could be based on different intensities of rumination and reflection. Trapnell and Campbell suggested that a propensity for a high level of reflection and a low level of rumination represent a group of individuals with an adaptive coping style and that this is a coping style that would be associated with psychological health. However, three other combinations of rumination and reflection indicated more maladaptive styles of coping and that these would be

associated with psychological distress. Specifically, these three groups comprised repressives (low rumination & low reflection), sensitisers (high rumination & high reflection), and vulnerable individuals (high rumination & low reflection).

Interestingly, Trapnell and Campbell's (1999) model shares common characteristics with the well-established Weinberger, Schwartz and Davidson (1979) typology of coping and avoidance. Weinberger et al. suggested that people respond differently to negative experiences. For example, some individuals respond well under stress, whereas others engage in highly defensive coping strategies to the point of denying or repressing anxiety reactions. Similar to the Trapnell and Campbell typology, the Weinberger et al. model also contains four groups but these groups are based on different levels of defensiveness.

To date, no research has been conducted on the Trapnell and Campbell (1999) model of coping and adjustment. Therefore, the third aim of this thesis was to examine this typology and explore its possible overlap with the Weinberger et al. (1979) model. Study 3 involved a multi-faceted examination of the Trapnell and Campbell typology and the role that rumination and reflection play in coping with negative affect. The first part of Study 3 was an examination of the rumination and reflection typology in relation to self-reported psychological symptoms, personality factors, and self-consciousness. The second part of Study 3 provided further information on coping and adjustment via a cognitive experiential task involving the retrieval of autobiographical memories

The autobiographical memory task in Study 3 was considered beneficial to include in the current study because of the existing body of research on autobiographical memory tasks in relation to repression (e.g., Myers, Brewin & Power, 1998) and rumination (e.g., McFarland & Buehler, 1998; Watkins & Teasdale, 2001). Although self-report questionnaires reveal important information about people's conscious self-concepts, experiential tasks, such as the retrieval of autobiographical memories, give access to the less conscious aspects of the self (Westen, 1995). This type of access provides fertile ground for a multi-faceted understanding of the person.

Chapters 1, 2 and 3 review the theoretical and empirical literature relevant to the current thesis and provide a rationale what is being proposed. In brief, Chapter 1 outlines the role that self-awareness plays in the self-absorption paradox, that is, in psychological health or psychological distress. The first section in Chapter 1 begins with definitions of psychological mindedness and well-being as they apply to self-awareness and the self-absorption paradox. Next, two possible explanations for the self-absorption paradox are reviewed. The development and empirical use of the Fenigstein, Scheier and Buss (1975) Self-Consciousness Scale is then presented. This discussion is included because the Self-Consciousness Scale is a pivotal measure of self-consciousness, and the way in which it operationalises private and public self-consciousness is an important tool for the first research aim. The following section focuses on the Trapnell and Campbell (1999) proposal that certain personality types are involved in self-attention and that this partially explains the self-absorption paradox.

Whereas Chapter 1 focuses on the relationships among self-attention, self-consciousness and the self-absorption paradox, Chapter 2 presents Trapnell and Campbell's (1999) proposal that associated with the personality factors of neuroticism and openness to experience are the self-focused thoughts of rumination and reflection. The second section in Chapter 2 presents the different theoretical positions on the origins of ruminative thoughts. Following on from this, a summary of key findings from studies on rumination and reflection are presented to support the contention that rumination is a clear factor in psychological distress and that reflection is a factor in psychological health. Measures of rumination are then evaluated, including that of Trapnell and Campbell. Drawing on the theoretical and empirical differentiation of private and public self-consciousness, as outlined in Chapter 1, it is then argued that ruminative and reflective self-focus involves intrapersonal and interpersonal dimensions.

To further examine the differential associations that rumination and reflection have with psychological health and distress, Chapter 3 explores research relevant to a proposed model of coping and adjustment. Following this is an outline of the Weinberger et al. (1979) coping and avoidance typology and other related research. Emphasis is placed on the repressive coping style in this discussion because this is the style that has received most attention in the research literature, especially in autobiographical memory research. A discussion of autobiographical memories then takes place followed by a discussion of the link between generality of memories and rumination. The relationship that autobiographical memory has with different combinations of

rumination and reflection from the coping and adjustment typology is presented in the following section. Chapter 3 concludes with an outline of the plan of the empirical analysis undertaken in this study.

Chapter 4 describes the methodology, hypotheses and results for Study 1. Briefly, Study 1 comprised four stages. The first two stages involved a revision of the Rumination and Reflection Questionnaire (Trapnell & Campbell, 1999) items and face validation of the modified item content for the Revised-Rumination and Reflection Scale using two independent samples. The third and fourth stages comprised a psychometric evaluation of the new scale using exploratory factor analysis, scale, and item reliability.

Chapter 5 describes the methodology, hypotheses and results of Study 2. This study involved an exploration of the factor structure of the Revised-Rumination and Reflection Scale in a new sample of participants. Confirmatory factor analysis revealed that both the public and private dimensions of rumination and reflection were not substantiated. Chapter 6 describes the methodology, hypotheses and findings for Study 3. This study investigated the coping and adjustment model by differentiating four groups within the population in terms of levels of distressing symptoms, personality characteristics, self-consciousness, and autobiographical memories. The autobiographical memory experiential task in Study 3 was completed by a subsample of respondents from Study 2. Chapter 7 provides a general discussion of the findings in relation to the three major research questions, as well as a discussion of their theoretical and clinical implications, and finally, opportunities for future research are presented.

Psychological Mindedness and Psychological Well-Being

As a concept, psychological mindedness has been defined as a “reflectivity about psychological processes, relationships and meanings, and is displayed by an individual to the extent that he or she displays both an interest in, and an ability for, such reflectivity across both affective and intellectual dimensions” (Hall, 1992, p.130). It has been operationalised by a scale originally developed as an evaluation of patient suitability for psychodynamic therapy. The Psychological Mindedness Scale (Shill & Lumley, 2002) aims to capture how open a person is to therapy, that is, in wanting to talk over their issues, whether they believe therapy is beneficial and how in touch they are with their emotions. Thus, the psychologically minded individual is believed to possess a healthy ability to pay attention to and reflect about themselves.

That psychological well-being is viewed as an indicator of psychological mindedness and vice-versa is becoming increasingly promoted in the research literature (e.g., Trudeau & Reich, 1995). For example, Ryff (1989) encompasses six dimensions of psychological functioning in her measure of psychological well-being. The six areas have dimensional qualities characteristic of a healthy versus an unhealthy level of psychological functioning. These dimensions reflect a person’s level of autonomy, environmental mastery, personal growth, positive relations with others, purpose in life and self-acceptance. Thus, the healthy individual is described as one who engages in positive self-evaluation, personal growth and development, and who has directions and goals for their life complemented by strong interpersonal relationships (Ryff, 1995). As such,

psychological well-being and psychological mindedness have a well-established positive association with self-consciousness, self-awareness, and self-reflection that is supported by much empirical research (e.g., Brown & Ryan, 2003; Ryff, 1995; Ryff & Keyes, 1995; Trudeau & Reich, 1995).

Self-Awareness and Psychological Well-Being

Self-consciousness research provides evidence for a link between psychological well-being and self-awareness. For instance, private self-consciousness correlates with key characteristics of psychological mindedness (e.g., Creed & Funder, 1998, 1999; Trapnell & Campbell, 1999). These are positive characteristics, which include having a well-defined sense of self (Nasby, 1989, 1997), knowing and understanding oneself (Franzoi, Davis & Markwiese, 1990), and being more candid when reporting on aspects of oneself over time (Hjelle & Bernard, 1994). Private self-consciousness is also found to be associated with the positive aspects of one of the 'Big-five' personality factors, openness to experience (Scandell, 1998; Trapnell & Campbell, 1999). It appears that psychological mindedness is an outcome of a positive type of self-reflection or self-consciousness (Ryff & Keyes, 1995), and one that relates to favourable dimensions of the more open personality (Schmutte & Ryff, 1997).

Self-Awareness and Psychological Distress

The other side to the paradox of self-focus is that self-focused attention is also associated with psychological distress. Ingram's (1990a) review of self-focused attention in clinical disorders noted that patients had a heightened degree of attention focused on the self and which was associated with a range of

psychopathological states such as alcohol abuse, depression, anxiety, test anxiety, and social anxiety. Other research has also identified positive relations between self-consciousness and psychoticism (Darvill, Johnson & Danko, 1992); low self-esteem (Turner, Scheier, Carver & Ickes, 1978); fear of negative evaluation (Monfries & Kafer, 1994); and depression and anxiety (Ingram, 1990b), as well as the personality construct of neuroticism (Scandell, 1998). Moreover, a high level of self-focused attention (state & trait) constitutes a vulnerability factor for depression and anxiety disorders, and is associated with negative mood (Wood et al., 1990).

Possible Explanations for the Self-Absorption Paradox

Two possible explanations have been proposed for the self-absorption paradox phenomenon. The first was proposed by Ingram (1990a) who suggests that it is due to the inflexibility of self-attention. The second proposal involves the self-regulatory process.

The Inflexibility of Self-Attention

According to Ingram (1990a), the clue to unravelling the self-absorption paradox lies in differentiating between a chronic, non-pathological type of self-focused attention and self-absorption. He claimed that within a wide range of psychological disorders, there is a disproportionate level of persistent and inflexible self-attention known as self-absorption. Ingram defined self-absorption as a sustained, inflexible, inappropriate and excessive self-focus across a wide variety of contexts. He stated that it is “difficult to find a

psychological disorder that is not characterised by a heightened degree of self-focused attention” (p.165).

Ingram (1990a) maintained that the self-absorption paradox exists because a constantly high level of internal self-focus is not always of the self-absorbing type. A non-self-absorbed form of self-attention involves a flexible process in which the individual’s attention moves in response to different contexts or needs and is not detrimental to an individual’s psychological health. However, Ingram proposed that self-attention can become rigid or inflexible to such a degree that a person’s self-focus remains fixated on self-relevant information being absorbed from a variety of sources. If an individual does not, or cannot move out of a highly self-focused state, then self-focused attention or self-absorption is more likely to be associated with psychological distress. Thus, argued Ingram, the fixedness of self-absorption is indicative of a pathological form of self-focused attention, the content of which (its self-relevance) impacts on individual psychopathology.

It was Ingram’s (1990a) contention that the relationship between psychological health and a flexible type of internal self-focused attention partially explains the paradox. This relationship is more positive and distinct from a rigid, sustained, inflexible form of self-attention that is more accurately termed self-absorption, and which is associated with psychological distress. Chronic, self-focused attention by itself is not necessarily dysfunctional but becomes self-absorbing by “an inability to shift out of this state [of self-focus] in response to situational demands” (p.170).

Ingram (1990a) formulated his answer to the self-absorption paradox in terms of a particular type of self-directed attention, which consists of an inflexible, excessive, and internally directed self-focus. Yet, there are other mechanisms, which could well explain the link between self-focused awareness and psychopathology. To be sure, the self-absorption paradox is a complex issue that may be understood in the way that Ingram suggests. However, a much wider framework involving self-awareness and the self-regulation of mood and behaviour also provides some understanding of the contradictory findings in the research literature. This literature is now reviewed.

Self-Regulation of Mood and Behaviour

The self-regulation of mood and behaviour is, on one hand, associated with negative affects, such as depression or anxiety (Carver & Scheier, 1981, 1998; Duval & Wicklund, 1972; Pyszczynski & Greenberg, 1987), and yet on the other, with positive affects (Carver & Scheier, 1981, 1998; Duval & Wicklund, 1972). Self-regulation is a process by which people maintain an accurate, stable, positive self-concept, and achieve personal goals and standards of behaviour (e.g., Carver & Scheier, 1981; Pyszczynski & Greenberg, 1987; Wicklund, 1975). Personal goals can be as concrete as buying a new car, or as abstract as enjoying public speaking (Carver, Lawrence & Scheier, 1996).

The self-regulatory process involves the comparison of a person's internalised self-concept with externally generated physical, intellectual, or socially desirable standards (Carver & Scheier, 1981; Wicklund, 1975). Comparison between a current behavioural or situational standard and the preferred standard produces continual adjustment or regulation of behaviour.

Attempts to reach such desirable standards first involve an evaluation by an individual of their current behaviour or situation against a desired standard. The individual then makes a decision as to whether their current behaviour or situation matches the desired standard. The final part of the self-regulatory process involves the individual adjusting their behaviour to the desired standard. Negative affect occurs if there is still a discrepancy between the current standard and a desired standard. On the other hand, positive affect occurs if the individual's behaviour achieves the desired standard (Carver & Scheier, 1981, 1998; Duval & Wicklund, 1972).

Recently, Wrosch, Scheier, Miller, Schulz and Carver (2003) examined the associations between adaptive self-regulation of unattainable goals and the role played by goal disengagement and goal reengagement on subjective well-being. This study found that in a sample of both undergraduate college students and parents of children with cancer and parents with healthy children that the ability to disengage from a goal which is not achievable reduces the distress that arises from pursuit of the unattainable. Reengaging with valued alternative goals is an important part of the self-regulatory process for high subjective well-being.

By reviewing both the research literature and the different theoretical models, it becomes clear that self-awareness is very involved in the self-regulatory process and that the self-regulation of mood and behaviour is linked to both positive and negative outcomes. Moreover, it is possible to use self-consciousness theory to further support this link between self-awareness and the self-regulatory process. Buss (1980) suggested that self-consciousness, as a self-

attentive trait, is integral to the regulation of individual behaviour through the process of self-awareness. This is because self-awareness is the mechanism by which the self-regulatory process operates. Individuals understand and define their self-concept through being self-aware; they use self-awareness in evaluating and making judgements about their current behaviour or situation and adjust their behaviour because they are self-aware. Thus, self-consciousness theory expounds that the self-regulatory process cannot occur without some form of self-awareness.

Buss (1980) went on to suggest that people vary not only in how often or the length of time that they remain self-focused (at a dispositional level) but also in the content or direction of their self-focus (on a public or private level). Thus, a person, who is consistently self-conscious, or temporarily self-aware about their public-self, regulates behaviour more out of concern for the attitudes or expectations of others (public self-consciousness) than out of their own concerns. In contrast, a person who is consistently self-conscious or temporarily self-aware of bodily stimuli, internal states, or motives, regulates behaviour more in accord with inner values, feelings or physical sensations (private self-consciousness) (Buss, 1980; Chang, Hau & Guo, 2001; Scheier & Carver, 1985).

Buss (1980) viewed the differences in the process and the content of self-awareness as reflecting the impact that self-awareness has on the self-regulatory process and thus on the role that self-awareness plays in a person's psychological health and well-being. Therefore, self-awareness influences the occurrence of positive or negative affect through the self-regulation of

behaviour. However, it is still to be considered whether this provides enough evidence that the self-regulatory process is at the heart of the self-absorption paradox.

Theoretical Models of the Self-Regulation of Behaviour

Several other comprehensive theoretical models of self-regulation concur with Buss's (1980) proposal that self-awareness is essential to the self-regulation of behaviour. These models connect the self-regulation of mood with self-awareness and the development of psychological distress. An early model put forward by Duval and Wicklund (1972) linked self-regulation and self-awareness to positive and negative affect. The Duval and Wicklund model was later expanded on by Carver and Scheier (1981, 1998) to include self-relevant and non-self-relevant internal attention. Pyszczynski and Greenberg (1987) have also posited that the development of a depressive self-focusing style could very well be part of the self-regulation cycle.

Duval and Wicklund (1972). This model proposed relationships among self-regulation, affect and objective self-awareness, in which attention is drawn to individual thoughts as well as to emotional or physical feelings. The Duval and Wicklund objective self-awareness model describes the influence that self-focus has on the drive for a reduction in perceived discrepancies between a person's present state and self-relevant standards of comparison. Duval and Wicklund argued that self-attention is a necessary part of a person's evaluatory process. Self-evaluation takes place between the individual's current state and personal standards. If a person concludes from their self-evaluation that they are content with their current state then this induces positive affect. However, if the

self-evaluation of their current state is below their personal standards, then this may often lead to discontent. Self-focused attention on negative discrepancies produces negative affect regardless of the probability of success in reducing the discrepancy. Experiencing negative affect (i.e., discontent) can result in one of two things: either action directed at decreasing the discrepancy and the negative affect, or avoidance of the self-focus and of the self-evaluation process.

Duval and Wicklund's (1972) theory of objective self-awareness has been revised over many years. For example, Silvia and Duval (2001) more recently suggested that the original theory did not specify why people chose one action over another. That is, to either reduce the perceived discrepancy between current and desired standards or to avoid self-focus. Silvia and Duval suggested that what influences people's choices is perhaps an interaction of what is being attributed as the cause of the discrepancy, the rate of progress or lack of progress in reducing the discrepancy, and the size of the discrepancy. Thus, people choose to reduce the discrepancy if it is thought to be within their capabilities to do so and they can see it being reduced. On the other hand, people avoid self-focus if the discrepancy is not being reduced at a fast enough pace or if the discrepancy is not within their capacity, that is, the discrepancy is beyond them.

Carver and Scheier (1981, 1998). Expanding on Duval and Wicklund's (1972) theory of objective self-awareness, Carver and Scheier's (1981, 1998) model views self-focused awareness as an adaptive and necessary part of the self-regulation cycle. Carver and Scheier argue that self-attention is needed to attain the self-relevant goals (personal standards) that all individuals hold. As in

Duval and Wicklund's model, self-regulation occurs if there is a discrepancy between a person's current self and a desired personal standard (a goal). Self-awareness is required to evaluate and compare possible discrepancies between the two states. Following evaluation, self-regulatory behaviour attempts to match the current self to the desired self. Attainment of the desired self results in positive affect and the conclusion of the self-regulatory cycle. Nonattainment of the desired self (personal standard) results in an alteration of the person's behaviour in order to meet that standard (Carver, 1979; Carver & Scheier, 1981, 1998; Pyszczynski & Greenberg, 1987). However, unlike the original Duval and Wicklund model, Carver and Scheier proposed that negative affect (e.g., anxiety, depression) is experienced, not because a person notices a discrepancy between a desired goal and a current situation, but when the attainment of a goal (meeting the discrepancy) takes too long. Similar to Silvia and Duval's (2001) proposal, Carver and Scheier maintain that if there is a low probability of achieving a reduction in a negative discrepancy then self-focus is aversive.

Carver and Scheier's (1981, 1998) model of the self-regulation of behaviour takes into account the different aspects of private and public self-consciousness. Self-relevant goals include those individual goals desired by the private side of the self, as well as social goals, which are believed to be the goals desired by the public side of the self. Carver and Scheier state that the achievement of these goals links the different ways in which individuals self-regulate. The focus of the individual may be on the achievement of their own interests (i.e., private dimension) with a deep commitment to the pursuit of these values. Alternatively, the individual may take into account their

relationship to others (i.e., public dimension) and focus on the pursuit and maintenance of an acceptable social self-image. Thus, individuals use the private and public values in self-consciousness differentially to self-regulate their behaviour (Carver & Scheier, 1987).

Pyszczynski and Greenberg (1987). When people become 'stuck' in the self-regulatory cycle, Pyszczynski and Greenberg (1987) proposed that a negative focus on the attainment or non-attainment of discrepancy reduction involves the loss of self-worth and the development of a depressive self-focusing style. Intensification of self-focus and of negative affect occurs when an individual is unable to stop focusing on the discrepancy between the current and desired state. Depression occurs through an inability or unwillingness to give up a desired goal, preventing disengagement from the self-regulatory cycle. Preoccupation with the loss of the goal heightens the attention paid to it. Therefore, self-focus affects cognitive, emotional, and behavioural adjustment to the loss, leading to a state of depression. Pyszczynski, Greenberg, Hamilton and Nix (1991) also added that, although the outcome of negative self-focus is more often depression, it can be co-morbid with anxiety given the overlap between depression and anxiety symptomatology.

Summary of Models of the Self-Regulation of Behaviour

The self-regulatory model first put forward by Duval and Wicklund (1972), and extended by Buss (1980), Carver and Scheier (1981), and Pyszczynski and Greenberg (1987) proposes the involvement of self-consciousness (self-awareness) in the regulation of behaviour through self-evaluation. Self-focused attention is thought to encompass an awareness of

internal aspects, such as cognitions and affect, as well as contributing to a process of self-evaluation, discrepancy perception, and self-regulation (Hull & Levy, 1979). The self-regulatory process implies that self-focused attention is an adaptive mechanism involved in the reduction of discrepancies between current and desired states. Self-regulation theory suggests that negative affect (i.e., psychological distress) occurs because of a failure to achieve personal goals, whereas positive affect (i.e., psychological health) occurs when goals are attained. Thus, self-awareness is considered to be a specific factor contributing to psychological distress.

The self-regulatory theoretical viewpoint stands in contrast with Ingram's (1990a) claim that heightened levels of self-attention or self-absorption are a non-specific feature of psychopathology, occurring because of an inflexible and rigid type of self-attention. Ingram, along with the proponents of self-regulation theory, such as Buss (1980) and Carver and Scheier (1981, 1998), is not alone when predicating an association between self-awareness and psychological dysfunction. Yet, they account for this association in very different ways. Hull and Levy (1979), Carver and Scheier (1981) and Pyszczynski and Greenberg (1987) propose that self-focused attention in the self-regulatory cycle is relevant to and associated with particular negative psychological states, such as alcohol abuse, anxiety and depression. Ingram's model of self-absorption accounts for the contribution that self-awareness makes to a wide range of disordered thinking and behaviour as a non-specific factor.

Measurement of Self-Awareness

Although Ingram (1990a) and Carver and Scheier (1981, 1998) hold different theoretical positions on the association that self-awareness has with psychological health and distress, they overlap methodologically in the use of a specific measure of self-awareness, the Self-Consciousness Scale (Fenigstein et al., 1975). As self-awareness now appears to play such a fundamental role in the self-absorption paradox, either due to its role in the self-regulatory process or as a non-specific factor, it is important at this stage of the discussion to understand how self-awareness has been operationalised and measured. There is always the possibility that the self-absorption paradox may be difficult to explain because of the way that self-awareness is being measured. Therefore, the following section reviews the development, use and criticism of the Self-Consciousness Scale. In particular, this review focuses on the evidence that there are public and private aspects of self-consciousness.

The Self-Consciousness Scale

The association that self-focused awareness has with psychological health or distress has been identified primarily using the Self-Consciousness Scale (Fenigstein et al., 1975) as a measure of self-consciousness (Mor & Winquist, 2002). Buss, along with colleagues Fenigstein and Scheier (Fenigstein et al., 1975) drew on Duval and Wicklund's (1972) objective self-awareness theory, as well as psychoanalytic and other insight therapies, to make a theoretical link between self-awareness and self-consciousness. They then developed the Self-Consciousness Scale on the basis of this link. The Self-

Consciousness Scale has become the most frequently used instrument to assess individual differences in self-awareness and to investigate the association that self-awareness has with particular psychological disorders (Scandell, 2001). Indeed, research on this scale has contributed much to our understanding of the nature of self-awareness.

Principally, the Self-Consciousness Scale (Fenigstein et al., 1975) measures individual tendencies to be self-focused, that is, to be aware of private thoughts, feelings, and behaviour. The self-consciousness domain encompasses the examination of personal attitudes and motives, and a concern with appearance and public performance, as well as sensitivity to the impressions and reactions of others (Scheier & Carver, 1985). Fenigstein et al. conceptualised self-focus/self-awareness as having two different aspects: namely private self-consciousness and public self-consciousness. Therefore, understanding that there are different aspects of self-consciousness suggests the possibility that the relationship that self-awareness has with both psychological distress and psychological health could be mediated not only by the intensity of a person's self-awareness but also by its direction. These aspects are now discussed in turn.

Definition of Private Self-Consciousness

Private self-consciousness is defined by a constant self-examination of private, undisclosed thoughts and feelings. Individual thoughts, beliefs and values are primarily self-centred and private, and unless self-disclosed, are not open to inspection by others (Buss, 1980; Scheier & Carver, 1985). Items in the private self-consciousness scale include introspection, the examination of

moods, awareness of mental processes, and the use of fantasy (Buss, 1980).

Thus, those who are high in private self-consciousness tend to show little interest in the evaluations that others may have of them, being more interested in understanding themselves (Fenigstein & Abrams, 1993).

Definition of Public Self-Consciousness

On the other hand, public self-consciousness refers to the way individuals focus on certain of their observable attributes and attitudes - aspects of themselves that are open to public scrutiny and evaluation (Scheier & Carver, 1985). Public self-consciousness is described as an awareness of one's self as a social object, a concern with physical appearance and presentation, a vulnerability to the opinions of others, and is clearly defined in terms of social awareness (Buss, 1980; Scheier & Carver, 1980). Intense levels of public self-consciousness are associated with social anxiety, low self-esteem and avoidance behaviours (Buss, 1980). Items in the public self-consciousness scale involve being worried about what other people think, feeling the need to make a good impression and being concerned with one's appearance. Thus, there is one component of public self-consciousness that is concerned with 'appearance' operationalised as a concern over presentation. A second component to public self-consciousness is concerned with 'style', that is, an awareness that others are watching how one stands, moves, speaks, gestures and performs (Buss, 1980).

Although they found small, positive correlations between public and private self-consciousness ($r = .26$ & $.23$), Fenigstein et al. (1975) concluded that they are indeed measuring different aspects of self-attention. Furthermore, Buss (1980) accounted for any correlation between these two aspects by

proposing that there are some individuals who, in general, self-attend more than others and that they would be above average in both public and private self-consciousness. Conversely, there are some individuals who do not self-attend and would be below average. Further extensive research supports the Fenigstein et al. proposition that the two facets of self-consciousness refer to separate private and public dimensions of self-attentiveness (e.g., Carver & Scheier, 1987; Fenigstein, 1987; Jaimovich, 1999; Monfries & Kafer, 1994; Nasby, 1997).

Definition of Social Anxiety

Fenigstein et al. (1975) also identified a third factor in the Self-Consciousness Scale that they termed social anxiety. On face value, the social anxiety factor seemed to be closely related to public self-consciousness, but involved a more negative type of public self-focus. Buss (1980) defined social anxiety as shyness, embarrassment and anxiety in the company of others. On the basis of low correlations between the social anxiety and public self-consciousness scales ($r = .21$ & $.20$), Fenigstein et al. concluded it was more likely that public self-consciousness was a forerunner of social anxiety. However, awareness of the self as a public person (i.e., public self-consciousness) does not necessarily lead to social anxiety. It is possible to focus attention on one's self without experiencing excessive concern over being evaluated by others (Scheier & Carver, 1985) and it is more likely that social anxiety is brought about by the expectation of a particularly public negative evaluation (Fenigstein et al., 1975).

Gender Differences in Self-Consciousness

Further to this review of the self-consciousness literature, gender differences in some aspects of self-consciousness present further possibilities for exploring the self-absorption paradox. When using the Self-Consciousness Scale (Fenigstein et al., 1975) as a primary basis for gathering empirical data on self-awareness, findings are mixed regarding the intensity, direction or origins of self-consciousness differing as a function of sex. For example, there is some evidence that women have significantly higher levels of private but not public self-consciousness relative to men (Scheier & Carver, 1985). Other evidence indicates that women have significantly higher levels of both private and public self-consciousness than men (Morin, 1997). Yet again, other studies do not find any significant differences between men and women for self-consciousness (Fenigstein et al., 1975).

Apart from these equivocal findings for intensity of self-consciousness, specific experiences appear to have more influence on the direction of women's self-consciousness than on the direction of men's. Morin (1997) found that a history of frequent exposure to self-focusing stimuli, such as mirrors, audiences, video devices, or cameras significantly relates to high levels of private self-consciousness in men but to high levels of public self-consciousness in women.

Public and private self-consciousness, as different aspects of self-consciousness, appear to develop along separate paths for men and women (Klonsky, Dutton & Liebel, 1990; Morin, 1997). Klonsky et al. found that men with high levels of private self-consciousness reported more encouragement to

examine their thoughts and behaviour by their parents than men with low levels of private self-consciousness. On the other hand, women high in private self-consciousness reported more restrictive maternal discipline (e.g., overprotection, authoritarian discipline or rejection) than women with low levels of private self-consciousness. Thus, the development of private self-consciousness in men appears to be through the encouragement of self-examination by parents, whereas, in women it develops through restrictive maternal practices.

In contrast to the differential development of private self-consciousness in men and women, the development of public self-consciousness appears to follow similar pathways. For both sexes, high levels of public self-consciousness seem to stem from achievement demands by one or both parents and negative parental practices, such as authoritarian discipline. Klonsky et al. (1990) proposed that the development of public self-consciousness, in both men and women, was due to a combination of directive, authoritarian parenting and an external locus of control in the giving of too much weight to the perceived value of external influences.

Problems with the Self-Consciousness Scale

The amount of empirical research on self-consciousness/self-awareness is indeed impressive. However, before proceeding any further with this discussion it is important to note that although the Self-Consciousness Scale (Fenigstein et al., 1975) has been used in much of that research, the scale itself has been criticised on both methodological and conceptual grounds (e.g., Scheier & Carver, 1985; Trapnell & Campbell, 1999; Wicklund & Gollwitzer,

1987). If the Self-Consciousness Scale turns out to be a flawed scale where does this leave the link between self-consciousness and the self-absorption paradox? The following section presents a detailed discussion of methodological and conceptual criticisms of the scale.

Methodological Criticism of the Self-Consciousness Scale

One criticism of the Fenigstein et al. (1975) Self-Consciousness Scale concerns the development of the measure solely focusing on college student samples. Scheier and Carver (1985) proposed that this type of restriction has led to the question of the utility of using the Self-Consciousness Scale with populations other than students. They believed that problems in research studies, which have arisen using members of the public who (a) find it difficult to understand some of the item content (e.g., the word ‘scrutinize’), and (b) are required to say what was not characteristic of them, has resulted in unacceptably high levels of missing response data. Scheier and Carver suggested that a response format which only requires people to say what was characteristic of them along with more readily-understood item content would lessen the number of missing responses. Consequently, they revised the Self-Consciousness Scale in 1985 to address response rate issues. Although this revision addresses some of the specific structural problems of the scale, there continues to be debate over the actual factor structure of the Self-Consciousness Scale.

Criticism of the Content of the Self-Consciousness Scale

Self-consciousness research is ambiguous as to whether the Self-Consciousness Scale (Fenigstein et al., 1975) contains three, four, five, or six factors (Cramer, 2000). In a review of the various factor models of the Self-

Consciousness Scale, Cramer (2000) noted that factor analysis has supported the original 3-factor structure of the Self-Consciousness Scale (private self-consciousness, public self-consciousness & social anxiety) for women but not for men (e.g., Nystedt & Smari, 1989). However, other factor analyses support a four-factor solution (e.g., Conway & Giannopoulos, 1993; Cramer, 2000; Martin & Debus, 1999) and others a five-factor model of self-consciousness (e.g., Mittal & Balasubramanian, 1987; Nystedt & Ljungberg, 2002). A six-factor model has received very limited support (Cramer, 2000).

Studies that have found two separate but related factors in private self-consciousness generally describe them in similar terms. For example, the subfactors of private self-consciousness define internal state awareness and self-reflectiveness. Internal state awareness encompasses an individual's specific awareness of their inner thoughts and feelings (Conway & Giannopoulos, 1993) or as a monitoring of specific aspects of the self (Martin & Debus, 1999). In contrast, self-reflectiveness is believed to involve a more scrutinising characteristic of private self-focus (Conway & Giannopoulos, 1993) or rumination on the general self (Martin & Debus, 1999). This portrays a more negative type of reflection on the overall self. Although a few studies have highlighted the more affective parts of the two factors (e.g., Anderson, Bohon & Berrigan, 1996) it is usually agreed that internal state awareness is a relatively adaptive type of private self-focus, whereas, self-reflectiveness is a more maladaptive type (Watson, Morris, Ramsey & Hickman, 1996).

Fewer studies agree on a bidimensional measure of public self-consciousness. Mittal and Balasubramanian (1987) proposed that the two

dimensions of public self-consciousness found in a factor analysis of the Self-Consciousness Scale (Fenigstein et al., 1975) were appearance consciousness and style consciousness. Appearance consciousness encompasses an individual's concern or worry over what others may think of their external physical appearance, whereas style consciousness reflects a concern about the "behavioural or stylistic elements of self-presentation or public image" (p. 64).

Cramer's (2000) factor-analysis of the Self-Consciousness Scale (Fenigstein et al., 1975) supported the four-factor solution for the scale comprising public self-consciousness, social anxiety, and two private self-consciousness factors of internal state-awareness and self-reflectiveness. Cramer argued that a four-factor model consisting of one-dimensional social anxiety and public self-consciousness scales and a bidimensional private self-consciousness is a wide-ranging, stable and replicable factor structure for the measurement of self-consciousness.

Pertinent to the differences in the number of factors that make up the self-consciousness measure is a continuing dispute as to which items load onto the individual factors (e.g., Cramer, 2000; Mittal & Balasubramanian, 1987; Trapnell & Campbell, 1999; Watson et al., 1996). Kline (1994) suggests that correct interpretation of factors should be made through the content of the highest loading items. Therefore, if researchers cannot agree on the makeup of the individual factors then interpretation of each factor, as well as the overall scale, is thrown into doubt. Hence, the Self-Consciousness Scale (Fenigstein et al., 1975) continues to be a controversial scale despite its use in numerous research projects (Creed & Funder, 1999; Trapnell & Campbell, 1999).

Conceptual Criticisms of the Self-Consciousness Scale

Further to the methodological and content criticism of the scale, Wicklund and Gollwitzer (1987) suggested that self-consciousness was such a multifaceted concept that its measurement using a self-report scale such as the Self-Consciousness Scale (Fenigstein et al., 1975) was inappropriate. They proposed that self-consciousness is a dynamic process not properly captured through an empirically based measurement and criticised the Self-Consciousness Scale for lacking conceptual validity. This was because it tried to measure a very complex concept in terms of “concrete, empirical definitions thus neglecting the underlying psychological processes” (p. 492). Wicklund and Gollwitzer also argued that neither was it meaningful to distinguish between a private and public type of self-consciousness, in that public self-consciousness is, in reality, measuring ‘social dependency’ and its associated traits, such as anxiety, conformity, disinclination to risk-taking, value orthodoxy, affiliation, and lack of autonomy. They contended that the ‘so-called’ public self-consciousness/private self-consciousness dichotomy and any further expansion of these factors, is immaterial to the concept of the self. However, Wicklund and Gollwitzer’s notion that public self-consciousness is social dependency has itself been intensely debated in the literature by self-consciousness researchers (e.g., Fenigstein, 1987).

Fenigstein (1987) responded to Wicklund and Gollwitzer’s (1987) argument by stating that “as a result of the self-awareness process and stimulated by an increased perception of themselves as a social object, the

publicly self-conscious person is sometimes socially dependent or sometimes socially responsive” (pp. 545-546). Fenigstein also suggested that public self-consciousness and social dependency relate through the process of self-awareness yet still remain “conceptually different variables” (pp. 545-546).

Contrary to Wicklund and Gollwitzer’s (1987) argument, research supports the empirical measurement of different aspects of self-consciousness. The probability that public self-consciousness measures social dependency has not received strong support from other self-consciousness researchers. Then again, neither has the proposition that public self-consciousness is a bidimensional construct. Furthermore, public self-consciousness subscales have been criticised in the literature for having low validity and reliability (Mor & Winquist, 2002).

Despite such criticisms, the Fenigstein et al. (1975) Self-Consciousness Scale is a well-accepted measure of self-consciousness and continues to be used as a measure of self-awareness and its attendant associations with cognition, affect, behaviour and motivation. Thus, it appears that self-awareness can be operationalised through the use of the Self-Consciousness Scale or its revised version, the Self-Consciousness Scale-Revised Version (Scheier & Carver, 1985).

Other Areas of Investigation Using the Self-Consciousness Scale

Up to this point it could be concluded that the self-absorption paradox is explainable by Ingram’s (1990a) contention that it is a rigidity of self-focus that leads to psychological distress. Then again, the research literature appears supportive, both theoretically and empirically, of the importance of the self-

regulatory process in psychological health outcomes. However, other investigations using the Self-Consciousness Scale (Fenigstein et al., 1975) have examined both the positive and negative impact of self-awareness on many areas of human functioning other than self-regulation, such as cognition, affect, behaviour, and motivation. Therefore, the following section sees evidence presented which suggests that the paradoxical nature of self-absorption is more than either rigidity of self-focus, or the self-regulatory process.

One study of self-awareness and cognition, conducted by Jamovich (1999), entailed an investigation of the influence of private and public self-consciousness on perceptions of responsibility and on attributions made by medical students about their patients. Medical students who were high in public self-consciousness were found to be prone to making external attributions for a negative interaction with their patients, that is, to blame the patient for not having more control over their behaviour. On the other hand, medical students who were high in private self-consciousness made more internal attributions, that is, they were more able to differentiate between the different emotions elicited from both positive and negative patient interactions and so were less inclined to blame the patient for negative interactions. Jamovich concluded that higher levels of private self-consciousness facilitated greater cognitive awareness in difficult situations, through a recognition by those medical students of their own part in a patient-doctor exchange. In contrast, public self-consciousness leads to more externally generated attributions, in that those students who were high in public self-consciousness found it more difficult to take any responsibility for negative patient interactions.

Other research has looked at specific emotional processes that are associated with self-consciousness and which influence individual behaviour. Monfries and Kafer (1994) found differential associations among aspects of self-consciousness, fear of negative evaluation (i.e., a concern about public presentation) and social avoidance. Their sample contained some individuals who had high levels of private self-consciousness and who were very concerned about their self-presentation. Yet, they did not avoid social situations that may have caused them concern and nor did they evidence psychological distress as a result of their concerns. Others within their sample, who had high levels of public self-consciousness, showed more internal distress (e.g., fear or anxiety) and tended to avoid potentially threatening social situations. Monfries and Kafer concluded that the direction of self-consciousness (private or public) influences the outcome of self-presentational concerns. A publicly self-conscious person with self-presentational concerns avoids social situations with which they are not comfortable. In contrast, similar self-presentational concerns for a privately self-consciousness person, do not lead to internal distress or avoidance of social situations.

A willingness to receive accurate information about personality characteristics has highlighted the associations among self-awareness, behaviour and motivation. Franzoi et al. (1990) combined the Self-Consciousness Scale (Fenigstein et al., 1975) with a scale measuring individual differences in the need for self-knowledge. The researchers found that different needs for accurate self-knowledge appear to underpin the different levels of private self-consciousness. Individuals with a high level of private self-

consciousness were motivated to gain more accurate self-knowledge regardless of whether this knowledge was positive or negative. However, individuals low in private self-consciousness tended to avoid negative self-knowledge.

Franzoi et al. (1990) concluded that the different levels of self-consciousness indicated different self-protective or self-defensive needs. For instance, someone with high levels of private self-consciousness 'needs' self-knowledge more than they 'need' self-esteem protection, whereas, someone low in private self-consciousness 'needs' self-defense mechanisms to protect their self-esteem more than their 'need' for self-knowledge. Thus, self-awareness as operationalised in the Self-Consciousness Scale has been found to be involved in a wide range of human behaviour, thought, emotions and motives which could very well be involved in the self-absorption paradox.

Self-Consciousness and Clinical Disorders

It has now become clear that self-consciousness has an important role to play when understanding psychological health and psychological distress. This is especially so when public and private self-consciousness are assessable as specific pathological features among groups with different psychological disorders. Research has shown that a number of clinical disorders, such as social phobia, panic disorder, obsessive-compulsive disorder and bulimia are associated with different levels of private and public self-consciousness (Jostes, Pook & Florin, 1999). The association is such that self-consciousness suggests a contributing factor for some clinical disorders. For instance, Jostes et al. found that four groups of young women, diagnosed with clinical disorders, could be

differentiated from a fifth group of normal controls on the basis of individual public or private self-consciousness scores.

This type of self-consciousness differentiation also applies to levels of anxiety and depression in student samples. Ingram (1990b) found that differences in public and private self-consciousness were evident in anxious students, depressed students, and depressed-anxious students. Private self-consciousness was significantly elevated in the three groups when compared to a normal control group but was not significantly different within the three groups. However, public self-consciousness was elevated for the anxiety groups but not for the depression-only group. Ingram concluded that heightened private self-focused attention represents a particular thought process in both anxiety and depression; yet public self-consciousness represents a cognitive process only in anxiety.

Personality: A Further Understanding of the Self-Absorption Paradox

In light of the many possible rationalisations for the self-absorption paradox, Trapnell and Campbell (1999) suggested that a partial explanation to the involvement of self-awareness in both psychological health and distress lies in individual personality factors.

Self-Consciousness, Personality and The Self-Absorption Paradox

Trapnell and Campbell (1999) proposed that different personality types are motivated to use self-consciousness for different reasons and that this would account for the relation that self-awareness has with psychological health and psychological distress. For instance, both 'neuroticism' and 'openness to

experience' from the NEO Personality Inventory (Costa & McCrae, 1992) have items which encompass high levels of self-awareness but which are motivationally disparate. The neuroticism factor encompasses an aspect of self-consciousness that is motivated by fear, social anxiety and public self-consciousness. Individuals scoring high on neuroticism find it difficult to control their emotions, suffer from shame and embarrassment and so tend to be disturbed by awkward social situations (Costa & McCrae, 1992).

In contrast, the 'open' personality is intellectually curious, actively pursuing an inner world of fantasy, imagination, ideas, feelings and emotions (Costa & McCrae, 1992). These individuals spend time in being self-aware but unlike the neurotic, who is self-conscious out of fear or anxiety, the open individual is motivated out of a healthy curiosity. Thus, Trapnell and Campbell (1999) proposed that the part of self-awareness that is associated with psychological distress is also associated with the neurotic personality. However, that part of self-awareness that is associated with psychological health is connected to the personality trait of openness to experience.

Many studies have shown this association between personality and self-consciousness. For example, private self-consciousness correlates positively with personality characteristics such as imagery, self-monitoring, emotionality, negative self-esteem, and with the personality factor of openness to experience (e.g., Scandell, 1998; Tunnell, 1984; Turner et al., 1978). This indicates that the personality profile of individuals high in private self-consciousness includes both positive and negative aspects. Positive aspects include the ability to be

self-reflective, philosophically minded and to use imagery. Negative aspects involve emotionality and negative self-esteem.

Public self-consciousness, on the other hand, tends to be associated only with the more negative characteristics of personality such as emotionality, negative self-esteem, anxiety, conformity, affiliation, exhibitionism, social recognition and value orthodoxy as well as neuroticism (Scandell, 1998; Tunnell, 1984; Turner et al., 1978). This suggests a profile of a person anxiously, and perhaps neurotically, concerned with monitoring, conforming to, and displaying conventional, socially appropriate behaviour.

Trapnell and Campbell's (1999) proposal, that different personality types are motivated to use self-focused awareness or self-consciousness for different reasons, is perhaps the key to understanding the paradoxical nature of heightened levels of self-awareness. A person high in both openness to experience and private self-consciousness wants to explore their internal world. They tend to be reflective, psychologically minded, keen to extend their self-knowledge, and curious (Franzoi et al., 1990; Scandell, 1998), and thus are more likely to be psychologically healthy. On the other hand, an individual high in both private self-consciousness and neuroticism could suggest that the motive to be self-attentive may be out of fear, and the constant monitoring of and thinking about themselves is a way of managing their unstable inner world.

The relationship that public self-consciousness has with personality suggests a stronger link with neuroticism than with openness to experience. The publicly self-consciousness person is focused on themselves as they fit into their social world; they tend to constantly monitor themselves and their behaviour in

order to conform to conventional social expectations. Thus, the motivation to be self-attentive is more likely to occur out of fear rather than a desire for greater self-knowledge. Therefore, as Trapnell and Campbell (1999) suggest, specific personality factors appear to be involved in the relationship that self-awareness has with psychological health and psychological distress, and may indeed form the basis for a better understanding of the self-absorption paradox.

Involvement of Narcissism in the Self-Absorption Paradox

Trapnell and Campbell (1999) also proposed that personality variables, other than that of neuroticism and openness to experience might contribute to the different motivations behind self-attention. They suggested that narcissism is one personality factor of particular relevance to the paradox. Narcissism, by its very nature, entails high levels of self-focus. It encompasses a collection of diverse mental processes and behaviours that include exhibitionism, superiority, vanity, exploitativeness, entitlement, and self-sufficiency (Raskin & Terry, 1988). Narcissism is associated with many negative behaviours and outcomes. For instance, unrealistic levels of self-enhancement (Campbell, Reeder, Sedikides & Elliot, 2000; Colvin, Block & Funder, 1995; John & Robins, 1994), low satisfaction with self and life (Kopelman & Mullins, 1992), low satisfaction with interpersonal feedback (Kernis & Sun, 1994) and the pursuit of goals in order to display superiority over others (Morf, Weir & Davidov, 2000) are related to narcissism.

Not all narcissism is necessarily maladaptive. Watson and Biderman (1993) argued that there is a factor within narcissism that is adaptive, in that it is associated with the more psychologically healthy private self-consciousness

factor of internal state awareness. Hill and Yousey (1998) found that certain characteristics of narcissism could be adaptive in occupations that involve opportunities for leadership, authority, social attention, prestige, and admiration from others. Politicians appear to have high levels of adaptive narcissistic characteristics such as the leadership traits of authority, social boldness, and information delivery. In contrast, clergy have very low levels of maladaptive narcissism, such as being domineering, exhibitionistic, autocratic, craving excitement and aggression, all of which may impair interpersonal relationships.

As suggested by Trapnell and Campbell (1999), narcissism as a construct is a blend of several of the traits that are part of the Five Factor Model of personality. Roberts and Robins (2000) found that narcissism is associated with high levels of extraversion and low levels of agreeableness. Narcissists appear to put being the centre of attention, the pursuit of their own goals and the taking of credit for their successes before interpersonal relationships and consequently often damage these relationships in the process. Thus, when narcissism is extreme, maladaptive relationships in interpersonal and work situations often result (Carroll & Hoenigmann-Stovall, 1996).

Although narcissists may use unrealistic self-enhancement as an aid to bolster their vulnerable self-esteem, accurate self-appraisal plays an important role in psychological health (Colvin et al., 1995). However, as previously evidenced, high levels of self-attention are not necessarily indicative of psychological well-being. In some cases, high levels of self-attention are associated with psychological distress. Trapnell and Campbell's (1999) proposal, that narcissism might be involved in the motivations behind self-

attention seems concordant with that part of narcissism which is driven by the neurotic's fear. In contrast, there seems to be a different aspect of narcissism driven by curiosity about the self. Further to this, Trapnell and Campbell suggest that some items within the Self-Consciousness Scale (Fenigstein et al., 1975) reflect the narcissistic personality (e.g., 'I think about myself a lot') and thus may be associated with the disagreeableness dimension within the Five Factor Model. There are other items (e.g., 'It's easy for me to talk to strangers'), that appear to be associated with extraversion. Therefore, it is possible that the dichotomy seen in the association that self-awareness has with psychological distress and psychological health might also be seen in the two aspects of narcissism or involve traits other than neuroticism and openness to experience.

Summary and Conclusion

Chapter 1 presents a series of ideas which have been used to explain the self-absorption paradox. For instance, Ingram's (1990a) contention is that a maladaptive type of self-absorption is marked by inflexibility and rigidity. On the other hand, self-regulation theorists, such as Scheier and Carver (1985) propose that it is the non-achievement of personal goals that underpins the association that self-awareness has with psychological distress.

The most recent of these explanations is one proposed by Trapnell and Campbell (1999), who suggest that different personality types self-attend for different reasons. Specifically, Trapnell and Campbell propose that a ruminative self-focus is a feature of the neurotic personality, whereas a reflective self-focus

is a feature of the personality trait of openness to experience. Therefore, rumination as the cognitive style of the neurotic personality would explain the association that heightened levels of self-awareness has with psychological distress, whereas reflection, as the cognitive style of the more open personality, would explain the association that heightened levels of self-awareness has with psychological health. Thus, the next phase in investigating the self-absorption paradox is the part played by rumination and reflection, and is discussed in Chapter 2.

CHAPTER 2

INSIGHT INTO THE SELF-ABSORPTION PARADOX: THE ROLE OF RUMINATION AND REFLECTION

It was suggested at the end of Chapter 1 that associated with specific personality factors are ruminative or reflective self-focused thought processes. Trapnell and Campbell (1999) proposed that rumination and reflection were driven by two “motivationally distinct dispositions” (i.e., fear or curiosity) which lie behind different aspects of self-consciousness (p. 287). These cognitive differences explain the relationship that self-consciousness has with both psychological health and distress.

The impact of different styles of cognitive processing on symptoms of psychological distress and indices of psychological health is, to a large extent, absent from previous attempts to resolve the self-absorption paradox. Therefore, the aim of Chapter 2 is to consider the way that ruminative and reflective self-focus gives insight into the self-absorption paradox. Whereas Trapnell and Campbell (1999) concentrated on the private dimension of self-consciousness, it has been clearly evidenced in much of the research literature presented in Chapter 1, that self-consciousness involves public and private aspects. Thus, it is the contention of this thesis that a ruminative or reflective self-focus also encompasses internal and external dimensions.

First, an outline of the association that rumination and reflection has with the self-absorption paradox is given. Then, different theoretical positions

on the origins of rumination are presented. Research on the links between self-focus, rumination and psychological distress is then reviewed, most of which is related to the effect of rumination on specific symptoms, such as depressed mood. The Trapnell and Campbell (1999) measure of ruminative and reflective self-focus is examined in comparison to other measures of rumination. Finally, an argument is presented that rumination and reflection involve intrapersonal and interpersonal dimensions and these different cognitive processes also have consequences for heightened self-focused attention. A summary of Chapter 2 is provided in the final section of the chapter.

Rumination and Reflection and the Self-Absorption Paradox

This section presents the Trapnell and Campbell (1999) proposal that a ruminative or reflective self-focused thought process that is associated with specific personality factors might help to clarify the self-absorption paradox. According to Trapnell and Campbell, self-awareness is associated with psychological health and well-being because it involves a curiosity of thought (i.e., reflection) evident in a particular personality trait of openness to experience, whereas the association of self-awareness with psychological distress emanates from thoughts driven by fear and anxiety (i.e., rumination) evident in a more neurotic personality trait. The psychological distress allied with rumination occurs through the concentration of a ruminative self-focus. In turn, psychological well-being is associated with reflection because it entails a healthy interest in one's self.

Trapnell and Campbell (1999) investigated the self-absorption paradox via rumination and reflection and developed the Rumination and Reflection Questionnaire. The Rumination and Reflection Questionnaire distinguishes between a fearful/anxious (ruminative) and an inquisitive (reflective) type of self-focus. Trapnell and Campbell concentrated on the private dimension of self-consciousness and proposed that a distinction could be made, within those individuals who tended to be more privately self-conscious, between a ruminative or reflective self-focus, and that these distinctions were associated with different personality factors of neuroticism and openness to experience respectively. Independent studies, by Joireman, Parrott and Hammersla (2002) and Teasdale and Green (2004) have supported Trapnell and Campbell's assertions.

Definition of Rumination

Trapnell and Campbell (1999) were interested in rumination and reflection as they occurred in ruminative self-focus and reflective self-focus. Therefore, they operationalised rumination as involuntary, chronic, self-focused thoughts that are concerned with the past. The authors' conception of rumination corresponds in part with previous literature referring to rumination as "working through, and regret" (Martin & Tesser, 1996 p. 9). However, Trapnell and Campbell suggest that a primary feature of ruminative thoughts is that they recur frequently and are mostly unwelcome. The ruminative thought process connects to self-attention through a persistent negative cycle of perceived threats to the self (fear or anxiety), which is associated with the neurotic personality. Thus, the authors described a ruminative self-focus as "a

general, neurotic category of self-attentiveness defined as recurrent thinking or ruminations about the self prompted by threats, losses or injustices to the self” and which is “associated with anxiety, depression, and anger, respectively” (p. 292).

Definition of Reflection

In contrast to rumination, Trapnell and Campbell (1999) proposed that reflection is a form of self-attention that infers curiosity and entails a questioning or a study of the self. The reflective thought process is a positive type of self-attention focused on the desire to gain knowledge about the self (curiosity). This more positive type of self-attentiveness suggests a broad, reflective interest that is “motivated not by distress about the self but by epistemic curiosity, that is, pleasurable, intrinsic interest in abstract or philosophical thinking” (p. 292).

Origins of Reflection and Rumination

Little, if any, suggestion has been made as to the origins of reflection. Dispositional theory would suggest that reflection is part of a self-attentive trait, in that it is a particular cognitive style consistently displayed over time and across situations. A reflective cognitive style has been found to be part of the personality domain as represented by certain Big-Five factors from the NEO-PI-R (Costa & McCrae, 1992). In particular, a reflective cognitive style is considered to be one of effortful control. For example, it is a style that encompasses a more cautious approach to academic tasks, with more focus on

getting the task done correctly and accurately rather than rapidly and has been associated with the personality traits of agreeableness (Nietfeld & Bosma, 2003), conscientiousness (Ahadi & Rothbart, 1994), or openness to experience (Trapnell & Campbell, 1999).

Much, however, has been said in the way of the origins of rumination. For example, Gold and Wegner (1995) suggested that ruminative thoughts originate from a range of sources. Rather than there being one particular pathway to the formation of ruminative thoughts, an interaction of four sources is a more likely explanation for their occurrence. Gold and Wegner (1995) outlined the four different pathways involving trauma, goals, repression, and suppression as follows.

Trauma: Ruminations can occur as a response to a traumatic or difficult event in a person's life, for example, the death of a parent or a wartime experience. The intense affect of a traumatic event causes an especially strong memory to develop and increases the chances of a negative memory recurring later on. Events which are unanticipated and affect-charged, such as those found in post-traumatic stress disorder, are believed to accompany neurochemical changes (neuroendocrine processes) in the brain leading to an enhancement of particular memories (Gold, 1992). Thus, traumatic events laid down in memory, are enduring recollections of the event and the affect associated with it (Gold & Wegner, 1995).

Goals: Ruminative thoughts occur when there is a failure to attain set goals (Carver, 1996; Gold & Wegner; 1995; Martin & Tesser, 1996). However, unlike the trauma-related view, Martin and Tesser argue that ruminations occur,

not because of the affect associated with a traumatic event, but because there has been a disruption to the attainment of a higher-order goal. Ruminations, and hence negative affect, occur due to the non-attainment of goals because of an apparent deficiency in progress towards a goal. Consequently, rumination dominates cognitive resources and decreases cognitive performance.

Repression: Ruminations emanate from a failure to process a traumatic event, that is, the repression of emotional pain, along with the non-disclosure of the event and its consequences (Gold & Wegner, 1995). This is most likely in people who have poor social networks. Individuals who do not have good social networks miss out on the opportunity to talk about the event that has happened. Such people are also more likely to report higher levels of rumination than those who have been able to disclose what has happened (Nolen-Hoeksema, Parker & Larsen, 1994).

Suppression: Ruminative thoughts occur because of attempts to suppress a trauma and its aftermath (Gold & Wegner, 1995). Suppression involves an attempt to push away the memory of an event. In attempting to avoid thinking about an event, a repeated search begins for the memory of what has happened. Thus, avoidance and suppression of a traumatic memory have a paradoxical effect of negative intrusive thoughts about an event which is meant to be suppressed (Erber & Wegner, 1996).

In summing up the origins of ruminative thought, Gold and Wegner (1995) suggested that ruminative thoughts are most often focused on past traumatic events, such as the death of a loved one. Further, they proposed that ruminative thoughts seem to continue because of the very attempts to control

them. Gold and Wegner concluded that “the initial trauma, the need for completion [in reaching a higher-order goal], the drive for disclosure, and the negative consequences of thought suppression all play a role in promoting intrusive thoughts” (p.1257).

Self-Focus, Rumination and Psychological Distress

Trapnell and Campbell’s (1999) proposal, that ruminative self-focus is associated with psychological distress, is supported by the findings of a study involving cognitive processing, rumination and distress. Wood et al. (1990) evidenced a link between a cognitive style of processing which incorporates high levels of self-focused attention, rumination, and psychological distress. They argued that high levels of self-focused attention are implicated in the occurrence of a ruminative coping style which impacts on problem-solving abilities, reduces level of motivation, and creates stronger negative affect. These findings suggest that rumination and the development of a ruminative coping style leads to passivity in the face of problem solving which in turn leads to a higher level of distress (i.e., more unhappiness). The implication of this research is that, because of the influence of the ruminative coping mechanism, high levels of self-focused attention may actually represent a vulnerability factor for mood disorders (Ingram, 1990b; Wood et al., 1990).

Self-Focus and Ruminative Responses

Consistently evidenced in the research (e.g., Mellings & Alden, 2000; Nolen-Hoeksema, 1987; Spasojevic & Alloy, 2001) is the association that

rumination and self-focused attention has with depression and anxiety. This association is in accord with Wood et al.'s (1990) suggestion that depressed mood is intensified by a ruminative response style. Nolen-Hoeksema (1987, 1991) proposed that prolonged distress occurs when a ruminative response style leads to the concentration of thoughts onto depressive symptoms.

A series of studies by Nolen-Hoeksema (e.g., 1987, 1991, 2000) demonstrates that a ruminative coping style develops through a consistent tendency to respond to trauma or emotional distress with ruminative thoughts. Consequently, a ruminative coping style produces depressive explanations for life events (Nolen-Hoeksema & Davis, 1999). A ruminative response increases the load on cognitive resources and impedes or limits the person's ability to take action and manage the mood. This results in increased access to both negative memories and thoughts (Gorski & Young, 2002) which in turn leads to more rumination.

Nolen-Hoeksema's (1987, 1991) definition of rumination focuses on thoughts related to negative emotions. For example, ruminative thoughts about feelings of sadness include thoughts about what might have caused the feelings of sadness, what the meaning of the feelings are and what might be the consequences of feeling this way (Lyubomirsky & Nolen-Hoeksema, 1993). Accordingly, Nolen-Hoeksema defines a ruminative response as a behavioural and attentional style of chronic, repetitive focusing on a negative emotional state (Nolen-Hoeksema, 1991; Nolen-Hoeksema, Morrow & Fredrickson, 1993). Focusing on negative emotions, such as depressive symptoms, induces lethargic behaviour which acts to prolong the negative affect, and which

maintains the focus of thoughts (i.e., ruminations) on the affect (Ward, Lyubomirsky, Sousa & Nolen-Hoeksema, 2003).

Ruminative Thoughts and Symptoms of Psychological Distress

Numerous studies provide evidence that ruminative thoughts sustain or intensify some symptoms of depression (Lyubomirsky & Nolen-Hoeksema, 1993; Nolen-Hoeksema, 1991; Pyszczynski, Hamilton, Herring & Greenberg, 1989). It appears that depressed persons are more likely to ruminate, express more negative expectations about the future, endorse more negative interpretations of events and give more self-defeating explanations for negative events (Andersen & Limpert, 2001; Gibbons, Smith, Ingram, Pearce, Brehm & Schroeder, 1985; Lyubomirsky & Nolen-Hoeksema, 1995; Nolen-Hoeksema et al., 1994; Pyszczynski & Greenberg, 1987; Pyszczynski et al., 1989). This line of research has also revealed a strong positive relationship between a ruminative response style and depression severity and the duration of depressive episodes (Morrow & Nolen-Hoeksema, 1990; Nolen-Hoeksema, 1991, 2000).

Furthermore, apart from the established relationship that a ruminative response style has with depression, rumination by itself can predict levels of depression and anxiety. Harrington and Blankenship (2002) found that by using a general (i.e., non-specific) measure of rumination in a non-clinical sample (low to very low levels of depression & anxiety), and when controlling for the relationship that depression has with anxiety, rumination correlates significantly with depression ($r = .20$) and with anxiety ($r = .17$). Thus, as an independent concept rumination is implicated as a symptom of psychological distress.

The positive relationship between repetitive thoughts (rumination) with depression and with anxiety is evident in outpatients as well as student samples (Seegerstrom, Tsao, Alden & Craske, 2000). Ruminators display greater cognitive inflexibility and find it difficult to modify their behaviour when given feedback concerning the consequences of their behaviour (Davis & Nolen-Hoeksema, 2000). When dysphoric ruminative thought focuses on personal problems, it combines a negative aspect of self-criticism and self-blame for the problems with a low sense of self-confidence, optimism and control (Lyubomirsky, Tucker, Caldwell & Berg, 1999), and impaired concentration (Lyubomirsky, Kasri & Zehm, 2003). In addition, rumination mediates gender differences in rates of depression in adults (Butler & Nolen-Hoeksema, 1994) with women reporting more rumination than men (Nolen-Hoeksema, 1987; Nolen-Hoeksema et al., 1994). It was suggested that women are more likely to focus on their emotional state when sad or depressed which in turn exacerbates negative feelings. In contrast, men tend to focus on problem solving strategies to help alleviate any negative affect.

Interaction of Rumination with Reflection

Although there is much evidence to support the relationship that reflection has with psychological health and that rumination has with psychological distress, it is possible that the presence of reflection could have some influence on the extent of the negative effect of rumination. Trapnell and Campbell (1999) proposed that reflection possibly moderates the effect of rumination or a ruminative coping style through a “dyadic interaction” (p. 299). Preece, De Longis, Campbell and Trapnell (1998) investigated whether women

who chronically ruminated had an increased risk of developing depressive symptoms. They found that the risk of depressive symptomatology reduced considerably if the women had a close relationship with a spouse who was consistently reflective. Thus, association with someone who has a reflective style of thinking appears to buffer or moderate the potential negative impact of a ruminative style of thinking on psychological symptoms.

Further evidence of the mediating effect of reflection in comparison to the negative impact of rumination comes from a recent study by Joireman (2004) which considered the role that rumination and reflection play in shame, guilt and empathy. Participants completed self-report measures of proneness to shame and guilt; the Trapnell and Campbell (1999) Rumination and Reflection Questionnaire; three measures of empathy (i.e., empathic concern, perspective taking & personal distress); and a measure of self-esteem. It appears that rumination and reflection are involved to some degree in the way that the emotions of shame and guilt result in different empathic responses. When responses to measures of proneness to shame, guilt, empathy, self-rumination and self-reflection were analysed, Joireman found that self-reflection played a mediating role in the relationship between guilt and empathy (being able to take another's perspective), which is more likely to lead to constructive problem solving, whereas self-rumination was more involved with shame and a more maladaptive empathic response of personal distress.

In summary, by repetitively and negatively self-focusing, some individuals ruminate more than others (e.g., particularly women) and so are at risk of sustaining or even heightening a depressed mood (Lyubomirsky &

Nolen-Hoeksema, 1993). Individuals who ruminate often perceive themselves as getting some benefit out of this type of sustained self-focus (Watkins & Baracaia, 2001). However, they appear to risk further negative affect, such as hopelessness and an inability to take constructive action to solve their problems (Lyubormirsky et al., 1999). In short, rumination relates to risk factors for depression, that is, to a negative cognitive style, self-criticism, dependency, neediness, and a history of past Major Depressive Episodes (Spasojevic & Alloy, 2001).

Measuring Rumination

The Trapnell and Campbell (1999) proposal, that ruminative thoughts play a role in psychological distress, is not new. Aligned with such evidence as presented previously, are a number of ways that rumination has been measured. Therefore, the following section describes research on the relationship between rumination and psychopathology, in particular the work done by Nolen-Hoeksema and associates on a ruminative response style (Nolen-Hoeksema & Morrow, 1991). Early interest in rumination centred on the recurrence of negative thoughts influencing aggressive behaviour (e.g., Caprara, 1986). Later research on rumination has focused on negative thoughts, on sadness, angry episodes, emotional upsets, and lack of progress towards a goal (e.g., Conway, Csank, Holm & Blake, 2000; Roger & Najarian, 1989; Scott & McIntosh, 1999; Sukhodolsky, Golub & Cromwell, 2001). This line of research has led to the

development of a number of measures and these are briefly described as follows.

Rumination on Symptoms

The rumination subscales of the Emotional Control Questionnaire (Roger & Najarian, 1989) measure the level of preoccupation with past emotional upsets and potential upsets in the future. Emotional over-concern and inhibition of emotional responses has implications for health and social behaviour (Roger & Najarian, 1998). Research utilising this scale has shown that continual preoccupation with emotional upset has an effect on vulnerability to illness. Specifically, higher scores on the rumination scale of the Emotional Control Questionnaire are associated with higher cortisol secretion which is in turn associated with higher and prolonged stress levels (Roger & Najarian, 1989, 1998).

Interest in the cognitive and emotional processes that may be involved in aggressive behaviour led Caprara (1986) to design the Dissipation-Rumination Scale. The scale tests the level of hostility in individuals when given negative feedback (provoked or insulted) on a performance task. Collins and Bell (1997) found that high ruminators (those who tend to hold on to past experiences of being provoked, insulted & given negative performance appraisals) find it more difficult to dissipate negative feelings and are more likely to retaliate aggressively after negative evaluations.

Sukhodolsky et al. (2001) were also interested in rumination on anger, but more specifically in the type of negative thought that focuses on the emotion of anger. Sukhodolsky et al. developed the Anger Rumination Scale to measure

thoughts associated with the cause and consequences of current and earlier anger episodes. In particular, they were interested in the types of thought that occur after the heat of the angry episode subsides and whether intensive ruminative thoughts about the situation help to continue or even heighten the emotional experience.

Sukhodolsky et al. (2001) defined rumination on anger as recurrent, unsolicited negative thoughts about the anger experience, that is, rumination on the current angry mood, past incidents of anger, and causes and results of previous angry moods. The Anger Rumination Scale is a 19-item scale measuring attention to current and past anger experiences and the predisposition to participate in 'what if' type of thinking. Sukhodolsky et al. found anger rumination to correlate strongly and positively with negative affectivity ($r = .55$), but moderately and negatively with satisfaction with life ($r = -.38$). Sukhodolsky et al. concluded that when thoughts focus on episodes of anger there are higher levels of negative affect. In addition, higher levels of anger rumination are related to dissatisfaction with life, an inability to repair negative moods, and an unwillingness to please others (low social desirability).

Nolen-Hoeksema and co-researchers developed the Response Styles Questionnaire (RSQ; Nolen-Hoeksema, 1987; Nolen-Hoeksema & Morrow, 1991) to measure individual differences between a ruminative and distractive response style. According to Nolen-Hoeksema (1987), response styles are consistent ways that individuals cope with or respond to their feelings. Thus, the Ruminative Responses subscale of the RSQ measures the ruminative responses

to affective, cognitive and behavioural experiences that frequently occur when feeling depressed.

The Ruminative Response Scale (Nolen-Hoeksema, 1987) is a 41-item scale in which respondents indicate the frequency with which they ruminate when they are sad, down or depressed. Numerous studies on the Ruminative Response Scale have identified a link between the ruminative response style and higher levels of depressive symptoms (e.g., Papageorgiou & Wells, 2003; Roberts, Gilboa & Gotlib, 1998; Segerstrom et al., 2000). Rumination scores have been shown to predict aspects of depressive disorders including the onset of new episodes, and chronicity of depression, as well as levels of anxiety symptoms and mixed anxiety/depression (Nolen-Hoeksema, 2000). Nolen-Hoeksema (2000) suggested that thought content focuses on the symptoms of anxiety and depression while the ruminative process maintains the negative mood. The ruminative response style also accounts for gender differences in the incidence of depression with higher levels of ruminative responses being associated with higher levels of depression in women (Nolen-Hoeksema, 1990, 1993, 2001).

Recent research has identified two separate factors in the Ruminative Response Scale (Treyner, Gonzalez & Nolen-Hoeksema, 2003). It is possible to differentiate between a reflective component of rumination which entails a more contemplative style of thought and which is involved in problem solving. The second component in the scale is interpreted as a brooding component and which captures a more negative style of anxious or moody thinking on feelings of sadness, and depressed mood. The content of the two factors are

unconfounded with the content of a measure of depression. Thus, the Ruminative Response Scale captures both the adaptive nature of ruminative thought (reflection/contemplation) as well as a maladaptive aspect associated with depression (rumination).

Rumination on Goals

The Scott-McIntosh Rumination Inventory (Scott & McIntosh, 1999) measures ruminations about the attainment or non-attainment of goals. It operationalises the Martin and Tesser (1996) theory of ruminative thoughts, in that rumination is identified as thoughts driven by the desire to achieve certain goals. The scale measures the tendency to ruminate about failed goals and the degree to which people then experience (a) emotional reactions, (b) consumption of cognitive resources, and (c) motivational reactions. In developing their scale, Scott and McIntosh concluded that rumination consumes cognitive resources by distracting the person from goals (e.g., passing exams) and problem solving tasks. Rumination on goal attainment is also moderately associated with worry, neuroticism, trait anxiety, and depression (r ranged from .34 to .38).

The Rumination on Sadness Scale (Conway, Csank, Holm & Blake, 2000) is a 13-item measure of the intensity and repetitive quality of negative, intrusive thoughts, which center on a person's existing feelings of sadness and the conditions contributing to the sadness. These particular thoughts do not lead anywhere (i.e., are not problem solving) and are difficult to stop. Conway et al. reported that individuals who score highly on the Rumination on Sadness Scale reported higher levels of depression, neuroticism, more introversion, less

agreeableness, less conscientiousness and were closed to new experiences. They concluded that “individuals are more likely to ruminate to the extent that they are more introverted, more antagonistic toward others, and less oriented in a disciplined manner toward goal achievement” (p. 422).

Trapnell and Campbell's (1999) Measurement of Rumination and Reflection

Most of the previous work on rumination has a limited focus on it as a response to the experiencing of particular symptoms (e.g., sadness, anger). Trapnell and Campbell (1999) were interested in rumination in a broader context; that of a dispositional, ruminative type of self-focus involving personality. They were also interested in the measurement and correlates of a reflective type of self-focus. Thus, the Rumination and Reflection Questionnaire was developed as a more appropriate measure of a ruminative self-focus and reflective self-focus, in that, it is a measure of both neurotic and inquisitive types of thought processing considered part of the motivation behind different levels of private self-consciousness. The scale's 24 items encompass two separate components, rumination (12 items) and reflection (12 items).

Rumination and reflection, in the Trapnell and Campbell (1999) study, were found to be identifiable as different types of thought processes in the way that they relate to private self-consciousness (rumination, $r = .43$ & reflection, $r = .59$). Both rumination and reflection correlated moderately well with aspects of private self-consciousness, that is, with self-reflectiveness ($r = .53$ & $.53$, respectively), but only reflection was found to have a significant correlation

with internal state awareness ($r = .39$) (rumination, $r = .05$). Based on these findings, Trapnell and Campbell proposed that private self-consciousness encompasses both a ruminative and reflective self-focus.

Trapnell and Campbell (1999) also found that rumination correlated most strongly with different measures of neuroticism ($r = .57$ to $.64$) and anxiety ($r = .59$), whereas reflection correlated most strongly with different measures of openness to experience ($r = .61$ to $.68$). Rumination and reflection did not show any significant correlations with the three other personality factors of the NEO-FFI (Costa & McCrae, 1992) (r ranged from $.0$ to $.15$). These results provided support for Trapnell and Campbell's suggestion that rumination is the thought process associated with the part of private self-consciousness that correlates with psychological distress (depression & anxiety), whereas reflection is the thought process involved in the part of private self-consciousness that correlates with psychological health (desire for self-knowledge).

Summary and Conclusion

Few studies have considered the involvement that motivation has with heightened levels of self-consciousness and consequently the impact that these relationships have on either psychological health or psychological distress. Much of this chapter has focused on how rumination and reflection have been defined, measured and interpreted, as well as on the role that rumination and reflection play in the self-absorption paradox. Of particular importance to understanding the paradox of heightened self-focus is Trapnell and Campbell's

(1999) finding that there are different cognitive processes involved in private self-consciousness (i.e., rumination & reflection) associated with different personality characteristics. However, as evidenced earlier in Chapter 1, in a vast amount of previous research, self-focus is a concept which has been theoretically and empirically differentiated into internal and external aspects (e.g., Darvill et al., 1992; Mor & Winquist, 2002; Scheier & Carver, 1980). Self-consciousness encompasses an awareness of one's private thoughts and feelings, in addition to an awareness of one's self in relation to others. Therefore, it is the contention of this thesis that if the cognitive processes of rumination and reflection are measured as a ruminative and reflective self-focus then presumably these are cognitions which involve self-consciousness as a whole.

Following on from this proposal is that, given the nature of the associations that rumination and reflection, and public and private self-consciousness have with symptoms of psychological distress, then these factors would sit along a continuum of psychological health. In other words, both rumination and public self-consciousness are associated with more negative symptomatology. Thus a ruminative self-focus that involves a public dimension would be associated with higher levels of psychological distress (i.e., less psychological health). In contrast, a reflective self-focus that involves a private dimension would in all probability be associated with lower levels of psychological distress (i.e., more psychological health).

The concept that both ruminative self-focus and a reflective self-focus have intrapersonal and interpersonal dimensions has yet to be tested

empirically. Accordingly, it was the intention of this current thesis to investigate whether rumination and reflection both have public and private aspects and if these separate aspects differentially relate to personality characteristics and psychological symptoms of distress.

The evidence presented in Chapter 2 is that rumination is a risk factor for depression or anxiety (e.g., Harrington & Blankenship, 2002; Nolen-Hoeksema, 1987, 1991). It has also been proposed that rumination and the risk factors associated with it may be moderated by the presence of reflection. That is, a reflective person can actually lessen the degree of negative affect experienced by a ruminative spouse (Preece et al., 1998). In accord with these findings is the proposal by Trapnell and Campbell (1999) that differences in patterns of ruminative and reflective thought may correspond to differences in the way that negative affect is experienced and thus processed. Indeed, Trapnell and Campbell suggested that a model, using different combinations of rumination and reflection, could be constructed to portray adaptive and maladaptive coping styles. For example, high levels of rumination would be detrimental to individuals, resulting in more psychological distress and be indicative of a maladaptive coping style; whereas high levels of reflection would be associated with psychological health and indicate an adaptive coping style. This model of ruminative and reflective coping styles has also yet to be tested empirically. Therefore, Chapter 3 of this thesis discusses the potential of a model of rumination and reflection, its correlates with psychological health and distress, along with the proposal that there is a possible connection between

this model with an established one that uses self-defensiveness to differentiate adaptive and maladaptive coping styles.

CHAPTER 3

RUMINATION AND REFLECTION IN RELATION TO A MODEL OF COPING AND ADJUSTMENT

As presented in the previous chapters, ruminative thoughts are associated with symptoms of psychological distress, whereas reflective thoughts are associated with psychological health. A connection can be made from psychological health and well-being to the reflective cognitions of the open personality. Likewise, a connection can be made from psychological distress to the ruminative cognitions of the neurotic personality. These associations lead to a more specific understanding of the self-absorption paradox in terms of ruminative and reflective self-focus. In turn, the relationships that rumination and reflection have with psychological health and distress suggests that these are different styles of information processing and involved in ways of coping with negative experiences. That is, the way individuals cope with negative situations is to either ruminate or reflect about what was happened.

The aim of Chapter 3 is to examine this connection, between coping strategies and different levels of ruminative and reflective self-focused thoughts. Thus, a model of coping and adjustment, as proposed by Trapnell and Campbell (1999), using combinations of rumination and reflection to depict cognitive and behavioural patterns of approaching (coping with) or adjusting to negative affect was evaluated. This new model parallels a well-established coping and avoidance typology by Weinberger et al. (1979). However, the Weinberger et

al. model differentiates individuals in their styles of coping and avoidance of negative affect through self-reported levels of anxiety and self-defensiveness (i.e., social desirability).

First, the Trapnell and Campbell (1999) coping and adjustment model is outlined, then follows a discussion on the Weinberger et al. (1979) model of coping and avoidance. This is also a model of coping strategies but one which depicts coping with negative effect through avoidance, thus, this typology is based on different levels of self-defensiveness. In this discussion on the Weinberger et al. typology, the categorisations in the model are compared with those proposed by Trapnell and Campbell's (1999) model and consideration is given to the degree of overlap between the two models. The following section of Chapter 3 discusses the value of autobiographical memory research in providing a richer view of the person. This discussion is then followed by relating the possible association between generality (lack of specificity) of memories with rumination and repression. Then, a proposal is addressed that autobiographical memory retrieval can be used to differentiate the different combinations of rumination and reflection in the typology of coping and adjustment. And, after a chapter summary and conclusion an outline of the plan of the empirical work undertaken in this thesis is presented.

The Trapnell and Campbell Typology of Coping and Adjustment

Trapnell and Campbell (1999) suggested that coping with negative experiences might be better differentiated by determining the way that this

information is processed, that is, through ruminative and reflective self-focused thoughts. The model that they suggested is one which may provide an alternative understanding of coping strategies for receiving negative information or being involved in threatening situations. It is a model which taps directly into the cognitive processes employed by the individual, and the behavioural and psychological consequences of that cognitive style.

The Trapnell and Campbell (1999) coping and adjustment framework encompasses four different combinations of self-focused ruminative or reflective thoughts. Rather than viewing coping with negative affect in terms of social desirability, defensiveness, impression management or anxiety, Trapnell and Campbell suggested that the way people cope with negative experiences might be better understood in terms of information processing. Thus, four combinations of different levels of rumination and reflection form four different groups in terms of coping and adjustment to negative affect. An adaptive coping style is represented by a high level of reflective self-focus and a low level of ruminative self-focus. Three other groups reflect different combinations of rumination and reflection and represent maladaptive styles of coping. The four Trapnell and Campbell groups are defined as follows.

Adaptable: These individuals report high levels of reflection and low levels of rumination. The evidence from previous research (e.g., Brown & Ryan, 2003; Hall, 1992) suggests that high levels of reflective thought is an adaptive process often associated with a more healthy type of self-attention and not with psychological distress. Thus, an individual with a high level of reflection and low level of rumination is more likely to be inquisitive than

fearful, and actively seek to know more about themselves and the world around them.

Repressives: These individuals report low levels of both reflection and rumination. Repressives appear to use an avoidance strategy of denial or repression of negative information when faced with threatening situations. These individuals tend to reject the notion that they could be or should be threatened by a stressful situation and often deny that they might be having a negative emotional reaction to that stressor. As an avoidance strategy, repression reflects a “motivated unwillingness to experience negativity” (McFarland & Buehler, 1997, p. 203). In terms of low levels of rumination and reflection this may not necessarily mean a denial of symptoms but that they do not consciously think about their internal life.

Sensitisers: These are individuals who display the opposite pattern of self-focused thought processes to repressives, in that they report high levels of both reflection and rumination. Sensitisers are hypervigilant when it comes to experiencing anxiety, tending to focus their attention on threatening stimuli or on their emotional reactions to it (McFarland & Buehler, 1997). Sensitisers tend not to avoid negative events and emotions. Rather, they seem keen to acknowledge and report their distress to others. High levels of ruminative self-focus are associated with a maladaptive type of self-attention, which in turn is related to a higher degree of psychological distress, however, a high level of reflection should go some way to moderating the impact that rumination has on psychological distress. Thus, as a group, the sensitisers experience a higher

level of distress than the adaptable group but not as high as those individuals who only ruminate.

Vulnerable: This is a group of individuals who generally report a more negative pattern of thought processing, in that they report low levels of reflection with high levels of rumination. This pattern of self-focus is indicative of a greater risk factor to the symptoms of depression and anxiety because of the strong relationship that rumination has with psychological distress (e.g., depression, anxiety & neuroticism).

Weinberger, Schwartz and Davidson Typology of Coping and Avoidance

A previous typology that attempts to do something similar, was proposed by Weinberger et al. (1979). This typology uses self-report measures of anxiety and social desirability (i.e., defensiveness) to determine group membership. Although the Weinberger et al. model has had widespread support, recent research has found that one of the ways of identifying group membership, the Marlowe-Crown Social Desirability Scale (Crowne-Marlowe, 1960), is confounded by two separate constructs of impression management and self-deception (Paulhus, 1984). This now presents a problem when using the Weinberger et al. typology for identifying coping strategy group membership. For example, membership of the Weinberger et al. repressor group is identified by individuals having low anxiety scores and high social desirability scores. This pattern of scores would indicate that individuals in this group are indulging in high levels of social defensiveness. However, due to the apparent

confounding of the social desirability scale, it is now argued that repressors should be more correctly classified as having a cognitive strategy of self-deception than one of impression management (Ashley & Holtgraves, 2003). Thus, it is the self-deception which is characteristic of the repressor's defensiveness and not impression management.

Predictably, the Weinberger et al. (1979) method of classification does not take account the cognitive processing involved in the repressor construct. There are now more contemporary ways of differentiating ways of coping. For instance, Furnham and Traynar (1999) used the Lie and Neuroticism scales of the Eysenck Personality Questionnaire to successfully predict coping and avoidance group membership. Alternatively, Ashley and Holtgraves (2003) suggested using the self-deception factor on the Balanced Inventory of Desirable Responding (Paulhus, 1988). The contemporary view of identifying coping strategies has particular relevance to this current thesis, as it is now likely that the Trapnell and Campbell method of classification would more suitably identify those individuals who use repression as a cognitive strategy. Specifically, in terms identifying different information processing strategies involved in coping and adjustment, repressors would be those who self-report low levels of both rumination and reflection. However, while some of the empirical findings using the Weinberger et al. model may be questioned by the ambiguity of the social desirability measure, the conceptual framework can still be compared to the Trapnell and Campbell model.

Comparable to Trapnell and Campbell's (1999) suggestion, is the Weinberger et al. (1979) proposal that individuals cope with negative

information in distinct ways. There are some individuals who deal with negative affect using adaptive coping mechanisms. Others deal with negative affect by avoiding and denying it. Weinberger et al. argued that different coping and avoidance groups within the general population can be identified using self-report measures of anxiety and defensiveness (i.e., social desirability).

The Weinberger et al. (1979) typology uses the Marlowe-Crowne Social Desirability Scale (Crowne-Marlowe, 1960) as a measure of an individual's honesty or willingness to acknowledge negative symptoms, that is, their defensiveness. It measures the extent to which respondents believe that they can maintain self-control (Crowne & Marlowe, 1960), inhibit their affect, and protect their self-esteem (Weinberger et al., 1979). The Marlowe Crowne Social Desirability Scale is also used as a measure of impression management (i.e., other deception) and repressive coping (i.e., self-deception in the form of being positive in the face of negative experiences) (Derakshan & Eysenck, 1999; Schwartz, 1990). In short, the Weinberger et al. typology differentiates individuals on their levels of social desirability, in the maintenance of their self-concept and self-belief system, and on their level of anxiety. The different categories in Weinberger et al.'s model are now described and compared with Trapnell and Campbell's (1999) framework.

Weinberger et al.'s Adaptive Group: The first group of individuals in Weinberger et al.'s (1979) typology was one in which self-reported low levels of anxiety actually matched their physiological responses. This group was labelled (truly) *low-anxious*, in that they had low scores on the anxiety scale and low defensiveness scores on the social desirability scale. These were individuals

who responded rapidly to a stressful task with only small fluctuations in physiological stress responses. They tend to describe themselves as “enjoying life, versatility, flexibility, and that they like being with people” (p. 379).

Weinberger et al. found that the clinical measures of anxiety coupled with self-reported descriptors were indicating that this was a group of individuals who use more adaptive coping mechanisms in a stressful situation; they had low levels of defensiveness, enjoyed a new and challenging experience and reported good interpersonal relationships.

On a similar conceptual level, it could be presumed that within the general population a group of individuals would fit into both the Weinberger et al. (1979) and the proposed Trapnell and Campbell (1999) definition of an adaptive information processing style. Adaptive styles of coping with negative affect appear to involve both low levels of social desirability (as prescribed by Weinberger et al.) along with low levels of rumination and high levels of reflection (as suggested by Trapnell & Campbell). Thus, an adaptive individual suggests a profile of someone who is not highly defensive about feelings of distress (i.e., low social desirability), yet would be clearly aware if they were (i.e., high reflection).

Weinberger et al.’s Repressor Group: The repressor or the repressive coping style has been investigated more than any other style of information processing (e.g., Boden & Dale, 2001; Myers & Brewin, 1996; Terry & Burns, 2001). The pattern of responses found originally by Weinberger et al. (1979) for the repressors, appears to have similarities with the Freudian concept of repression. For instance, Freud described repression as the ‘turning away’ of a

memory or an experience (Freud 1915/1957, p.147). Thus, Weinberger et al. defined repressors as people who make a concerted effort 'not to know' about something negative that may be happening to them (p. 342). Individuals classified into the repressor group of this typology are highly defensive. Although they deny having symptoms of psychological distress their physiological responses (heart rate, sweat gland activity & forehead muscle tension) indicate otherwise. Weinberger labelled them as repressors due to their *low anxiety* but *high social desirability* scores.

In essence, what classifies repressors from nonrepressors is the maintenance of a positive self-image through a consistent avoidance and denial of having experienced negative effect (Holtgraves & Hall, 1975; Weinberger, 1990). This form of denial appears to be more than a self-presentational strategy (Weinberger & Davidson, 1994), as it is believed to be very important in the maintenance of the repressor's self-concept (Weinberger, 1990). For instance, when given the opportunity, children who have had adverse childhood experiences and who fit into the repressor category, report interactions with their fathers more positively than do non-repressors with similar childhood experiences (Fritz, Spirito & Yeung, 1994; Myers & Brewin, 1994; Myers, Brewin & Winter, 1999). It appears that the repressor's coping strategy is not only to deny negative experiences but to be involved in building up a more positive but illusory self-concept.

Repressors differ from nonrepressors (non-deniers of negative symptoms) in a number of ways. For example, they spend less time reading negative feedback if given privately but spend more time on dismissing such

feedback if given publicly (Baumeister & Cairns, 1992). They are slower at identifying emotionally laden words (Dawkins & Furnham, 1989); are more likely to use distraction and distancing of thoughts (Boden & Baumeister, 1997; Myers, 1998), and tend to avoid socially threatening words (Myers & McKenna, 1996). Repressors believe and thus report themselves as high on emotional intelligence, self-esteem, life satisfaction, and healthy coping styles and low on rumination and unhealthy coping styles (Furnham, Petrides & Spencer, 2002).

The repressive coping style is thought to be a form of affect regulation, in that it serves to decrease the effects of distressing feelings (Boden & Baumeister, 1997; Boden & Dale, 2001). However, additional research has presented evidence that repressors do not avoid the processing of all emotionally valenced words but “selectively attenuate processing of emotional information of personal relevance” (Terry & Burns, 2001, p. 430). The proposition that repressors use selective attention in processing self-relevant information is also consistent with Mendolia, Moore and Tesser’s (1996) suggestion concerning the preservation of repressors’ self-belief system. Mendolia et al. proposed that repressors are motivated to distance themselves from both negative and positive events if the situation is a threat to their self-beliefs. They do not avoid all negative emotional stimuli but use avoidance as a defense against stressors which personally threaten their self-concept (Mendolia, 1999, 2002).

It seems that repressors engage in self-deceptive defenses in order to protect their fragile or low self-esteem through unrealistic optimism and overly

positive self-evaluations (Myers & Brewin, 1996). Baumeister and Cairns (1992) suggested that “beliefs about the self may be an important sphere for self-deception, because the self is characterized by both uncertainty and a strong preference for a favourable image” (p. 851). Repressors use a range of cognitive strategies to defend their self-beliefs, which include reporting low anxiety and depression on self-report measures (Myers, 1996), expending less effort in the recall of negative emotional experiences (Holtgraves & Hall, 1995) and actually recalling fewer negative experiences (Cutler, Larsen & Bunce, 1996).

Repressors, as a group, tend to describe themselves as being rational and non-emotional in life, such as not getting upset very easily, or preferring to deal with people on a serious and practical level. These statements tend to reflect their determination to maintain self-control in a stressful situation; yet their physiological responses, measured when undergoing stressful tasks, do not match what they report is actually happening to them. This, Furnham and Traynar (1999) suggest, is because the avoidance, through denial, of any negative affect (high defensiveness) is due to their need to remain socially desirable (i.e., cool under stressful situations) causing interference with positive coping mechanisms. The outcome of this behaviour is that the avoidance actually becomes a negative coping mechanism and thus unacknowledged anxiety remains high.

The description of the repressor group in Weinberger et al.’s (1979) typology (i.e., low anxiety with high defensiveness) indicates a correspondence with the Trapnell and Campbell (1999) individuals who report low levels of both rumination and reflection. However, it is possible that a repressive

information processing style might not always involve an avoidance or denial of negative affect but seen as a lack of either self-reflective or self-ruminative thought. Thus, these are individuals who do not consciously focus on their internal life.

Weinberger et al.'s High-anxiety/Low-defensiveness Group. The third group classified within Weinberger et al.'s typology (1979) was the *high-anxious* group, in that these were individuals who were differentiated from the others by reported high levels of anxiety and low levels of social desirability (defensiveness). This group had an intermediate to high level of stressful physiological responses to the threatening task (i.e., a phrase association task involving neutral, sexual & aggressive content conducted under time pressure) but did not have high levels of defensiveness by avoiding or denying the negative affect caused by the experience.

In this group, the self-reported high levels of anxiety actually matched their physiological stress responses. However, these individuals have been found to overestimate negative affect at times, indicating a lack of knowledge about themselves (Cutler et al., 1996). Furnham and Traynar (1999) found that non-defensive highly-anxious individuals generally employ more negative coping strategies, such as turning to alcohol and drugs because non-defensiveness, in this case, signifies a lack of self-protective strategies even though distress about a situation might be high.

It could also be suggested that Weinberger et al.'s (1979) high-anxious group (high anxiety-low defensiveness) has common characteristics with a group of individuals who are sensitive to psychological distress. This is because

they have constant and repetitive thought patterns consisting of high levels of rumination as well as high levels of reflection. Thus, a highly anxious or sensitive group of individuals appear to combine high levels of both rumination and reflection resulting in high levels of anxiety. Therefore, this is a pattern of processing which increases the likelihood of more distressing psychological symptoms.

High-anxious/High-defensiveness: This is a group of individuals in the Weinberger et al. (1979) typology who are highly defensive and highly anxious. These individuals have been identified as having both high levels of positive coping mechanisms (active coping, low on turning to alcohol & drugs) as well as high levels of negative coping mechanisms (mental disengagement, neuroticism & passivity) (Furnham & Traynar, 1999). Furnham and Traynar proposed that this group of highly defended and highly anxious individuals are more neurotic than the other three coping and avoidant groups and appear to use specific coping strategies, positive or negative, according to the given situation.

The Weinberger et al. (1979) defensive-high anxious group may be correspondent with a more vulnerable group of individuals in the population who primarily engage in high levels of rumination. These are individuals who have a more maladaptive thought processing style and consequently higher levels of psychological distress.

Both the Trapnell and Campbell (1999) typology and the Weinberger et al. (1979) typology classify ways of experiencing negative affect into four groups. The first is a group who responds adaptively to negative information or threatening situations. The three other groups are classed as having maladaptive

coping styles in the way that they respond to similar situations. Access to differences between the four groups, regardless of typology, should be evident in terms of social desirability, personality factors, self-consciousness, and psychological symptom dimensions. For example, the adaptive group should be one which reflects more of the positive personality characteristics and less psychological distress, whereas the maladaptive groups should be associated with psychological distress and more negative personality characteristics. Moreover, the advantage of using the Trapnell and Campbell typology should be evident in the way that individual differences in personality and symptom variables predict differences in ways of coping with negative affect (Westen, 1995).

Differences in Information Processing among the Coping Groups

Different styles of controlling and minimising negative affect can also be seen in the way that some individuals use an over-general memory style (Williams, 1996). This particular memory style has been described as a deficit in autobiographical memory retrieval. Specifically, an over-general memory style consists of a failure to introduce a context of time and place into a mnemonic search (Dagleish, Spinks, Yiend & Kuyken, 2001). Findings from the work of Williams and colleagues (Moore, Watts & Williams, 1988; Williams & Broadbent, 1986; Williams & Dritschel, 1988; Williams & Scott, 1988) have revealed that an over-general memory style may be adopted as a cognitive style of preference that is associated with concurrent psychological

disturbance in adulthood but could also be linked to childhood experiences of trauma (Henderson, Hargreaves, Gregory & Williams, 2002).

The Williams' Model

Williams (1999) argued that overgenerality (or lack of specificity) of autobiographical memory is a key distinctive feature of depressed individuals and due to a long term cognitive style, in that overgenerality does not appear to disappear when the depression has lessened. Depressed individuals also demonstrate a negative distortion in the recall of memories whereby they recall negative events from their past more quickly than positive ones (Williams & Broadbent, 1986). Easier recall (i.e., faster) of unpleasant experiences by depressed individuals was first noticed in an early study by Lloyd and Lishman (1975) on the relationship between autobiographical memory and depression.

Williams (1999) proposed that it is the interaction of two particular factors which causes certain errors in the recall of single events. Williams describes this interaction as a *mnemonic interlock* and argues that it is a phenomenon which acts to produce overgeneral memories. The first factor in the production of overgeneral memories Williams (1999) proposes, is when, in their early years, children learn to avoid the distress attached to particular negative experiences. If the child is given a cue word such as 'unhappy', the retrieval process from their autobiographical memory for a specific negative

experience of being unhappy begins. On realisation that a specific experience may well be too painful to retrieve the process is likely to be terminated.

The consequence of avoidance becomes the second factor in mnemonic interlock. The retrieval process continues the search but settles for a more intermediate or general description for 'unhappy' (I'm always failing), one that does not contain a specific, painful recollection of being unhappy. If this type of general retrieval process continues as part of the child's development, and the child becomes unable to progress beyond a general level of recall, then the child tends to develop a wider network of negative categoric descriptions, such as, 'I've always failed; I was never any good at sports; I didn't have many friends' (Moore et al., 1988). Williams (1999) argued that the consequence of this type of retrieval process is an overelaboration of general negative categories of self-descriptors and one which is associated with a ruminative style of self-focus. Thus, any future attempt at retrieval of negative experiences activates intermediate (general) rather than specific self-descriptors. The person has now developed an overgeneral cycle of encoding and retrieval of autobiographical memory experiences through the avoidance of painful specific recollections of negative events.

Since the initial work by Williams and Broadbent (1986), overgeneral memories have been the subject of much research. Overgeneral memories are described as either omissions in recall, or as experiences that have become blended together as a generic memory, in that these memories are not set in a specific context of a time or a place (Moffitt, Singer, Nelligan, Carlson & Vyse, 1994; Phillips & Williams, 1997). Thus, overgenerality in terms of

autobiographical memory is the inability to recollect specific memories despite being requested to do so (Williams, 1999). An overgeneralised response has been evidenced in both positive and negative memory recall (Moore et al., 1988), but has been found to be more so for positive memories as opposed to negative memories (Evans, Williams, O'Loughlin & Howells, 1992; Kuyken & Dalgleish, 1995; Moffitt et al., 1994; Moore et al., 1988; Williams, 1999; Williams & Broadbent, 1986; Williams & Dritschel, 1988).

Overall, the findings of this area of research have been fairly consistent. Overgeneral memories are primarily associated with cognitive impairments and several psychological disorders. For example, a lack of specificity in autobiographical memories has been found to be part of the cognitive impairment in elderly dementia patients (Phillips & Williams, 1997). It has also been associated with a ruminative, analytical thinking style (Watkins & Teasdale, 2001); a repressive coping style (Dickson & Bates, in press); the maintenance of depression and a despondent mood (Kuyken & Dalgleish, 1995; Watkins & Teasdale, 2001); suicidal patients (Williams & Broadbent, 1996), and poor problem solving and poorer long term outcomes in the emotionally disturbed (Williams, 1999). However, results are mixed for anxiety. For example, Levy and Mineka (1998) failed to demonstrate a mood-congruent retrieval bias in anxiety, whereas McNally, Foa and Donnell (1989) found that panic disorder patients recalled more anxiety than non-anxiety words.

Autobiographical Memory Recall and Rumination

Rumination, as a particular negative style of self-focused thinking, implies a relationship to specific patterns of maladjustment or distortions of

personal experiences. These specific patterns are thought to be reflected in the retrieval of positive and negative autobiographical memories. McFarland and Buehler (1998) found that after a negative mood induction those individuals who had high levels of self-focus, which led to a ruminative processing orientation of their negative moods (i.e., a neurotic tendency to focus on undesirable or negative self-aspects), tended to engage in mood congruent retrieval of their autobiographical memories. In other words, a ruminative self-focus encouraged the recall of more negative memories. However, when self-focus was correspondent to a reflective processing of their negative moods (i.e., an open examination of self-aspects), then these individuals were more than likely to retrieve mood-incongruent memories. That is, if a person is self-reflective then more positive memories were recalled after the mood induction.

These findings are correspondent with the effect that mood has on the recall of memories (Blaney, 1986) and the findings that rumination increases access to both negative thoughts and memories (Gorski & Young, 2002). However, according to Lyubomirsky, Caldwell and Nolen-Hoeksema (1998), rumination in itself does not adversely influence the recall of negative memories but it appears to enhance the effect of negative mood on the accessibility of negative memories.

Teasdale and Green (2004) have recently evidenced the validity of using measures of autobiographical memory to differentiate rumination and reflection, giving further insight into these different forms of dispositional self-focus. Using neutral words to cue memories, participants were rated on the affective dimensions of their autobiographical memories. It was found that reflection, as

measured by Trapnell and Campbell's (1999) measure of rumination and reflection, was unrelated to the affective qualities of memories, whereas rumination was related to happiness and unhappiness (i.e., positive & negative affect) of memories. Teasdale and Green concluded that dispositional ruminative self-focus is specifically related to increased accessibility of negative memories.

Autobiographical Memory Recall and the Repressive Coping Style

The recall of autobiographical memory is a particular experiential task which is linked strongly to repression and the repressive coping style. In particular, a number of studies have investigated the autobiographical memories of repressors. For instance, repressors recall significantly fewer negative memories from childhood than low-anxious or high-anxious groups even though they appeared to have experienced more childhood adversity (Davis & Schwartz, 1987; Myers & Brewin, 1994). Other studies have shown that whereas repressors are not slower at retrieving memories associated with fear, anger or self-consciousness, they actually access fewer negative experiences (Calvo & Eysenck, 2000; Davis, 1987; Newman & Hedberg, 1999). Moreover, in a directed forgetting task repressors have a greater overall deficit in the recall of negative autobiographical memories, in that repressors compared to nonrepressors forgot more negatively valenced words (Myers et al., 1998). And, in a cue-recall task, repressors relative to nonrepressors recalled significantly fewer negative emotional words when asked to retrieve emotionally cued experiences (Holtgraves & Hall, 1995).

These findings suggest that repressors have a relatively poor memory for negative emotional experiences. It has been concluded that the repression mechanism impacts on autobiographical memories by hampering the effort to recall past negative emotional experiences (Myers et al., 1998). An extension of this research has been seen in a recent study by Dickson and Bates (in press), which investigated the retrieval of autobiographical memories in terms of Williams' (1996) notion of specificity and response latency. It was found that repressors demonstrated a bias toward pleasant experiences. They were less specific than non-repressor controls in reporting unpleasant experiences (anxious & depressive) but were no different to the controls in the specificity of their reports of pleasant experiences. It was suggested that repressors have a stronger investment in repressing negative events, particularly those related to depression rather than anxiety experiences because depressive experiences are associated more with failure and thus represent a loss to their self-esteem, whereas anxiety experiences could be attributed to an external factor and not impact so negatively on their sense of self.

The Coping and Adjustment Typology and Autobiographical Memory

The review of research on autobiographical memories brings into question whether overgenerality and poor retrieval for negative experiences may relate to individual differences in coping and adjustment. Rumination and its attendant association with psychological distress implies that retrieval of autobiographical memories would be more general for both positively and

negatively valenced personal memories. Within the Trapnell and Campbell (1999) coping and adjustment groups are two groups whose profile includes high levels of ruminative thought. Thus, given previous evidence of rumination and maladjustment both highly ruminative groups (vulnerable & sensitiser) should display distinctive patterns when accessing autobiographical memories (e.g., Teasdale & Green, 2004). In particular, a more negative, ruminative style of thought processing would be associated with more general autobiographical memory retrieval. In contrast, the two groups in the rumination and reflection typology who are not highly ruminative should show a different pattern of autobiographical memory retrieval.

Furthermore, repression, with its associated low levels of self-reported distress, implies that to recall autobiographical memories of a negative valence involves self-disclosure and loss to self-esteem. Thus, it is more than possible that individuals classified in the Trapnell and Campbell (1999) repressive group would have access to fewer specific autobiographical memories due to the problem of self-disclosure. Less specificity for unpleasant memories would represent a 'pay-off' for repressives as part of affect regulation for past negative experiences (Raes, Hermans, Decker, Eelen & Williams, 2003).

Autobiographical Memories and the Concept of the Self

Although self-report questionnaires do indeed reveal important information about conscious self-concepts, autobiographical memory is particularly relevant to understanding the concept of the self (Conway & Pleydell-Pearce, 2000). Westen (1999) proposes that to overcome some of the methodological problems inherent in self-report data collection and analysis, a

richer understanding of individual differences in cognition, affect, behaviour and motivation, and of the interactions among them, can be gained through experiential tasks.

Westen (1999) suggested that tasks which involve clinical interviews, such as the retrieval of autobiographical memories, and which use inter-rater reliability can give further access and insight into the meaning of a person's unconscious rather than just their conscious self-concept (Westen, 1995). Specifically, access to the unconscious self-concept provides fertile ground for a multi-faceted understanding of the person. As such, autobiographical memories constitute specific recollections of personally meaningful events that form a person's history (Davis, 1987). Westen (1999) suggested that this type of experiential exercise allows for a wider understanding of human behaviour.

Summary and Conclusion

A new typology of coping and adjustment has been suggested by Trapnell and Campbell (1999) as a way of explaining the different cognitive processes that are used by individuals in coping with negative affect. The Trapnell and Campbell model is based on different combinations of rumination and reflection and parallels the well researched but problematic Weinberger et al. (1979) typology of coping and avoidance.

Trapnell and Campbell (1999) proposed that the way people cope with negative affect can be differentiated by different patterns of ruminative or reflective self-focusing thoughts. In contrast, Weinberger et al. (1979) differentiate coping and avoidance patterns through measures of anxiety and

social desirability. Although the Weinberger et al. typology has been widely used (e.g., Furnham & Traynar, 1999) this method of classifying individuals has been criticised for the confounding of two separate dimensions of defensiveness, that is, impression management and self-deception (Derakshan & Eysenck, 1999).

The repressor coping style has been investigated more than any other form of coping and avoidance (e.g., Boden & Dale, 2001; Myers & Brewin, 1996). Repressors are individuals who self-report low levels of distressing symptoms (e.g., anxiety) but whose physiological responses indicate that they are actually highly stressed. Repressors differ from non-repressors (non-deniers of negative symptoms) in many ways (e.g., avoidance behaviours, distraction & distancing) and are believed to use this coping style as a form of affect regulation by selectively processing emotional information.

As an alternative method of differentiating individuals in terms of coping and adjustment to negative affect, it was proposed that a cognitive experiential task would elicit differences in the way that autobiographical memories are retrieved. Rumination implies a relationship to patterns of maladjustment and distortions of personal experiences and should be reflected in more general retrieval for positive and negative personal memories. Reflection implies a relationship to patterns of adjustment and more specific retrieval of personal experiences. The repressor coping group should display a greater overall deficit in the recall of negative autobiographical memories (Myers et al., 1998) as past research has evidenced that repressors have a

relatively poor memory for negative emotional experiences (Holtgraves & Hall, 1995).

A cognitive experiential task was used to answer the question of whether overgenerality and poor retrieval relates to individual differences in coping and adjustment. Accordingly, the Williams and Broadbent (1986) Autobiographical Memory Task is reported in Study 3.

Plan of Empirical Work

This thesis investigated the self-absorption paradox, that is, the contradictory association that self-awareness has with both psychological distress and psychological well-being. Earlier sections examined the relationships among psychological mindedness, psychological well-being and psychological distress and how they apply to self-awareness. Specifically covered were the emotion laden thought processes of rumination and reflection and their involvement in the self-absorption paradox. A primary issue in this thesis concerned an extension of the concepts of rumination and reflection to encompass a public and private focus in the same way that self-awareness/self-consciousness has a public and private focus. A second issue was to investigate a related matter, not empirically addressed by Trapnell and Campbell (1999), that their reflection-rumination model implies a potential 2x2 taxonomy of cognitive approach and avoidance coping styles. The current thesis addressed this shortcoming by evaluating hypothesised psychological differences among the four coping and avoidance styles, and comparing the observed differences

with those on a suitable conceptual benchmark, the influential Weinberger et al. (1979) model of coping and adjustment. Therefore, a new typology of coping and adjustment, based on different combinations of rumination and reflection, was considered in addition to a parallel model of coping and avoidance based on social desirability and anxiety. The multi-faceted model of rumination and reflection was further examined by an investigation of the retrieval of autobiographical memories.

The current thesis has addressed in a joint fashion two closely related research questions – the question of public versus private, rumination and reflection, and the empirical utility of a ruminative x reflective model of cognitive approach and adjustment, thereby adding substantially to current understandings of how self-attentive dispositions can both help and hinder psychological adjustment.

There were three specific research aims:

- (1) to identify intrapersonal and interpersonal dimensions of rumination and reflection by expanding the Rumination and Reflection Questionnaire developed by Trapnell and Campbell (1999), and
- (2) to examine the self-absorption paradox in terms of a ruminative and reflective self-focus, and
- (3) to examine a coping and adjustment model proposed by Trapnell and Campbell (1999) as well as any possible overlap with the well-established Weinberger et al. (1979) typology of coping and avoidance.

The research involved three related studies. Study 1 was conducted in four stages. The first two stages of Study 1 involved the extension and face-validation of the item content of the Rumination and Reflection Questionnaire (Trapnell & Campbell, 1999) so that the new scale, the Revised-Rumination and Reflection Scale, encompassed both intrapersonal and interpersonal dimensions. The third and fourth stages of Study 1 consisted of a psychometric validation of the Revised-Rumination and Reflection Scale and the Self-Consciousness Scale-Revised Version (Scheier & Carver, 1985) involving exploratory factor analysis. The questionnaire comprised two self-report measures consisting of public/private, rumination and reflection, and self-consciousness, as well as demographic data. Overall, Study 1 allowed for an examination of (a) the psychometric properties of the two measures – the Revised-Rumination and Reflection Scale and the Self-Consciousness Scale-Revised Version, (b) the relationships among self-consciousness, rumination and reflection, and (c) differences between men and women, psychology and non-psychology participants, and the order of scale administration.

Using an independent sample from that in Study 1, the quantitative data from Study 2 was used to provide confirmation of dimensions of rumination and reflection, and an examination of the relationships among rumination/reflection, self-consciousness, personality, and psychological symptoms of distress. The assessment battery comprised seven self-report measures of rumination/reflection, self-consciousness, social desirability, anxiety, personality factors, and psychological symptoms along with demographic information.

Study 3 examined the coping and adjustment typology and its overlap with the Weinberger et al. (1979) typology of coping and avoidance, utilising the data collected in Study 2. Study 3 also involved the examination of the coping and adjustment groups in relation to the retrieval of autobiographical memories via a cognitive experiential task. A specific sub-sample of respondents from Study 2 took part in individual interviews. The interview process included the Williams and Broadbent (1986) Autobiographical Memory Task in which participants were required to retrieve ten specific personal memories using neutral, positive and negative cues. Each personal memory was timed to give a measure of response latency, and then coded to give a measure of specificity of memory.

CHAPTER 4

**STUDY 1 - A RE-DEVELOPMENT OF THE RUMINATION AND
REFLECTION QUESTIONNAIRE**

Aims

The primary purpose of the first study was to redevelop the original Rumination and Reflection Questionnaire (Trapnell & Campbell, 1999), to incorporate a public as well as a private dimension to the self-attentive thought processes of rumination and reflection (i.e., public rumination, private rumination, public reflection & private reflection). The first stage of Study 1 involved a revision of the Rumination and Reflection Questionnaire items. The second stage of Study 1 entailed a conceptual investigation of the public and private dimensions of rumination and reflection and comprised a face validation of the revised scale's content through back translation of the revised items using independent samples (Dawis, 1987).

The third stage of Study 1 used an independent sample of participants and involved a psychometric evaluation of the revised version of the Rumination and Reflection Questionnaire through exploratory factor analysis, scale reliability and item reliability. In addition to the psychometric study of the Revised-Rumination and Reflection Scale, the relations among self-consciousness, rumination, and reflection were determined. This analysis explored the possible distinctions between a ruminative type of self-focus and a reflective type of self-focus. The fourth stage of Study 1 investigated the factor

structure of Scheier and Carver's (1985) Self-Consciousness Scale-Revised Version.

The Self-Consciousness Scale-Revised Version (Scheier & Carver, 1985) was chosen for use in Study 1 as an assessment tool because it has been consistently validated as a reliable measure of dispositional self-attentiveness. The private self-consciousness subscale of the Self-Consciousness Scale (Fenigstein et al., 1975) was also used in the original study by Trapnell and Campbell (1999) to demonstrate the link between rumination, reflection, and private self-consciousness, and to illustrate the differences between a ruminative and a reflective type of thought process. Thus, use of the Self-Consciousness Scale-Revised Version permitted an examination of the empirical as well as conceptual relations among rumination, reflection, private, and public self-consciousness.

Data from the Revised-Rumination and Reflection Scale and the Self-Consciousness Scale-Revised Version (Scheier & Carver, 1985) were analysed using SPSS Version 12 Statistical Package (SPSS, 2003).

Stage 1: Redevelopment of the Rumination and Reflection Questionnaire

The first step in Stage 1 of this research project involved the redevelopment of Trapnell and Campbell's (1999) Rumination and Reflection Questionnaire. This required a re-wording of a number of the items in the original measure to reflect public as well as private distinctions in order to encompass both interpersonal and intrapersonal dimensions.

Definitions of Public and Private, Rumination and Reflection

Prior to rewording the items of the Rumination and Reflection Questionnaire (Trapnell & Campbell, 1999) the underlying constructs were defined. Initial definitions of rumination and reflection drew heavily on those given by Trapnell and Campbell (see pages 44 & 45 for these definitions). Private and public self-consciousness definitions, as originally proposed by Fenigstein et al. (1975) and further developed by researchers, such as Buss (1980) and Scheier and Carver (1985) augmented the four constructs of public and private, rumination and reflection (see pages 22-24 for these definitions). Therefore, for the purposes of the current research, definitions for public and private, rumination and reflection are as follows:

Public reflection: A type of thought process that involves contemplation of the self as a social object or a social stimulus. The impact and effect that an individual, as a social object, has on their external world is an instance of this type of thinking. The focus of these thoughts is primarily on the actions and reactions of others in relation to the individual and in a broader sense on the world around them. Public reflection is inherently philosophical in the way the person meditates on their interactions and relationships with others.

Private reflection: Private reflection is a type of thought process involving a philosophical discovery of the personal self. This is a particular way of thinking that provides greater self-knowledge of a person's inner world of thoughts and feelings. Private reflection or contemplation of oneself is, overall, a pleasurable, meditative, positive experience linked to psychological well-being.

Public rumination: The focus of public rumination is on being aware of, and concerned about, the personal self as a social object or as a social stimulus. Individuals high in public rumination constantly rework or ‘rehash’ recently held conversations, tending to go over and over past events and experiences in a repetitive, negative cycle of self-critical thoughts. In particular, these thoughts revolve around public appearances and comparisons to others concerning their performance.

Private rumination: The focus of private rumination is on the thoughts and feelings that involve the individual's inner world. The privately ruminative person tends to constantly churn over negative aspects of their personal self. These perceived negative personal characteristics are not necessarily apparent by the outside world, yet they cause serious concern for the ruminative individual. Private ruminations consist of repetitive, unwanted, and often needless negative self-critical thoughts.

Identifying and Rewording Items from the Rumination and Reflection Questionnaire

Once the definitions had been established, the next step in revising Trapnell and Campbell's (1999) Rumination and Reflection Questionnaire was to identify those items that needed to be changed to reflect unambiguously the public and private, rumination and reflection dimensions. Thus, it was deemed that twelve of the original items would stay as they were (see Table 4.1). Trapnell and Campbell based their measure on private self-consciousness, and the majority of the twelve retained items ($n = 10$) reflected this private aspect.

Table 4.1

Final Set of Items for Public and Private, Rumination and Reflection Subscales of the Revised-Rumination and Reflection Scale

Rumination
Private
1. My attention is often focused on aspects of myself I wish I'd stop thinking about.*
3. Sometimes it is hard for me to shut off thoughts about myself.*
6. I don't waste time going over experiences that are over and done with in my life. (-)
8. I often find myself re-evaluating something I've done.*
9. I never ruminate or dwell on myself for very long.* (-)
12. I spend a great deal of time thinking back over my disappointing moments.
Public
2. I always seem to be rehashing in my mind recent things I've said or done to others.
4. Long after an argument or disagreement is over with, my thoughts keep going back to what happened.*
5. I tend to 'ruminate' or dwell over my interactions with others for a really long time afterwards.
7. Often I'm playing back over in my mind how I acted towards others in a past situation.
10. It is easy for me to put unwanted thoughts about others out of my mind. (-)
11. I often keep thinking about times when I have been embarrassed in front of others.
Reflection
Private
15. I love exploring my inner self.*
17. I don't really care for introspective or self-reflective thinking.* (-)
18. I love analysing why I do things.*
20. I don't care much for self-analysis.* (-)
21. I'm very self-inquisitive by nature.*
24. Contemplating myself isn't my idea of fun. * (-)
Public
13. Philosophical or abstract thinking about how I relate to others doesn't appeal to me that much. (-)
14. I don't really meditate about the world around me. (-)
16. My attitudes and feelings about other people fascinate me.
19. People often say I'm a deep, introspective type of person.*
22. I love to meditate on the nature of people and the meaning of things.
23. I often look at how I relate to others, in philosophical ways.

* Denotes original (unchanged) Trapnell and Campbell (1999) RRQ items
 (-) Negatively worded items
 Note. Items numbered in the order they appear on the scale

For example, Item 1 in the rumination scale encompassed constant thoughts about the private self:

‘My attention is often focused *on aspects of myself* I wish I’d stop thinking about.’

However, there were a small number of the retained items ($n = 2$), which were deemed to have more of a public focus. For example, Item 19 in the original scale captured in its wording the person’s thoughts about themselves in terms of others:

‘*People often say* I’m a deep, introspective type of person.’

This left twelve items in need of revision to make them specific to the concepts of public and private rumination and reflection (see Table 4.1).

For example, Item 13 in the Rumination and Reflection Questionnaire was originally worded:

‘Philosophical or abstract thinking doesn’t appeal to me that much’.

To give the item a stronger public orientation this item was changed to:

‘Philosophical or abstract thinking *about how I relate to others* doesn’t appeal to me that much.’ (The original Rumination and Reflection Questionnaire items are in Appendix A.1.)

Independent Examination of the Revised Scale Items

Three independent psychologists who were very familiar with the constructs of rumination and reflection assessed an initial version of the Revised-Rumination and Reflection Scale. They were given construct definitions, and a list of all items from the scale and asked to assign each item back to the four hypothesised categories according to the given definitions of

(1) Reflection - private, (2) Reflection – public, (3) Rumination – private, and (4) Rumination – public. Upon their recommendations, further adjustments were made to four prospective public items and one private item. The psychologists, acting as independent judges of the scale, suggested that these five items although concomitant with rumination or reflection remained ambiguous and lacked a clear public or private direction. For example, the content of Item 5 was changed from:

‘I tend to ruminate or dwell over things that have happened for a really long time afterwards’

to

‘I tend to ruminate or dwell over *my interactions with others* for a really long time afterwards’

providing a stronger public orientation to the rumination item in question.

After revision of the five ambiguous items, the scale was re-examined by the same three psychologists who once again rated each item according to the four definitions. The independent psychologists agreed that the 24 items in the new rumination and reflection scale fitted into four separate groups of six items each in accord with the given definitions. Each group of items represents the proposed constructs of public and private, rumination and reflection (see Table 4.1) as well as maintaining the integrity of the original two-factor Trapnell and Campbell (1999) rumination and reflection measure.

Results for the First Stage in Revising the Trapnell and Campbell (1999)

Rumination and Reflection Questionnaire

The revision of the Trapnell and Campbell (1999) Rumination and Reflection Questionnaire resulted in a new scale, which encompassed both interpersonal and intrapersonal dimensions. The Revised-Rumination and Reflection Scale is a 24-item inventory that is designed to measure individual levels of the self-focused thought processes of rumination and reflection. It also measures the degree to which there is a public (interpersonal) or private (intrapersonal) direction or content to these styles of thinking.

Respondents to the measure are told that the statements are about self-attentiveness. They are asked to indicate their level of agreement or disagreement to each item by circling one of five scale categories ranging through (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, to (5) strongly agree. Reverse scoring applies to eight items due to their negative wording (refer to Table 4.1), for example, Item 24 'Contemplating myself isn't my idea of fun'. A total score for the rumination scale is the sum of items 1 to 12 and for the reflection scale is the sum of items 13 to 24. Possible scores range from 12 through to 60 for either of the two major subscales or from 6 through to 30 for each of the secondary scales. (Scale items are listed in Table 4.1.)

The first stage of Study 1 was completed when the concepts of public and private, rumination and reflection were defined, and the items which were intended to measure these concepts were re-worded. Independent examiners of both conceptual definitions and scale items agreed that both were acceptable.

***Stage 2 : Conceptual Investigation of the Private and Public Dimensions of
Rumination and Reflection***

Aims

The second stage of Study 1 involved a conceptual investigation rather than an empirical study of the private and public dimensions of rumination and reflection. An independent sample of participants (third year psychology students) volunteered to take part in the study as independent arbiters of the constructs and items of the Revised-Rumination and Reflection Scale and the Self-Consciousness Scale-Revised Version (Scheier & Carver, 1985). The aim of this study was to establish face validity of the Revised-Rumination and Reflection Scale by using the back translation method of placing scale items into defined categories (Dawis, 1987). The research questions addressed in this study were as follows: (a) Is it possible to identify conceptual definitions through item content? That is, are the revised public or private, rumination and reflection items face valid? (b) Are there four, rather than two cohesive groups of items to justify the formation of a four-factor scale of rumination and reflection?

Method

Participants

The sample for this study ($N=122$) consisted of 117 (96%) third year undergraduate psychology students from Swinburne University of Technology, who took part in the study in Semester 1, 2001 as part of a class exercise on

scale development. The students were in addition to a convenience sample of 5 (4%) members of the community, who agreed to participate in the study.

Members from the community responded to verbal requests by the researcher to take part in the study. Overall there were 27 men (22%) with an average age of 26.41 years ($SD=10.40$) and 94 women (78%), with an average age of 26.53 years ($SD=9.51$), with one who did not indicate gender. The age distribution of participants ranged from 19 to 52.

Materials

Two definition sheets, developed in Stage 1 of this study, drew on the work of Trapnell and Campbell (1999), Fenigstein et al. (1975), Buss (1980), and Scheier and Carver (1985). The first definition sheet listed the descriptions of public and private - rumination and reflection. The second definition sheet listed the descriptions for private self-consciousness, public self-consciousness, and social anxiety (see Appendix A.2). In addition to these definition sheets, participants were provided with the 24 items of the Revised-Rumination and Reflection Scale and the 22 items of the Self-Consciousness Scale-Revised Version (Scheier & Carver, 1985) (see Appendix A.2).

Procedure

Participants were informed that they were taking part in a redevelopment of a scale measuring the thought processes of rumination and reflection.

Students were given the definition sheets in their class, while members of the general community were approached by the researcher privately. All participants were asked to complete the categorisation task by indicating, in the appropriate place, which of the Revised-Rumination and Reflection Scale items

fitted into one of the four possible definition categories of public and private, rumination and reflection. This was also done for the Self-Consciousness Scale-Revised Version (Scheier & Carver, 1985) items and the three possible categories of private self-consciousness, public self-consciousness and social anxiety (see Appendix A.2). The answer sheets contained no identifying data, with all responses being anonymous and confidential. Upon completion, students placed their answer sheets into envelopes, which were collected by the class teacher who then handed them back to the researcher. Members of the general public sent their completed answer sheets back to the researcher in reply paid envelopes.

Results for the Categorisation Task for the Rumination and Reflection Items

The results for Stage 2 of the first study are presented in two sections. After an overview of the methods of data analysis that were used in this stage of the thesis, the first section reports on the results of the categorisation task in relation to the items from the Revised-Rumination and Reflection Scale. The second section presents the results of the task in relation to the items from Scheier and Carver's (1985) Self-Consciousness Scale-Revised Version.

Methods of Data Analysis

Responses to the categorisation tasks were analysed in terms of the number of times (i.e., percentages) each item in the Revised-Rumination and Reflection Scale and the Self-Consciousness Scale-Revised Version (Scheier & Carver, 1985) was allocated to its own hypothesised factors. Criteria for face validation of an item were considered in a number of ways. If an item was

endorsed correctly by at least half of the participants then it was considered to have a good level of face validity. Therefore, items presenting conceptual difficulty for participants were identified as those receiving less than a 50% endorsement for its intended category. A Chi-square test compared item responses in the two highest categories of endorsement. If the item in question did not receive a significantly higher rate of endorsement for its intended category then re-wording of the item was considered.

Rumination and Reflection Items

This analysis revealed that for the individual items of the Revised-Rumination and Reflection Scale, participants endorsed a majority of the items as corresponding to its correct conceptual definition. Responses to each item are presented in Table 4.2. Bolded scores in Table 4.2 indicate the percentage of the total sample that endorsed the item in relation to its hypothesised factor, that is, for public or private, rumination or reflection.

As indicated in Table 4.2, all but three of the items from the Revised-Rumination and Reflection Scale were allocated to their correct definition by more than 50% of the participants. Therefore, out of the 24 items of the Revised-Rumination and Reflection Scale, 21 showed good face validity. Excluding the three potentially problematic items, justification for a four factor scale was found to be satisfactory with the endorsement of private rumination items ranging from 51% to 84%; public rumination ranging from 67% to 80%; private reflection ranging from 66% to 97%, and public reflection ranging from 62% to 82%.

Table 4.2

Revised Rumination and Reflection Scale Items, Response Endorsement and Hypothesised Factors

Item No.	Rumination				Reflection				Total <i>n</i>	
	Private		Public		Private		Public			
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	
Rumination - Private										
1	103	84.4	5	4.1	13	10.7	-	-	121	
3	92	78.4	1	.8	21	17.2	6	4.9	120	
6	48	39.3*	30	24.6	22	18.0	17	13.9	117	
8	52	50.8	23	18.9	27	22.1	6	4.9	108	
9	89	73.0	7	5.7	17	13.9	6	4.9	119	
12	89	73.0	24	19.7	5	4.1	3	2.5	121	
Rumination - Public										
2	19	15.6	89	73.0	2	1.6	12	9.8	122	
4	28	23.0	82	67.2	6	4.9	4	3.3	120	
5	19	15.6	98	80.3	1	.8	4	3.3	122	
7	18	14.8	82	67.2	1	.8	18	14.8	119	
10	18	14.8	57	46.7*	14	11.5	30	24.6	119	
11	14	11.5	90	73.8	1	.8	16	13.1	121	
Reflection - Private										
15	3	2.5	-	-	119	97.5	-	-	122	
17	17	13.9	1	.8	89	73.0	13	10.7	120	
18	9	7.4	1	.8	106	86.9	5	4.1	121	
20	24	19.7	2	1.6	81	66.4	13	10.7	120	
21	6	4.9	2	1.6	110	90.2	4	3.3	122	
24	26	21.3	4	3.3	84	68.9	5	4.1	119	
Reflection - Public										
13	11	9.0	12	9.8	13	10.7	84	68.9	120	
14	10	8.2	5	4.1	27	22.1	76	62.3	118	
16	3	2.5	4	3.3	16	13.1	98	80.3	121	
19	7	5.7	6	4.9	60	49.2	48	39.3*	121	
22	3	2.5	5	4.1	14	11.5	99	81.1	121	
23	-	-	11	9.0	10	8.2	100	82.0	121	

N=122

Note. Rows do not sum to 100% because of missing values

*Items received less than 50% endorsement in correct category

The first item of concern was Item 6 in the private rumination scale ('I don't waste time going over experiences that are over and done with in my life'). No more than 39% of participants correctly identified this item as a private rumination item. The remaining responses to Item 6 were 14% public reflection, 18% private reflection, and 25% public rumination. A Chi-square test revealed a significant difference in the number of responses between private rumination (39%) and the next highest category of endorsement, public rumination (25%), $\chi^2(1, N = 78) = 4.15, p < .05$. Thus, as Item 6 received a significantly higher endorsement for this category than for any other, and independent psychologists in Stage 1 had previously identified it as a private rumination item it was felt unnecessary to alter its content.

Item 10 ('It is easy for me to put unwanted thoughts about others out of my mind') in the public rumination scale was the second item in the Revised-Rumination and Reflection Scale to be considered. This item received a response endorsement for public rumination of 46.7%. The next highest endorsement was 24.6% for public reflection. A Chi-square test revealed that Item 10 was endorsed significantly higher for its intended category of public rumination than it was for public reflection, $\chi^2(1, N = 87) = 8.40, p < .05$. As this item had almost reached the 50% response endorsement criteria; it had a significantly higher rate of endorsement than the next highest category; and it had been identified previously as a public rumination item, it was deemed a satisfactory item for measuring its intended construct.

A third item in the Revised-Rumination and Reflection Scale that was of more concern was Item 19 ('People say I'm a deep introspective type of

person'). Although 39% of respondents correctly identified this item as a public reflection item, a higher proportion (49%) categorised this item as a measure of private reflection. However, a Chi-square test revealed that the difference in response endorsement between the two reflection categories was not significant, $\chi^2(1, N = 108) = 1.33, p = .25$. Independent psychologists had previously identified this item as a public reflection item. After careful consideration, it was decided that there was no obvious way to re-word this item. Hence, Item 19 would be treated with some caution, in that although independent psychologists identified it as a public reflection item, within this sample of primarily psychology students it was not differentiated strongly in terms of direction, that is, between public and private reflection.

The remaining items in the Revised-Rumination and Reflection Scale were strongly endorsed as appropriate items for their intended concepts. In conclusion, although there were a small number of items ($n = 3$) that fell just below a 50% response endorsement for their correct category, overall, the revised items were accepted as specifically related to the concepts of private and public, rumination and reflection; a majority of the endorsements (19 out of 24) being over 65%. Therefore, no further revision to the Revised-Rumination and Reflection Scale was deemed necessary at this stage.

Self-Consciousness Scale Items

The revised Scheier and Carver (1985) version of the Fenigstein et al. Self-Consciousness Scale (1975) has 22 items. It has cross-cultural utility, having been translated and used in numerous countries (e.g., Chang, 1998; Nystedt & Ljungberg, 2002; Teixeira & Gomes, 1995). The scale has three

subfactors: private self-consciousness (9 items), public self-consciousness (7 items) and social anxiety (6 items) (see Appendix A.2 for the complete scale).

Respondents are asked to indicate the extent to which each of the 22 statements is like them, using the response format of: (0) not at all like me, (1) a little like me, (2) somewhat like me, and (3) a lot like me. Two items (8 & 11) are worded negatively, for example, Item 8 ‘I never take a hard look at myself’. These items are reversed for scoring. Responses to each item are summed after reverse coding. After reverse scoring, higher scores indicate higher levels of private self-consciousness, public self-consciousness, or social anxiety. Possible scores can range from 0 to 27 for the private self-consciousness scale; 0 to 21 for the public self-consciousness scale and 0 to 18 for the social anxiety scale.

The categorisation task for self-consciousness definitions and items for the Self-Consciousness Scale-Revised Version (Scheier & Carver, 1985) was conducted at the same time as the categorisation task for rumination and reflection items. The responses to each item are presented in Table 4.3, in terms of the total number of times that this item was endorsed (*n*) with a specific conceptual definition. Bolded scores in the table indicate the percentage of the total sample that endorsed the item as correspondent to one of the three factors, that is, for private self-consciousness, public self-consciousness, or social anxiety.

As seen in Table 4.3, respondents strongly endorsed all of the private self-consciousness items as measuring private self-consciousness, with response endorsement ranging from 55% to 99%. Yet, one item measuring public self-consciousness and three items measuring social anxiety presented conceptual

Table 4.3

Self-Consciousness Scale-Revised (Scheier & Carver, 1985) Items, Response Endorsement and Factors

Item No.	Private SC		Public SC		Social Anxiety		Total <i>n</i>
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	
Private Self-Consciousness							
1	121	99.2	1	.8	-	-	122
4	114	93.4	2	1.6	5	4.1	121
6	112	91.8	8	6.6	1	.8	121
8	110	90.2	4	3.3	5	4.1	119
12	80	65.5	35	28.7	4	3.3	119
14	77	63.1	41	33.6	3	2.5	121
17	67	54.9	27	22.1	28	23.0	122
19	81	66.4	13	10.7	24	19.7	118
21	73	59.8	5	4.1	43	35.2	121
Public Self-Consciousness							
2	86	70.5	28	23.0*	8	6.6	122
5	46	37.7	65	53.3	11	9.0	122
10	32	26.2	65	53.3	21	17.2	118
13	4	3.3	75	61.5	42	34.4	121
16	23	18.9	94	77.0	3	2.5	120
18	2	1.6	73	59.8	47	38.5	122
20	31	25.4	67	54.9	21	17.2	119
Social Anxiety							
3	49	40.2	16	13.1	57	46.7*	122
7	41	33.6	33	27.0	48	39.3*	122
9	48	39.3	11	9.0	62	50.8	121
11	4	3.3	85	69.7	33	27.0*	122
15	1	.8	43	35.2	77	63.1	121
22	3	2.5	6	4.9	111	91.0	120

N=122

Note. Rows do not sum to 100% because of missing values; Private SC = Private self-consciousness; Public SC = Public self-consciousness

*Received less than 50% endorsement in correct category

difficulty for participants, in that these items received less than a 50% response endorsement for their allocated definition. The same criteria for face validation were set for the self-consciousness items as that of the rumination and reflection items.

Item 2 ('I'm concerned about my style of doing things') was correctly endorsed by 23% of respondents as reflecting public self-consciousness. A much larger proportion of the sample (71%) indicated that this item measured private self-consciousness. A Chi-square test indicated that endorsement of private and public self-consciousness were significantly different, $\chi^2(1, N = 114) = 29.5, p < .001$. Thus, Item 2 was strongly identified in this sample as an item measuring private self-consciousness rather than its original classification of public self-consciousness.

Further, there were three items (3, 7 & 11), which were intended to measure the concept of social anxiety, that were not strongly identified as such by participants. Item 3 ('It takes me time to get over my shyness in new situations') was endorsed correctly as a social anxiety item by 47% of respondents and as a private self-consciousness item by 40% of respondents. A Chi-square test revealed that the difference in endorsement between the categories was not significant, $\chi^2(1, N = 106) = .60, p = .44$. The endorsement of Item 7 ('It's hard for me to work when someone is watching') ranged from 39% for social anxiety, 34% for private self-consciousness, and 27% for public self-consciousness. A Chi-square test revealed that these responses were not significantly different from each other in terms of overall item response, $\chi^2(2, N = 122) = 2.77, p = .25$.

On the other hand, respondents (70%) identified Item 11 ('It's easy for me to talk to strangers') as an item that captured the concept of public self-consciousness rather than its intended category of social anxiety (27%). A test of Chi-square revealed that the difference between the responses was significant, $\chi^2(1, N = 118) = 22.92, p < .001$. Thus, Item 11 was endorsed as an item reflecting self-consciousness in public but perhaps without the more negative type of consequences inherent in social anxiety.

Summary and Discussion of the Categorisation Task

The primary purpose of the second stage of Study 1 was to broaden the concepts of rumination and reflection so that they would encompass a public and private focus. The goal was to achieve face validity of the revised items using a categorisation task. The majority of items from the Revised-Rumination and Reflection Scale (21 out of 24 items) and the Self-Consciousness Scale-Revised Version (18 out of 22) were found to have good conceptual face validity.

On inspection of the data from the participants, it became clear that although most of the items in both measures (rumination/reflection & self-consciousness) were allocated to the correct definitions in the way that the items were designed to, respondents were divided in the way that a small number of items were identified.

The results of this study were in the main extremely positive. It was not necessary to withdraw any of the revised items from the scale as all were approved of by psychologists with expert knowledge of the rumination area. In

terms of the research questions the following answers were arrived at. First, that overall it was possible to identify conceptual definitions through item content, that is, the revised public or private, rumination and reflection items generally show good face validity. Second, there appears to be preliminary justification for the formation of a four-factor scale of rumination and reflection consisting of four rather than two cohesive groups of items.

Stage 3 : Psychometric Properties of the Revised-Rumination and Reflection Scale

Aims

The aim of the third stage of Study 1 was to examine the psychometric properties of the Revised-Rumination and Reflection Scale. Therefore, a principle components analysis of the Revised-Rumination and Reflection Scale and internal reliability were undertaken. Data were collected over two university years (Semester 2, 2001 & Semester 1, 2002) from psychology undergraduates, and a convenience sample of individuals from the broader community. All participants were volunteers. The concurrent validity of the Revised-Rumination and Reflection Scale was also investigated through its comparison with the Self-Consciousness Scale-Revised Version for Use with General Populations (Scheier & Carver, 1985).

The research questions addressed in this study were as follows: (a) Given the major changes made to the Rumination and Reflection Questionnaire (Trapnell & Campbell, 1999) in Stage 1 of this current study, would the

Revised-Rumination and Reflection Scale maintain its integrity as a measure ruminative and reflective self-focus? (Research Question 1), (b) Would an exploratory factor analysis of the rumination scale see two separate factors of public and private rumination emerge (Research Question 2a) in addition to two separate factors of public and private reflection in the reflection scale? (Research Question 2b), and (c) In light of the different findings concerning the factor structure of Fenigstein et al.'s (1979) Self-Consciousness Scale, what subfactors would emerge in an exploratory factor analysis of the Scheier and Carver (1985) Self-Consciousness Scale-Revised Version? (Research Question 3)

Hypotheses

Bivariate Correlations for Rumination and Reflection

Hypothesis 1: Overall, in keeping with Trapnell and Campbell's (1999) study, it was expected that rumination and reflection would correlate differently with the three subfactors of the Scheier and Carver (1985) Self-Consciousness Scale-Revised.

Specifically, it was expected to find that:

Hypothesis 1a: The correlation between rumination and reflection would be positive and moderately low.

Hypothesis 1b: Both rumination and reflection would correlate positively and moderately with private self-consciousness.

Hypothesis 1c: As private self-consciousness is thought to be more reflective than ruminative, private self-consciousness would correlate higher with reflection than with rumination.

Hypothesis 1d: Rumination but not reflection would correlate positively and moderately with public self-consciousness.

Bivariate Correlations for Public and Private, Rumination and Reflection

Hypothesis 2: It was also expected that the four subfactors of public and private, rumination and reflection would correlate differently with private and public self-consciousness.

Specifically, it was expected to find that:

Hypothesis 2a: There would be moderate positive correlations between the private and public aspects of rumination and also between the private and public aspects of reflection based on the moderate positive correlations between private and public self-consciousness.

Hypothesis 2b: Private and public aspects of the Revised-Rumination and Reflection Scale would show similar correlational patterns as the parent categories of rumination and reflection. Thus, it was anticipated that public and private reflection as well as public and private rumination would correlate moderately and positively with private self-consciousness.

Hypothesis 2c: Private and public rumination (but not private or public reflection) would correlate moderately and positively with public self-consciousness.

Individual Differences for Order of Scale Presentation, Gender, and Student Status

Three-way between-subjects Multivariate Analyses of Variance (MANOVAs) were used to assess individual differences among the participants (i.e., order of scale presentation, gender, & student status) for the dependent variables of rumination, reflection, private self-consciousness, public self-consciousness, and social anxiety. Individual differences among participants for public and private, rumination and reflection were also assessed.

Hypothesis 3: Order effects of scale presentation have been seen in a few studies when using the Self-Consciousness Scale (Fenigstein et al., 1975). However, a study by Osberg (1985), which was based on the premise that personally relevant questions heighten self-attention, found that those participants who responded to the Self-Consciousness Scale last in an assessment battery obtained higher private self-consciousness scores yet had unexpectedly lower public self-consciousness scores. Yet, in a second study, Osberg found that the number of other measures included in the test battery moderated the strength of the effect of personally relevant questions. Therefore, in light of such equivocal findings for order effects, it was anticipated that there would be differences in scores for the two scale presentation orders.

Hypothesis 4: It has been previously reported that women tend to ruminate more and are more privately self-conscious than men (Butler & Nolen-Hoeksema, 1994; Nolen-Hoeksema, 1987, 2001; Scheier & Carver, 1985). Thus, it was expected that there would be overall differences in scores between

men and women. In particular, women were expected to score higher on rumination and private self-consciousness than men.

Hypothesis 5: Psychology students (both men & women) have been found to be more psychologically minded and reflective, in that, they are believed to pay more attention to their inner thoughts because (a) they are interested in the thought processes of others more than other students, and (b) they have more training in the area (Trapnell, 2001; Trudeau & Reich, 1996). Therefore, in light of the perceived link between psychological mindedness and the self-reflective type of thought process, overall differences were expected between psychology students and non-psychology participants in scores. In particular, psychology students were expected to score higher on reflection and private self-consciousness than non-psychology participants.

Method

Participants

The sample for this study ($N = 353$) consisted of 250 (71%) undergraduate psychology students from Swinburne University of Technology, who completed the rumination and reflection scale as part of their course requirements. The students were in addition to a convenience sample of 103 (29%) members of the community, who agreed to participate in the study. Members from the community responded to advertisements placed by the researcher in other divisions of the University (e.g., Management, Information Technology), and in a church newsletter. Some of the participants from the

community were studying at tertiary level but were not studying psychology. Overall, there were 242 women (69%), with an average age of 28.1 years ($SD=10.8$) and 109 men (31%) with an average age of 31.7 years ($SD=12.0$). The age distribution of participants ranged from 18 to 66. Two participants had missing values for gender and eight for age (3 men, 5 women). On average, psychology students tended to be younger ($M=25.71$, $SD=8.4$) than the non-psychology participants ($M=38.0$, $SD=12.6$), $t(343) = -10.59$, $p < .001$.

Measures

Public and private, rumination and reflection: The Revised-Rumination and Reflection Scale was the same scale as used in Study 1A. (See Appendix A.4 for the complete scale.)

Self-consciousness: The Self-Consciousness Scale-Revised Version (Scheier & Carver, 1985) was the same scale as used in Study 1A. (See Appendix A.4 for the complete scale.)

Gender differences have been found for private self-consciousness with women reporting higher levels of private self-consciousness than men (Scheier & Carver, 1985). However, no gender differences are evident for public self-consciousness or social anxiety. Internal consistency for each subscale is sound. Scheier and Carver reported .75 for private self-consciousness, .84 for public self-consciousness, and .79 for social anxiety using Cronbach's Coefficient Alpha. Correlations between the subfactors were $r = .38$ for private and public self-consciousness, $r = .03$ for private self-consciousness and social anxiety, and $r = .35$ for public self-consciousness and social anxiety. (See earlier discussion on the validity of the Self-Consciousness Scale-Revised Version in Chapter 1.)

Procedure

The 24-item Revised-Rumination and Reflection Scale (R-RRS) and the 22-item Self-Consciousness Scale-Revised Version (SCS-R; Scheier & Carver, 1985), were compiled into a questionnaire along with demographic questions (see Appendix A.3). There were two versions of the questionnaire that corresponded to different orders of completion. Half the questionnaires had the Revised-Rumination and Reflection Scale first and the Self-Consciousness Scale-Revised Version second. The other half of the questionnaires had the Self-Consciousness Scale-Revised Version first and the Revised-Rumination and Reflection Scale second. Of the 353 participants, 169 (48%) completed Order 1 of scale presentation (R-RRS first, SCS-R second) and 184 (52%) completed Order 2 (SCS-R first, R-RRS second).

The questionnaires were distributed in random order to psychology students and completed in tutorial classes. Non-psychology participants were approached by friends and colleagues of the researcher and asked to take part in a study on self-attention. They were given the questionnaire to complete in their own time if, after reading the information sheet, they indicated that they were willing to participate. Student participants returned the questionnaire to a designated box at the university, whereas the non-psychology respondents posted their questionnaire to the university in reply-paid envelopes.

Results for the Psychometric Analysis of the Revised-Rumination and Reflection Scale

The results for the third stage of Study 1 are presented in three sections. After an overview of methods of data analysis a report on the preliminary data analysis the results for Research Questions 1, 2a and 2b are then described.

Methods of Data Analysis

Multivariate and univariate normality of the distribution of the scores was ascertained prior to data analyses. The percentage of missing values was also established. The scales were analysed in terms of internal consistency. Reverse-scored items were recoded prior to the factor analyses. The data analysis for the third part of Study 1 consisted of an exploratory factor analysis of the Revised-Rumination and Reflection Scale was conducted to answer Research Questions 1 and 2. As a first step in the factor analysis process, principle components analysis was used to give an empirical summary of the number and nature of the components in the data set (Tabachnik & Fidell, 1996). In addition, principal axis factoring was conducted on the data set as a test of the stability of the factor structure. Following the factor analyses, a series of bivariate correlations were run to test for hypothesised relationships (Hypotheses 1 & 2). Individual differences were then examined for order of scale presentation, between men and women, and between psychology students and non-psychology participants in terms of responses to the Revised-Rumination and Reflection Scale and Self-Consciousness Scale-Revised Version (Scheier & Carver, 1985) (Hypotheses 3, 4 & 5).

Preliminary Analyses

A normal distribution was established through inspection of the data set for out-of-range values for the dependent variables of rumination, reflection, private self-consciousness, public self-consciousness and social anxiety. There were no out-of-range values for the continuous variables of rumination, reflection, private self-consciousness, public self-consciousness, and social anxiety. There were no out-of-range values for the discrete variables of gender, status and order. Means and standard deviations for the dependent variables were similar to those found in previous research (e.g., Scheier & Carver, 1985; Trapnell & Campbell, 1999).

Missing value analyses showed that there were no respondents with more than 5% missing values for scores on rumination and reflection (R-RRS) and private self-consciousness, public self-consciousness and social anxiety (SCS-R; Scheier & Carver, 1985). As there were so few cases with missing data, deletion of these cases was considered to be the most appropriate procedure for handling missing values (Tabachnick & Fidell, 1996).

Inspection of z-scores for the five dependent variables revealed no univariate outliers; based on outliers being those z-scores over 3.29. Z-scores ranged from -2.81 to 2.60 which is below the $p = .001$ criterion for univariate outliers (Tabachnick & Fidell, 1996).

The Mahalanobis Distance procedure was used to search for multivariate outliers. Cases were selected for each independent variable level (Gender 1 & Gender 2; Status 1 & Status 2; Order 1 & Order 2) and Mahalanobis Distance

was found to range from .24 to 16.74, which is within the critical distance of 20.5 for 5 dependent variables (Francis, 1999).

Each of the five dependent variables was inspected for skewness and kurtosis. Z scores obtained for skewness and kurtosis were all within the cut-off point of 3.29 ($p = .001$, two-tailed) for a normal distribution. (See descriptive statistics in the Table of Means - Appendix A.5.)

Results for Research Question 1: Factor Analysis of the Revised-Rumination and Reflection Scale

According to the criteria for factor analysis (Tabachnick & Fidell, 1996), the data were suitable for factor analysis with (a) an adequate sample size (over 300), (b) satisfactory Bartlett's Test of Sphericity (3177.16 (276), $p < .001$), and (c) the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (.90) demonstrating adequate multivariate normality of the set of distributions. The factor loadings and summary item statistics for the forced two-factor Revised-Rumination and Reflection Scale are presented in Table 4.4 and the factor loadings for the four factors are presented in Table 4.9.

To address the primary research questions, a principal-components analysis of the entire R-RRS used a direct oblimin rotation, as rumination and reflection were expected to show a moderate to low correlation. Factor loadings, for this sample size, were suppressed at .30 ($N > 350$) (Hair, Anderson, Tatham & Black, 1998), and were taken from the pattern matrix (Tabachnick & Fidell, 1996). The unrotated factor analysis displayed 4 principal components,

explaining 55.3% of the variance, with eigenvalues greater-than-one as a criterion (eigenvalues of 6.72 with 28% of the variance, 4.3 with 18%, 1.2 with 5.0%, & 1.02 with 4.2%, respectively) (see Appendix A.6 for the table of factor loadings). Cattell's Scree test could indicate two or more components (see Figure 4.1).

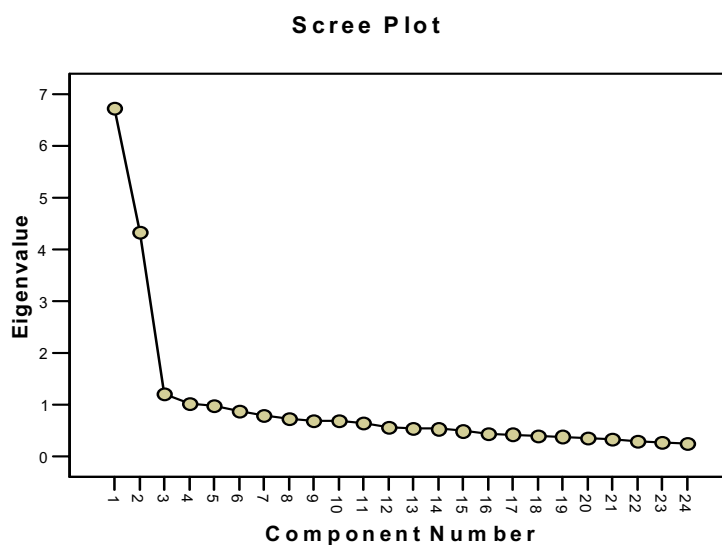


Figure 4.1. Scree plot for rumination and reflection items

When the rumination and reflection scale is factor analysed as a whole, four components are extracted that have eigenvalues over 1. Yet, these four components are not strongly represented in the scree plot. The first criterion for retaining factors that was considered concerns the percentage of variance accounted for by the factor solution. Tinsley and Tinsley (1987) state that although there is no firm theoretical or empirical basis for this criterion, factors which explain only 30 to 40% of the estimated variance leave too much common variance unexplained. On the other hand, retaining all factors to explain 100% of the estimated common variance might only be plausible in

some cases. Often, the total variance explained by a factor solution is less than 50%.

The second criterion that was considered was that the four extracted factors in this initial solution had eigenvalues greater-than-one. However, the Kaiser's criterion in which factors with eigenvalues greater-than-one are retained, as a general rule, may misjudge the most suitable number of factors (Gorsuch, 1983). Kaiser's criterion may either overestimate (Tabachnik & Fidell, 1996), or underestimate the number of factors in a data set (Cliff, 1988; Tabachnik & Fidell, 1996), with underestimation of the number of factors usually more serious than overextraction of factors (Tinsley & Tinsley, 1987). Tinsley and Tinsley (1987) state that underextraction of the number of factors means that factors are left undiscovered, thereby restricting the discovery of new constructs and inhibiting theory development.

The third criterion, Cattell's Scree test, indicated more than two factors. Again, issues arise in using the scree test to retain factors. First, Tinsley and Tinsley (1987) and Kline (1999) state that this procedure is rather subjective. Two researchers interpreting a scree test may do so differently with regards to the last one or two factors. Second, more than one scree may exist. Gorsuch (1983) contends that with principle components analysis the scree test usually produces cutoffs near eigenvalue = 1.00. The scree plot for this initial factor analysis displays a scree from factors one to three and another smaller scree or slope from factors five to six.

The fourth criterion involved Horn's parallel analysis. This criterion suggests that for a data set with a sample size of 353 and 24 items then four

factors with eigenvalues over 1.5, 1.4, 1.3 and 1.2 would be needed. Although the first two factors extracted would meet this criterion the second two factors would not.

Tabachnik and Fidell (1998) state that there is ongoing debate about whether it is better to retain too many or too few factors if the number of factors is ambiguous. Retaining factors of marginal reliability (e.g., communality values <1) may, at times, be appropriate because they represent the more interesting and unexpected findings in a given research area.

Therefore, due to the somewhat subjective nature of retaining factors when using exploratory factor analysis, and more importantly, because one of the limitations of exploratory factor analysis is that it is known to be robust to any deviations of dimensionality, that is, it underestimates the dimensionality of scales then further analysis is warranted. As a result, it was proposed to conduct a hierarchical factor analysis in which rumination and reflection were treated as second-order constructs. Moreover, the use of oblique rotations in a factor analysis allows for a factor analysis of the actual factors (Gregory, 2000).

Hierarchical factor analysis is a procedure which is highly underused in developing and evaluating measures (Floyd & Widaman, 1995). This is a factor-analytic procedure deemed appropriate for use with a measurement instrument, such as the Revised-Rumination and Reflection Scale because as with many psychological constructs it is composed of multiple, correlated facets. As such, second-order factors can provide support for the hierarchical organisation of traits and provide a link between those who propose single general factors (e.g., Trapnell & Campbell's (1999) rumination) and this current

thesis which proposes that both rumination and reflection have public and private subcomponents.

Prior to conducting a hierarchical factor analysis it was deemed necessary to establish that rumination and reflection still held as factors in their own right when the item content of the scales had been manipulated to cover public and private dimensions. Consequently, a forced two-factor principle components factor analysis was undertaken. This ensured that the integrity of the Trapnell and Campbell (1999) scale had been maintained.

A principal-components analysis was conducted on the entire Revised-Rumination and Reflection Scale and the number of factors was set at two, with a direct oblimin rotation. Factor loadings were suppressed at .30. Subsequently the two extracted factors explained 46% of the variance, showed simple structure, correlated at $r = .21$ and accounted for eigenvalues of 6.7 with 28% and 4.3 with 18% of the variance respectively. However, forcing two factors on this scale leaves two extracted components with eigenvalues greater-than-one unexplained (eigenvalue for component 3 of 1.2 explaining 5% of the variance, eigenvalue for component 4 of 1.02 explaining 4% of the variance) and only 46% of the variance in rumination and reflection being accounted for. The Scree plot could indicate more than two factors (see Figure 4.2).

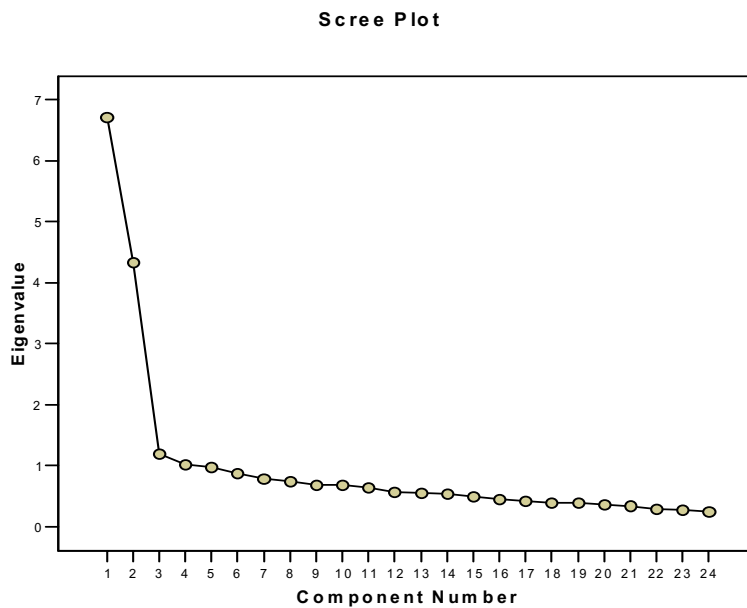


Figure 4.2. Scree plot for rumination and reflection items

As seen in Table 4.4, the 12 items that were anticipated to measure reflection loaded significantly only on the first factor, and the 12 items that were anticipated to measure rumination loaded significantly only on the second factor. No items cross-loaded. Factor loadings ranged from .50 to .81 (rumination subscale) and .48 to .75 (reflection subscale), which was comparable to the two factors of the Trapnell and Campbell (1999) Rumination and Reflection Questionnaire where loadings ranged from .58 to .80 (rumination subscale) and .59 to .81 (reflection subscale). Consequently, in answer to Research Question 1, based on the findings from the original analysis of the Trapnell and Campbell measure, in addition to the current findings, imposing two factors on the 24 items of the Revised-Rumination and Reflection Scale saw the emergence of two strong general factors of rumination and reflection.

Table 4.4

Factor Structures, Means, Standard Deviations and Alpha If Item Deleted of the Revised–Rumination and Reflection Scale Items

Items	Factor Loadings		Sample Statistics		Alpha if Item Deleted
	1	2	<i>M</i>	<i>SD</i>	
Reflection					
23. I often look at how I relate to others, in philosophical ways	.75	-.02	3.31	0.95	.875
15. I love exploring my inner self	.75	-.08	3.54	1.04	.876
16. My attitudes and feelings about other people fascinate me	.73	-.04	3.50	0.97	.878
22. I love to meditate on the nature of people and the meaning of things	.73	-.04	3.69	0.94	.879
17. I don't really care for introspective or self-reflective thinking *	.72	-.00	3.88	0.92	.878
18. I love analysing why I do things	.72	-.08	3.35	0.99	.876
20. I don't care much for self-analysis *	.71	.09	3.73	0.94	.877
13. Philosophical or abstract thinking about how I relate to others doesn't appeal to me that much *	.64	.08	3.43	1.04	.881
24. Contemplating myself isn't my idea of fun *	.62	-.08	3.10	1.04	.885
21. I'm very self-inquisitive by nature	.59	.09	3.67	0.91	.883
14. I don't really meditate about the world around me *	.58	-.09	3.50	0.96	.887
19. People often say I'm a deep, introspective type of person	.48	.14	3.02	1.00	.888
Rumination					
5. I tend to ruminate or dwell over my interactions with others for a really long time afterwards	-.05	.81	3.20	1.07	.870
7. Often I'm playing back over in my mind how I acted towards others in a past situation	-.05	.77	3.43	0.92	.874
2. I always seem to be rehashing in my mind recent things I've said or done to others	-.01	.76	3.41	0.98	.872
4. Long after an argument or disagreement is over with, my thoughts keep going back to what happened	-.15	.75	3.70	0.99	.877
12. I spend a great deal of time thinking back over my disappointing moments	-.11	.71	2.73	1.08	.877
1. My attention is often focused on aspects of myself I wish I'd stop thinking about	.03	.67	3.09	1.05	.876
11. I often keep thinking about times when I have been embarrassed in front of others	-.04	.66	2.91	1.05	.878
3. Sometimes it is hard for me to shut off thoughts about myself	.04	.65	3.26	1.05	.877
8. I often find myself re-evaluating something I've done	-.00	.65	3.64	0.84	.879
9. I never ruminate or dwell on myself for very long*	.19	.53	3.29	1.01	.882
6. I don't waste time going over experiences that are over and done with in my life *	.17	.50	3.48	0.94	.884
10. It is easy for me to put unwanted thoughts about others out of my mind *	.12	.50	3.12	1.06	.885

N=353

Note. Items are numbered in order they appear in the scale and are presented here in order of decreasing factor loadings.

*Means for these items on this and all further tables are means following reverse scoring.

Interpretation of the Two Factors from the Revised-Rumination and Reflection Scale

The item content of the first factor was consistent with Trapnell and Campbell's (1999) *reflection* factor. The two highest loading items on the reflection factor were Items 23 'I often look at how I relate to others, in philosophical ways' (.75) and 15 'I love exploring my inner self' (.75). As interpretation of factors is preferably made through the content of the highest loading items (Kline, 1994), the two items appear to measure a positive type of thought process, which is philosophical, meditative and pleasurable. Overall, the 12 items describe a reflective thought process encompassing an exploration of the self, others, and of the world in general. This includes thoughts, feelings and behaviour.

The content of the second factor is also consistent with the item content of Trapnell and Campbell's (1999) *rumination* factor. The two highest loading items were Items 5 'I tend to ruminate or dwell over my interactions with others for a really long time afterwards' (.81) and 7 'Often I'm playing back over in my mind how I acted towards others in a past situation' (.77). The two items suggest the chronic nature of ruminative thought, in that rumination tends to be a long-term, persistent thought process involving the person's interactions with others. Consistent with the definition of rumination, the content of this factor seems to be measuring a self-focus in which the person spends a lot of time engaged in a negative evaluation of themselves and of their interactions with others.

In summary, these findings answer the first research question, the Revised-Rumination and Reflection Scale maintained its integrity as a measure of ruminative and reflective self-focus. To explore the second research question, hierarchical exploratory factor analyses were conducted separately on the revised rumination scale and the revised reflection scale. These analyses were intended to answer the question of whether there were different aspects to a ruminative and a reflective self-focus which indicated that self-focus encompassed public and private dimensions.

Results for Research Question 2a: Analysis of the Rumination Scale

Principle components analysis was conducted separately on the rumination scale (12 items) of the Revised-Rumination and Reflection Scale. This analysis allowed for a more specific measure of self-attentive thought processes than that identified by the broader parent factor of rumination.

Bartlett's Test of Sphericity (1548.71(66), $p < .001$) was satisfactory and the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (.92) demonstrated adequate multivariate normality of the set of distributions. Consistent with theoretical expectations a forced two-factor principal-components analysis was conducted first, with a direct oblimin rotation on rumination items 1 to 12. The two extracted factors explained 55% of the variance (eigenvalues of 5.4 with 45% of the variance and 1.12 with 9% of the variance, respectively). Cattell's Scree plot showed 1 to 2 factors (see Figure 4.3). The factor loadings and

summary item statistics for the two factors (1=public & 2=private) of the rumination scale are presented in Table 4.5.

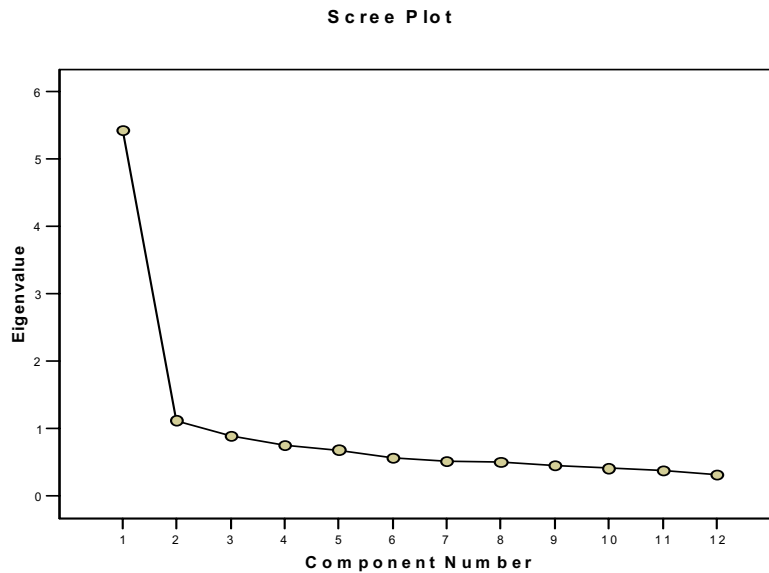


Figure 4.3. Scree plot of the rumination items

With loadings suppressed at .30 no items cross-loaded, however, the factor structure was different from that anticipated with some items loading on alternative factors to the hypothesised private and public dimensions (see Table 4.5 for factor loadings). On inspection of the content of these items, it was decided that the migration of Item 10, which was intended to capture the notion of controlling the flow of negative thoughts about others, from public to private rumination was acceptable. The focus of the item appeared to be more on the ease (or difficulty) of controlling unwanted thoughts rather than the actual content of the thoughts (see Table 4.6 for migratory items). Items 8 and 12, which were both concerned with the repetitive nature of ruminative thoughts

Table 4.5

Factor Structures, Means, Standard Deviations and Alpha If Item Deleted of the Rumination Scale

	Factor Loadings		<i>M</i>	<i>SD</i>	Alpha if item deleted
	1	2			
Public Rumination					
4. Long after an argument or disagreement is over with, my thoughts keep going back to what happened	.87	-.17	3.70	0.99	.846
5. I tend to ruminate or dwell over my interactions with others for a really long time afterwards	.79	.05	3.21	1.07	.835
11. I often keep thinking about times when I have been embarrassed in front of others	.72	-.02	2.92	1.06	.854
2. I always seem to be rehashing in my mind recent things I've said or done to others	.71	.12	3.40	0.99	.843
12. I spend a great deal of time thinking back over my disappointing moments *	.70	.03	2.73	1.09	.851
7. Often I'm playing back over in my mind how I acted towards others in a past situation	.68	.13	3.42	0.93	.846
8. I often find myself re-evaluating something I've done *	.65	.04	3.65	0.83	.858
Private Rumination					
9. I never ruminate or dwell on myself for very long	-.11	.87	3.29	1.00	.681
10. It is easy for me to put unwanted thoughts about others out of my mind *	-.00	.68	3.14	1.06	.721
6. I don't waste time going over experiences that are over and done with in my life	.02	.65	3.50	0.94	.718
3. Sometimes it is hard to shut off thoughts about myself	.26	.54	3.26	1.06	.684
1. My attention is often focused on aspects of myself I wish I'd stop thinking about	.29	.52	3.10	1.06	.689

N=353

Note. Items are numbered in order they appear in the scale and are presented here in order of decreasing factor loadings.

*Migratory items from hypothesised factors to concluding factors

about the self, were deemed acceptable migrations from private to public rumination, as the items appeared to be measuring situations or events that have included others or the effect that the individual's behaviour has had on others (see Table 4.6 for migratory items).

Table 4.6

Migratory Items Between Private and Public Rumination Factors

Item No.	Item	Hypothesised Factor	Final Decision
10	It is easy to put unwanted thoughts about others out of my mind	public	private
8	I often find myself re-evaluating something I've done	private	public
12	I spend a great deal of time thinking back over my disappointing moments	private	public

Preliminary Interpretation of the Rumination Factors

As the item content for the factors was different from that initially proposed, the interpretation of each factor was primarily based on the item content of the two highest loading items (Kline, 1994). The first factor in rumination (Items 2, 4, 5, 7, 8, 11 & 12) was labelled *public rumination*. The two highest loading items on this factor were Items 4 'Long after an argument or disagreement is over with, my thoughts keep going back to what happened' (.87) and Item 5 'I tend to ruminate or dwell over my interactions with others for a really long time afterwards' (.79). The two items defining this factor reflect rumination on a person's behaviour with others, on their interactions with others, or on embarrassing and disappointing situations. Together, the seven

items describe a person who tends to mainly ruminate on their interactions with other people, and on situations that are happening around them (Factor 1, Table 4.5).

The second factor in rumination (Items 1, 3, 6, 9, & 10) was labelled ***private rumination***. The highest loading items were Item 9 ‘I never ruminate or dwell on myself for very long’ (.87) and Item 10 ‘It is easy for me to put unwanted thoughts about others out of my mind’ (.68). The two primary items defining this factor reflect a type of rumination that is based mainly on one's own thoughts and inner experiences. The content of this factor describes a person who ruminates on private, unshared thoughts and feelings (Factor 2, Table 4.5).

In summary, it appears when conducting a separate analysis of the factor structure of the rumination scale from the Revised-Rumination and Reflection Scale a more specific measure of self-attentive thought processes than that identified by the broader parent factor of rumination was suggested. It was found, in answer to Research Question 2a, that rumination may have distinct public and private aspects which can be measured independently.

Results for Research Question 2b: Analysis of the Reflection Scale

Principle components analysis was conducted separately on the reflection scale (12 items) of the Revised-Rumination and Reflection Scale. It was found, in answer to the second part of Research Question 2, that the public

and private aspects of reflection are not as strong as the public and private aspects of rumination.

A forced two-factor principal-components analysis, with a direct oblimin rotation, was conducted on reflection items 13 to 24 as once more two factors were expected. Subsequently, the two extracted factors explained 54% of the variance (eigenvalues of 5.5 with 46% of the variance and .97 with 8% of the variance, respectively). The eigenvalue for the second factor was below the Kaiser criterion of 1. With loadings suppressed at .30 two items cross-loaded (20 & 13). The Scree plot showed one or two factors (see Figure 4.4).

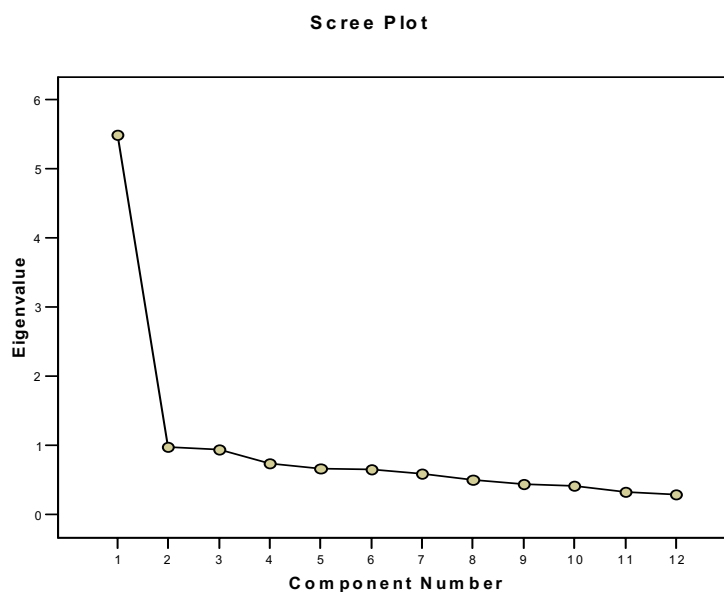


Figure 4.4. Scree plot for reflection items

Moreover, on inspection of the item content of the two factors it was found that Item 21, which had been intended to capture the concept of an internally directed self-focus, had migrated from private to public reflection. Yet, it was clear that in this case Item 21 did not represent the construct of

public reflection and so was dropped from the analysis (see Table 4.7 for migratory items).

Table 4.7

Migratory Items Between Private and Public Reflection Factors

Item No.	Item	Hypothesised Factor	Final Decision
21	I'm very self-inquisitive by nature	private	dropped
16	My attitudes or feelings about other people fascinate me	public	private

Re-factoring of the remaining eleven items found two potential factors with no items cross-loading, explaining 55% of the variance (46%, eigenvalue 5.13 & 9%, eigenvalue .95, respectively). The eigenvalue for the second factor was again below Kaiser's criterion of 1. Bartlett's Test of Sphericity (1447.04 (55), $p = .000$) was satisfactory and Kaiser-Meyer-Olkin Measure of Sampling Adequacy (.90) demonstrated adequate multivariate normality of the set of distributions. The factor structure was again different from anticipated with one item now loading on an alternative factor (see Table 4.8). Item 16, which was concerned with the respondent's thoughts about other people, had migrated from public to private reflection. In this case the item in question was deemed to fit the construct of private reflection as it also focused on the individual's attitudes and feelings (see Table 4.7 for migratory items). The Scree plot showed one to two factors (see Figure 4.5).

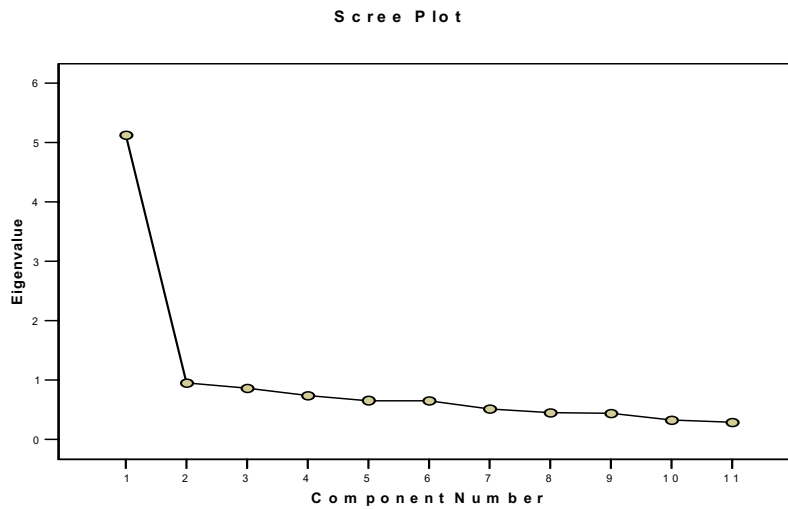


Figure 4.5. Scree plot for reflection items

Preliminary Interpretation of the Reflection Factors

The first factor in reflection (Items 15, 16, 17, 18, 20 & 24) was labelled private reflection. The two highest loading items on this factor were Item 16 ‘My attitudes or feelings about other people fascinate me’ (.84) and Item 24 ‘Contemplating myself isn’t my idea of fun’ (.80). The two primary items defining this factor are concerned with the person’s internal world, for example, the thrust of Item 16 is not on the respondents’ evaluation of others but is more of an evaluation of their own attitudes and feelings towards others. Together, the six items seem to measure a person's willingness to explore their inner self (Factor 3, Table 4.8).

Table 4.8

Factor Structures, Means, Standard Deviations and Alpha If Item Deleted of the Reflection Scale

	Factor Loadings		<i>M</i>	<i>SD</i>	Alpha if item deleted
Private Reflection					
16. My attitudes or feelings about other people fascinate me *	.84	.05	3.50	.97	.809
24. Contemplating myself isn't my idea of fun	.80	-.14	3.11	1.05	.834
18. I love analysing why I do things	.75	.07	3.38	.98	.811
15. I love exploring my inner self	.60	.23	3.55	1.05	.815
20. I don't care much for self-analysis	.57	.25	3.73	.94	.818
17. I don't really care for introspective or self-reflective thinking	.55	.25	3.88	.93	.821
Public Reflection					
14. I don't really meditate about the world around me	-.17	.83	3.50	.97	.739
22. I love to meditate on the nature of people and the meaning of things	.09	.73	3.70	.94	.701
23. I often look at how I relate to others, in philosophical ways	.25	.62	3.32	.97	.679
13. Philosophical or abstract thinking about how I relate to others doesn't appeal to me that much	.17	.60	3.45	1.04	.717
19. People say I'm a deep, introspective type of person	.06	.54	3.02	1.01	.772

N=353

Note: Items are numbered in order they appear in the scale and are presented here in order of decreasing factor loadings

* Migratory item from hypothesised to concluding factor; Item 21 dropped from the analysis

The second factor in reflection (Items 13, 14, 19, 22 & 23) was labelled public reflection. The items that loaded highest on this factor were Item 14 ‘I don’t really meditate about the world around me’ (.83) and Item 22 ‘I love to meditate on the nature of people and the meaning of things’ (.73). The two items measure reflection on a person’s world, on the meaning of things and on their experiences with others. The factor content describes a person who displays a healthy interest in the world and in the people around them, or as Trudeau and Reich (1995) suggested, they are socially curious (Factor 4, Table 4.8).

At this stage of the investigation there is not strong evidence that the reflection scale encompasses independent measures of public and private reflection. Overall, these findings provide only preliminary answers to the second research question, concerning the development of a rumination and reflection scale and whether it encompasses factors measuring interpersonal and intrapersonal dimensions. The next section considers the stability of the factor structure of the revised scale.

Results for Testing the Stability of the Factor Structure of the R-RRS

As a test of the stability of the factor structure of the Revised-Rumination and Reflection Scale and because debate exists about the appropriate way to conduct this type of data analysis (Hayes, 1997; Tabachnik & Fidell, 1996), different possible combinations of orthogonal and oblique

rotation, principal-components analysis versus principle-axis factor analysis were conducted.

When the 24 items of the Revised-Rumination and Reflection Scale were allowed to freely rotate a four-factor solution appeared. The four factors were more clearly identified than those previously found through principle-components analysis but were consistent with the first-order factors found through hierarchical factor analysis (see Table 4.9). The four factors explained 55% of the variance (28%, eigenvalue 6.72, 18%, eigenvalue 4.3, 5%, eigenvalue 1.2, and 4%, eigenvalue 1.02, respectively). The Scree plot displayed the same pattern as previously (SPSS default for a scree plot is to display principle components) (see Figure 4.6).

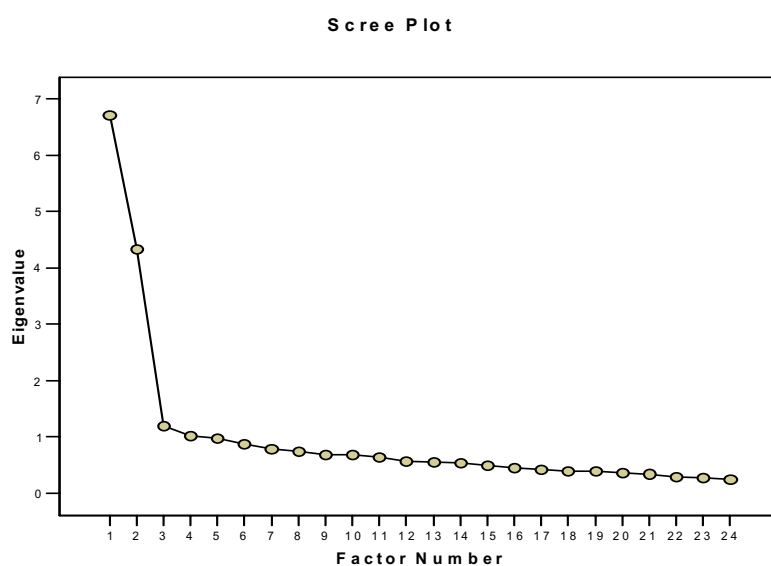


Figure 4.6. Scree plot for rumination and reflection items

Table 4.9

Factor Patterns and Structure Coefficients of the Revised-Rumination and Reflection Scale – Four Factor Solution

Items	Factor 1		Factor 2		Factor 3		Factor 4	
	Pattern	Structure	Pattern	Structure	Pattern	Structure	Pattern	Structure
22. I love to meditate	.80	.77	-.02	.05	-.02	.20	-.02	.51
23. I often look at how I relate to	.75	.78	.03	.08	-.07	.19	.07	.56
21. I'm very self-inquisitive by nature	.49	.58	.07	.16	.06	.27	.11	.45
13. Philosophical or abstract thinking	.40	.59	-.06	.11	.23	.37	.18	.51
14. I don't really meditate	.40	.50	-.22	-.06	.22	.26	.09	.40
19. People often say I'm	.37	.46	.15	.19	-.01	.21	.12	.38
4. Long after an argument	.10	.07	.81	.76	-.12	.28	-.13	-.04
5. I tend to ruminate	-.03	.10	.76	.80	.07	.45	.05	.09
2. I always seem	.04	.15	.68	.73	.09	.44	.02	.11
7. Often I'm playing back	.02	.11	.67	.73	.11	.44	-.01	.06
12. I spend a great deal of time	-.12	.02	.59	.65	.13	.40	.06	.05
11. I often keep thinking about	-.13	.05	.59	.62	.06	.36	.15	.11
8. I often find myself re-evaluating	.10	.15	.59	.62	.03	.34	-.03	.08
9. I never ruminate or dwell	.01	.23	.07	.40	.67	.71	.02	.20
3. Sometimes it is hard for me	.04	.17	.34	.55	.42	.59	-.06	.10
1. My attention is often focused	.11	.18	.36	.57	.41	.59	-.14	.07
6. I don't waste time going over	.03	.22	.22	.42	.39	.53	.08	.21
10. It is easy for me	.02	.18	.21	.40	.39	.50	.03	.15
16. My attitudes and feelings	.03	.53	.06	.07	-.06	.17	.77	.78
24. Contemplating myself	-.04	.40	-.05	-.00	.02	.15	.65	.63
18. I love analysing why I do things	.26	.61	.20	.20	-.12	.20	.55	.71
15. I love exploring my inner self	.32	.62	.03	.04	-.11	.13	.49	.68
17. I don't really care	.19	.57	-.14	.04	.26	.37	.47	.65
20. I don't care much for self-analysis	.20	.58	-.03	.13	.24	.41	.46	.66

N=353

The results of a principal-axis factor analysis found that when two factors were imposed, based on previous research (e.g., Trapnell & Campbell, 1999), an identical two factor solution to that which had been found with principle-components analysis appeared. Bartlett's Test of Sphericity (3177.15(276), $p < .001$) was satisfactory and the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (.90) demonstrated adequate multivariate normality of the set of distributions. Cattell's Scree plot showed more than two factors (see Figure 4.7). However, the two factors only explained 46% of the variance (28%, eigenvalue 6.71, and 18%, eigenvalue 4.3, respectively). Two factors with eigenvalues greater-than-one were unexplained.

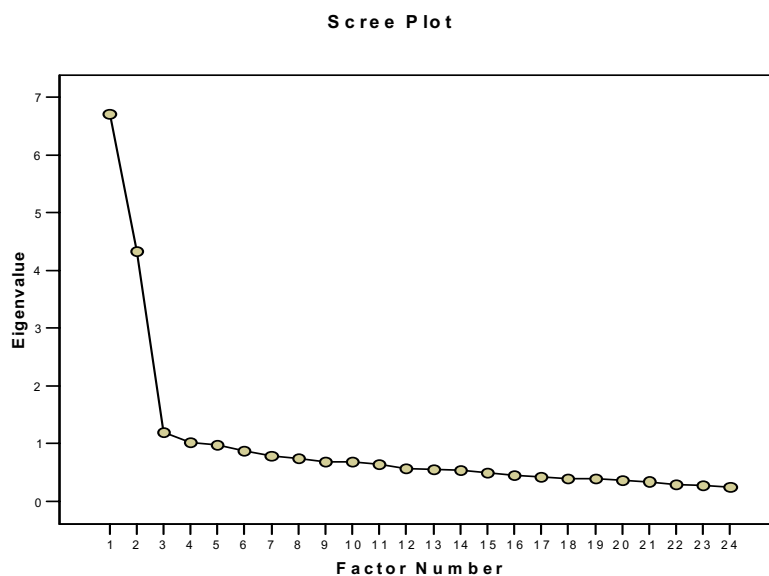


Figure 4.7. Scree plot for rumination and reflection items

When the 12 items from the rumination scale were analysed using principle-axis factoring, two factors of public and private rumination appeared. Bartlett's Test of Sphericity (1548.72 (65), $p = .000$) was satisfactory and

Kaiser-Meyer-Olkin Measure of Sampling Adequacy (.92) demonstrated adequate multivariate normality of the set of distributions. The two extracted factors explained 55% of the variance with the first factor explaining 45% and having an eigenvalue of 5.4 and the second factor explaining 9% of the variance and having an eigenvalue of 1.12. The Scree plot displayed 1 to 2 factors (see Figure 4.8).

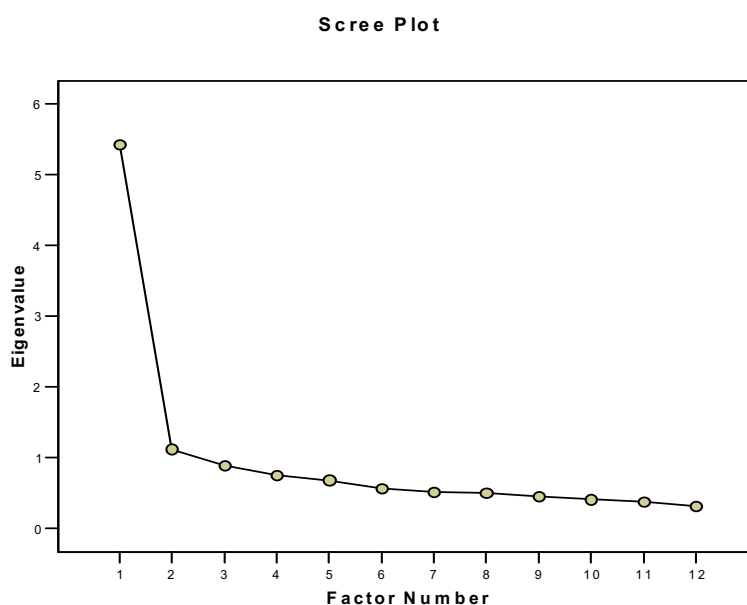


Figure 4.8. Scree plot for rumination items

When the 12 items from the reflection scale were factor-analysed using principle-axis factoring, two factors were extracted explaining 54% of the variance. The first factor explained 46% of the variance with an eigenvalue of 5.5, the second factor explained 8% of the variance with an eigenvalue of .97. Bartlett's Test of Sphericity (1558.33 (66), $p = .000$) was satisfactory and Kaiser-Meyer-Olkin Measure of Sampling Adequacy (.90) demonstrated

adequate multivariate normality of the set of distributions. The Scree plot displayed 1 to 2 factors (see Figure 4.9).

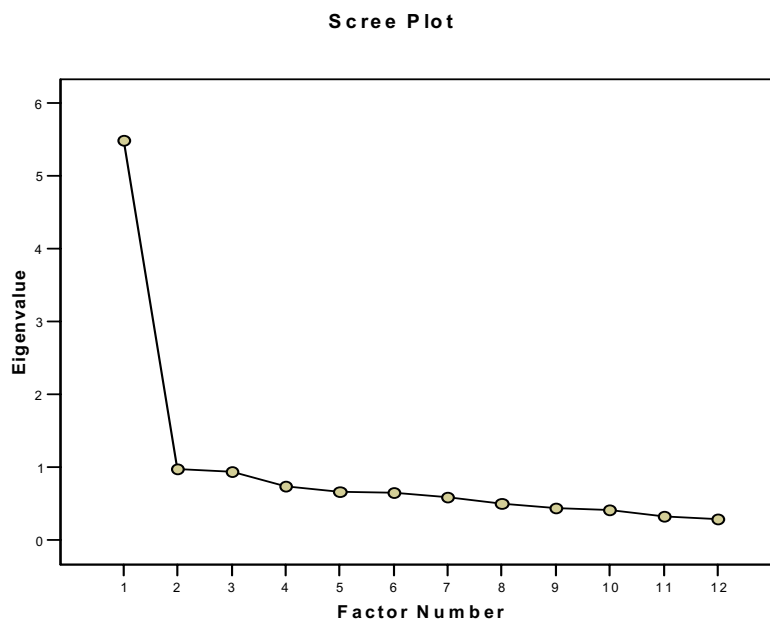


Figure 4.9. Scree plot for reflection items

Of note is that regardless of extraction technique the Revised-Rumination and Reflection Scale maintained its two factors of rumination and reflection. Using a principle axis factor analysis four factors were identified with eigenvalues greater-than-one. However, yet to be determined is whether the data set can be interpretable as a four-factor solution of public and private, rumination and reflection or a three-factor solution of public rumination, private rumination and reflection. The results of the principle-axis factoring have also been appended (see Appendix A.6).

Results for the Examination of the Internal Consistency of Rumination, Reflection, Private and Public Self-Consciousness and Social Anxiety Scales

Descriptive statistics, alpha coefficients, and intercorrelations of the Revised-Rumination and Reflection Scale and the Self-Consciousness Scale-Revised Version (Scheier & Carver, 1985) are presented in Table 4.10. Internal consistency for each primary factor, that is, rumination, reflection, private self-consciousness, public self-consciousness and social anxiety was based on the total sample ($N=353$). Cronbach's Coefficient Alpha was high (.89) for both the rumination and reflection scales (12 items each). This demonstrated adequate reliability and compared favourably with Trapnell and Campbell's (1999) original scale reliabilities of .90 and .91 for rumination and reflection respectively. A mean inter-item correlation for the rumination and reflection scales in the current study of .40 was comparable with the original Trapnell and Campbell scales (.40 for both scales) and within the recommended range for internal consistency (Clark & Watson, 1995). Inter-item correlations ranged from .24 - .62 for rumination and .17 - .56 for reflection indicating that the scales were not strongly unidimensional (Clarke & Watson, 1995). For the Self-Consciousness Scale-Revised Version (Scheier & Carver, 1985) Cronbach's Coefficient Alpha was good (.80) private self-consciousness, (.86) public self-consciousness, and (.78) for social anxiety.

Table 4.10

Reliabilities, Intercorrelations and Descriptive Statistics of the Revised-Rumination and Reflection Scale and the Self-Consciousness Scale-Revised Version (Scheier & Carver, 1985)

	Rum	Ref	PrSc	PbSc	Sa
Rum	(.89)				
Ref	.22**	(.89)			
PrSc	.43**	.63**	(.80)		
PbSc	.45**	.16**	.46**	(.86)	
Sa	.39**	.03	.20**	.33**	(.78)
<i>M</i>	39.17	41.47	15.88	12.39	8.97
<i>SD</i>	8.02	7.98	4.87	4.51	4.10

N=353

Note. Cronbach's Alpha reliability coefficients are represented on the diagonals in brackets; Rum = Rumination (R-RRS); Ref = Reflection (R-RRS); PrSc = Private Self-Consciousness (SCS-R); PbSc = Public Self-Consciousness (SCS-R); Sa = Social Anxiety (SCS-R)

** Correlation is significant at the 0.01 level (2-tailed)

These results indicate that the structure of the revised version of the scale had maintained the integrity of the Rumination and Reflection Questionnaire, which Trapnell and Campbell devised in 1999 (Research Question 1). The Alpha Coefficients for the rumination and reflection subscales of private and public, rumination and reflection ranged from .74 to .87, thus demonstrating adequate scale reliability (see Table 4.11).

Table 4.11

Reliabilities, Intercorrelations and Descriptive Statistics of Public and Private, Rumination and Reflection and the Self-Consciousness Scale-Revised Version (Scheier & Carver, 1985)

	PbRum	PvRum	PbRef	PvRef	PrSc	PbSc	Sa
PbRum	(.87)						
PvRum	.63**	(.74)					
PbRef	.13*	.23**	(.77)				
PvRef	.15**	.24**	.69**	(.84)			
PrSc	.34**	.46**	.58**	.56**	(.80)		
PbSc	.41**	.40**	.15**	.14*	.46**	(.86)	
Sa	.42**	.27**	.02	.05	.20**	.33**	(.78)
<i>M</i>	22.97	16.20	20.99	16.86	15.88	12.39	8.97
<i>SD</i>	5.23	3.62	4.49	3.58	4.87	4.51	4.10

N=353

Note. Cronbach's alpha reliability coefficients are represented on the diagonals in brackets; PbRum = Public Rumination; PvRum = Private Rumination; PbRef = Public Reflection; PvRef = Private Reflection; PrSc = Private Self-Consciousness; PbSc = Public Self-Consciousness; Sa = Social Anxiety.

** Correlation is significant at the 0.01 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed)

Results for Bivariate Correlations Among Rumination, Reflection, Private Self-Consciousness, Public Self-Consciousness and Social Anxiety

A series of bivariate correlations between the Revised-Rumination and Reflection Scale and the Self-Consciousness Scale-Revised Version (Scheier & Carver, 1985) were run to test Hypotheses 1 and 2, that rumination and reflection would correlate differently with the private self-consciousness, public

self-consciousness and social anxiety. The results of these analyses can be seen in Table 4.10.

The first of the bivariate correlations were run to test hypothesised relationships among the two primary factors of rumination and reflection with the primary factors of the self-consciousness, private, public and social anxiety. Correlation coefficients are displayed in Table 4.10.

Hypothesis 1: As shown in Table 4.10, the pattern of correlations was different for the two factors of rumination and reflection with private self-consciousness, public-self-consciousness and social anxiety, providing support for Hypothesis 1.

Hypothesis 1a: As anticipated, the correlation between rumination and reflection was positive and although significant, it was modest ($r = .22$) in keeping with that of Trapnell and Campbell (1999) ($r = .22$).

Hypothesis 1b: Reflection and rumination respectively showed positive, strong correlations with private self-consciousness (both p 's < .01), providing support for this hypothesis.

Hypothesis 1c: Hotelling's tests for differences between correlations (Guildford & Fruchter, 1998) showed that reflection correlated significantly higher with private self-consciousness than did rumination ($z = 4.18$, $p < .001$, one-tail), supporting Hypothesis 1c.

Hypothesis 1d: This hypothesis received only partial support. Although rumination showed a strong positive correlation with public self-consciousness, contrary to the prediction, reflection also displayed a low positive correlation with public self-consciousness (both p 's < .01). However, Hotelling's tests for

differences between correlations (Guildford & Fruchter, 1998) found that rumination correlated significantly higher with public self-consciousness than did reflection ($z=4.88$, $p<.001$, one-tail). In addition, the magnitude of correlation indicates that, although statistically significant, the relationship between public self-consciousness and reflection was very weak.

In addition to the predicted correlations, different patterns of relationship were evident for rumination and reflection, and the aspects of self-consciousness. Rumination correlated strongly and equally with public and private self-consciousness (both p 's $<.01$) whereas reflection correlated strongly only with private self-consciousness and had a significant, albeit very weak, correlation with public self-consciousness (both p 's $<.01$).

These findings suggest that for people who ruminate the focus of their negative thoughts can be on their inner world of thoughts and ideas or alternatively on their outer world of which they are a part. On the other hand, people who reflect tend to focus on their inner world rather than the public self. Consistent with its negative self-focus rumination had a substantial association with social anxiety, whereas the correlation between reflection and social anxiety was negligible.

Overall, the results support the independence of rumination and reflection as separate types of self-focused thought processes in the way that they relate differentially to private self-consciousness, public self-consciousness and social anxiety, in addition to the differences found in the breadth and direction of these self-focused thoughts.

A further series of bivariate correlations were run to test Hypothesis 2, that public and private, rumination and reflection would correlate differently with private and public self-consciousness. The results of the analyses are presented in Table 4.11.

Hypothesis 2: Contrary to expectations, Table 4.11 shows that there were few differences in the patterns of correlations among the four subfactors of reflection and rumination with public and private self-consciousness.

Hypothesis 2a: The correlation of .63 between private rumination (PvRum) and public rumination (PbRum) was in the expected direction but somewhat stronger than expected as was the correlation between private reflection (PvRef) and public reflection (PbRef).

Hypothesis 2b: As predicted, private reflection, public reflection, private rumination and public rumination were found to be correlated with private self-consciousness (all p 's < .01).

Hypothesis 2c: As expected, public self-consciousness was correlated with private and public rumination (both p 's < .01), although the correlations were stronger than expected. However, contrary to expectations public self-consciousness also displayed modest correlations with private and public reflection (p < .01, p < .05 respectively).

In sum, the pattern of correlations for the four factors of the Revised-Rumination and Reflection Scale with the self-consciousness subscales replicated the pattern displayed previously for the overall dimensions of rumination and reflection. Rumination (public & private) is substantially associated with both public and private self-consciousness. Thus, rumination

appears to be very involved in all aspects of self-consciousness, that is, private self-consciousness, public self-consciousness and social anxiety. The association that rumination has with social anxiety can be seen in the strength of its correlation with public rumination rather than private rumination. Hotelling's tests for differences between correlations (Guildford & Fruchter, 1998) showed that public rumination correlated significantly higher with social anxiety than did private rumination ($z = 3.59, p < .05$, one-tail).

On the other hand, reflection (public & private) is associated with private self-consciousness substantially more than it is with public self-consciousness. Those who tend to reflect focus their attention on private aspects of the self and there is no relationship between reflection and social anxiety.

Results for Individual Differences in Rumination and Reflection Scores

The next part of the data analysis in Stage 3 involved a series of 3-way Multiple Analyses of Variance (MANOVAs) to examine the differences for order of presentation, men and women, and psychology students and non-psychology participants for levels of rumination, reflection, private self-consciousness, public self-consciousness, and social anxiety. Analyses of simple main effects for significant results are also reported. Effect sizes are included in the reporting of results and interpreted following Cohen's (1988) recommendation for behavioural research. Small effects were considered those over .10, medium over .25, and large over .40.

A 3-way between subjects MANOVA was performed using SPSS MANOVA (SPSS, 2003) on the five dependent variables of rumination,

reflection, private self-consciousness, public self-consciousness and social anxiety. There were two levels of each of the three independent variables of Order of Presentation (R-RRS first or SCS-R first); Gender (male or female); and Status (psychology student or non-psychology participant). Although there were unequal cell sizes, having a sample size of at least 20 respondents in each cell ensured robustness (Tabachnick & Fidell, 1996). Box's M test for homogeneity of variance/covariance matrices of the dependent variables of rumination, reflection, private self-consciousness, public self-consciousness, and social anxiety was non-significant ($p > .05$).

There were no 2-way or 3-way interactions for order of presentation, gender, or status (see Appendix A.7 for MANOVA results). However, there were significant main effects for two of the independent variables. There were small but significant multivariate effects for gender, Wilks' Lambda = .961, $F(5,339) = 2.75, p < .05, \eta^2 = .04$, and status, Wilks' Lambda = .902, $F(5,339) = 7.39, p < .01, \eta^2 = .10$, but not for order of presentation, Wilks' Lambda = .972, $F(5,339) = 1.95, p = .09, \eta^2 = .03$. The means and standard deviations for each dependent variable are presented in Table 4.12.

Table 4.12

Means and Standard Deviations for Order, Gender, and Status for Rumination and Reflection, Private Self-Consciousness, Public Self-Consciousness and Social Anxiety

	Rumination		Reflection		Private SC		Public SC		S. A.	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Order										
R-RRS first (<i>n</i> =169)	40.07	7.74	41.30	7.49	15.46	4.95	12.39	4.56	9.27	4.15
SCS-R first (<i>n</i> =182)	38.35	8.21	41.63	8.42	16.27	4.78	12.40	4.47	8.69	4.04
Gender										
Men (<i>n</i> =109)	37.57	8.14	39.71	9.15	15.06	4.92	10.98 ^a	4.03	8.45	4.24
Women (<i>n</i> =242)	39.91	7.90	42.22	7.29	16.26	4.83	13.06 ^a	4.56	9.20	4.03
Student Status										
Psychology (<i>n</i> =248)	40.24 ^a	7.75	43.02 ^b	7.35	16.67 ^c	4.56	12.94	4.40	9.05	3.90
Non- psychology (<i>n</i> =103)	36.58 ^a	8.12	37.71 ^b	8.23	13.97 ^c	5.09	11.07	4.51	8.76	4.55

N=353

Note. Private SC = Private Self-Conscious (SCS-R); Public SC=Public Self-Consciousness (SCS-R); S.A. = Social Anxiety (SCS-R); a,b,c=same superscripts represent significant differences

Hypothesis 3: Contrary to what had been expected in Hypothesis 3, no order effects were evident in the data for scale presentation (all p 's > .05). Thus, scores were not related to the order in which the scales were presented.

Hypothesis 4: Analyses of simple main effects (univariate F tests) revealed the specific differences between men and women. Women had been expected to have higher rumination and private self-consciousness scores than men. As shown in Table 4.12, women's scores were higher on all dependent variables in comparison to the men's. However, after Bonferroni correction for multiple dependent variables, the only significant difference was on public self-consciousness scores, $F(1,343) = 8.81, p < .01, \eta^2 = .03$. Women had

significantly higher public self-consciousness scores than men. All other differences between men and women were non significant (p 's>.05). Thus, the prediction of significantly higher rumination and private self-consciousness scores for women than for men was not supported.

Hypothesis 5: On examination of simple main effects (univariate F tests) and after Bonferroni correction for multiple dependent variables, psychology students were found to have significantly higher scores than non-psychology participants on reflection, $F(1,343) = 29.81, p < .01, \eta^2 = .08$; and private self-consciousness, $F(1,343) = 19.63, p < .01, \eta^2 = .05$. These findings are in support of Hypothesis 5. However, psychology students also had significantly higher scores on rumination, $F(1,343) = 10.76, p < .001, \eta^2 = .03$.

In summary of the individual relationships that the independent variables of gender, student status and order of scale presentation had with rumination and reflection, it was found that women had significantly higher public self-consciousness scores than men and psychology students were found to have significantly higher scores than non-psychology participants on rumination, reflection and private self-consciousness. The small effect size indicates that these differences were not very pronounced. All other differences were non-significant.

Results for Individual Differences in Public and Private, Rumination and Reflection Scores

The next stage of the data analysis in Stage 1 involved an examination of differences for order of scale presentation, between men and women, and

between psychology and non-psychology students for the subfactors of public and private, rumination and reflection.

Preliminary Analyses

Multivariate and univariate normality were assessed for the four factors of public and private rumination and public and private reflection. Normal distribution was again ascertained through inspections of the data set for out-of-range values in each dependent variable. There were no out-of-range values for the continuous variables of public rumination, private rumination, public reflection, and private reflection or for the discrete variables of gender, status, and order of presentation.

Missing values analyses showed that there were no variables with more than 5% of missing values for the four dependent variables. Each of the four variables was inspected for skewness and kurtosis. *Z* scores obtained for skewness and kurtosis were all within the cut-off point of 3.29 ($p = .001$), two-tailed for a normal distribution. There were no multivariate or univariate outliers. *Z* scores for univariate outliers were above the $p = .001$ criterion. Mahalanobis Distance was found to be within the critical distance for 4 dependent variables. (See descriptive statistics in Table of Means – Appendix A.5.)

A 3-way between subjects MANOVA was performed using SPSS MANOVA (SPSS, 2003) on the four dependent variables. There were two levels of each of the three independent variables of Order of Presentation (RRS first or SCS-R first), Gender (male or female), and Status (psychology student or non-psychology student). Unequal cell size was compensated for by

having a sample size of at least 20 respondents in each cell (Tabachnik & Fidell, 1996). Box's M test for homogeneity of the covariance matrix was non-significant ($p=.05$).

There were no 2-way or 3-way interactions for gender, status, or order (see Appendix A.7 for results). However, there was a significant main effect for one of the independent variables. There was a small but significant multivariate effect for status, Wilks' Lambda = .88, $F(4,340)=10.71$, $p<.01$, $\eta^2 = .11$, but not for gender, Wilks' Lambda = .98, $F(4,340)= 1.39$, $p= .24$, $\eta^2 = .02$, or order of presentation, Wilks Lambda' = .988, $F(4,340)= 1.06$, $p = .38$, $\eta^2 = .01$. The means and standard deviations for each dependent variable are presented in Table 4.13.

Hypothesis 3: Contrary to what had been initially expected in Hypothesis 3, there was no order effect for scale presentation for the four dependent variables. Thus, the scores for public and private, rumination and reflection were not related to order of scale presentation.

Hypothesis 4: Contrary to what had been initially expected in Hypothesis 4, women did not have higher public or private, rumination or reflection scores than men.

Table 4.13

Means and Standard Deviations for Order, Gender and Status for the Four-Factor Revised-Rumination and Reflection Scale

	PbRum		PvRum		PbRef		PvRef	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Order								
R-RRS first (<i>n</i> =169)	23.67	4.95	16.40	3.57	16.78	3.36	20.95	4.38
SCS-R first (<i>n</i> =182)	22.33	5.40	16.02	3.67	16.93	3.78	21.02	4.60
Gender								
Men (<i>n</i> =109)	22.31	5.59	15.26	3.71	16.41	4.06	19.85	5.19
Women (<i>n</i> =242)	23.27	5.06	16.64	5.50	17.04	3.34	21.47	4.06
Student Status								
Psychology (<i>n</i> =248)	23.52 ^a	4.92	16.72 ^b	3.52	17.31 ^c	3.33	15.78 ^d	3.93
Non-psychology (<i>n</i> =103)	21.64 ^a	5.72	14.94 ^b	3.57	15.78 ^c	3.93	18.61 ^d	4.61

N=353

Note. PbRum = Public Rumination; PvRum = Private Rumination; PbRef = Public Reflection; PvRef = Private Reflection; a,b,c= same superscripts represent significant differences

Hypothesis 5: Specific differences between psychology students and non-psychology participants show in the analysis of the simple main effect (univariate *F* tests). After Bonferroni correction for multiple independent variables, it was found that psychology students had significantly higher scores for public rumination, $F(1,343)= 10.94, p<.01, \eta^2 = .02$; private rumination, $F(1,343)= 7.45, p<.01, \eta^2 = .03$; public reflection, $F(1,343)= 13.14, p<.001, \eta^2 = .04$, and private reflection, $F(1,343)= 36.50, p<.001, \eta^2 = .10$, than did non-psychology participants. Psychology students were expected and found to have higher reflection scores than non- psychology participants (Hypothesis 5).

However, contrary to the prediction in Hypothesis 5, psychology students also had higher rumination scores.

In summary of the analysis of the individual differences for the independent variables of gender, student status and order of scale presentation for public and private, rumination and reflection it was found that psychology students had significantly higher scores for public and private, rumination and reflection than non-psychology students. All other differences were non-significant.

Summary and Discussion of Stage 3

In answer to Research Questions 1 and 2, the Revised-Rumination and Reflection scale maintained the integrity of the original scale, however, it is not clear if the revisions made to the scale permits measurement of individual levels of thought that have a different self-focused direction, that is, whether both reflection and rumination can be construed as having a public or private self-focus. The results of both the exploratory and factor analyses in Stage 3 have not provided strong enough evidence that the concepts of rumination and reflection encompass interpersonal and intrapersonal dimensions. Rumination and reflection may not be psychometrically multi-dimensional scales as hypothesised, however, due to the limitations of exploratory factor analysis, the results in Stage 3 are viewed as only preliminary, in that, *public rumination*, *private rumination*, *public reflection* and *private reflection* may have

intrapersonal and interpersonal dimensions that will be confirmed through further analysis of the scale.

Results for Research Question 3 : Factor Analysis of the Self-Consciousness

Scale –Revised Version

The fourth stage of Study 1 involved an investigation of the factor structure of Scheier and Carver's (1985) Self-Consciousness Scale-Revised Version. Previous research has evidenced conflicting results for the number of factors in this scale. Therefore, this analysis was conducted to test for the other factors of private self-consciousness and public self-consciousness that had been identified in earlier work.

Methods of Data Analysis

A principle-components analysis of the Self-Consciousness Scale-Revised Version (Scheier & Carver, 1985) was conducted in Stage 4 in the same way as for the Revised-Rumination and Reflection Scale in Stage 3. Individual differences between men and women, psychology students and non-psychology participants, in terms of responses to alternative factors of the SCS-R, were also examined using MANOVAs, as was order of scale presentation. Prior to these group comparisons, the scales were analysed in terms of internal consistency of the subscales and multivariate and univariate normality of the distribution of the scores. A series of bivariate correlations were run to test for relationships among the variables.

***Principle-Components Analysis of the Self-Consciousness Scale-Revised
Version***

An unforced principal-components analysis, using a direct oblimin rotation and loadings suppressed at .30, displayed 4 principal components, explaining 54% of the variance, with eigenvalues greater-than-one as a criterion (6.1 with 28%, 2.7 with 13%, 2.0 with 9%, & 1.1 with 5%). Kaiser-Meyer-Olkin Measure of Sampling Adequacy (.86) and a satisfactory Bartlett's Test of Sphericity (2586.06 (231), $p = .000$) demonstrated adequate multivariate normality of the set of distributions. Listwise deletion of cases with missing values was used for the analysis. Cattell's Scree test indicated 4 factors (see Figure 4.10). Although the pattern matrix showed 3 items cross-loading (11,17, & 21) over 2 factors, these loadings were reasonably low (<.34).

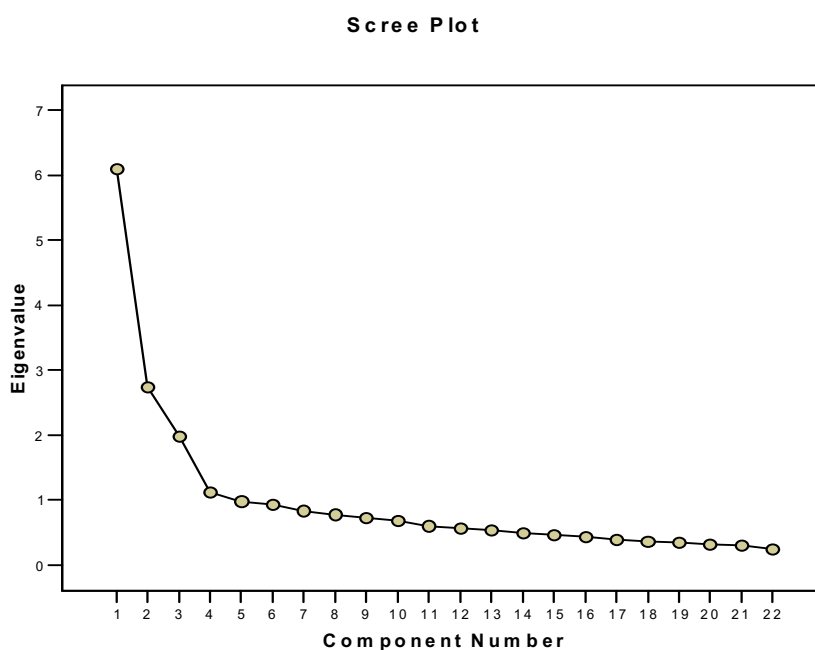


Figure 4.10. Scree plot of self-consciousness items

Table 4.14

Factor Loadings, Means, Standard Deviations, and Alpha if Item Deleted of the Self-Consciousness Scale–Revised Version (Scheier & Carver, 1985)

Items	Factor Loadings				<i>M</i>	<i>SD</i>	Alpha if item deleted
	1	2	3	4			
Private Self-Consciousness - Self-Reflectiveness							
14. I'm constantly thinking about my reasons for doing things	.74	.05	-.11	.02	1.70	.90	.762
6. I often daydream about myself	.71	.03	-.07	.20	1.16	.97	.795
4. I think about myself a lot	.70	-.10	-.06	.08	1.63	.85	.758
1. I'm always trying to figure myself out	.64	-.08	.04	.28	1.84	.98	.757
17. I sometimes step back (in my mind) in order to examine myself from a distance	.52	-.11	-.02	.32	1.35	.96	.777
2. I'm concerned about my style of doing things #	.48	-.10	-.21	.08	1.58	.89	.782
Social Anxiety							
3. It takes me time to get over my shyness in new situations	.10	-.81	.09	-.06	1.61	1.01	.716
22. Large groups make me nervous	-.01	-.80	.03	.13	1.25	1.03	.733
15. I feel nervous when I speak in front of a group	-.17	-.78	-.11	.21	1.89	1.04	.740
9. I get embarrassed very easily	-.07	-.66	-.15	-.15	1.39	.92	.742
11. It's easy for me to talk to strangers *	.04	-.56	.12	-.34	1.35	.97	.788
7. It's hard for me to work when someone is watching me	.14	-.43	-.18	-.01	1.61	.95	.785
Public Self-Consciousness							
16. Before I leave my house, I check how I look	-.10	.03	-.81	.13	1.71	.94	.845
5. I care a lot about how I present myself to others	.09	.07	-.79	.01	1.98	.85	.837
20. I'm usually aware of my appearance	-.09	-.08	-.76	.21	1.90	.80	.843
13. I usually worry about making a good impression	.15	.04	-.75	-.17	1.82	.86	.840
18. I'm concerned about what other people think of me	.13	-.08	-.72	-.10	1.76	.87	.837
10. I'm self-conscious about the way I look	.07	-.08	-.67	-.08	1.71	.93	.854
Private Self-Consciousness - Internal State Awareness							
12. I generally pay attention to my inner feelings	.19	.11	-.04	.64	2.09	.83	.431
8. I never take a hard look at myself *	-.09	.03	-.04	.62	2.47	.73	.597
19. I'm quick to notice changes in my mood	.15	-.19	-.09	.59	1.90	.83	.467
21. I know the way my mind works when I work through a problem	.31	.08	.18	.47	1.91	.82	.549

N=353

Note. Items are numbered in order they appear in the scale and are presented here in order of decreasing factor loadings

* Means for these items are means following reverse scoring; # Item migrated from public to private self-consciousness

As seen in Table 4.14, 10 items loaded significantly on two private self-consciousness factors, 6 items loaded significantly on one public self-consciousness factor and 6 items loaded significantly on a social anxiety factor. Factor loadings ranged from .47 to .74 (private self-consciousness), .43 to .81 (social anxiety); and .67 to .81 (public self-consciousness). The pattern matrix revealed that Item 2, which was intended to measure the respondent's concern about how others viewed their style of doing things, migrated from public to private self-consciousness. This was considered an acceptable migration, in that the focus appeared to be on the person's view of their own particular way or style of doing things. The factor loadings and summary item statistics for the four-factor Self-Consciousness Scale-Revised Version (Scheier & Carver, 1985) are presented in Table 4.14.

Interpretation of the Self-Consciousness Factors

The first factor for self-consciousness (Items 1, 2, 4, 6, 14 & 17) was labelled ***self-reflectiveness***. The two highest loading items on this factor were Items 14 'I'm constantly thinking about my reasons for doing things' (.74) and Item 6 'I often daydream about myself a lot' (.71). These items define personal concerns. The six items loading on this factor are consistent with a negative, ruminative self-preoccupation. Self-reflectiveness is believed to predict relative maladjustment (Watson et al., 1996) (Factor 1, Table 4.14).

The second factor (Items 3, 7, 9, 11, 15 & 22) was labelled ***social anxiety***. The highest loading items were Item 3 'It takes me time to get over my shyness in new situations' (-.81) and Item 22 'Large groups make me nervous' (-.80). These items indicate a problem with public situations. The six items (six

original items), which define this factor, clearly reflect social anxiety and is concordant to the one originally proposed by Fenigstein et al. (1975). It measures a concern with public performance and sensitivity to the reactions of others (See Factor 2, Table 4.14).

The third factor (Items 5, 10, 13, 16, 18 & 20) was labelled *new public self-consciousness* as this factor contained different item content from the original public self-consciousness factor. The highest loading items were Item 16 'Before I leave my house, I check how I look' (-.81) and Item 5 'I care a lot about how I present myself to others' (-.79). These two items reflect issues of self-presentation. The six items loading on the factor describe aspects of public self-consciousness as put forward by Fenigstein et al. (1975) in that they measure concern with physical appearance and presentation and a vulnerability to the opinions of others (See Factor 3, Table 4.14).

The fourth factor in self-consciousness (Items 8, 12, 19 & 21) was labelled *internal state awareness*. The two highest loading items were Items 12 'I generally pay attention to my inner feelings' (.65) and 8 'I never take a hard look at myself' (.62). The four items defining this factor appear to measure a similar dimension of internal self-awareness as the one proposed by Conway and Giannopoulos (1993). Conway and Giannopoulos define this factor as a close examination of the self in order to gain further understanding of thoughts, motives and behaviours. Internal state awareness is believed to predict relative adjustment (Watson et al., 1996) (Factor 4, Table 4.14).

In summary, the factor analysis of items from the self-consciousness scale has found a similar four-factor structure to that of Martin and Debus

(1999). Although this analysis found that the self-consciousness scale contained four factors, these four factors still represent those which are found in the Self-Consciousness Scale-Revised Version (Scheier & Carver, 1985) and also the original three factors of private self-consciousness, public self-consciousness and social anxiety found in the Fenigstein et al. (1979) Self-Consciousness Scale. The new factor structure separated private self-consciousness into self-reflectiveness and internal state awareness, and maintained the public self-consciousness and social anxiety factors.

Internal Consistency of the Factors of the Self-Consciousness Scale

Internal consistency for each factor in the Self-Consciousness Scale-Revised Version (Scheier & Carver, 1985) was based on the total sample ($N=353$) and was assessed by Cronbach's Coefficient Alpha. The Alpha Coefficient was regarded as high for the majority of the scales, ranging from .87 to .74, thus demonstrating adequate scale reliability (see Table 4.15). However, the internal state awareness scale had a low reliability of .59.

Bivariate Correlations Among Public and Private, Rumination and Reflection and the Alternative Factors of the Self-Consciousness Scale

A series of bivariate correlations between the factors of Revised-Rumination and Reflection Scale and the alternative factors of the Self-Consciousness Scale-Revised Version (Scheier & Carver, 1985) was run to

explore the relations among public and private, rumination and reflection and internal state awareness, and self-reflectiveness and new public self-consciousness. The correlational matrix is presented in Table 4.15.

The pattern of correlations among rumination, reflection, and the new self-consciousness scales is comparable with the pattern found previously. Because of the slight change in the item content of the self-consciousness subscales, the previous association that reflection had with the general public self-consciousness scale is no longer evident. As shown in Table 4.15, reflection now correlated only with private self-consciousness, whereas, rumination correlated with both public and private self-consciousness.

New information emerged about the nature of the self-consciousness domain when private self-consciousness was factored into two distinct aspects, internal state awareness and self-reflectiveness. Only the maladaptive self-reflective component of private self-consciousness was associated with both rumination and reflection. In contrast, internal state awareness was associated primarily with reflection. This indicates that two different cognitive processes confound the measurement of private self-consciousness. One is a more negative, maladaptive self-focus that overlaps with rumination and the other is a more adaptive type of self-focus that taps into reflection.

Table 4.15

Reliabilities, Intercorrelations and Descriptive Statistics of the Four Factor Revised-Rumination and Reflection Scale and the Alternative Factors of the Self-Consciousness Scale-Revised (Scheier & Carver, 1985)

	PbRum	PvRum	PbRef	PvRef	NPbS	Sa	Sr	Isa
PbRum	(.87)							
PvRum	.63**	(.74)						
PbRef	.13**	.23**	(.77)					
PvRef	.15**	.24**	.69**	(.84)				
NPbSc	.38**	.38**	.10	.10	(.87)			
Sa	.42**	.27**	.05	.02	.32**	(.74)		
Sr	.45**	.52**	.48**	.52**	.48**	.30**	(.80)	
Isa	.07	.22**	.48**	.47**	.20**	.01	.48**	(.59)
<i>M</i>	22.97	16.20	16.86	20.99	10.82	8.97	9.18	8.27
<i>SD</i>	5.23	3.62	3.58	4.49	4.08	4.10	3.93	2.21

N=353

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Note. Cronbach's alpha reliability coefficients are represented on the diagonal in brackets; PbRum = Public Rumination; PvRum = Private Rumination; PbRef = Public Reflection; PvRef = Private Reflection; NPbSc = New Public Self-Consciousness; Sa = Social Anxiety; Sr = Self Reflectiveness; Isa = Internal State Awareness

The preliminary finding of public and private dimensions of rumination and reflection also allowed for a more fine-grained analysis of the relationship that cognition has with self-focus. For example, when correlating the factors of rumination and reflection with the factors of self-consciousness, an association was found between public rumination and social anxiety; and between private rumination and internal state awareness. It is evident that the direction of self-focus has an important association with the type of thought processing that a person is engaged in.

Overall, the pattern of associations indicates that the different aspects of rumination and reflection can be seen through their relationship with social anxiety, private self-consciousness and public self-consciousness. It also signifies that there are distinct aspects involved in ruminative type thoughts. Not only are ruminative thoughts more strongly associated with being publicly self-conscious and socially anxious but they can include a negative internal focus. On the other hand, reflection appears to be a more positive type of thought processing which is primarily a curiosity of overall thought.

Results for the Examination of Individual Differences for New Self-Consciousness Factors

Data analysis in Stage 4 also involved an examination of differences for men and women, psychology students and non-psychology participants, and order of scale presentation for internal state awareness, self-reflectiveness, new public self-consciousness and social anxiety. Descriptive statistics, alpha

coefficients, and intercorrelations of the subscales are presented in Table 4.15. A MANOVA was conducted as part of the examination of the alternative factors of the Self-Consciousness Scale-Revised Version (Scheier & Carver, 1985). It consisted of the dependent variables of internal state awareness, self-reflectiveness, new public self-consciousness, and social anxiety.

Preliminary Analyses

Multivariate and univariate normality was assessed for the alternative factors of self-consciousness. Normal distribution was ascertained through inspections of the data set for out-of-range values in each dependent variable. There were no out-of-range values for the continuous variables of new public self-consciousness, social anxiety, or for self-reflectiveness, and internal state awareness. There were no out-of-range values for the discrete variables of gender, status and order. Nor were there any dependent variables with more than 5% missing values.

Each of the dependent variables was inspected for skewness and kurtosis. Z scores obtained for skewness and kurtosis were all within the cut-off of 3.29 ($p=.001$, two-tailed) for a normal distribution (see descriptive statistics in Table of Means - Appendix A.5). No univariate or multivariate outliers were found.

Results for the Examination of Individual Differences for the Alternative Self-Consciousness Factors

A 3-way between subjects MANOVA was performed on the four dependent variables of self-reflectiveness, internal state awareness, new public self-consciousness and social anxiety. There were two levels of each of the

three independent variables of Order of Presentation (R-RRS first or SCS-R first), Gender (male or female) and Status (psychology students or non-psychology student). Box's M for the test of homogeneity of the covariance matrices of the dependent variables was non-significant ($p > .05$). The means and standard deviations for each dependent variable are presented in Table 4.16.

There were no 2-way or 3-way interactions (see Appendix A.7 for results). However, there were significant main effects for two of the independent variables. There were small but significant multivariate effects for gender, Wilks' Lambda = .953, $F(4,340) = 4.17$, $p < .01$, $\eta^2 = .05$, and status, Wilks' Lambda = .941, $F(3,340) = 5.32$, $p < .01$, $\eta^2 = .06$, but not for order of presentation, Wilks' Lambda = .987, $F(4,340) = 1.11$, $p = .35$, $\eta^2 = .01$.

Table 4.16

Means and Standard Deviations for Order, Gender, and Status for the Alternative Factors of the Self-Consciousness Scale-Revised Version (Scheier & Carver, 1985)

	New Public Self-C'ness		Social Anxiety		Self Reflect		Internal State Aware	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Order								
R-RRS first ($n=169$)	10.75	4.21	9.27	4.15	7.93	3.34	8.02	2.21
SCS-R first ($n=182$)	10.92	3.92	8.69	4.06	8.18	3.45	8.51	2.20
Gender								
Men ($n=109$)	9.50 ^a	3.58	8.45	4.24	7.50	3.43	7.92	2.22
Women ($n=242$)	11.44 ^a	4.13	9.20	4.03	8.31	3.36	8.44	2.20
Student Status								
Psychology ($n=248$)	11.38	3.73	9.05	3.92	8.57	3.23	8.54	2.11
Non-psychology ($n=103$)	9.72	4.21	8.76	4.55	6.83	3.49	7.65	2.33

$N=353$

Note. New Public Self-C'ness=New Public Self-Consciousness; Self-Reflect=Self-Reflectiveness; Internal State Aware=Internal State Awareness; a,b,c=same superscripts represent significant differences

Hypothesis 3. No order effects were evident in the data for scale presentation (all p 's > .05). Thus, scores were not related to the order in which the scales were presented.

Hypothesis 4. The specific differences between men and women show in an analysis of the simple main effect (univariate F tests). Women had been expected to have higher private self-consciousness scores than men. As shown in Table 4.15, women's scores were higher than men's on all four dependent variables. However, after Bonferroni correction for multiple dependent variables, the only significant difference was on new public self-consciousness with women having higher scores than men, $F(1,343) = 10.45, p < .01, \eta^2 = .03$. Thus, the prediction of higher private self-consciousness scores for women than men was not found.

Hypothesis 5. Examination of simple main effects (univariate F tests) revealed that, after Bonferroni correction for multiple independent variables, psychology students had higher scores than non-psychology participants on self-reflection, $F(1,343) = 18.92, p < .001, \eta^2 = .05$ and internal state awareness, $F(1,343) = 8.95, p < .01, \eta^2 = .03$.

Stage 4 : Summary and Discussion

In answer to Research Question 3, the Self-Consciousness Scale-Revised Version was factor analysed into four separate but related factors. Consistent with previous findings (Anderson et al., 1996; Conway & Giannopoulos, 1993; Mittal & Balasubramanian, 1987) private self-consciousness contained two factors. The first factor was that of *self-*

reflectiveness encompassing a negative, ruminative self-preoccupation, whereas, the second was that of an *internal state awareness* measuring the level of a person's self-examination in order to gain further understanding of their thoughts, motives and behaviour.

The factor structure of public self-consciousness did not support previous findings of two separate but related factors of *impression consciousness*, reflecting a general concern with impression making and *appearance consciousness*, illustrating a concern with physical appearance (e.g., Mittal & Balasubramanian, 1987). The one general factor of public self-consciousness is consistent with the findings of Martin and Debus (1999) and the original Fenigstein et al., (1975) Self-Consciousness Scale.

The finding that the private self-consciousness domain but not the public self-consciousness domain consists of separate factors still corresponds to Buss' (1980) original theoretical stance. He proposed that the private self-consciousness domain occurred on a continuum of awareness of bodily stimuli, internal states, and motives. He also argued that with public self-consciousness attention would be focused on awareness of appearance and style and on how those particular aspects impact on the person's self-imposed value as a social object. Social anxiety maintained its original form with the item content unchanged. This factor measures a more negative type of self-focus than that of public self-consciousness and is described by Buss (1980) as shyness, embarrassment and anxiety in the company of others.

Stage 4 of Study 1 was concerned with the factor structure of the Self-Consciousness Scale-Revised Version (Scheier & Carver, 1985). This allowed

the relationships among rumination, reflection and self-consciousness to be considered even more widely. Reflection (both private & public reflection) maintained its association with both aspects of private self-consciousness, that is, internal state awareness and self-reflectiveness. By contrast, rumination displayed a different association with private self-consciousness depending on whether it was public or private rumination. Public rumination was not associated with internal state awareness, whereas private rumination was. Both public and private rumination were significantly associated with the other aspect of private self-consciousness, self-reflectiveness. From this, it appears that the association that reflection has with private self-consciousness is not dependent on whether it is with public or private aspects, whereas the association that rumination has with private self-consciousness is.

Study 1 : Summary and Discussion

In partial fulfilment of the aims of this thesis, the objectives of Study 1 were to redevelop the original Rumination and Reflection Questionnaire (Trapnell & Campbell, 1999) so that it would encompass a public and private focus. Independent psychologists and participants in Study 1 gave conceptual endorsement for a four-factor rumination and reflection scale. Using an independent sample, preliminary empirical endorsement was stronger for a two factor rumination scale than it was for a two-factor reflection scale. The results for principle-components analysis showed that a two-factor solution to be more interpretable than a four-factor solution, however, for principle-axis factor

analysis four factors were more clearly identified. The individual scales were found to have moderate to strong levels of internal consistency. As such, the psychometric evaluation of the revised Rumination and Reflection Questionnaire (Trapnell & Campbell, 1999) fulfilled the intention of Study 1. However, due to the unexpected findings of only weak support for a four factor scale and to provide more substantive evidence of the dimensionality of the Revised-Rumination and Reflection Scale a Confirmatory Factor Analysis was instituted in Study 2 with an independent sample of participants.

CHAPTER 5

STUDY 2 - CONFIRMATION OF THE REVISED-RUMINATION AND REFLECTION SCALE

Aims

It was found in Study 1 that the new measures of rumination and reflection could not be strongly defined as psychometrically multi-dimensional scales. In addition, the results of a series of bivariate correlations and an examination of individual differences did not provide the expected empirical support for both rumination and reflection having separate public and private dimensions.

It was the intention of Study 2 to corroborate the factor structure of the Revised-Rumination and Reflection Scale using Confirmatory Factor Analysis to fulfill the first aim of this thesis which was to identify both intrapersonal and interpersonal dimensions of rumination and reflection. This was conducted with an independent sample. In addition, through a series of bivariate correlations, the convergent and discriminant validity of the Revised-Rumination and Reflection Scale was examined. In this way, the relationship of public and private, rumination and reflection to self-reported personality factors (e.g., neuroticism, openness to experience, narcissism), and possible associations with psychological symptoms (e.g., depression, anxiety, hostility) was also able to be considered.

In addition, Study 2 addressed a concern that the rumination scale had items that were too similar in content to the items in a measure of neuroticism. It has been suggested that using scales with similar item content undermines the

independence of these two dimensions (Clark & Watson, 1995). Thus, as the operationalisation of rumination in the Rumination and Reflection Questionnaire (Trapnell & Campbell, 1999) is one that is closely linked to neuroticism, a factor analysis of the item content of the rumination scale with the item content of the NEO-FFI (Costa & McCrae, 1992) neuroticism scale was conducted. Parallel to the strong association that rumination has with neuroticism, reflection also has a strong association with the personality factor of openness to experience. Therefore, it was decided to factor analyse the reflection items with the items from the NEO-FFI openness to experience scale to ensure their independence.

Following on from this, a series of multiple hierarchical regressions were performed, using symptoms of psychological distress, social desirability, personality and self-consciousness factors to test the individual contribution that these variables make in predicting public and private, rumination and reflection.

Method

Participants

The sample for this study ($N=313$) consisted of 276 (88%) undergraduate psychology students from Swinburne University of Technology, who completed the questionnaire as part of their course requirements in Semester 2, 2002 and Semester 1, 2003. The students were in addition to a convenience sample of 37 (12%) from the wider community. Overall, there were 60 men (19%), with an average age of 22.7 years ($SD = 8.6$) and 251 (81%) women, with an average age of 21.8 years ($SD = 8.0$). Two participants had missing values for gender. The age distribution for participants ranged from

17 to 59 ($M = 22.03$ years, $SD = 8.18$). There was no difference in average age between men and women ($p > .05$).

Of the total sample, 247 (80%) were full-time students, 52 part-time students (17%), and 11 non-students (4%) (3 not stated). The majority of participants also worked part-time (65%) ($n=201$), while 11% ($n=35$) worked full-time and 24% ($n=75$) were not working. Of those who were working, 49% ($n=152$) worked in a professional occupation and 21% ($n=65$) worked in a trade. The majority of participants were single (86%) ($n=270$), 11% were married ($n=33$), and 3% were divorced or separated ($n=10$). Most participants described their ethnicity as Australian (79%) ($n=234$), the rest of the participants (21%) ($n= 62$) were from a wide range of ethnic backgrounds and were grouped together in one category of 'other'.

Measures

The questionnaire battery consisted of the following seven scales. All measures are presented in Appendix B.2.

Rumination and Reflection: The Revised-Rumination and Reflection Scale (R-RRS) is the 24-item revised version of the Trapnell and Campbell (1999) Rumination and Reflection Questionnaire re-developed in Study 1 (see Table 4.4). Internal consistency, as measured by Cronbach's alpha, for both the rumination and reflection scale is high (.89) (see Table 4.9).

Self-Consciousness: The Self-Consciousness Scale-Revised Version (SCS-R; Scheier & Carver, 1985) is the same scale used in Study 1. (See pages 103 & 104 for the scale description.)

Personality Measures

Five Factor Model: The NEO Five-Factor Inventory (NEO-FFI; Costa & McCrae, 1992) is a brief 60-item version of the 240-item NEO-Personality Inventory–Revised (NEO-PI-R; Costa & McCrae, 1992). The five factors of Neuroticism, Extraversion, Openness to Experience, Conscientiousness, and Agreeableness, have been recognised as representing five basic trait dimensions of normal personality (Costa & McCrae, 1992). Scores on the five personality traits have been used to predict numerous constructs, such as membership in a taxonomy of motives (Roberts & Robins, 2000), procrastination (Watson, 2001) and narcissism (Roberts & Robins, 2000).

The Neuroticism domain (12 items) distinguishes emotional stability and adjustment from emotional instability and maladjustment. It is not a measure of psychopathology as such but high scorers in this domain may be at risk for certain psychiatric problems, whereas low scorers in neuroticism tend to be emotionally stable, calm and even-tempered (Costa & McCrae, 1992).

The Extraversion domain (12 items) contrasts an outgoing, sociable, assertive and active personality with that of the introvert, a more reserved, independent personality.

The Openness to Experience domain (12 items) involves attention to inner feelings, intellectual curiosity, and independence of behaviour. Individuals high in openness are thought of as unconventional, imaginative and curious, whereas those low in openness tend to be conventional and conservative in outlook.

The Agreeableness domain (12 items) encompasses interpersonal styles when relating to others. The individual high in agreeableness tends to be

sympathetic and eager to help. In contrast, the person who is low in agreeableness, that is, disagreeable, is antagonistic, egocentric and sceptical.

The Conscientiousness domain (12 items) concerns self-control in terms of planning, organising and implementing tasks. The conscientious individual tends to be determined, strong-willed and achievement focused or fastidious, compulsively neat and workaholic (Costa & McCrae, 1992). The low conscientious person tends to be less interested in goal achievement.

Each item on the NEO-Five Factor Inventory is scored on a Likert-type five-point scale ranging from 1 = strongly disagree to 5 = strongly agree. Participants are asked to indicate how much they agree or disagree with each statement. The five domain scores are calculated from the sum of the twelve items that pertain to its particular domain. Possible scores for each domain range from 12 to 60. Twenty-seven items are worded negatively and reverse scored. Costa and McCrae (1992) reported Cronbach's Alpha reliabilities of .86 for Neuroticism; .77 for Extraversion; .73 for Openness to Experience; .68 for Agreeableness, and .81 for Conscientiousness. The scale's underlying structure has been found to be similar for men and women (Tokar, Fischer, Snell & Harik-Williams, 1999). Costa and McCrae reported scale means for college age respondents for neuroticism ($M = 24.6$, $SD = 7.9$), extraversion ($M = 30.5$, $SD = 8.6$), openness to experience ($M = 27.8$, $SD = 5.9$), agreeableness ($M = 30.1$, $SD = 5.4$), and conscientiousness ($M = 30.7$, $SD = 6.8$).

Narcissism: The Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988) is a 40-item revised form of the original Narcissistic Personality Inventory scale initially created by Raskin and Hall (1979). It is a forced-choice (true/false) questionnaire designed to measure individual differences in

narcissism as a normal personality trait. The scale was normed by Raskin and Terry on 1018 college undergraduates (479 men, 529 women) (Mean age = 20 years, $SD = 6.7$). All 40 items are scored with either 1 (true) or 0 (false), with no items reverse worded or scored. The mean of the full scale for college students is 15.5 ($SD = 6.7$). Cut-off scores, one standard deviation above and below the mean, are used to identify high and low scorers with higher scores indicating a greater endorsement of narcissistic traits. Reliability for the full Narcissistic Personality Inventory scale has been reported at .83 (Raskin & Terry, 1988).

Validity studies have established that Narcissistic Personality Inventory scores are able to differentiate between the narcissistic and the non-narcissistic in non-clinical subjects (Emmons, 1984), and also in psychiatric subjects (Profitera & Ryan, 1984). Factor analysis on the Raskin and Terry (1988) version of the Narcissistic Personality Inventory has revealed seven factors - authority, self-sufficiency, superiority, exhibitionism, exploitativeness, vanity and entitlement with high internal consistency (Alpha Coefficients between .82 & .86) or four factors using the Raskin and Hall (1979) scale - leadership/authority, self-absorption/self-admiration, superiority/arrogance, exploitativeness/entitlement (Emmons, 1987) (Alpha Coefficients range from .68 to .87). The number of factors is said to represent the diversity of behaviours to be found within the narcissism domain (Raskin & Terry, 1988).

Symptom Measures

General Psychological Distress: The Brief Symptom Inventory (BSI; Derogatis, 1993) is a 53-item measure of current psychological symptoms. The inventory has been designed to reflect psychological symptom patterns in psychiatric, medical and non-clinical individuals who are aged 13 years and

over. Of non-clinical respondents, college-age students report both higher levels and different patterns of psychological symptoms than non-clinical adults (Cochran & Hale, 1985).

Respondents are asked to rate the severity of each item of the Brief Symptom Inventory that best describes how much that problem has distressed or bothered them during the past seven days including today, on a five-point scale, from zero to four, with 0 = not at all (distressed) and 4 = extremely (distressed). The Brief Symptom Inventory is scored and profiled in terms of nine primary symptom dimensions and three global indices of distress. It is designed to be interpreted at three distinct but related levels: the global level, the dimensional level and the discrete symptom level. Scale means for college students have been reported by Cochran and Hale (1985) for somatisation ($M = .43$, $SD = .5$), obsessive-compulsive ($M = 1.1$, $SD = .7$), interpersonal sensitivity ($M = .98$, $SD = .76$), depression ($M = .94$, $SD = .8$), anxiety ($M = .85$, $SD = .6$), hostility ($M = .81$, $SD = .7$), phobic anxiety ($M = .31$, $SD = .4$), paranoid ideation ($M = .86$, $SD = .7$), and psychoticism ($M = .68$, $SD = .6$).

The primary symptom dimensions are Somatisation (7 items) or distress over body dysfunction; Obsessive-Compulsive (6 items) measures the repetitive nature of thoughts, impulses and actions; Interpersonal Sensitivity (4 items) relates to feeling inadequate and inferior; Depression (6 items) consists of a number of depression risk factors; Anxiety (6 items) involves both cognitive components and somatic components; Hostility (5 items) includes characteristics of negative affect; Phobic Anxiety (5 items) measures a chronic fear response to people, places, or objects; Paranoid Ideation (5 items) reflects dysfunctional thought patterns, and finally Psychoticism (5 items) ranges from a

mild form of alienation to extreme psychosis. There are four additional items that are not solely included on any one of the primary symptom domains but which load on several of the dimensions. These items are incorporated into the global scores on the Brief Symptom Inventory. Raw scores for the nine domains are calculated by summing the values for each item in the domain plus the four additional items and then divided by the number of symptoms endorsed.

The global indices of distress are the Global Severity Index (GSI), which is an average of the 53 items, combining the number of symptoms with the level of distress. The Global Severity Index is a measure of the intensity of a person's distress. The Positive Symptom Total (PST) is calculated by summing the number of items endorsed with a positive response. It measures the extent of a person's distress. The Positive Symptom Distress Index (PSDI), which is calculated by dividing the Global Severity Index by the Positive Symptom Total, provides the average level of distress experienced by the respondent.

Internal consistency has been established as being reasonable for the nine dimensions of the Brief Symptom Inventory on a clinical population (Alpha Coefficients ranging from .57 to .83), and for a community sample (Alpha Coefficients ranging from .60 to .81) (Kellett, Beail, Newman & Frankish, 2003). The subscales have also demonstrated a consistency of measurement across time that is reasonably high ($r = .68$ to $.91$) (Derogatis, 1993). Derogatis (1993) reports that the Brief Symptom Inventory correlates moderately well with the Minnesota Multiphasic Personality Inventory clinical and content scales (MMPI; Hathaway & McKinley, 1983) ($r = .30$ to $.72$). However, the Brief Symptom Inventory's moderate to high correlations with the majority of MMPI scales has been criticised as reflecting poor discriminant

validity and limited convergent validity, in that too few items uniquely measure their intended dimension (Boulet & Boss, 1991).

Anxiety: The Minnesota Multiphasic Personality Inventory Anxiety Scale (A-MMPI; Butcher, Graham, Williams & Ben-Porath, 1990) is one of the fifteen MMPI-2 Content Scales and can be used as a stand-alone measure of current levels of anxiety. It consists of 23 items in a true/false response format with five items negatively worded. The A-MMPI measures negative affect and correlates highly with the Welsh Anxiety Scale ($r = .80$ men, $r = .84$ women). Elevations on the A-MMPI for both men and women are correlated with fearfulness, worry, nervousness, tenseness, a lack of self-confidence and moodiness (Butcher et al., 1990).

The A-MMPI was normed on 1138 males and 1462 females. Reliability was reported using Cronbach's Coefficient Alpha of .82 for men and .83 for women. Test-retest was also high at .90 for men and .87 for women. Scale means were reported by Butcher et al. (1990) as 6.0 ($SD = 4.4$).

Social Desirability: The Marlowe-Crowne Social Desirability Scale–Short Form C (MCSD; Reynolds, 1982) is a 13-item revised form of the original Marlowe-Crowne Social Desirability Scale (Crown & Marlowe, 1960). The Crown and Marlowe scale was originally designed to measure social desirability as a measure of defensiveness in self-report response tendencies and is defined as ‘the tendency to avoid awareness of negative affects and impulses’ (Orbach & Mikulincer, 1996, p. 459). In addition, the MCSD measures ‘need for approval’, in that high scorers are responsive to social reinforcement, to restrain feelings of aggression and acquiesce more to social influence, all of which are indicative of impression management (Paulhus, 1984, p. 599).

However, social desirability is also considered to be an individual personality construct in the way that it relates to neuroticism overall ($r = -.49$), extraversion facets (e.g., warmth $r = .33$ & gregariousness $r = .22$), and openness facets (e.g., fantasy $r = -.24$) (Costa & McCrae, 1983). In this sense, Costa and McCrae suggest that the Marlow-Crowne is a measure of a lack of neuroticism and a tendency towards extraversion rather than self-defensive presentation.

A short form of the scale was normed on 608 undergraduate students (Mean age = 20.54, $SD = 4.01$) with an age range of 17 to 54 years (239 men, 369 women) (Reynolds, 1982). The scale mean was reported as 5.67 ($SD = 3.2$) with an average item mean of .44. All 13 items are scored with either 1 (true) or 0 (false). For example, 'I'm always willing to admit it when I make a mistake' would score 1 if the respondent felt that this was true of themselves or 0 if it was not true. Eight items are worded negatively. Higher scores would indicate higher levels of social desirability. Reliability for the MCSD is good ($r = 0.76$) (Kuder-Richardson) and the correlation between the original Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960) with the Short Form is very high ($r = .93$).

Procedure

The questionnaire battery consisted of (a) an information sheet outlining the nature of the study, (b) a demographic sheet asking for age, gender, education level, ethnicity, student status, work status, current occupation and marital status, (c) seven separate self-report scales, and (d) a sign-up sheet for Study 3. The Revised-Rumination and Reflection Scale (R-RRS); the Self-Consciousness Scale–Revised Version (SCS-R; Scheier & Carver, 1985); the Marlowe-Crowne Social Desirability Scale–Short Form C (MCSD; Reynolds,

1982); the Minnesota Multiphasic Personality Inventory Anxiety Scale (A-MMPI; Butcher et al., 1990); the Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988); the NEO-Five Factor Inventory (NEO-FFI; Costa & McCrae, 1992), and the Brief Symptom Inventory (BSI; Derogatis, 1993), were compiled into a questionnaire along with demographic questions and a sign-up sheet for Study 3. (All measures are presented in Appendix B.2.)

There were two versions of the questionnaire that corresponded to different orders of completion. Counterbalancing was done to limit the effects of priming or focusing on symptoms. Thus, half the questionnaires had the BSI first, followed by the A-MMPI scale, the NEO-FFI, the NPI, MCSD, R-RRS and the SCS-R (Order 1). The other half of the questionnaires had the SCS-R and R-RRS first, followed by the NEO-FFI, NPI, MCSD, the BSI and the A-MMPI scale (Order 2). Of the 313 participants, 155 (50%) completed Order 1 of scale presentation (BSI first, SCS-R last) and 158 (50%) completed Order 2 of scale presentation (SCS-R first, A-MMPI last).

Initially, the questionnaires were distributed to psychology students who completed them outside of class time. Additional questionnaires were then distributed through friends and colleagues of the researcher. All participants completed the questionnaire if, after reading the information sheet, they indicated they were willing to participate in the study. Student participants returned the questionnaire to a designated box at the university. The other participants posted their questionnaire to the university in reply-paid envelopes.

Hypotheses

Confirmatory Factor Analysis of Rumination and Reflection Subfactors

Hypothesis 1: Given that the principle axis factor analysis in Study 1 identified four factors in the revised scale, it was expected that the sub-factors of public and private, rumination and reflection, would be confirmed in an independent sample in Study 2.

Bivariate Correlations for Public and Private, Rumination and Reflection

Hypothesis 2: It was expected to find similar patterns of correlations that had been found in Study 1, among the four subfactors of reflection and rumination.

Hypothesis 2a: It was also expected to find similar patterns of correlations among the four subfactors of rumination and reflection with aspects of self-consciousness. In particular, that public and private rumination would correlate moderately well with private self-consciousness, public self-consciousness and social anxiety.

Hypothesis 2b: In addition, it was anticipated that public and private reflection would correlate moderately well with private self-consciousness.

Hypothesis 2c: Recent indications are that the more neurotic an individual is, the more they ruminate (e.g., Trapnell & Campbell, 1999). Therefore, it was expected that there would be a strong positive correlation between rumination or its subfactors and neuroticism.

Hypothesis 2d: Also, following on from the Trapnell and Campbell study, it was expected that there would be a strong positive correlation between reflection or its subfactors and openness to experience.

Hypothesis 2e: In keeping with previous research (e.g., Nolen-Hoeksema, 2000), it was expected that rumination or its subfactors would correlate more highly with negative psychological symptoms, such as anxiety and depression, than would reflection or its subfactors.

Hypothesis 2f: Given that social desirability has been found to have an inverse relationship to negative symptoms such as, loneliness, isolation, depression and anxiety (Watson, Milliron & Morris, 1995), and that rumination has been found to be associated with negative symptoms, it was expected to find that there would be a negative correlation between rumination and social desirability.

Factor Analysis of the Rumination/Neuroticism Items and Reflection/Openness to Experience Items

Hypothesis 3a: Although moderate to strong correlations have been found between rumination and neuroticism, it was still expected to find that rumination and neuroticism would emerge as two separate factors.

Hypothesis 3b: It was also anticipated that in a factor analysis of the items from the reflection scale and the openness to experience scale, that reflection and openness to experience would be found to be separate constructs.

Multiple and Hierarchical Regression Analysis

A series of multiple regression and hierarchical regression analyses, using psychological symptoms and personality traits, were used to predict public and private, rumination and reflection.

Hypothesis 4: It was expected that both of the rumination subfactors would be predicted by their public or private partner, various symptoms of psychological distress, and the more negative personality trait of neuroticism.

Hypothesis 5: On the other hand, it was expected that the reflection subfactors would be predicted by their public or private partner and the more positive personality trait of openness to experience but not by symptoms of psychological distress

Results

The results for Study 2 will be presented in five sections. After an overview of the methods of data analysis used in each section the findings of preliminary analyses are reported. Then the results for the hypotheses will be presented in each section.

Methods of Data Analysis

The data analysis for Study 2 began with a set of single factor congeneric Confirmatory Factor Analyses of the components of the Revised-Rumination and Reflection Scale to substantiate its factor structure. Then a series of bivariate correlations were run to test for hypothesised relationships for the factors of rumination and reflection, with psychological symptoms of distress, personality factors and social desirability. Following this, a factor analysis of the rumination and neuroticism items was conducted. In addition, a factor analysis of the reflection and openness to experience items was undertaken. These analyses were followed by a series of multiple and hierarchical regressions to develop a model of variables which would successfully predict the confirmed rumination and reflection factors.

Preliminary Analyses

Missing value analyses were conducted and three cases (192, 289, 315) were identified which were considered to have too many missing values and so were dropped from the analysis. Following this, a second missing value analysis confirmed that there were now no respondents who had more than 5% missing values. As there were so few cases with missing data, deletion of these cases for this particular analysis was considered to be the most appropriate procedure for handling missing values (Tabachnick & Fidell, 1996).

There were no out-of-range values for the discrete variables of gender (male, female), student status (part-time, full-time, non student), work status (part-time, full-time, not working), occupational status (professional, trades, student), marital status (single, married, divorced/separated), discipline (psychology student, non psychology participant), group (2002, 2003), presentation order (BSI first, SCS-R first), education level (secondary, tertiary), and ethnicity (Australian, other). (See descriptive statistics in a Table of Means – Appendix B.3.)

Rumination and Reflection Scores

Univariate normality was assessed through inspection of the distributions for each variable. A normal distribution was established when inspections of the data set found that there were no out-of-range values for the dependent variables of rumination and reflection. Graphical representations of the distributions (histograms, box-plots & normal Q-Q plots) indicated that reflection and rumination were close to normal. Skewness and kurtosis were then assessed through z scores and were found to be within the cut-off point of 3.29 ($p = .001$, two-tailed) for normal distributions for both dependent variables

(Tabachnik & Fidell, 1996). Internal consistency was assessed through Cronbach's Alpha and found to be similar to those in Study 1. Means for rumination ($M = 41.3, SD = 7.5$) and reflection ($M = 40.5, SD = 8.4$) were also similar to those in Study 1.

Self-Consciousness Scores

There were no out-of-range values for the continuous self-consciousness variables, that is, for new private self-consciousness, new public self-consciousness, self-reflectiveness, internal state awareness, impression consciousness, appearance consciousness, and social anxiety. Z scores obtained for skewness and kurtosis were all within the cut-off point of 3.29 ($p = .001$, two-tailed) for a normal distribution.

Internal consistency, measured by Cronbach's Alpha ranged from a low .45 for internal state awareness to a high .86 for new public self-consciousness. On inspection of the internal state awareness scale it was found that one item (Item 8) if deleted would improve the scale's reliability to .51. It was decided that, as this would make only a marginal improvement to the scale's reliability, coupled with its previous low reliability in Study 1 (Alpha = .59), little would be gained from deleting this item. Any interpretation using this measure was undertaken with caution.

Means for the primary factors of new private self-consciousness ($M = 16.5, SD = 5.4$), new public self-consciousness ($M = 13.6, SD = 4.1$) and social anxiety ($M = 9.76, SD = 4.09$) were found to be in line with the SCS-R means (Scheier & Carver, 1985) and with those previously reported in Study 1. The means for self-reflectiveness ($M = 7.9, SD = 3.4$), internal state awareness ($M =$

7.4, $SD = 2.3$), impression consciousness ($M = 5.8$, $SD = 2.2$), and appearance consciousness ($M = 5.7$, $SD = 2.2$) were found to be similar to those in Study 1.

Personality Factor Scores

There were no out-of-range values for any of the five dimensions of Costa and McCrae's (1992) NEO-FFI. Skewness and kurtosis for the five dimensions were within the 3.29 cut-off point for a normal distribution ($p < .001$, two-tailed). Internal consistency (Cronbach's Alpha) for each scale was good and ranged from .64 for agreeableness to .86 for neuroticism. Scale means were similar to those reported by Costa and McCrae (1992) with neuroticism ($M = 24.5$, $SD = 8.6$), extraversion ($M = 29.5$, $SD = 6.2$), openness to experience ($M = 28.3$, $SD = 6.6$), agreeableness ($M = 31.4$, $SD = 5.1$), and conscientiousness ($M = 28.8$, $SD = 7.0$).

Narcissism Scores

The narcissism variable had no out-of-range values. Z scores for skewness and kurtosis were within the bounds of normality (3.29, $p < .001$, two-tailed). Internal consistency for the scale was good at .81 (Cronbach's Alpha). Scale means were higher than those reported previously, that is, Raskin and Terry (1988) reported a full scale mean of 15.5 ($SD = 6.7$), this current study's mean was 17.7 ($SD = 6.4$).

Brief Symptom Inventory Scores

Outliers (standardized z scores more than 3.29, $p > .001$) were found in eight out of the nine Brief Symptom Inventory (Derogatis, 1993) symptom dimensions, that is, for somatisation, interpersonal sensitivity, depression, anxiety, hostility, phobic-anxiety, paranoid-ideation, and psychoticism. To overcome this problem the outliers were converted to scores that were three

standard deviations or less away from their respective means (Kline, 1994). Thus, these scores maintained their deviance but would not lead to the violation of assumptions for univariate or multivariate analysis (Tabachnik & Fidell, 1996).

The same eight Brief Symptom Inventory dimensions which had outliers were also found to be moderately to severely skewed. Transformations were performed on these variables in order to bring their distribution closer to normality. Three different types of transformations were performed on each of the eight variables – square root, natural logarithm, and reciprocal square root transformation (Francis, 2003). To varying degrees the transformed variables were less skewed than initially. However, Tabachnik and Fidell (1996) advise that transformations in large samples may not make a substantive difference in the analysis of the variables. This is because the impact of skewness and kurtosis diminishes with increased sample size and also because it would be expected theoretically to find skewed distributions for dimensions such as these in a normal population (Tabachnik & Fidell, 1996).

All analyses were run using both the untransformed and transformed variables. It was found that there was very little difference in results using either set of variables. For example, the correlation between public rumination and somatisation (untransformed) was $r = .28, p < .001$ and the correlation using the square root of somatisation (transformed) was $r = .30, p < .001$. On comparing MANOVA analyses using transformed and untransformed variables, the difference between the two was also negligible. Four groups (different combinations of rumination & reflection scores) were compared on overall Brief Symptom Inventory symptoms (not transformed) (Wilks' Lambda = .669,

$F(27, 879) = 4.82, p < .001$) and on overall Brief Symptom Inventory symptoms (combination of transformations) (Wilks' Lambda = .674, $F(27, 879) = 4.72, p < .001$). Thus, the transformations made only marginal improvements to the shape of the distribution but did not substantively alter analyses. After careful consideration it was decided not to use the transformed Brief Symptom Inventory dimensions, for ease of interpretation (Francis, 2003). Transformation statistics can be seen in Appendix B.4.

Internal consistency for the nine scales was varied, ranging from .60 (phobic anxiety) to .89 (psychoticism). Scale means were slightly higher than those reported previously by Cochran and Hale (1985) for college students and can be seen in the Table of Means in Appendix B.3.

Anxiety (A-MMPI) Scores

The stand-alone measure of anxiety (A-MMPI; Butcher et al., 1990) had no out-of-range values. Z scores for skewness and kurtosis were within the bounds of normality. Internal consistency for the anxiety scale was good at .84 (Cronbach's Alpha). The scale mean of 10.0 ($SD = 5.1$) was considerably higher than those reported by Butcher et al. (1990).

Social Desirability Scores.

The variable social desirability had no out-of-range values. The distribution was within normal limits with z scores for skewness and kurtosis within the 3.29 criteria ($p < .001$, two-tailed) (Tabachnik & Fidell, 1996). Internal consistency for the social desirability scale was an acceptable .69 (Cronbach's Alpha). The scale mean of 6.54 ($SD = 2.9$) was slightly higher than that reported previously by Reynolds (1982).

Multivariate Outliers

Potential multivariate outliers were inspected through the Mahalanobis Distance procedure. Cases were selected for two independent variable levels (Male 1 & Female 2; Order 1 & Order 2) and when analysed it was found that Mahalanobis Distance ranged from 10.4 to 68.17 which is outside the critical distance of 59.70 ($p < .001$) for 30 dependent variables (Tabachnik & Fidell, 1996).

On investigation, it was found that there was one case (273) which had extreme scores on a combination of variables. A selection of analyses (e.g., correlations, MANOVAs) was run with and without this one case and it was found that the difference between results was negligible. Thus, as this individual participated in Study 3 it was decided to leave this case in the data set with the knowledge that there is one case which may have contributed to a minor distortion of the results (Tabachnik & Fidell, 1996).

In summary of the preliminary data analyses, it was found that there were some parts of the data set which violated the terms of normality (i.e., the Brief Symptom Inventory). However, the large sample size and an expectation of having such a skewed distribution for symptoms of psychological distress in a normal population, the overall data set was considered robust enough to continue. The first stage of actual data analysis in Study 2 was to corroborate the factor structure of the Revised-Rumination and Reflection Scale found in Study 1 through the use of Confirmatory Factor Analysis.

Confirmatory Factor Analyses of the Rumination and Reflection Subfactors

A series of single factor congeneric models for each of the constructs of public rumination, private rumination, public reflection, and private reflection, were conducted using AMOS 5.0 (Arbuckle, 2004). Each single factor congeneric model was assessed using multiple criteria for goodness of fit (Byrne, 2001; Kline, 1998). The estimated likelihood chi-square statistic was used to assess the statistical fit of the model. Kline (1998) suggests that, due to its sensitivity to large sample sizes, a significant chi-square is not critical to the model's fit. Descriptive fit was assessed by the ratio of χ^2 to its degrees of freedom (df), the root-mean-square error of approximation (RMSEA), the Tucker-Lewis Index (TLI), the adjusted goodness of fit index (AGFI) and the comparative fit index (CFI). The following criteria were used to indicate adequate fit of the model to the data: $\chi^2 / df < 3$, RMSEA $< .08$ (90% confidence intervals stated), and the AGFI, TLI and CFI all to exceed .90 (Kline, 1998).

Study 2 : Results

Hypothesis 1. Single factor congeneric confirmatory factor analyses for public rumination, private rumination, public reflection and private reflection were conducted. Although no respondents had less than 5% missing values, confirmatory factor analysis requires a full data set with no random missing values. Thus, a new set of rumination and reflection items were formed through the replacement of missing values through the expectation-maximization (EM) algorithm available through SPSS (Klein, 1998). As anticipated in Hypothesis

1, the results initially confirmed the single factors of public and private, rumination and reflection found in Study 1.

The Public Rumination Model

The initial results of single factor congeneric confirmatory factor analysis of the public rumination model denoted an overidentified model with 14 degrees of freedom. However, goodness of fit indices and chi-square indicated that the model was a poor fit to the data, $\chi^2 (14, N=313) = 65.51, p = .000$, RMSEA = .11 (.08; .14), TLI = .90, CFI = .93, and AGFI = .90. Modification indices revealed that the model could be improved if certain error terms were covaried. Thus, error terms for Items 11 and 12 were covaried in the public rumination model (see Figure 5.1). This was considered to be appropriate as it appeared that Items 11 ('I often keep thinking about times when I have been embarrassed in front of others') and 12 ('I spend a great deal of time thinking back over my disappointing moments') were being answered in similar ways because they were similarly worded items. The correlation between the two items was strong but not extreme ($r = .52$).

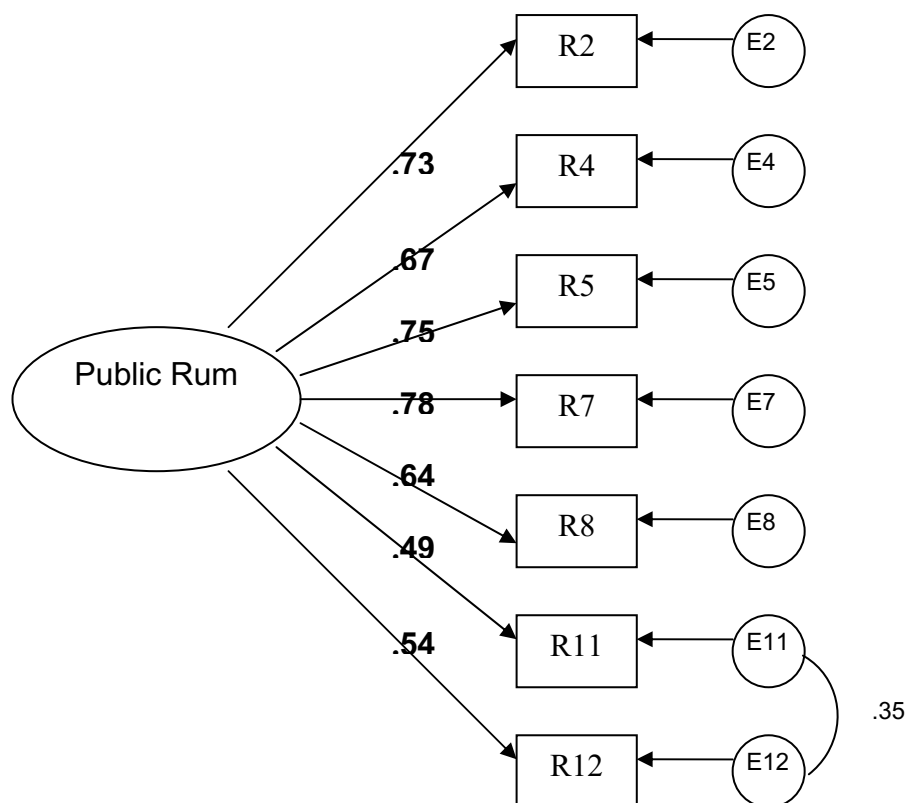


Figure 5.1. Standardised parameter estimates for the Public Rumination model.

Note. Public Rum=Public Rumination Factor; R2 to R12 – Rumination items; E2 to E12 = Error Terms

This adjustment, combined with Bollen-Stein bootstrapping, which takes into account violations of univariate and multivariate normality, resulted in a model that was better fit to the data, $\chi^2(13, N=313) = 28.31, p = .05$ (Bollen-Stein bootstrapping), RMSEA = .06 (.03; .09), TLI = .97, CFI = .98, and AGFI = .95. Figure 5.1 shows the parameter estimates for the seven item model of public rumination.

The Private Rumination Model

The initial results of the single factor congeneric CFA for the private rumination model denoted an overidentified model with 5 degrees of freedom. However, goodness of fit indices and chi-square indicated that the model was a poor fit of the data $\chi^2(5, N=313) = 37.05, p = .000, RMSEA = .14 (.10; .19), TLI = .72, CFI = .86, \text{ and } AGFI = .86$. Modification indices revealed that the model could be improved if certain error terms were covaried. The correlations between the items were not high, with $r = .39$ between Items 6 and 9 and $r = .25$ between Items 6 and 10. Thus, error terms for Items 6 with 9 and 6 with 10 were covaried in the model. Although it would be preferable not to covary error terms, the similarity of the content of the three items (e.g., Item 6 ‘I don’t waste time going over experiences that are over and done with in my life’, Item 9 ‘I never ruminative or dwell on myself for very long’, and Item 10 ‘It is easy for me to put unwanted thoughts about others out of my mind’) indicates that to get a reasonable fit these items needed to be linked in this way.

These adjustments resulted in a model that was a better fit to the data, $\chi^2(3, N=313) = 7.98, p = .11$ (Bollen-Stine bootstrapping), $RMSEA = .07 (.01; .14), TLI = .93; CFI = .98; \text{ and } AGFI = .95$). Figure 5.2 shows the parameter estimates for the five item model of private rumination.

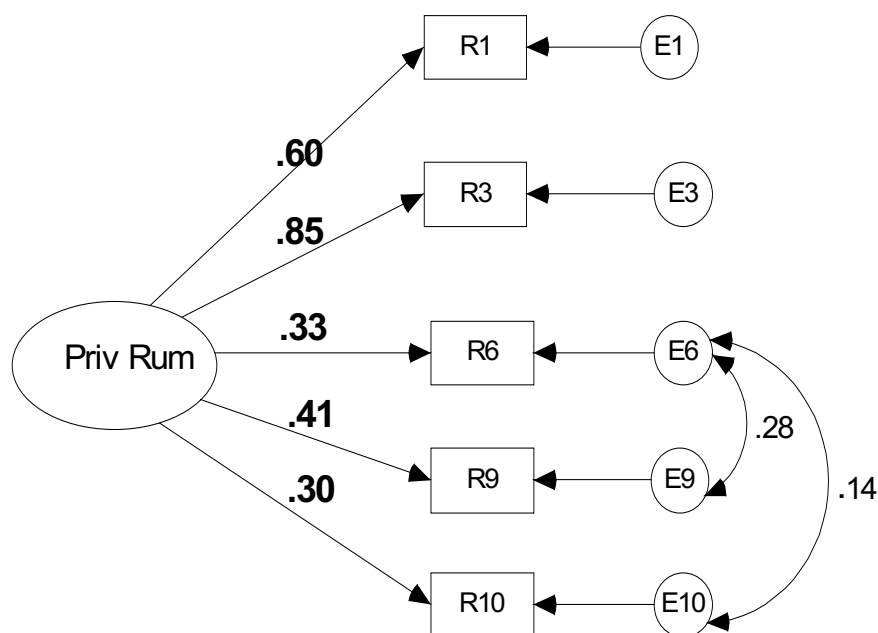


Figure 5.2. Standardised parameter estimates for private rumination model.

Note. Priv Rum=Private Rumination Factor; R1 to R10 – Rumination items; E1 to E10 = Error Terms

The Public Reflection Model

The test of the public reflection model was found to be a good fit of the data, $\chi^2(5, N=313) = 3.27, p = .66, RMSEA = .00 (.00; .06), TLI = 1.01, CFI = 1.0,$ and $AGFI = .99$. No further modification of the public reflection model was required. From these results it was concluded that the public reflection factor, found through exploratory and factor analysis in Study 1, was also substantiated in an independent sample in Study 2 (see Figure 5.3).

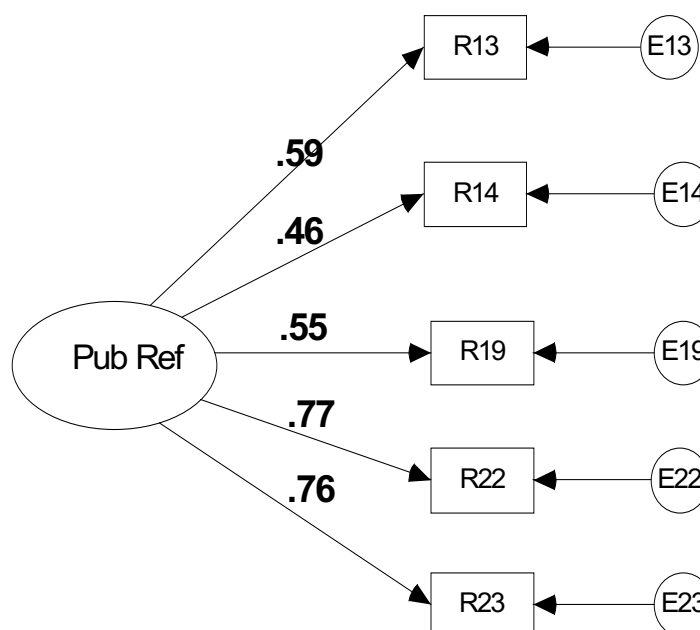


Figure 5.3. Standardised parameter estimates for the Public Reflection model

Note. Pub Ref=Public Reflection Factor; R13 to R23 – Rumination items; E13 to E23 = Error Terms

The Private Reflection Model

The results of the single congeneric CFA for the private reflection model denoted an overidentified model with 9 degrees of freedom. However, goodness of fit indices and chi-square indicated that the model was a poor fit to the data, $\chi^2 (9, N=313) = 44.84, p = .000$, RMSEA = .11 (.08; .15), TLI = .90, CFI = .94, and AGFI = .88. Modification indices revealed that the model could be improved if certain error terms were covaried. Thus, error terms for Items 17 and 20 were covaried in the model. Item 17 ‘I don’t really care for introspective or self-reflective thinking’ and Item 20 ‘I don’t care much for self-analysis’ correlated at $r = .61$. This resulted in a model that was a better fit to the data, χ^2

(8, $N=313$) = 12.67, $p = .36$ (Bollen-Stein Bootstrapping), RMSEA = .04 (.00; .09), TLI = .98, CFI = .99, and AGFI = .97. Figure 5.4 shows the parameter estimates for the six item model of private reflection.

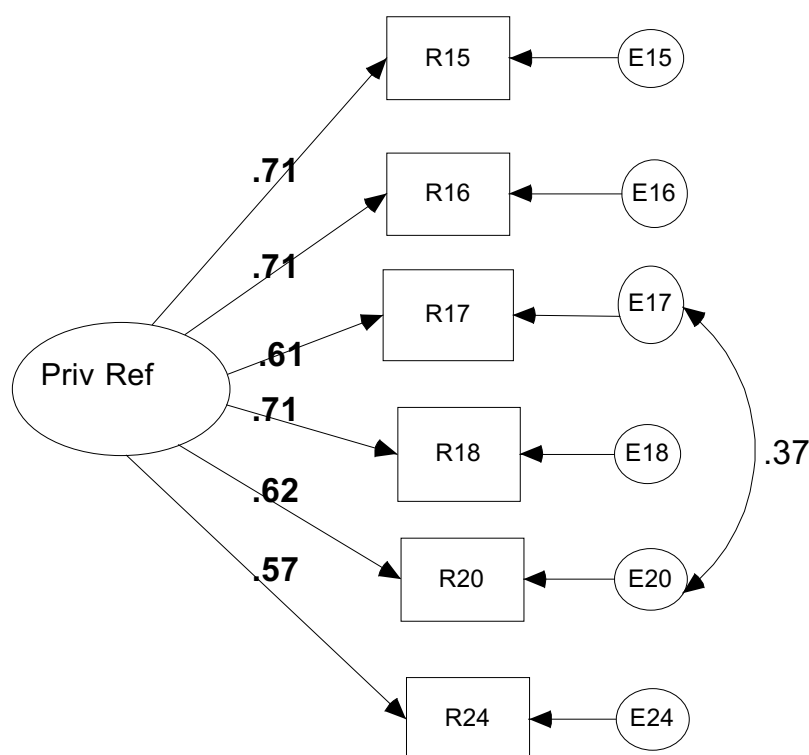


Figure 5.4. Standardised parameter estimates for the Private Reflection model.

Note. Priv Ref=Private Reflection Factor; R15 to R24 – Rumination items; E15 to E24 = Error Terms

Confirmatory Factor Analysis of the Public and Private Rumination Model

As a stronger test of Hypothesis 1 the fitting of a two-factor congeneric model for public and private rumination was conducted. This model was identified with 53 degrees of freedom. However, goodness of fit indices and chi-square indicated that the model was a poor fit to the data, χ^2 (53, $N=313$) = 192.86, $p = .000$, RMSEA = .09 (.08; .11), TLI = .89, CFI = .88, and AGFI =

.86. Modification indices revealed that the model could be improved if certain error terms were covaried. Thus, error terms for Items 6 and 9 were covaried and error terms for 11 and 12 were covaried (see Figure 5.5). The items that were covaried were the same items that were covaried in the single congeneric models.

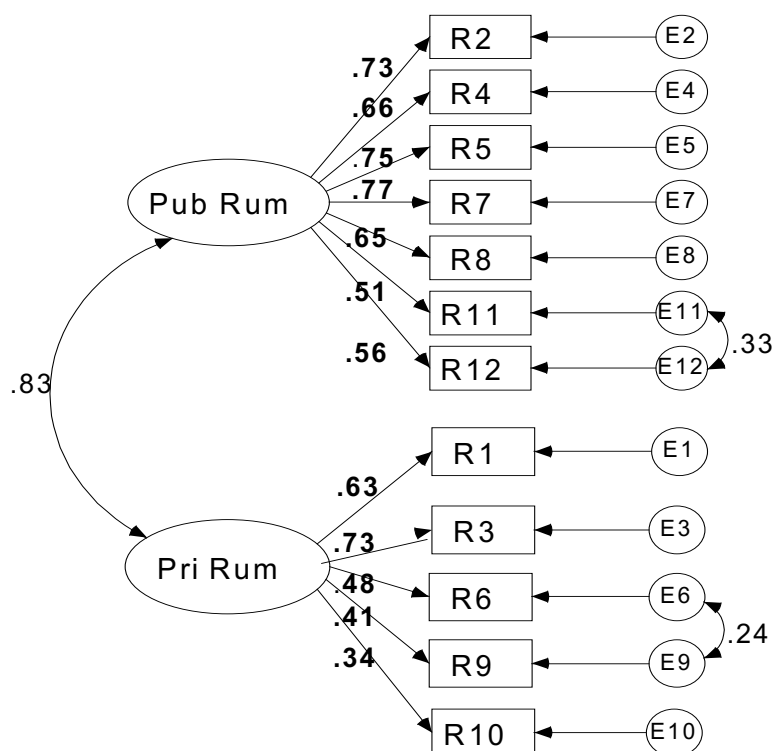


Figure 5.5. Standardised parameter estimates for the Public and Private Rumination model.

Note. Pub Rum=Public Rumination Factor; Pri Rum=Private Rumination Factor

This adjustment appeared to result in a model that was a better fit to the data. Goodness of fit indices and chi-square indicated that the model was a good fit to the data, $\chi^2(51, N=313) = 143.29, p = .000$, RMSEA = .08 (.06; .09), TLI = .90, CFI = .92, and AGFI = .89. However, the intercorrelation between public

rumination and private rumination of .83 indicates that this model does not show good discriminant validity between the two factors.

Confirmatory Factor Analysis of the Public and Private Reflection Model

Again, as a stronger test of Hypothesis 1 the fitting of a two-factor congeneric model for public and private reflection was conducted. This model was identified with 43 degrees of freedom. However, goodness of fit indices and chi-square indicated that the model was a poor fit to the data, χ^2 (43, $N=313$) = 132.5, $p = .000$, RMSEA = .08 (.07; .10), TLI = .91, CFI = .93, and AGFI = .88. Modification indices revealed that the model could be improved if certain error terms were covaried. Thus, error terms for Items 17 and 20 were covaried (see Figure 5.6). The items that were covaried were the same items that were covaried in the single congeneric models.

This adjustment also appeared to result in a model that was a better fit to the data. Goodness of fit indices and chi-square indicated that the model was a good fit to the data, χ^2 (42, $N=313$) = 92.04, $p = .000$, RMSEA = .06 (.04; .08), TLI = .95, CFI = .96, and AGFI = .95. However, the intercorrelations between public reflection and private reflection of .91 indicates that this model does not show good discriminant validity between the two factors.

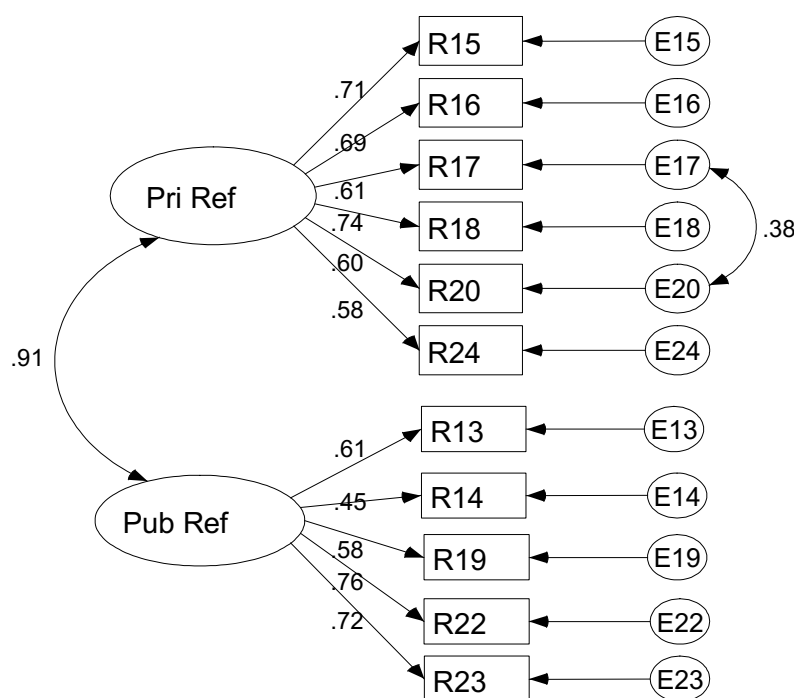


Figure 5.6. Standardised parameter estimates for the Public and Private Reflection Model

Note. Pri Ref=Private Reflection Factor; Pub Ref=Public Reflection Factor

Summary of the Confirmatory Factor Analyses for the Subfactors of Rumination and Reflection

As single factor congeneric factors, public rumination, private rumination, public reflection and private reflection were initially confirmed as models which fit well to the data. As a stronger test of Hypothesis 1, public and private rumination together and public and private reflection together were also confirmed as models which well to the data. However, the large intercorrelations between public and private rumination (.83) and between public and private reflection (.91) indicated poor discriminant validity between the factors. In view of these findings, it was decided to extend this section of the study and investigate whether differential responding to negative and positive

items reflected a method effect that was resulting in the appearance of additional factors. A recently reported re-analysis of the Penn State Worry Questionnaire by Brown (2003) has found this to be the case, in that item response has impacted on previous factorial solutions for this measure. Brown (2003) found that instead of a well-established two-factor solution, a one-factor solution, which incorporated an error theory to reflect the method effect from five reverse-worded items, was considered to be a better fit to the data.

In light of this, the fitting of a two-factor congeneric model for public and private rumination with one method factor incorporating three reverse scored items (Items 6, 9 & 10) was conducted. This model was identified with 50 degrees of freedom. As shown in Figure 5.7 goodness of fit indices and chi-square indicated that this model was a good fit to the data, $\chi^2(50, N=313) = 126.4, p = .000, RMSEA = .07 (.05; .09), TLI = .92, CFI = .94, \text{ and } AGFI = .90.$

With the addition of a method factor the intercorrelations between public and private rumination has decreased to .76 indicating better discriminant validity. Intercorrelations between public rumination and the method factor was .68 and between private rumination and the method factor was .57 also indicating that the method factor is displaying discriminant validity between itself and public and private rumination.

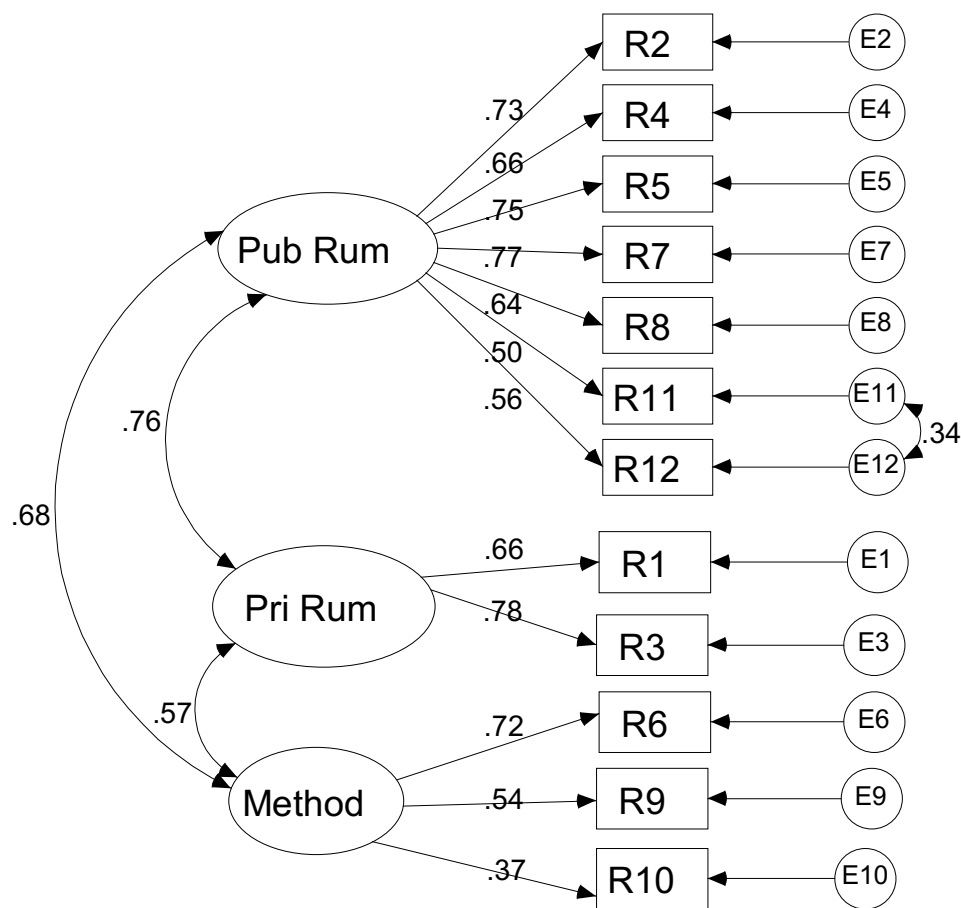


Figure 5.7. Standardised parameter estimates for the Public and Private Model of Rumination with one Method Factor

Note. Pub Rum=Public Rumination; Pri Rum=Private Rumination; Method=Method Factor

In addition, the fitting of a two-factor congeneric model for public and private reflection with one method factor for three reverse scored items (Items 17, 20 & 24) was conducted. This model was identified with 41 degrees of freedom (See Figure 5.8). Goodness of fit indices and chi-square indicated that this model was a good fit to the data, $\chi^2(41, N=313) = 97.2, p = .000$, RMSEA = .07 (.05; .08), TLI = .94, CFI = .95, and AGFI = .95.

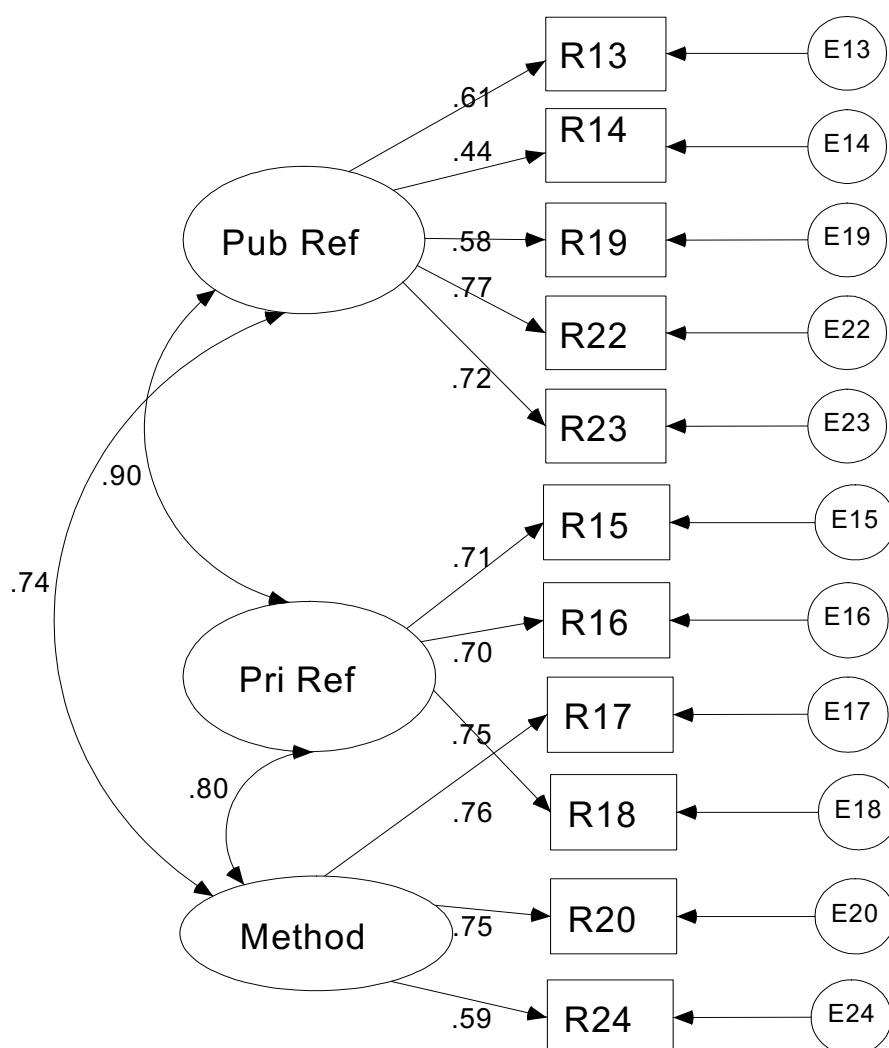


Figure 5.8. Standardised parameter estimates for the Public and Private Reflection model with one Method factor

Note. Pub Ref=Public Reflection; Priv Ref=Private Reflection; Method=Method factor

However, in contrast to the results for the public and private rumination model, incorporating a method factor for the reverse worded items found that intercorrelations between public and private reflection has not decreased (.90). Intercorrelations between public reflection and the method factor was .74 and between private reflection and the method factor was .80. Including a method

factor did not increase the discriminant validity between public and private reflection.

The present findings indicate that there is not strong enough empirical evidence to substantiate a four-factor solution for the Revised-Rumination and Reflection Scale. A method effect was found for the three reverse worded items in the rumination scale but not for the reverse worded items in the reflection scale. At this stage any interpretation of a three-factor solution for rumination (public rumination, private rumination & a method factor) or a two-factor solution for reflection (public reflection & private reflection) was viewed as inappropriate. All further data analyses were conducted only for the general factors of rumination and reflection.

Confirmatory Factor Analyses of Rumination and Reflection Factors

A two-factor congeneric model for the constructs of rumination and reflection were conducted using AMOS 5.0 (Arbuckle, 2004). The model was assessed using the same criteria for goodness of fit as before. The estimated likelihood chi-square statistic was used to assess the statistical fit of the model. Descriptive fit was assessed by the ratio of χ^2 to its degrees of freedom (df), the root-mean-square error of approximation (RMSEA), the Tucker-Lewis Index (TLI), the adjusted goodness of fit index (AGFI) and the comparative fit index (CFI). The following criteria were used to indicate adequate fit of the model to the data: $\chi^2 / df < 3$, RMSEA $< .08$ (90% confidence intervals stated), and the AGFI, TLI and CFI all to exceed .90 (Kline, 1998).

The results of the two-factor congeneric confirmatory factor analysis of the rumination and reflection model denoted an overidentified model with 251

degrees of freedom. However, goodness of fit indices and chi-square indices indicated that the model was a poor fit to the data, $\chi^2 (251, N=313) = 624.82$, $p=.000$, RMSEA = .07 (.02; .08), TLI = .85, CFI = .86, and AGFI = .82.

Modification indices revealed that the model could be improved in certain error terms were covaried. Therefore, errors terms for Items 1 and 3, 6 and 9, 11 and 12, and 17 and 20 were covaried. This resulted in a model that was a good fit to the data, $\chi^2 (247, N=313) = 492.31$, $p = .000$, RMSEA = .08 (.05; .06), TLI = .90, CFI = .91, and AGFI = .86. The intercorrelations between rumination and reflection was .20 which indicates that there is strong discriminant validity between the two concepts.

In sum, the expectations of a public and private, rumination and reflection factors was not supported. The conducting of a CFA supported the model of general factors of rumination and reflection that fit well with the data.

Bivariate Correlations Using the Rumination and Reflection Factors

A series of bivariate correlations were run to test for the hypothesised relationships. As the previous results failed to confirm the factors of public and private reflection as well as the factors of public and private rumination, the four subfactors were not involved in the following data analyses. Therefore, Hypotheses 2, 3, 4 and 5 were reported only in terms of rumination and reflection. The results of these analyses show a similar pattern of correlations to those found in Study 1 among rumination and reflection and with aspects of self-consciousness. These patterns can be seen in Table 5.1. It was also found that rumination correlated more highly with and can be predicted by neuroticism and negative psychological symptoms, whereas, reflection tended

not to be associated with psychological symptoms but with openness to experience. The results also show that rumination is associated with negative social desirability, whereas reflection is not. These patterns can be seen in Tables 5.1 and 5.2.

Correlations Among Rumination and Reflection

Hypothesis 2. The correlation between the primary factors of rumination and reflection was weak ($r = .18, p > .01$) and similar to that found in Study 1.

Correlations among Rumination and Reflection, and Aspects of Self-Consciousness

Hypothesis 2a: Rumination. As expected, rumination was strongly and positively associated with most aspects of self-consciousness, that is with self-reflectiveness, public self-consciousness, and with social anxiety but not with internal state awareness.

Hypothesis 2b: Reflection. As anticipated, reflection was correlated with both aspects of private self-consciousness (i.e., self-reflectiveness & internal state awareness) but was not associated with public self-consciousness, nor with social anxiety.

Correlations among Rumination and Reflection, and Personality Dimensions

A series of bivariate correlations were run for the rumination and reflection factors, the Big-Five personality dimensions and narcissism to test for the hypothesised relationships. The pattern of results, as seen in Table 5.1, supports the anticipated relationships, in that the rumination and reflection factors showed distinct patterns of relationships with the dimensions of

personality, and in particular, with the variables of neuroticism and openness to experience.

Table 5.1

Bivariate Correlations of Rumination and Reflection Factors with Self-Consciousness Factors (Scheier & Carver, 1985), NEO-FFI Factors (Costa & McCrae, 1992), and Narcissism (Raskin & Terry, 1988)

	Rumination	Reflection
Self-Consciousness		
Private Self-Consciousness	.38**	.62**
Self-reflectiveness	.43**	.57**
ISA	.12	.46**
Public Self-Consciousness	.50**	.10
Social Anxiety	.33**	-.09
Personality Factors		
Neuroticism	.61**	.04
Extraversion	-.16**	-.05
Openness	.10	.60**
Agreeableness	-.21**	.02
Conscientiousness	-.12*	.20**
Narcissism	.02	.23**

N=313

** Correlation is significant at 0.01 level (2-tailed); * Correlation is significant at 0.05 level

Note. ISA=Internal state awareness; Openness=Openness to Experience

Hypothesis 2c: Rumination. As expected, rumination was strongly and positively correlated with neuroticism. It was also modestly and inversely correlated with extraversion and agreeableness. In addition, rumination was modestly and inversely correlated with conscientiousness. This pattern of correlations, for rumination, suggests that it is strongly associated with emotional instability (neuroticism), and has moderate associations with the more negative aspects of personality.

Hypothesis 2d: Reflection. Consistent with Hypothesis 2d, the reflection factor was strongly correlated with the personality factor of openness to experience. It was also modestly associated with conscientiousness and narcissism. An analysis of the narcissism items revealed that there was an association with four items (r ranging from .24 to .31) tapping into the notion of self-admiration. These particular items encompass thoughts of superiority and vanity.

Correlations among Rumination and Reflection, and Symptoms of Psychological Distress

A further series of bivariate correlations were run for the rumination and reflection factors and symptoms of psychological distress to test the hypothesised relationships. The results support the anticipated relationships, and can be seen in Table 5.2.

Hypothesis 2e: As hypothesised, rumination correlated more highly with all of the negative psychological symptoms than did reflection. Rumination, is particularly associated with higher levels of interpersonal sensitivity, anxiety and depression.

Table 5.2

Bivariate Correlations for Rumination and Reflection Factors with BSI Symptoms and Indices (Derogatis, 1993), Social Desirability (Reynolds, 1982) and Anxiety (Butcher et al., 1990)

	Rumination	Reflection
Somatisation	.31**	.03
Obs-Com	.41**	.13*
Int-Sens	.53**	.10
Depression	.51**	.13*
Anxiety	.51**	.18*
Hostility	.38**	.05
Phobic	.31**	.13*
Paranoid	.47**	.11
Psychoticism	.45**	.18*
GSI	.53**	.14*
PST	.51**	.12*
PSDI	.46**	.09
SD	-.32**	.01
Anxiety	.61**	.12*

N=313

** Correlation is significant at 0.01 level (2-tailed); * Correlation is significant at 0.05 level

Note. Obs-Com=Obsessive-Compulsive; Int-Sens=Interpersonal Sensitivity; Phobic=Phobic Anxiety; Paranoid=Paranoid Ideation; GSI=Global severity index (BSI); PST=Positive symptom total; PSDI= Positive symptom distress index; SD=Marlowe-Crowne Social Desirability; Anxiety=A-MMPI Anxiety

This pattern of associations was confirmed in the general symptom indexes of the Brief Symptom Inventory. The three global indices from the Brief Symptom Inventory indicated that rumination is associated with a

higher intensity of distress (GSI); the extent of the distress of greater (PST), and a higher average level of distress (PSDI). On other hand, reflection showed little correlation with the Brief Symptom Inventory symptom dimensions. Thus, reflection appears to be relatively independent of symptoms of psychological distress.

Correlations among Rumination and Reflection and Social Desirability

Hypothesis 2f: Rumination. As expected, the correlation, between rumination and social desirability, was modest but negative. This finding supported a previous suggestion that a negative association with social desirability predicts psychopathology (Watson et al., 1995). Thus, a negative correlation with social desirability indicated that ruminators have a tendency to focus on and admit to a more negative emotional state.

Summarising the Pattern of Correlations

Taken together, the pattern of correlations, as shown in Tables 5.1 and 5.2, revealed that rumination and reflection have different patterns of relationships with symptoms of psychological distress, personality factors, aspects of self-consciousness and social desirability. Consistent with Hypothesis 2 (including 2a, 2b, 2c, 2d, 2e & 2f) the overall pattern of correlations seen for rumination is indicative of emotional instability and distress, whereas, the pattern of correlations for reflection is indicative of psychological health.

These results support the notion that rumination has concomitant associations with dimensions of psychological distress, personality factors and negative social desirability. On the other hand, reflection shows little to no association with indices of psychological distress.

Factor Analysis of the Rumination and Neuroticism Items

In order to address the possibility of overlap between the rumination and neuroticism items, a Maximum Likelihood Factor Analysis (with Promax rotation & factor loading cut-off of .30) was conducted on 12 items measuring rumination from the Revised-Rumination and Reflection Scale and 12 items measuring neuroticism from the NEO-FFI (Costa & McCrae, 1992). Bartlett's Test of Sphericity (2662.18 (276), $p = .000$) and Kaiser-Meyer-Olkin Measure of Sampling Adequacy (.91) indicated adequate multivariate normality of the set of distributions.

Hypothesis 3a. As anticipated, the results clearly supported the hypothesis, that although the correlation between rumination and neuroticism was moderately strong ($r = .61$) they emerged as two individual factors. The Scree plot clearly indicated two separate factors (See Figure 5.9). The two factors together accounted for 41% of the variance. Factor 1 accounted for 32% of the variance (eigenvalue = 7.73), Factor 2 accounted for 9% of the variance (eigenvalue = 2.11). The pattern matrix indicated one factor on which all 12 items from the neuroticism scale of the NEO-FFI loaded. The pattern matrix also indicated another factor on which 10 of the 12 rumination items loaded. However, a Chi-square test of the goodness-of-fit was significant ($p < .001$) suggesting that this was not the best fit to the data, though this is a test that is notoriously sensitive. (See Appendix B.5 for the Table of Factor Loadings.)

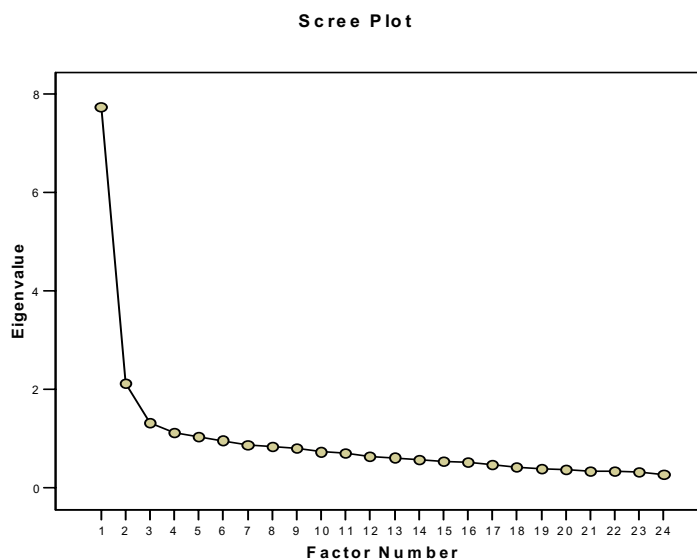


Figure 5.9. Scree plot for rumination and neuroticism items

Factor Analysis of the Reflection and Openness to Experience Items

In order to address the possibility of overlap between the reflection and openness to experience items, a Maximum Likelihood Factor Analysis (with Promax rotation & factor loading cut-off of .30) was conducted on 12 items measuring reflection from the Revised-Rumination and Reflection Scale and 12 items measuring Openness to Experience from the NEO-FFI (Costa & McCrae, 1992). Bartlett's Test of Sphericity (2522.72 (276), $p = .000$) and Kaiser-Meyer-Olkin Measure of Sampling Adequacy (.89) indicated adequate multivariate normality of the set of distributions.

Hypothesis 3b. Although the picture is not as clear for reflection/openness to experience items as it was for rumination/neuroticism items, the results generally supported the hypothesis, in that reflection and openness appeared to be individual factors. The items which measured

reflection and openness to experience generally loaded on separate factors. The correlation between reflection and openness to experience was moderately strong ($r = .60$). Cattell's Scree plot indicated two to four factors (See Figure 5.10). A four-factor solution was found to be the most interpretable factorial solution. The four factors together accounted for 49% of the variance. Factor 1 accounted for 31% of the variance (eigenvalue = 7.48), Factor 2 accounted for 7% of the variance (eigenvalue = 1.69), Factor 3 accounted for 6% of the variance (eigenvalue = 1.5), and Factor 4 accounted for 4.5% of the variance (eigenvalue 1.1). The pattern matrix indicated that the items from the reflection scale generally loaded on two factors. So also did the items from the openness to experience scale. There two items from the reflection scale (Item 13 & 14) which loaded on the openness to experience factor (Factor 3). A Chi-square test of the goodness-of-fit was significant ($p < .001$). (See Appendix B.5 for the Table of Factor Loadings.)

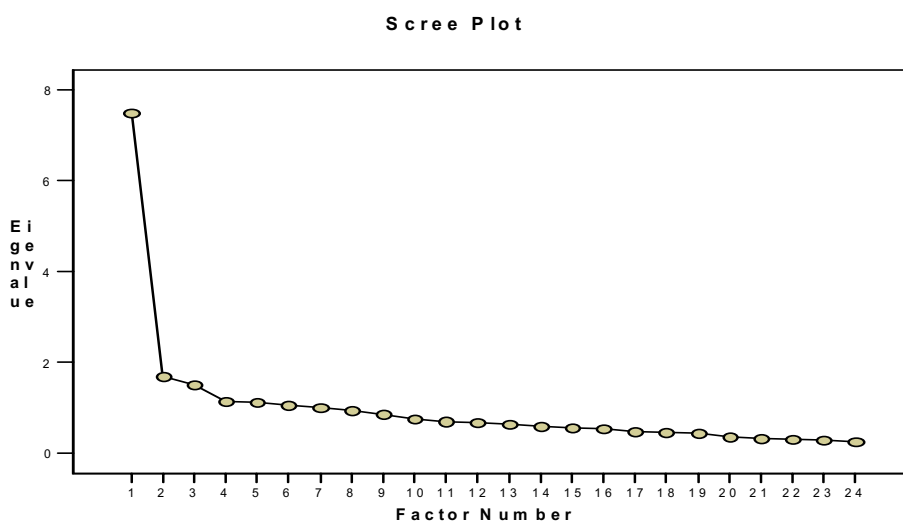


Figure 5.10. Scree plot for reflection and openness to experience items

In summary, the factor analysis of items from the neuroticism scale of Costa and McCrae's (1992) NEO-FFI and the items from the rumination scale of the Revised-Rumination and Reflection Scale yielded two clearly separate constructs of neuroticism and rumination. A factor analysis of the items from the openness to experience scale and the reflection saw that these items were not as clearly differentiated on individual factors. However, any overlap of items is happening in a modest way, and is not of particular concern to this research project.

Multiple and Hierarchical Regression for Predicting Rumination and Reflection

The findings of the previous series of bivariate correlations indicated that rumination was associated with neuroticism, introversion, and disagreeableness. However, it was not known whether the association that rumination had with psychological distress was because of the association that neuroticism, introversion and disagreeableness is known to have with symptoms of distress. Therefore, a series of multiple and hierarchical regressions were conducted, using symptoms of psychological distress, social desirability, an independent measure of anxiety, personality factors, narcissism, and self-consciousness factors, to test the individual contribution that these variables make in predicting rumination and reflection

Normality Assumptions

Linearity and homoscedasticity (equal variances) assumptions were ascertained for each multiple regression through a plot of residual versus

predicted values. A broad, horizontal band of points (with some fanning out) would indicate a normal distribution. In all cases, there was no definite pattern to the fanning out of residuals, thus, the assumption for linearity and equal variances were met. Histograms and normal probability plots were also used to ascertain skewness of residuals. With the exception of the Brief Symptom Inventory dimensions, there were no gross violations of assumptions regarding skewness.

The standard multiple regression procedure is robust to moderate violations of normality regarding equal variances, linearity and skewness, providing there are no outliers and a sufficient sample size is used (Francis, 1999). In the case of the substantial skewness of the Brief Symptom Inventory dimensions, which indicated that these scores were not normally distributed, more cases than standard were needed (Tabachnik & Fidell, 1996). If 20 dependent variables are entered then it is recommended that there should be 13 cases for each dependent variable (plus 50). This is a higher ratio than that normally recommended of 8 cases to each dependent variable (plus 50).

To maximise the ratio of cases to dependent variables, the following screening was undertaken. First, only those dependent variables that were significantly correlated with the independent variable were entered. Then, multicollinearity tolerance statistics (strong correlations amongst the predictors) were inspected for tolerances that were too small (less than .3) and Variance Inflation Factors (VIF) that were too large (more than 3.00) (Tabachnik & Fidell, 1996). Dependent variables that violated these criteria were taken out of the model (e.g., Brief Symptom Inventory global indices all Variance Inflation Factors >3).

Hypothesis 4: Estimating the Predictors of Rumination

Initially, the standard multiple regression approach was deemed the most appropriate of the regression options for ascertaining a prediction equation in the data from the present sample (Tabachnik & Fidell, 1996). Therefore, all of the independent variables that met the normality assumptions and correlated significantly with the dependent variable of rumination were entered together. The independent variables included the nine symptoms of psychological distress, social desirability, anxiety, neuroticism, extraversion, agreeableness, and conscientiousness, internal state awareness, self-reflectiveness, public self-consciousness, and social anxiety.

The multiple regression model for rumination was adjusted by excluding those variables with tolerances less than .3, and VIF that were more than 3.00. Thus, six independent variables were entered in order of highest to lowest Beta values (ranging from $r = .29$ to $-.10$, all p 's $< .05$). In support of Hypothesis 4, it was found that scores for rumination were predicted by greater levels of neuroticism, public self-consciousness, and self-reflectiveness. The significant predictors of rumination when entered together are shown in Table 5.3. The regression analysis indicated that 48% of the variation in rumination could be explained by the regression model ($R^2 = .48$) and that the regression model significantly predicted rumination, $F(3,309) = 93.59, p < .001$.

Following this, a series of hierarchical regressions were conducted in which all but one of the independent variables were entered as a block in Step 1, with the remaining variable entered as an individual variable in Step 2. This analysis was undertaken to test whether each independent variable made a

significant individual contribution as a predictor of rumination. The results can be seen in Table 5.3 as the R^2 change values.

Table 5.3

Summary of Multiple and Hierarchical Regressions for Variables Predicting Rumination

Variable	B	SE B	β	R^2 Change
Neuroticism	.40	.04	.462***	.176***
Public Self-Consciousness	.43	.09	.242***	.043***
Self-Reflectiveness	.37	.10	.171***	.022***

$N = 313$

*** $p < .001$

The results indicated that the independent variables of neuroticism, public self-consciousness and self-reflectiveness individually made a unique contribution to the prediction of rumination. In particular, neuroticism, public self-consciousness and self-reflectiveness contributed significantly to the variance in rumination.

Hypothesis 5: Estimating the Predictors of Reflection

The same procedure was followed for reflection. All significantly correlated variables with reflection were entered. Linearity and homoscedacity was ascertained through residual and normal probability plots.

The multiple regression model for reflection was adjusted by excluding those variables with tolerances less than .3, and VIF that were more than 3.00. Thus, five independent variables were entered in order of highest to lowest Beta values (ranging from $r = .44$ to $.24$, all p 's $< .05$). As expected, (Hypothesis 5), it was found that scores for reflection were predicted by greater levels of openness

to experience, self-reflectiveness, conscientiousness, internal state awareness, and narcissism. There were no symptoms of psychological distress which predicted reflection. The significant predictors of reflection when entered together are shown in Table 5.4. The analysis indicated that 57% of the variation in public reflection could be explained by the regression model ($R^2 = .57$) and that the regression model significantly predicted public reflection, $F(5,307) = 81.50, p < .001$.

Table 5.4

Summary of Multiple and Hierarchical Regressions for Variables Predicting Reflection

Variable	B	SE B	β	R^2 Change
Openness to Experience	.55	.05	.431***	.160***
Self-Reflectiveness	.93	.11	.384***	.110***
Conscientiousness	.15	.05	.122**	.014**
Internal State Awareness	.40	.16	.108*	.008*
Narcissism	.10	.05	.078*	.006*

$N = 313$

* $p < .05$, ** $p < .01$, *** $p < .001$

Following this a series of hierarchical regressions were again conducted in which all but one of the independent variables were entered as a block in Step 1 with the remaining variable entered as an individual variable in Step 2. This analysis was undertaken to test whether each independent variable made a significant individual contribution as a predictor of reflection. The results can be seen in Table 5.5 as R^2 change values. This indicated that openness to

experience, self-reflectiveness, conscientiousness, internal state awareness, and narcissism all made a unique contribution to the prediction of reflection.

Study 2 : Summary and Discussion

The two-factor structure of the Revised-Rumination and Reflection Scale was corroborated using Confirmatory Factor Analysis, in an independent sample, indicating that Study 2 fulfilled its aim. In addition, in a series of bivariate correlations the convergent and discriminant validity of the Revised-Rumination and Reflection Scale were examined. Thus, the relationship of rumination and reflection to self-reported personality factors (e.g., neuroticism, openness to experience, narcissism), and possible associations with psychological symptoms (e.g., depression, anxiety, hostility) was identified.

Study 2 also addressed the concern that the rumination scale had items that were too similar in content to the items in a measure of neuroticism, and also that the reflection scale had items that were similar in content to the openness to experience scale. A factor analysis of the items from the rumination scale and neuroticism scale found that there was little item overlap between neuroticism and rumination. Similar item content did not account for the relationship between these two dimensions. It was concluded that neuroticism and rumination are two relatively independent constructs as are reflection and openness to experience.

Following on from this, a series of multiple and hierarchical regressions were conducted, using symptoms of psychological distress, social desirability, personality and self-consciousness factors to identify the individual contribution that these variables made in predicting rumination and reflection.

The public and private, rumination and reflection dimensions were not substantiated through Confirmatory Factor Analysis in Study 2. The rumination and reflection dimensions that were substantiated through Confirmatory Factor Analysis in Study 2 are identified as follows.

Rumination

It was found through a series of bivariate correlations that the strongest correlations were between rumination and a broad range of negative psychological symptoms. Rumination also had a strong association with neuroticism, disagreeableness and distress in terms of self-consciousness and social anxiety.

Regression analyses gave further support to the correlational findings for rumination. The variables that predicted rumination were conceptually straight forward, in that neuroticism, public self-consciousness and self-reflectiveness were found to be predictors. However, despite the strong correlations that rumination had with symptoms of psychological distress, none of these variables were found to be significant predictors of rumination.

Reflection

A series of bivariate correlations were also run to explore the hypothesised relationships between reflection and psychological health. In contrast to rumination, reflection was relatively independent of symptoms of psychological distress. Global indices from the Brief Symptom Inventory indicated low to no levels of distress and the reporting of few if any distressful symptoms. On a symptom dimension level, reflection had weak associations with anxiety, phobic anxiety, obsessive-compulsiveness, depression and

psychoticism. Further investigation found that the highest correlating anxiety item for reflection was 'Feeling tense or keyed up'.

In addition, reflection was strongly associated with the personality characteristic of openness to experience (positive dimension), self-reflection and internal state awareness (private self-consciousness) and moderately associated with conscientiousness, and narcissism. Thus, consistent with theoretical and empirical evidence, reflection is associated with a more open type of personality.

Regression analyses gave further support to the correlational findings for reflection. They revealed that reflection could be predicted by the personality trait of openness to experience, self-reflectiveness, conscientiousness, internal state awareness, and narcissism. This confirms the correlations found previously, that there is no association between reflection and psychological distress.

Study 1 and Study 2 : Combined Summary and Discussion

The first aim of this thesis was to extend the work of Trapnell and Campbell (1999) in terms of rumination and reflection encompassing interpersonal and intrapersonal domains. Although there were some indications in Study 1 that the self-focusing thought processes of rumination and reflection involved public and private dimensions this was not confirmed in Study 2. Thus, while there might be strong conceptual grounds for rumination and reflection being proposed as multi-dimensional constructs, the results of Study 2 failed to endorse this proposal empirically. It has emerged that an artifact of

differential responding to positive and negative items has resulted in a factor largely made up of negatively worded items.

The results of this thesis also indicate that there is a progression from psychological health to psychological distress in terms of the associations that reflection and rumination have with psychologically distressing symptoms. It appears that the further one moves away from an internally focused intellectual curiosity to an externally focused rumination the higher the likelihood there is of psychological ill-health (i.e., an increase in distressing symptoms).

As a fulfilment of the second aim of this thesis, the results of Study 2 confirmed that the self-absorption paradox could be explained in terms of a ruminative and reflective self-focus. A ruminative self-focus is indicative of psychological distress: rumination being associated with neuroticism and moderate to strong levels of symptoms of distress. In contrast, a reflective self-focus is associated with psychological health: reflection being associated with openness to experience and being relatively independent of distressing symptomatology.

The final aim of this thesis was to explore a new typology of coping and adjustment based on different combinations of rumination and reflection. Therefore, Study 3 involved an examination this typology in relation to psychological symptoms, personality factors, self-consciousness and autobiographical memory retrieval. It was anticipated that such a multifaceted assessment of a new typology would contribute further to our understanding of the self-absorption paradox.

CHAPTER 6

STUDY 3 : A TYPOLOGY OF COPING AND ADJUSTMENT

Aims

The primary aim of Study 3 was to investigate the typology of coping and adjustment proposed by Trapnell and Campbell (1999) with different combinations of ruminative and reflective thoughts. Using the same sample of respondents as in Study 2, four cognitive coping and adjustment groups (adaptable, repressive, sensitizing & vulnerable) were formed. While not specifically mentioned by Trapnell and Campbell (1999), given the similarity of the group's labels, it was thought that such a typology might share an overlap with the Weinberger et al. (1979) typology of coping and avoidance. Different combinations of social desirability and anxiety form the four Weinberger et al. coping and avoidance groups (low-anxious, repressor, high-anxious, defensive high-anxious). Differences between groups in the rumination and reflection typology and the overlapping typology were looked at in terms of the respondents' social desirability, personality, self-consciousness, and psychological symptom scores.

A further aim of Study 3 was to address the cognitive processes involved in repression. As a cognitive strategy, repressors process information in ways that deceive themselves in terms of the impact of negative affect. Weinberger et al.'s (1979) typology does not differentiate repressors in terms of cognitive strategies but in terms of level of affect (i.e., anxiety) and socially desirable responding (self-defensiveness). Therefore, it was proposed that the new model

of coping and adjustment would be equally effective in identifying this particular group within the population because the cognitive strategy of repressors would be to self-report low levels of both reflection and rumination. In contrast, high reflection and low rumination levels would result in a profile of well-functioning and psychologically healthy individuals.

Study 3 was conducted in three stages. The first stage involved the formation of responses from participants in Study 2 into different combinations of rumination and reflection scores. The second stage involved the data analysis of these responses to assess the differences between the rumination and reflection groups on levels of social desirability, personality factors, self-consciousness, and psychological symptoms.

A third aim of Study 3 and which forms the third section of this study was to examine the different combinations of rumination and reflection in relation to the retrieval of personal memories. Autobiographical memory has been the subject of a large body of research involving rumination (e.g., McFarland & Buehler, 1998; Teasdale & Green, 2004; Watkins & Teasdale, 2001), and repression (e.g., Ashley & Holtgraves, 2003; Dickson & Bates, 2005; Myers et al., 1998). Therefore, Study 3 also involved an investigation of the four groups in the retrieval of autobiographical memories through a cognitive experiential task based on Williams and Broadbent's (1986) Autobiographical Memory Task (AMT). Thus, the third stage of Study 3 used a subsample of the participants from Study 2 who volunteered to participate in a study on personal memories. This stage of Study 3 encompassed an investigation of differences between the rumination and reflection groups on measures of specificity and latency of autobiographical memories.

Method

Participants

The sample for Study 3 ($N=313$) was the same as that in Study 2. Details of participants can be found in Study 2 (p. 168).

Measures

The questionnaire battery was the same as that in Study 2. Details of the measures can be found in Study 2 (pp 169-176). The questionnaire battery comprised the following scales: The Revised-Rumination and Reflection Scale (R-RRS); The Self-Consciousness Scale-Revised Version (SCS-R; Scheier & Carver, 1985); The NEO Five-Factor Inventory (NEO-FFI; Costa & McCrae, 1992); The Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988); The Brief Symptom Inventory (BSI; Derogatis, 1993); The Minnesota Multiphasic Personality Inventory Anxiety Scale (A-MMPI; Butcher et al., 1990), and The Marlowe-Crowne Social Desirability Scale–Short Form C (MCSD; Reynolds, 1982).

Procedure

The data used in Study 3 was taken from that collected in Study 2. (See pp. 176-177.)

Formation of the Typological Groups

The formation of the groups for the rumination and reflection typology, and the Weinberger et al., (1979) typology involved the responses from participants in Study 2. Responses were categorized into the typologies according to their scores on rumination/reflection and anxiety/social desirability. A third typology was included to explore any overlap between the Trapnell and Campbell (1999) typology and the Weinberger et al. typology.

The Rumination and Reflection Groups

For the rumination and reflection typology, four groups of different combinations of rumination and reflection scores were formed utilising median splits. Refer to Table 6.1 for the composition of the four groups.

Table 6.1

Composition of the Four Rumination and Reflection Groups

	Adaptable		Repressive		Sensitive		Vulnerable	
	<i>n</i>	Age	<i>n</i>	Age	<i>n</i>	Age	<i>n</i>	Age
		<i>M</i> <i>SD</i>		<i>M</i> <i>SD</i>		<i>M</i> <i>SD</i>		<i>M</i> <i>SD</i>
Gender								
Male	16	25.00 (9.68)	18	19.61 (3.55)	18	21.89 (6.27)	8	26.98 (15.52)
Female	53	26.20 (10.52)	74	20.54 (6.86)	65	21.14 (6.64)	57	20.40 (7.19)
Grouping Scores								
Reflection	> 40		<= 40		> 40		<= 40	
Rumination	<= 42		<= 42		> 42		> 42	

N=313

The Weinberger, Schwartz and Davidson (1979) Typology

For the Weinberger et al. (1979) typology, four groups comprising different combinations of social desirability and anxiety scores were formed using median splits. Refer to Table 6.2 for the composition of the four groups.

Table 6.2

Composition of the Four Weinberger et al. (1979) Groups

	Low-Anxious		Repressor		High-Anxious		Defensive	
	<i>n</i>	Age	<i>n</i>	Age	<i>n</i>	Age	<i>n</i>	Age
		<i>M</i> <i>SD</i>		<i>M</i> <i>SD</i>		<i>M</i> <i>SD</i>		<i>M</i> <i>SD</i>
Gender								
Male	15	19.93 (3.85)	19	23.53 (8.98)	19	22.58 (7.71)	6	28.17 (16.29)
Female	69	22.48 (8.17)	88	22.70 (9.18)	67	20.87 (7.18)	26	20.58 (6.39)
Grouping Scores								
Anxiety	<=10		<=10		>10		>10	
SD	<= 7		> 7		<=7		> 7	

N=313

Note. Defensive=Defensive High-Anxious; SD=Social Desirability (Marlowe-Crowne Social Desirability Scale).

Formation of Mixed Groups – Overlap of Rumination/Reflection Groups with Weinberger et al. (1979) groups

A crosstabulation was run to ascertain the number of participants who would be categorized by both the rumination/reflection group criteria (combinations of rumination & reflection) and the Weinberger et al. (1979) criteria (combinations of social desirability & anxiety). It was found that 25 of the participants from Study 2 could be classified as meeting the criteria for being both adaptable (low rumination & high reflection) and low-anxious (low anxiety, low social desirability) and were labelled *adaptive*. It was also found that 37 participants from Study 2 satisfied the criteria for being repressive in

both typologies (low rumination, low reflection & low anxiety & high social desirability) and were labelled *repressor* (see Table 6.3).

Table 6.3

Crosstabulation of Rumination and Reflection Typology with Weinberger et al. (1979) Typology

Weinberger Groups	Rumination/Reflection Groups				Total
	Adaptable	Repressive	Sensitiser	Vulnerable	
Low-anxious	25	33	16	10	84
Repressor	30	37	13	7	87
High-anxious	8	18	43	39	108
Defensive High-anxious	7	4	12	9	32
Total	70	92	84	65	311

$N = 313$

The next two categories were not as clearly defined as the adaptable and repressive categories. However, there were 43 participants who appeared to fit the criteria for both the sensitiser group (high rumination & high reflection) and high-anxious group (high anxiety, low social desirability). This group was labelled *sensitive*, whereas there were only 9 participants who filled the criteria for an overlap between the vulnerable (high rumination & low reflection) and defensive high-anxious group (high anxiety, high social desirability). This group was labelled *vulnerable* (see Table 6.3). Refer to Table 6.4 for the composition of the four groups. Cohen's Kappa (.14) indicates that there is minimal overlap between the two typologies. This suggests that these are clearly different ways of differentiating individuals within the population.

Table 6.4

Composition of the Mixed Group Typology

	Adaptive		Repressor		Sensitive		Vulnerable	
	<i>n</i>	Age	<i>n</i>	Age	<i>n</i>	Age	<i>n</i>	Age
		<i>M</i> <i>SD</i>		<i>M</i> <i>SD</i>		<i>M</i> <i>SD</i>		<i>M</i> <i>SD</i>
Gender								
Male	5	23.40 (5.13)	8	21.13 (4.88)	10	23.80 (7.39)	3	32.67 (22.81)
Female	20	26.50 (8.92)	29	20.86 (7.74)	32	21.06 (6.33)	6	18.00 (.63)
Grouping Scores								
Reflection	> 40		<= 40		> 40		<= 40	
Rumination	<= 42		<= 42		> 42		> 42	
Anxiety	<=10		<=10		> 10		>10	
SD	<= 7		> 7		<=7		> 7	

N=114

Note. SD=Social Desirability***Hypotheses for the Rumination and Reflection Groups******Social Desirability***

Hypothesis 1. As past research has indicated that the repressor coping style encompasses a high level of social desirability combined with a low level of anxiety (Weinberger et al., 1979), it was expected that the repressive group would display higher levels of social desirability and lower levels of anxiety than the other three groups. It was also anticipated, based on the findings in Study 2, that the high rumination groups would have lower levels of social desirability and higher levels of anxiety than the low rumination groups.

Personality Factors

Hypothesis 2. In light of Trapnell and Campbell's (1999) study and the findings of Study 2, it was expected that the two high rumination groups (i.e., sensitiser & vulnerable) would be found to be higher in neuroticism than the two low rumination groups (adaptable & repressive).

Hypothesis 3. In addition, it was expected that the two high reflection groups (i.e., adaptable & sensitive) would be found to be higher in openness to experience than the two low reflection groups (i.e., repressive & vulnerable).

Self-Consciousness

Hypothesis 4. It was also expected that the two high reflection groups would be higher in the private self-consciousness subfactors of self-reflectiveness and internal state awareness.

Hypothesis 5. Further to this, it would be expected that the two high rumination groups would be higher in public self-consciousness and social anxiety. Therefore, the sensitiser group who are high on both reflection and rumination would be expected to be higher on both the private self-consciousness sub-factors, public self-consciousness, as well as social anxiety, whereas, the vulnerable group who are high only on rumination would be expected to be higher on public self-consciousness and social anxiety.

Psychological Symptoms

Hypothesis 6. Overall, it was expected to find that the two groups who are low in rumination would be found to be lower in psychological symptoms, whereas the two high rumination groups would be found to be higher in psychological symptoms, particularly anxiety related symptoms, due to the association that rumination has with anxiety. However, it was expected that in

the case of the sensitiser group that a high level of reflection would moderate the effect of a high level of rumination in that they would have lower levels of psychological symptoms than the vulnerable group.

***Results : Examination of the Differences Among the Typologies on
Personality, Psychological Symptoms and Self-Consciousness***

Group differences, among the Rumination and Reflection Typology, the Weinberger et al. (1979) Typology, and the Mixed Group Typology were ascertained for the dependent variables of social desirability, personality factors, narcissism, self-consciousness, and symptoms of psychological distress. The focus of the results is for the Rumination and Reflection Typology and the Mixed Group Typology. The results for the Weinberger et al. Typology can be found in Appendix C.1.

Rumination/Reflection Group Differences for Social Desirability and Anxiety

A one-way between-groups MANOVA for group (adaptable, repressive, sensitiser & vulnerable) was performed for the two dependent variables of social desirability and anxiety. Box's M test for homogeneity of variance/covariance was nonsignificant ($p > .05$). Levene's Test of Equality of Error Variances was nonsignificant for both dependent variables (both p 's $> .05$). The MANOVA revealed an overall group difference for the rumination and reflection groups (adaptable, repressive, sensitiser & vulnerable) on social desirability and anxiety, Wilks' Lambda = .727, $F(6, 612) = 17.63, p < .001, \eta^2 = .15$. The means, standard deviations and Univariate F statistics for the dependent variables are presented in Table 6.5.

Table 6.5

Means, Standard Deviations and Univariate F Statistics for Social Desirability and Anxiety for the Four Rumination and Reflection Groups

Variables	Rumination/Reflection Groups				Univariate F (3, 309)	η^2
	Adapt	Repress	Sens	Vuln		
Social Desirability						
<i>M</i>	7.31 ^a	7.21 ^a	5.79 ^b	5.65 ^b	7.96***	.07
<i>SD</i>	2.48	2.75	2.83	2.97		
Anxiety						
<i>M</i>	7.73 ^a	7.28 ^a	12.71 ^b	12.72 ^b	35.96***	.27
<i>SD</i>	3.72	4.64	4.77	4.20		

$N = 313$

Note. Adapt = Adaptable; Repress = Repressive; Sens = Sensitiser; Vuln = Vulnerable; a,b = different superscripts represent significant differences and same superscripts reflect nonsignificant differences using planned comparisons

* $p < .05$, ** $p < .01$, *** $p < .001$

Hypothesis 1. This hypothesis received only partial support, although, after Bonferroni correction for multiple dependent variables, the results indicated that, as expected, the two more ruminative groups (sensitiser & vulnerable) had lower levels of social desirability and higher levels of anxiety than the two groups with low levels of rumination (adaptable & repressive). Planned comparisons indicated that the repressive group had similar levels of social desirability and anxiety as the adaptive group.

Results for Rumination/Reflection Groups - Personality Factors

A one-way between-groups MANOVA for group (adaptable, repressive, sensitiser & vulnerable) was performed for the six dependent variables of

neuroticism, extraversion, openness to experience, agreeableness, conscientiousness and narcissism. Box's M test for homogeneity of variance/covariance was nonsignificant ($p > .05$). Levene's Test of Equality of Error Variances was nonsignificant for all dependent variables (all p 's $> .05$). The analysis revealed an overall group difference for the rumination and reflection groups (adaptable, repressive, sensitiser & vulnerable) on neuroticism, extraversion, openness to experience, agreeableness, conscientiousness and narcissism, Wilks' Lambda = .466, $F(18, 860) = 14.79$, $p < .001$, $\eta^2 = .23$. The means, standard deviations and Univariate F statistics for the dependent variables are presented in Table 6.6.

Hypothesis 2. The results indicate that Hypothesis 2 was fully supported. After Bonferroni correction for multiple independent variables, planned comparisons indicated that the two high rumination groups had higher neuroticism scores than the two low rumination groups.

Hypothesis 3. The results also indicate that Hypothesis 3 was fully supported. After Bonferroni correction for multiple dependent variables, it was found that the two high reflection groups were higher in openness to experience than the two low reflection groups.

Taken together, these results are largely as expected, in that personality factors differentiated high ruminators from low ruminators, as well as differentiating high reflectors from low reflectors. Personality factors distinguished the two high rumination groups from the two rumination groups in terms of openness to experience.

Table 6.6

Means, Standard Deviations and Univariate F Statistics for Personality Factors for the Four Rumination and Reflection Groups

Variables	Rumination/Reflection Groups				Univariate F (3, 309)	η^2
	Adapt	Repress	Sens	Vuln		
Neuroticism						
<i>M</i>	20.00 ^a	20.12 ^a	28.82 ^b	30.08 ^b	43.22***	.30
<i>SD</i>	6.94	7.35	7.87	6.57		
Extraversion						
<i>M</i>	30.30	30.63	28.20	28.88	2.97*	.03
<i>SD</i>	6.31	5.86	6.05	6.26		
Openness						
<i>M</i>	32.06 ^a	24.90 ^b	31.58 ^a	24.89 ^b	39.11***	.28
<i>SD</i>	5.11	5.57	6.17	5.60		
Agreeableness						
<i>M</i>	32.24	32.00	30.93	30.37	2.26	.02
<i>SD</i>	4.27	5.48	5.33	4.67		
Conscientiousness						
<i>M</i>	30.30 ^b	28.62 ^{a,b}	29.31 ^{a,b}	26.68 ^a	3.29*	.03
<i>SD</i>	6.91	7.28	7.27	6.04		
Narcissism						
<i>M</i>	18.42 ^b	17.51 ^{a,b}	19.26 ^b	15.11 ^a	5.83**	.05
<i>SD</i>	6.28	6.43	5.94	6.33		

$N = 313$

Note. Openness = Openness to Experience; Adapt = Adaptable; Repress = Repressive; Sens = Sensitiser; Vuln = Vulnerable; a, b = different superscripts represent significant differences and same superscripts reflect nonsignificant differences using planned comparisons

* $p < .05$, ** $p < .01$, *** $p < .001$

Results for Rumination/Reflection Groups - Self-Consciousness Factors

A one-way between-groups MANOVA for group (adaptable, repressive, sensitiser & vulnerable) was performed for the four dependent variables of self-reflectiveness, internal state awareness, new public self-consciousness and social anxiety. Box's M test for homogeneity of variance/covariance was nonsignificant ($p > .05$). Levene's Test of Equality of Error Variances was nonsignificant for all dependent variables (all p 's $> .05$). This revealed that there was an overall group difference for the rumination and reflection groups (adaptable, repressive, sensitiser & vulnerable) on the self-consciousness factors, Wilks' Lambda = .531, $F(12, 809) = 18.25$, $p < .001$, $\eta^2 = .19$. The means, standard deviations and Univariate F statistics for the dependent variables are presented in Table 6.7.

Hypothesis 4. These findings provide partial support for Hypothesis 4. After Bonferroni correction for multiple dependent variables planned comparisons found that the two high reflection groups had higher internal state awareness scores than the two low reflection groups. Whereas, the sensitiser group had significantly higher self-reflectiveness scores and the repressor group had significantly lower scores than the adaptable and vulnerable groups.

Hypothesis 5. These findings indicate that Hypothesis 5 was only partially supported. After Bonferroni correction for multiple dependent variables, planned comparisons indicated that the two high rumination groups had higher public self-consciousness scores than the two low rumination groups. The two high rumination groups also showed the expected difference in social anxiety scores from the adaptive group. In addition, the repressive group had scores on social anxiety that were similar to the vulnerable and sensitiser

groups. Thus, three groups had significantly higher levels of social anxiety scores than the adaptive group. These unexpected findings suggest that although the repressives as a group do not admit to having high levels of ruminative thought they do admit to higher levels of social anxiety.

Table 6.7

Means, Standard Deviations and Univariate F Statistics for the Self-Consciousness Factors for the Four Rumination and Reflection Groups

Variables	Rumination/Reflection Groups				Univariate F (3, 309)	η^2
	Adapt	Repress	Sens	Vuln		
Self-Reflectiveness						
<i>M</i>	8.51 ^b	5.61 ^a	10.49 ^c	7.31 ^b	43.35***	.30
<i>SD</i>	3.14	3.14	2.74	2.47		
Internal SA						
<i>M</i>	8.51 ^a	6.29 ^b	8.42 ^a	6.60 ^b	26.76***	.21
<i>SD</i>	1.66	2.07	2.18	2.13		
New Public						
<i>M</i>	9.78 ^a	10.00 ^a	13.36 ^b	12.91 ^b	19.38***	.16
<i>SD</i>	3.50	3.93	3.74	3.94		
Social Anxiety						
<i>M</i>	7.70 ^a	9.49 ^b	10.68 ^b	11.22 ^b	11.27**	.10
<i>SD</i>	3.67	4.07	3.85	3.98		

$N = 313$

Note. Internal SA = Internal State Awareness; New Public = New public self-consciousness; Adapt = Adaptable; Repress = Repressive; Sens = Sensitiser; Vuln = Vulnerable; a, b, c = different superscripts represent significant differences and same superscripts reflect nonsignificant differences using planned comparisons

* $p < .05$, ** $p < .01$, *** $p < .001$

Overall, the results indicate that it is public self-consciousness that separated the high rumination groups from the low rumination groups. Moreover, internal state awareness but not self-reflectiveness differentiated the two high reflection groups from the two low reflection groups. Social anxiety differentiated the adaptive group from the three more maladaptive groups.

Results for Rumination/Reflection Groups - Psychological Symptoms

A one-way between-groups MANOVA for group (adaptable, repressive, sensitiser & vulnerable) was performed for the dependent variables of somatisation, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation and psychoticism. Box's M test for homogeneity of variance/covariance was significant ($p > .05$). Levene's Test of Equality of Error Variances was nonsignificant for interpersonal sensitivity ($p > .05$) and significant for all other dimensions (all p 's $< .05$). MANOVA revealed that there was an overall group difference for the rumination and reflection groups (adaptable, repressive, sensitiser & vulnerable) on the nine symptom dimensions, Wilks' Lambda = .669, $F(27, 879) = 4.82$, $p < .001$, $\eta^2 = .13$. The means, standard deviations and Univariate F statistics for the dependent variables are presented in Table 6.8.

Hypothesis 6. Hypothesis 6 received partial support in that after Bonferroni correction for multiple dependent variables, planned comparisons revealed that the two high rumination groups had significantly higher psychological distress scores than the two low rumination groups. These results also found no significant differences on any of the nine symptom dimensions between the two low rumination groups, that is, the adaptable group and the repressive group. However, it had been anticipated in Hypothesis 6 that a high level of reflection would somehow buffer the effect of high levels of rumination for the sensitiser group. Contrary to expectations there were no significant differences in symptoms of psychological distress between the two high rumination groups, that is, the sensitiser group and the vulnerable group. Overall, the scores for the low rumination groups are significantly lower on

Table 6.8

Means, Standard Deviations and Univariate F Statistics for the BSI Symptoms for the Four Rumination and Reflection Groups

Variables	Rumination/Reflection Groups				Univariate F (3, 309)	η^2
	Adapt	Repress	Sens	Vuln		
Somatisation						
<i>M</i>	.43 ^a	.64 ^{a,b}	.85 ^b	.90 ^b	7.73***	.07
<i>SD</i>	.51	.68	.70	.71		
Obsessive						
<i>M</i>	1.23 ^a	1.22 ^a	1.76 ^b	1.57 ^b	10.30***	.09
<i>SD</i>	.71	.73	.85	.64		
Sensitivity						
<i>M</i>	.82 ^a	.97 ^a	1.82 ^b	1.69 ^b	25.28***	.18
<i>SD</i>	.79	.82	.97	.95		
Depression						
<i>M</i>	.75 ^a	.77 ^a	1.61 ^b	1.52 ^b	22.94***	.18
<i>SD</i>	.71	.78	.99	.96		
Anxiety						
<i>M</i>	.62 ^a	.59 ^a	1.23 ^b	1.16 ^b	22.28***	.18
<i>SD</i>	.58	.58	.70	.73		
Hostility						
<i>M</i>	.65 ^a	.76 ^a	1.22 ^b	1.23 ^b	12.60***	.11
<i>SD</i>	.57	.74	.83	.80		
Phobic Anxiety						
<i>M</i>	.23 ^a	.27 ^a	.48 ^b	.48 ^b	7.30***	.07
<i>SD</i>	.34	.40	.49	.46		
Paranoid Ideation						
<i>M</i>	.65 ^a	.62 ^a	1.25 ^b	1.30 ^b	17.13***	.14
<i>SD</i>	.68	.71	.88	.88		
Psychoticism						
<i>M</i>	.55 ^a	.60 ^a	1.26 ^b	1.02 ^b	16.43***	.14
<i>SD</i>	.63	.76	.86	.75		

$N = 313$

Note. Obsessive = Obsessive-compulsive; Sensitivity = Interpersonal Sensitivity; Adapt = Adaptable; Repress = Repressive; Sens = Sensitiser; Vuln = Vulnerable; a, b = different superscripts represent significant differences and same superscripts reflect nonsignificant differences using planned comparisons * $p < .05$, ** $p < .01$, *** $p < .001$

dimensions of psychological distress than the scores for the high rumination groups.

Presentation of the Results for the Mixed Group Typology

The overlap between the Trapnell and Campbell (1999) coping and adjustment typology and the Weinberger et al. (1979) coping and avoidance typology was looked at in terms of a Mixed Group Typology. The four groups were differentiated in terms of the overlap between the different combinations of rumination and reflection and different combinations of anxiety and social desirability on measures of self-consciousness, personality factors, and psychological symptom dimensions.

Results for the Mixed Group Typology - Personality Factors

A one-way between-groups MANOVA for group (adaptive, repressor, sensitive & vulnerable) was performed for the dependent variables of neuroticism, extraversion, openness to experience, agreeableness, conscientiousness and narcissism. Box's M test for homogeneity of variance/covariance was nonsignificant ($p > .05$). Levene's Test of Equality of Error Variances was nonsignificant for all dependent variables (all p 's $> .05$). The analysis revealed that there was an overall difference between the Mixed Group typology (adaptive, repressor, sensitive & vulnerable) and the personality factors, Wilks' Lambda = .248, $F(18, 297) = 10.51, p < .001, \eta^2 = .37$. The means, standard deviations and Univariate F statistics for the dependent variables are presented in Table 6.9.

Table 6.9

Means, Standard Deviations and Univariate F Statistics for Personality Factors for the Mixed Group Typology

Variables	Mixed Group Typology				Univariate <i>F</i> (3, 110)	η^2
	Adapt	Repress	Sens	Vuln		
Neuroticism						
<i>M</i>	19.96 ^a	16.78 ^a	32.28 ^b	31.78 ^b	46.80***	.56
<i>SD</i>	6.86	5.62	6.62	7.40		
Extraversion						
<i>M</i>	29.08	30.95	26.47	27.67	3.80*	.10
<i>SD</i>	5.31	6.30	5.66	8.23		
Openness						
<i>M</i>	32.40 ^a	26.11 ^b	31.47 ^a	25.11 ^b	9.30***	.20
<i>SD</i>	4.92	5.49	6.75	5.74		
Agreeableness						
<i>M</i>	31.60 ^{a,b}	34.41 ^b	28.98 ^a	33.11 ^{a,b}	9.21***	.20
<i>SD</i>	4.86	4.68	4.95	2.03		
Conscientiousness						
<i>M</i>	29.20	30.86	27.28	27.44	1.88	.05
<i>SD</i>	7.50	6.60	7.36	5.22		
Narcissism						
<i>M</i>	17.76 ^a	15.97 ^a	20.07 ^a	10.56 ^b	8.89***	.20
<i>SD</i>	5.51	5.36	5.82	4.19		

N = 114

Note. Openness = Openness to Experience; Adapt = Adaptive; Repress = Repressor; Sens = Sensitive; Vuln = Vulnerable; a, b, c = different superscripts represent significant differences and same superscripts reflect nonsignificant differences using planned comparisons

p* < .05, *p* < .01, ****p* < .001

These results indicate that the mixed group typology differentiates between the two low rumination groups (i.e., adaptive & repressor) from the two high rumination groups in a similar way to the rumination and reflection

coping and adjustment typology. It was found that scores for the personality factor of neuroticism are higher for the high rumination groups than the low rumination groups. The personality factor of openness to experience differentiates between the two low rumination groups. The adaptive group with its higher level of reflection has higher levels of openness to experience. The two high rumination groups are separated by openness to experience and narcissism. The sensitiser group with its higher level of reflection also has higher levels of openness to experience. This supports the notion that it is the relationship that reflection has with openness to experience that differentiates these coping styles.

Results for Mixed Groups - Self-Consciousness

A one-way between-groups MANOVA for group (adaptive, repressor, sensitive & vulnerable) was performed for the dependent variables of self-reflectiveness, internal state awareness, new public self-consciousness and social anxiety. Box's M test for homogeneity of variance/covariance was nonsignificant ($p > .05$). Levene's Test of Equality of Error Variances was nonsignificant for all dependent variables (all p 's $> .05$). The analysis revealed that there was an overall group difference between the Mixed Group typology (adaptive, repressor, sensitive & vulnerable) and the self-consciousness factors, Wilks' Lambda = .309, $F(12, 283) = 13.89$, $p < .001$, $\eta^2 = .32$. Means, standard deviations and Univariate F statistics are displayed in Table 6.10.

The differences between the mixed groups on aspects of self-consciousness indicate that the self-consciousness factors do differentiate between the four groups. For example, the repressor group has significantly lower self-reflectiveness scores than three other groups, whereas the sensitive

group has significantly higher public self-consciousness scores than the others. There is no difference between the groups for social anxiety, after Bonferroni correction for multiple dependent variables.

Table 6.10

Means, Standard Deviations and Univariate F Statistics for the SCS-R for the Mixed Group Typology

Variables	Mixed Group Typology				Univariate F (3, 110)	η^2
	Adapt	Repress	Sens	Vuln		
Self-Reflectiveness						
<i>M</i>	9.40 ^{b,c}	4.46 ^a	11.09 ^c	8.11 ^b	50.06***	.58
<i>SD</i>	4.11	3.75	3.94	3.04		
Internal State						
<i>M</i>	8.56 ^b	5.92 ^a	8.28 ^b	7.22 ^{a,b}	12.42***	.25
<i>SD</i>	1.78	1.81	2.24	1.92		
New Public						
<i>M</i>	9.20 ^a	8.51 ^a	14.21 ^b	11.00 ^a	24.54***	.40
<i>SD</i>	2.61	3.42	3.19	3.74		
Social Anxiety						
<i>M</i>	8.24	9.03	11.30	9.89	4.18**	.10
<i>SD</i>	3.87	4.00	3.45	4.26		

N = 114

Note. Internal State = Internal State Awareness; New Public = New public self-consciousness; Adapt = Adaptive; Repress = Repressor; Sens = Sensitive; Vuln = Vulnerable; a, b, c = different superscripts represent significant differences and same superscripts reflect nonsignificant differences using planned comparisons

p* < .05, *p* < .01, ****p* < .001

Results for the Mixed Groups - Psychological Symptoms

A one-way between-groups MANOVA for group (adaptive, repressor, sensitive & vulnerable) was performed for the dependent variables of somatisation, obsessive-compulsive, interpersonal sensitivity, depression,

anxiety, hostility, phobic anxiety, paranoid ideation and psychoticism. Box's M test for homogeneity of variance/covariance was significant ($p < .05$). Levene's Test of Equality of Error Variances was nonsignificant for obsessive-compulsive ($p > .05$) and significant for the other dimensions (all p 's $< .05$). The MANOVA revealed that there was an overall group difference for the Mixed Group typology (adaptive, repressor, sensitive & vulnerable) on the nine symptom dimensions, Wilks' Lambda = .281, $F(27, 298) = 6.01$, $p < .001$, $\eta^2 = .35$. Means, standard deviations and Univariate F statistics are displayed in Table 6.11.

These results indicate that the two low rumination groups can be differentiated from the two higher rumination groups on scores of symptoms of psychological distress. There are no significant differences on any of the nine symptom dimensions between the two low rumination groups. Neither are there any significant differences between two high rumination groups. These results confirm that rumination is found to be associated with higher levels of psychological distress, as those groups who have higher levels of rumination have significantly higher scores on the Brief Symptom Inventory than those with lower levels of rumination.

Table 6.11

Means, Standard Deviations and Univariate F Statistics for the BSI Symptoms for the Mixed Group Typology

Variables	Mixed Group Typology				Univariate F	η^2
	Adapt	Repress	Sens	Vuln		
(3, 110)						
Somatisation						
<i>M</i>	.31 ^a	.36 ^a	1.05 ^b	1.19 ^b	14.37***	.28
<i>SD</i>	.49	.37	.73	.92		
Obsessive						
<i>M</i>	1.15 ^a	.91 ^a	2.14 ^b	1.81 ^b	27.52***	.43
<i>SD</i>	.61	.58	.73	.54		
Sensitivity						
<i>M</i>	.68 ^a	.62 ^a	2.13 ^b	1.64 ^b	31.87***	.47
<i>SD</i>	.33	.34	.33	.80		
Depression						
<i>M</i>	.52 ^a	.45 ^a	2.07 ^b	2.07 ^b	42.72***	.54
<i>SD</i>	.55	.54	.89	1.15		
Anxiety						
<i>M</i>	.52 ^a	.39 ^a	1.50 ^b	1.41 ^b	46.77***	.56
<i>SD</i>	.45	.28	.61	.76		
Hostility						
<i>M</i>	.58 ^{a,b}	.34 ^a	1.56 ^c	1.13 ^{b,c}	26.28***	.42
<i>SD</i>	.53	.34	.85	.79		
Phobic Anxiety						
<i>M</i>	.23 ^a	.10 ^a	.62 ^b	.62 ^b	14.86***	.29
<i>SD</i>	.32	.21	.49	.47		
Paranoid Ideation						
<i>M</i>	.48 ^a	.25 ^a	1.61 ^b	1.70 ^b	37.62***	.51
<i>SD</i>	.13	.37	.85	.67		
Psychoticism						
<i>M</i>	.49 ^a	.24 ^a	1.64 ^b	1.60 ^b	36.82***	.50
<i>SD</i>	.58	.34	.82	.94		

$N = 114$

Note. Obsessive=Obsessive-Compulsive; Sensitivity=Interpersonal Sensitivity; Adapt=Adaptive; Repress=Repressor; Sens=Sensitive; Vuln=Vulnerable; a, b, c = different superscripts represent significant differences and same superscripts reflect nonsignificant differences using planned comparisons

* $p < .05$, ** $p < .01$, *** $p < .001$

Summary and Discussion of the Examination of Differences Among the Typologies on Personality, Psychological Symptoms and Self-Consciousness

The purpose of the first two stages of Study 3 was to form participants into a typology of coping and adjustment and then to investigate the typology in relation to social desirability, personality, self-consciousness, and psychopathology. The new typology identified individual differences in cognitive styles using different combinations of rumination and reflection. Study 3 also examined the cognitive processes involved in repression. Interestingly, repressors were found to have higher than expected social anxiety scores.

Identification of the Two Low Rumination Groups

The coping and adjustment typology identified two groups who have low levels of rumination and low levels of distress. The high rumination groups had lower levels of social desirability, and higher levels of neuroticism, distressing psychological symptoms and public self-consciousness scores. These findings confirm expectations that high levels of rumination are linked to lower than healthy levels of social desirability and higher levels of distress.

The new coping and adjustment typology also identified differences between the two low rumination groups in terms of the personality factor of openness to experience, private self-consciousness and surprisingly social anxiety. People in the adaptive group, with high levels of reflection, were found to have a more open personality, and to be more privately self-consciousness than the repressive group. Although there were no differences between the adaptive and repressive groups in terms of psychological symptoms of distress,

the repressive group had significantly higher social anxiety. These findings not only confirm theoretical expectations that repressors are not internally or externally reflective, and that they have a personality that is closed to new experiences, but extends what is known about the repressor profile by exposing a significantly higher level of social anxiety than expected.

With the exception of social anxiety, these findings appear consistent with those found previously (e.g., Weinberger et al., 1979). Repressors are those individuals who report that they are not psychologically distressed, yet, at the same time they are not psychologically insightful (i.e., low openness to experience & private self-consciousness scores). In addition, repressors generally report more agreeableness than other groups indicating that they want to be seen as psychologically healthy. The repressor profile, as indicated by the coping and adjustment typology, was also evident in the Mixed Group typology. In both typologies the repressors' profile appears at first sight to be indicative of psychological health; yet, on closer inspection repressors are not open to any form of psychological curiosity. Once again this suggests that repressors self-report without really being engaged in any form of psychological insight.

Identification of the Two High Rumination Groups

The coping and adjustment typology also differentiated two high rumination/high distress groups in terms of the personality factor of openness to experience, narcissism and private self-consciousness scores. The sensitiser group consists of those who are both highly ruminative and highly reflective. The vulnerable group consists of those who are just highly ruminative. It appears that those who are both high in rumination and high in reflection are more open than those who are high in rumination only. Those who are high in

rumination only are much lower in narcissism. This is consistent with theoretical expectations that sensitive individuals are very keen to know about themselves, whereas vulnerable individuals have very negative beliefs about themselves. The expectation that reflection would somehow mediate the sensitive group with lower levels of distressful symptoms than those who just ruminate, was not met.

The Typology of Coping and Adjustment

The coping and adjustment typology appears valid when making distinctions about the different ways that individuals cope and deal with negative affect. The typology identifies a group of individuals with a more adaptive set of coping mechanisms, who exhibit a higher level of the more positive personality characteristics, such as openness to experience, in addition to a reflective cognitive style. They are privately self-conscious but not publicly self-consciousness. Nor are they socially anxious. This combination of characteristics is associated with low levels of distressful psychological symptoms and thus indicates a more psychologically healthy profile.

The coping and adjustment typology also identified three other groups of individuals who display more maladaptive coping styles. One of these styles is that of the repressor. These individuals do not self-report psychological distress but at the same time are not engaged in meaningful insight. The other two styles encompass a ruminative cognitive style and have higher self-reported levels of psychological distress.

Stage 3: Rumination and Reflection Typology and Autobiographical Memory

Retrieval

Aims

The aim of the third stage of Study 3 was to examine the Trapnell and Campbell (1999) rumination and reflection typology in relation to the retrieval of personal memories. It was suggested in this thesis that the different groups in the typology of coping and adjustment could be differentiated through a cognitive experiential task, which measured the ease of retrieval and the quality of individual respondents' personal memories. The cognitive experiential task encompassing the retrieval of autobiographical memories was based on the Williams and Broadbent (1986) Autobiographical Memory Task (AMT).

Method

Participants

A total of 91 participants had indicated their willingness to take part in a study on the retrieval of personal memories by providing their first name and a contact number on a sign-up form attached to the questionnaire in Study 2 (see Appendix C.3). However, 30 respondents cancelled their appointment or failed to show up for the task, leaving a final sample for the autobiographical memory study of $n = 61$. The autobiographical memory experiment took place during Semester 2, 2002 and Semester 1, 2003. Participants in the autobiographical memory study were classified into one of four rumination and reflection groups from their responses in Study 2. The adaptable group ($n = 14$) comprised 1 man,

13 women (mean age = 33.07, $SD = 13.83$); the repressive group ($n = 18$) comprised 3 men, 15 women (mean age = 24.0, $SD = 12.21$); the sensitiser group ($n = 16$) comprised 5 men, 11 women (mean age = 22.63, $SD = 7.59$), and the vulnerable group ($n = 13$) comprised 2 men, 11 women (mean age = 25.0, $SD = 12.60$). There was no difference in average age between the four groups ($p > .05$). The age distribution of participants in the autobiographical memory study ranged from 17 to 59 ($M = 25.93$, $SD = 12.08$).

Measures

Participants completed a cognitive experiential task based on Williams and Broadbent (1986) Autobiographical Memory Task (AMT). The AMT yields response latency and specificity of respondent's autobiographical memories. The AMT requires participants to retrieve and write down nine specific personal memories corresponding to positively or negatively valenced cue words which are embedded in sentences relating to past experiences. Each personal memory is (a) timed to give a measure of response latency, and (b) coded to give a measure of specificity of the memory. In the current study, three cue words referred to past positive memories (happy, loved, successful); three cue words referred to past anxious memories (scared, edgy, worried); and three cue words referred to past depressive memories (sad, lonely, dejected). (See Appendix C.5 for the response booklet.)

Selection of Stimulus Cue Words

The selection of stimulus cue words was based on the results of a preliminary study. One hundred and fifteen stimulus words, taken from a study by Bradley, Mogg and Williams (1995), were considered to be indicative of a neutral, pleasant (positive) or unpleasant (anxiety, depressive) valence. Three

independent psychologists were given a copy of the 115 word inventory and asked to rate each word on a Likert-type scale from '1 = not at all related' to '5 = extremely related' according to its (a) positive relevance, (b) anxiety relevance, and (c) depression relevance (see Appendix C.2 for the list of potential stimulus words).

Stimulus words were selected for their relevance to depression if at least two of the psychologists rated the word as 3 or more for relevance to depression, and less than 3 for its relevance to anxiety. Stimulus words were selected as anxiety-relevant if at least two of the judges rated the word with a 3 or more for relevance to anxiety and less than 3 for its relevance to depression. In addition, each anxiety and depressive word was given a judgement of less than 3 for a positive rating. Stimulus words for a positive relevance were selected if they rated more than 3 for a positive relevance, less than 3 for depressive relevance, and less than 3 for anxiety relevance. The final list of cue words used by the researcher was chosen on the basis that it was similar to one that had been used in previous research (e.g., Dickson & Bates, 2005) and covered a wide range of content.

Order of Presentation of Memory Cues

The memory task booklets used in Study 3 each contained the nine stimulus cues. To control for any possible order effects the positive, anxiety and depressive cue format was counterbalanced in four ways within the booklets. An additional cue of '*A time when I was absorbed in reading a book*' was used for training the respondent and remained constant as the first cue/sentence for all of the booklets. Each experimental trial consisted of a separate page with the stem, "*A time when I was*" listed at the top of the page. The first set of

booklets was in the order of anxiety, depressive then positive stimulus words and sentences. The second set of booklets was in the order of positive, anxiety then depressive stimulus words and sentences. The third set of booklets was in the order of positive, depressive then anxiety cue words and sentences. The fourth set of booklets was in the order of depressive, anxiety and positive stimulus words and sentences. The presentation order of booklets was evenly spread across the four groups. Table 6.12 illustrates the four different orders that the memory cues were presented.

Table 6.12

Order of Presentation of Memory Cue Words

Order 1	Order 2	Order 3	Order 4
scared	happy	happy	sad
sad	scared	sad	worried
happy	sad	scared	happy
edgy	loved	loved	lonely
lonely	edgy	lonely	edgy
loved	lonely	edgy	loved
worried	successful	successful	dejected
dejected	worried	dejected	scared
successful	dejected	worried	successful

Autobiographical Memory Assessment

Each respondent was tested individually by a trained research assistant who was blind to each participant's experimental status group and to their identity (other than their first name). Testing sessions were scheduled for 30 minutes and were conducted in designated laboratory rooms at Swinburne University's Hawthorn and Lilydale campuses. Each testing session began with

a brief introduction in which the general purpose of the study was explained along with the components that made up the experimental task. The participant was also given an assurance that all data collected would remain anonymous and confidential. Respondents, who were willing to participate in the experimental task, signed a consent form (see Appendix C.3). Instructions to each participant were given in both verbal and written standardised formats and a written copy was made available for them to retain (see Appendix C.3).

Procedure

The participants were first provided with examples of specific, moderate and general autobiographical memories to demonstrate what was required of them (see Appendix C.4 for examples). They were then presented with a neutral cue word embedded in a plausible sentence (see Williams & Broadbent, 1986) as a practice item. The practice item was '*A time when I was absorbed in a book*'. The respondents were asked to recall a specific experience associated with that cue. The time taken to retrieve a memory was recorded with participants indicating to the experimenter when the associated memory had been retrieved. A maximum of 60 seconds was allowed for the recall of the memory. Participants wrote down a brief description of the experience including aspects such as time, place and event.

The practice memory cue was used to train the participants in the requirements of the task. If the written response to the neutral cue did not contain enough detail, for example, '*When I'm on public transport*' participants were prompted to think of a more specific example, that is, an event which lasted less than a day. A satisfactory response was given as '*The Thorn Birds. I was on a train and totally missed my stop*'. The experimenter prompted for a

more specific experience only for the neutral cue. The response to the neutral cue was not included in the data analysis. Failure to retrieve a memory (over 60 seconds) was recorded as 60 seconds on the time record sheet and the participant was directed to the next cue in the booklet.

Coding the Autobiographical Memory Data

All memories were coded by the researcher and an independent rater. Three response categories were used to code specificity. These were specific, extended and categoric memories as defined by Williams and Broadbent (1986). A response was considered specific if it accounted for a one-off event or situation occurring on a particular day and place, for example, *'About two weeks ago, lazying around the house with partner, not worrying about housework or homework. Having a sleep in the afternoon'*. Responses were considered extended if the event or situation lasted for more than a day, for example, *'In primary school – Yr [year/grade] 3 when my best friend moved away half way through the year felt sad that she had left'*. A categoric response was identified if there was no specific event recalled. For example, *'Beening [being] alone and homeless has left me concerned, with lack of sleep and appetite, as thoughts [thoughts] go around in my head trying to work things out with no outcome'*.

Responses to the Autobiographical Memory Task (Williams & Broadbent, 1986) were scored on a continuous scale according to level of specificity. A specific response scored three points, an extended response scored two points, and a categoric response scored one point. Mean specificity represented averaged scores with higher scores indicating more specific retrieval of an autobiographical memory. An average was calculated for positive and negative cues. If a memory was not retrieved, previous research has

suggested that the respondent be allocated the mean specificity from their positive, anxiety or depressive memories (Dickson & Bates, 2005). Possible scores ranged from 1 to 3 for each valenced condition. The independent coder rated all of the responses to establish reliability. Inter-rater reliability, assessing agreement between the researcher and the independent coder for all memories, was high (Cohen's Kappa = .91) (see Appendix C.6).

Hypotheses

Individual Differences in Specificity for the Four Rumination and Reflection Groups

Hypothesis 1: Differences between individuals have been found in the recall of positive and negative experiences. Thus, it was anticipated that differences between the four rumination and reflection groups in specificity of content would exist for both emotionally valenced experiences.

Hypothesis 1a: More specifically, given previous findings (e.g., Myers et al., 1998), it was expected that repressive participants would show less specific content when recalling their autobiographical memories in comparison to the adaptable participants.

Hypothesis 1b: Also, following on from the finding that ruminative self-focus has been associated with overgeneral memory (e.g., Watkins & Teasdale, 2001), it was expected to find that those individuals who are high in rumination, that is, the sensitiser and vulnerable groups, would display a pattern of more general autobiographical memory retrieval (i.e., less specific) than those who

are low in rumination (i.e., adaptable & repressive) for both pleasant (i.e., positively cued) and unpleasant experiences (i.e., negatively cued).

Individual Differences in Latency for the Four Rumination and Reflection Groups

Hypothesis 2: In terms of individual differences in latency of response time for the four rumination and reflection groups it was hypothesised that differences between the groups would exist for both positive and negative experiences.

Hypothesis 2a: Specifically, differences were expected between repressive and adaptable participants in response time for negative experiences. Thus, repressive participants were not expected to be slower than the adaptable group in the recall of positive autobiographical memories but due to their more general retrieval of negative experiences this would be more likely associated with a longer response time.

Hypothesis 2b: A similar expectation was proposed for the high ruminative groups of sensitised and vulnerable compared to the adaptable group, in that more general memory retrieval for negative experiences would result in longer response times.

Differences in Category of Memories Retrieved for the Four Rumination and Reflection Groups

Whilst specificity in Hypotheses 1 and 2 was measured as a continuous variable it was also possible to measure specificity as a categorical variable in terms of the proportions of responses within the different categories of specific, extended and general categorical. Therefore, a specific hypothesis was

developed to look at the differences among the groups for these categorical variables.

Hypothesis 3: Given previous research, which has found that repressors have fewer specific negative experiences to access (e.g., Davis, 1987; Newman & Hedberg, 1999), it was anticipated that the repressive group would retrieve a higher proportion of more general memories and thus a lower proportion of specific memories for negative experiences than the adaptable group.

Results

The results for the autobiographical memory study are presented in three sections. Autobiographical memories of the four groups were compared in three ways. First, participants were given a score between 1 and 3, with 1 meaning general categorical, 2 meaning general extended, and 3 meaning specific. Higher scores indicated higher levels of specific content. The data were treated as continuous and analysed as such in the first section with ANOVA. In the second section, the four groups were also compared on the continuous data but in terms of the latency of memory retrieval. In the third section, the continuous data was converted to categorical data (i.e., 1 = general categorical, 2 = extended, 3 = specific). The rumination and reflection groups were compared over the three categories using Chi-square analyses for categorical data.

Specificity of Retrieval for the Four Rumination and Reflection Groups

A series of mixed design Analyses of Variance (ANOVAs) with group as the between-subjects factor (adaptable, repressive, sensitive, vulnerable) and cue valence as the within-subjects factor (positive, negative [combined anxiety

& depressive]) for continuous levels of specificity were conducted. Main effects were examined for significant results. Effects sizes are included in relevant results. In addition to the specificity data for the four rumination and reflection groups being examined, the data for specificity of memory retrieval was examined for a combined high rumination group (sensitiser & vulnerable) in comparison to a combined low rumination group (adaptable & repressive). Given the small sample size, it was considered appropriate to report all the results of significant planned comparisons even where main and/or interaction effects were non-significant. This approach has been recommended by Judd, McClelland and Culhane (1995) to inform subsequent researchers.

The first section examines group comparisons for specificity in a two-by-two mixed design ANOVA with a between-subjects factor of group (adaptable, repressive, sensitiser, vulnerable), and a within-subjects factor of cue valence (positive vs negative). The relevant means and standard deviations are displayed in Table 6.13. ANOVA revealed no significant main effect for group, $F(3,57) = .67, p = .58, \eta^2 = .03$. However, there was a significant main effect for cue valence, $F(1,57) = 8.95, p < .01, \eta^2 = .14$. There was no significant interaction between cue valence and group, Greenhouse-Geisser = .05, $F(3,57) = .11, p = .96, \eta^2 = .001$.

Table 6.13

Mean Specificity Level for Positive, Anxiety and Depression Stimulus Cues for the Four Rumination and Reflection Groups

	Rumination/Reflection Groups									
	Adaptable		Repressive		Sensitiser		Vulnerable		Total	
	(n=14)		(n=18)		(n=16)		(n=13)		(N=61)	
Valence	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Positive	2.71	.45	2.61	.47	2.56	.59	2.51	.66	2.60 ^a	.54
Negative	2.55	.30	2.35	.45	2.38	.63	2.26	.71	2.38 ^b	.54
Anxiety	2.69	.38	2.56	.62	2.42	.75	2.38	.77	2.51	.64
Depression	2.40	.49	2.15	.51	2.33	.67	2.12	.80	2.25	.80

Note. Scores range from 1=Categoric to 3=Specific; a,b=different superscripts represent significant using unplanned comparisons

Post hoc paired samples t-tests revealed that positively cued memories are retrieved more specifically than negatively cued memories, $t(60) = 3.10$, $p < .01$. As can be seen in Table 6.13, overall, positive memories were rated more specifically than negative memories.

Contrary to what was expected in Hypothesis 1, these results show that regardless of positive or negative valence there was no significant difference in specificity of content between the four rumination and reflection groups in the retrieval of pleasant or unpleasant memories. Also, contrary to expectations in Hypothesis 1a, the repressive group was not less specific in the recall of their autobiographical memories in comparison to the adaptable group.

There were no clearly discernable differences across the groups for pleasant compared to unpleasant experiences. However, given that inspection of

the means showed some differences it was decided to conduct further supplementary analyses. The data were re-analysed to see if there were differences confined to specific negative cues. A two-by-two mixed design ANOVA, comprising a between-subjects factor of group (adaptable, repressive, sensitiser, vulnerable), and a within-subjects factor of cue valence (positive, anxiety, depressive) was conducted.

ANOVA revealed the main effect for group was not significant, $F(3,57) = .72, p = .54, \eta^2 = .04$. There was a small but significant main effect for cue valence, $F(2,114) = 0.02, p < .001, \eta^2 = .14$. The interaction between cue and group was not significant, Greenhouse-Geisser = .52, $F(6,114) = .40, p = .88, \eta^2 = .02$.

Post hoc paired samples t-tests revealed that both positive and anxiety-type memories are significantly more specific than depressive-type memories, $t(60) = 3.11, p < .01, t(60) = 4.27, p < .001$, respectively (see Table 6.13 for means).

Within-group differences were shown through post hoc paired samples t-tests. These analyses revealed that there was no difference in level of specificity when retrieving positive, anxiety or depressive memories (all p 's $> .05$) for the adaptable, sensitiser or vulnerable groups. The repressive group retrieved their positive and anxiety memories more specifically than their depressive memories, $t(17) = 2.78, p < .05, t(17) = 2.50, p < .05$, respectively.

Specificity of Retrieval for High versus Low Rumination Groups

Further analyses were run to examine differences in specificity of content for a high rumination group compared to a low rumination group. A two-by-three mixed design ANOVA, which comprised a between-subjects

factor of group (high rumination, low rumination) and a within-subjects factor of cue valence (positive, anxiety, depressive) was conducted.

ANOVA reveal that there was no main effect for group, $F(1,59) = .93$, $p = .34$, $\eta^2 = .02$. However, there was a small but significant main effect for cue valence, $F(1,58) = 9.39$, $p < .001$, $\eta^2 = .14$. No significant interaction was found between cue and group, Greenhouse-Geisser = .28, $F(2,58) = .98$, $p = .53$, $\eta^2 = .02$. (See Table 6.14 for the relevant means and standard deviations.)

Table 6.14

Mean Specificity Level for Positive, Anxiety and Depression Stimulus Cues for High and Low Rumination Groups

	Rumination Groups			
	High ($n=29$)		Low ($n=32$)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Positive	2.54	.61	2.66	.50
Anxiety	2.40	.74	2.61	.52
Depressive	2.24	.72	2.26	.51
Total	2.39	.69	2.51	.51

Note. Scores range from 1=Categoric to 3=Specific

These results indicate that there was no support for Hypothesis 1b, in that there were no differences in specificity of content between a high rumination group (sensitiser & vulnerable) and a low rumination group (adaptable & repressive) for emotionally cued experiences.

Within-group differences were shown through post hoc paired samples *t*-tests. These analyses revealed that there was a significant difference in specificity between positive and depressive memories for the high rumination group, $t(28) = 2.45$, $p < .05$. There was a significant difference in specificity

between positive and depressive memories, $t(31) = 3.55, p < .01$ and between anxiety and depressive memories, $t(31) = 3.01, p < .01$.

Latency for the Four Rumination and Reflection Groups

This second section examines group comparisons for latency of retrieval (measured in seconds) in a four-by-two mixed design ANOVA with a between-subjects factor of group (adaptable, repressive, sensitiser, vulnerable), and a within-subjects factor of cue valence (positive vs negative). The relevant means and standard deviations are displayed in Table 6.15. Main effects were examined for significant results. Effects sizes are included in relevant results. Results of planned comparisons, undertaken separately for positive, anxiety and depressive cues using one-way ANOVA, are reported regardless of the significance of the overall main effect and/or interaction effects in the two-way ANOVA (Judd et al., 1995).

Table 6.15

Mean Response Latency for Positive, Anxiety and Depression Stimulus Cues for the Four Rumination and Reflection Groups

Valence	Rumination/Reflection Groups							
	Adaptable		Repressive		Sensitiser		Vulnerable	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Positive	8.30	8.11	5.83 ^a	3.00	12.03 ^b	8.44	8.85	4.70
Negative	11.65	7.41	14.51	9.17	14.07	9.54	13.37	7.47
Anxiety	11.52	8.43	15.62	10.70	12.42	10.00	12.32	7.26
Depression	11.77	9.70	13.40	11.94	15.71	12.74	14.42	9.60

N=61

Note. a,b=different superscripts represent significant differences and same superscripts reflection nonsignificant differences using unplanned comparisons

A two-way mixed design ANOVA revealed a significant main effect for cue valence, $F(1,57) = 24.75, p < .001, \eta^2 = .30$, but not for group, $F(3,57) = .71, p = .55, \eta^2 = .04$. The interaction between cue and group approached significance, Greenhouse-Geisser = 212.13, $F(3,57) = 2.70, p = .054, \eta^2 = .12$. Contrary to the expectations of Hypothesis 2, these results show that there were no significant differences in latency between the four rumination and reflection groups when retrieving positive or negative memories. A post hoc paired samples t-test showed that positive memories are retrieved more quickly than negative memories, $t(60) = 5.00, p < .001$ (see means in Table 6.15).

Latency of Retrieval for Positive, Anxiety and Depressive Experiences

In view of the negative findings the data were re-analysed to see if there were differences confined to specific negative cues. A four-by-two mixed design ANOVA, which comprised a between-subjects factor of group (adaptable, repressive, sensitiser, vulnerable) and a within-subjects factor of cue valence (positive, anxiety, depression) was performed. A small but significant main effect was found for cue valence, $F(2,114) = 8.69, p < .01, \eta^2 = .13$, but not for group, $F(3,57) = .41, p = .74, \eta^2 = .02$. No significant interaction was found between cue and group, Greenhouse-Geisser = 427.57, $F(6,114) = 1.40, p = .23, \eta^2 = .07$.

Although the overall-between group main effect was not significant, a one-way ANOVA revealed a between-groups difference in latency for positive cue type, $F(3,57) = 2.66, p = .056$. Post hoc Student-Newman-Keuls analysis found that the repressive group retrieved their positive memories significantly faster than the sensitive group (see Table 6.15 for means).

Contrary to the expectations of Hypothesis 2, there were no other significant differences between the groups in terms of the time taken to recall positive, anxiety or depressive experiences.

Within-group differences were shown through post hoc paired samples t-tests. These analyses revealed that there were no differences in latency for positive, anxiety or depressive experiences for the adaptable and sensitiser groups (all p 's > .05). There were significant differences in the time taken to retrieve positive memories compared to anxiety memories, $t(17) = 3.81, p < .01$ and depressive memories for the repressive group, $t(17) = 2.73, p < .05$. There was a significant difference in the time taken to retrieve positive memories compared to anxiety memories for the vulnerable group, $t(12) = 2.65, p < .05$.

Categorical Analysis of the Specificity Data

In addition to quantitative scores of specificity, the data were analysed in terms of total responses in each of the rating categories. These are presented in Table 6.18. Chi-square analyses were calculated for each rumination and reflection group by rating category for total responses and separately for positive, anxiety and depressive responses.

As can be seen in Table 6.16, 524 memories were retrieved out of a possible 549. Sixty three percent of the memories were classed as specific, 25% were extended, while only 8% were classed as categorical. This indicates that most memories retrieved were very specific, in that they were a one-off event or situation occurring on a particular day and place.

In contrast to the expectations of Hypothesis 3, separate tests of Chi-square found that differences between the four rumination and reflection groups for the number of specific, extended, categorical and nil responses overall were

non-significant (all p 's $>.05$). A further specific test of Chi-square, between the adaptable and repressive groups, found that differences between the two groups, in the proportion of specific, extended or categorically rated memories, were not significant, $\chi^2(3) = 3.97, p >.05$.

Table 6.16

Totals (and Percentage) across Groups for Specific, Extended and Categorical Memories, Positive, Anxiety and Depressive Valence

	Rumination/Reflection Groups				
	Adaptable Total %	Repressive Total %	Sensitive Total %	Vulnerable Total %	Overall Total %
<i>Positive</i>					
Specific	33 (26)	36 (22)	32 (22)	26 (22)	127 (23)
Extended	7 (6)	15 (9)	12 (8)	7 (6)	41 (7)
Categorical	1 (1)	3 (2)	3 (2)	6 (5)	13 (2)
<i>Anxiety</i>					
Specific	33 (26)	39 (24)	34 (24)	25 (21)	131 (24)
Extended	6 (5)	9 (6)	6 (4)	7 (6)	28 (5)
Categorical	2 (2)	3 (2)	2 (1)	4 (3)	11 (2)
<i>Depressive</i>					
Specific	22 (17)	20 (12)	27 (19)	17 (15)	86 (16)
Extended	16 (13)	26 (16)	13 (9)	12 (10)	67 (12)
Categorical	3 (2)	4 (4)	5 (3)	8 (7)	20 (4)
<i>Total</i>					
Specific	88 (70)	95 (59)	93 (65)	68 (58)	344 (63)
Extended	29 (23)	50 (31)	31 (21)	26 (22)	136 (25)
Categorical	6 (5)	10 (6)	10 (7)	18 (16)	44 (8)
Nil Response	3 (2)	7 (4)	10 (7)	5 (4%)	25 (5)

$N=61$

Note. Each participant was prompted to recall 9 memories.

That the repressive group retrieved a lower percentage of specific memories (59%) than the adaptable (70%) group is only seen as a trend in the data. It can also be seen in the data presented in Table 6.16 that repressives

retrieved a higher proportion of extended and categorical memories (37%) compared to the adaptable group (28%).

Autobiographical Memory Study : Summary and Discussion

The purpose of the autobiographical memory study was to examine the rumination and reflection typology in relation to the retrieval of emotionally valenced autobiographical memories. Contrary to expectations, no significant differences were found between the rumination and reflection groups for the level of specificity of content when recalling positively or negatively toned memories. There were, however, trends found in the data in the expected direction. For example, adaptable individuals (low rumination, high reflection) did display the expected tendency to retrieve autobiographical experiences at higher levels of specificity than any other group for all memory types (positive, depressive & anxiety). The repressive group showed less specificity than the adaptable group in both positively cued and negatively cued experiences. The two high rumination groups showed less specificity than the two low rumination groups.

Contrary to what had been expected, the ease with which positive and negative experiences were recalled did not significantly differ between the groups. However, the data revealed trends in the expected direction. With one notable exception, the adaptable group was faster to retrieve both their positive and negative experiences than the three other groups. The repressive group

displayed a bias for positive information in retrieving their positive memories faster than the three other groups.

Any differences in specificity of content or latency in retrieval between the rumination and reflection groups occurred despite most memories recalled being rated as specific (over 63%). This high level of specificity may be influenced by the education level of participants, as the higher a participant's education, the more specific memories they produce (Wessel, Meeren, Peeters, Arntz & Merckelbach, 2001); by the non-clinical nature of the sample, as most findings for overgenerality have been found in clinical samples (e.g., Williams et al., 2000); and by the lack of power inherent in a small sample (Tabachnik & Fidell, 1996).

Autobiographical Memory Retrieval for the Adaptable Group

Within-group differences showed that adaptable individuals did not differentiate in specificity between their past positive, anxiety or depressive experiences. For example, one adaptable individual recalled this specific memory in relation to the cue type 'happy', "*Happiness is something that I like to think I keep company with most of the time that is a sense of peace and contentment. But specifically I can recall not too long ago feeling a great sense of happiness just being out with [named] walking the shops at [named], sitting and having a cuppa etc*" and of equal specificity to the cue word 'scared', "*Quite a long time ago, maybe 10 years back we were on a family holiday in Queensland, [name, name, name] and myself. We had stayed at [name], my sister, and [name] place. While there I'd decided to climb Mt. Gun Gun not far away from their home. Half way up a cliff I couldn't find any more foot holds nor could I get back down. I was stuck for more than an hour, probably one of*

the very few times in my adult life that I've experienced that panicky fear. (I did get down)." This person is very much in touch with the affect associated with the emotion related to the cue words, both for positive and anxiety-related experiences. They are able to articulate what the experience of being happy and scared is to them and to easily remember a specific example of a happy or scary experience.

Autobiographical Memory Retrieval for the Repressive Group

Within-group differences for the repressive group showed that the memories recalled for their anxiety-type experiences were significantly more specific than the content of their depressive experiences. For example, when responding to the cue word of 'scared' a repressor recalled this specific anxiety-type memory, *"As a child my brothers put me head first into a sleeping bag, pulled the end shut and tied the knots. I remember blackness and terror and screaming until released by my mother. I'm now claustrophobic."* The same participant retrieved a more general (i.e., extended) memory to the cue word of 'lonely'. They wrote, *"As a mature age university student, I felt lonely for a few days after starting. Most of the students were young, fresh from school. I felt isolated and lonely, but fortunately soon had some friends, both young and older"*. The main thrust of this depressive memory is one of comparison with other, younger, fresher university students. Social comparison is a theme which became evident in many of the repressor individuals' depressive-type experiences.

Repressives took significantly longer to retrieve both their anxiety and depressive type memories than their positive ones. This result shows some consistency with that of Dickson and Bates (2005) and Holtgraves and Hall

(1995). Dickson and Bates found that repressors did display a bias toward positive information, in that repressors were more specific in the content of their positive memories.

Dickson and Bates (2005) suggested that depressive memories of the repressors constitute failure experiences causing distress to their sense of self-esteem. For example, in the current autobiographical memory study, a response to the cue 'sad' was, "*A few days ago I found out that a guy who was a good friend and whom I was interested in actually is interested in my friend*" indicating possible underlying themes of rejection, distress and self-blame. Anxiety experiences appear to be more readily externalised, for example, in response to the cue 'worried' the same repressor wrote, "*Today I was worried that I wouldn't get all my research participation completed before the end of semester because I only had done 1 hour*".

The faster recall of positive memories could suggest that repressors engage in protecting a positive self-image (Derakshan & Eysenck, 1999; Mendolia, 1999; Shedler, Mayman & Manis, 1993). Repressors' responsiveness to a threat to their self-esteem involves both depressive and anxiety experiences, for example, in response to the cue word 'scared' one repressor wrote, "*Sometimes when home alone at night. Our house is 2 storey so sometimes I am scared someone might be upstairs when I'm down or vice versa*". The content of this memory appears to signal an anxiety experience tapping into feelings of being unable to control the environment, in other words, a failure to cope becomes an issue of self-esteem.

Thus, avoidance of the experience of anxiety or depression at a conscious level, whether it is through generality of the content of the memory or

through a slow response time, appears to be a primary characteristic of the repressor individual. It could be seen to add an additional burden onto cognitive processing, and is in line with conclusions from previous studies (e.g., Ashley & Holtgraves, 2003; Davis, 1987; Derakshan & Eysenck, 1999). Lack of specificity is not considered to be due to an unwillingness or sluggishness to respond (Phillips & Williams, 1997) but to avoid the distress associated with specific negative experiences (Mackinger, Pachinger, Leibetseder & Fartacek, 2000).

Autobiographical Memory Retrieval for the Sensitiser Group

A different pattern of responses were found for within-group differences for the sensitiser group. The retrieval of positive memories occurs at the same level of specificity as that for negative memories. Latency of recall also occurs in the same way for positive and negative memories. In this case, sensitisers display very small differences in retrieval time across the different cue types. For example, one sensitiser individual responded to the ‘loved’ cue with “*Spending time with [named] – laughing and sharing intimate moments – saying goodbye at the gate under the banksia rose*”, in a similar time and level of specificity (i.e., a general category of memory) to the cue word ‘dejected’, “*Recently – in the last 6 weeks – had a short term boarder who took advantage both financially and energetically, **this impacted on my academic performance and I also had the flu and felt no-one could help***”. These examples indicate that sensitiser individuals are very much in touch with and attend to past, personal, negative experiences.

Autobiographical Memory Retrieval for the Vulnerable Group

The final group of responses to the retrieval of autobiographical memories was seen in the group of individuals classified as vulnerable (high rumination, low reflection). Vulnerable individuals retrieved their positive memories significantly faster than their depressive memories. For example, one vulnerable individual responded very quickly to the cue word ‘loved’ and then wrote, “*My parents have been an amazing blessing to me, especially through my boyfriend and my breakup. I always know that I am loved but they have really been expressing it lately with their time, hugs and words*”, whereas, the response time for the cue word ‘dejected’ was a lot longer, “*The only thing that I can think that fits is with this girl from church who was sick for a fair while and wasn’t at church, I called her to see how she was and emailed and she said I was the only one from church who made an effort to check on her. Yet I feel I try to make her feel significant and cared for but she has never returned the same nurture.*” These results are in line with previous evidence that has found that high levels of rumination are related to deficits for depressive experiences (e.g., Watkins & Teasdale, 2001).

Autobiographical Memory Retrieval Overall

All participants showed a somewhat more generalised retrieval style for past depressive experiences compared to past positive and anxiety experiences. From the lack of significant differences between the four rumination and reflection groups, it would be easy to conclude that repressors are not that different from the non-repressor when using a cognitive-experiential task, such as the Williams and Broadbent (1986) Autobiographical Memory Task. However, previous research has found that there is a qualitative difference in

repressors' responses to emotionally valenced cue words (e.g., Dickson & Bates, 2005). Past evidence has shown that repressors display an illusory positive self-image and unrealistic optimism (Myers & Brewin, 1996; Shedler et al., 1993), yet, these were not themes that were strongly present in the memories that were collected in the current study.

What became apparent on examination of the qualitative content of repressors' responses for pleasant events was that repressors display a strong need to be high achievers. As this sample is made up of many university students, success in this case often means the gaining of higher marks for their assignments, for example, in response to the cue of 'success' adaptable individuals tended to retrieve experiences such as, "*I felt very successful when I completed my research project. I had done it. I did not allow myself to think beyond that – just getting it finished. That was the goal – **My friends & family all cheered – Relief all round***", and "*I finally finished my masters degree, and I organised to take the people who love me most to the ceremony. It was a day out for all of us, we celebrated with a delicious afternoon tea in Warrandyte and enjoyed each others company*". Both of these experiences have themes of the sharing of success with others (family & friends), of delight in their companionship, being grateful for their support, and of the joy they experienced on completing their goal.

In contrast, responses from repressors tended to have themes of success in winning a competition, of comparisons being made, or of the need to achieve better results than others. For example, "*Two weeks ago I got my marketing assignment back and I was feeling happy to know that **I did relatively well in comparison to others in my tute***", "*When I coached some girls from netball,*

*under 13's, they were considered the 'left-overs', not good enough to get anywhere. I felt successful when they were runners up in the Grand Final & everyone had to eat their words', and "Last week when I got results back for my sociology assignment. I got a distinction which I was really happy with. **It was a better mark than anyone I was sitting with got**".* In summary, it appears that success for repressor individuals is about competition and achievement in comparison to others, whereas, success for adaptable individuals is about reaching a short or long term goal and sharing their happiness with others.

The results for the repressors are consistent with Mendolia's (2002) findings that repressive distancing occurs when individuals perceive that their social performance is poor. Thus, by engaging in social comparison and perceiving their performance as less noteworthy in relation to others, combined perhaps with poorer social integration, could be seen as the greatest form of threat to the repressives' self-concept.

CHAPTER 7

GENERAL DISCUSSION

The key purpose of this thesis was to address three interlinked aims involving the cognitive processes of rumination and reflection. The first aim was to identify intrapersonal and interpersonal dimensions of rumination and reflection through an expanded version of the Rumination and Reflection Questionnaire (Trapnell & Campbell, 1999). Second, the self-absorption paradox was examined in terms of a public and private, ruminative and reflective self-focus. Finally, a coping and adjustment model, using different combinations of rumination and reflection was investigated in terms of psychological distress, self-consciousness, personality factors, and autobiographical memories. A summary of the results from Study 1, Study 2 and Study 3 is linked around the three specific research aims. The discussion focuses on new contributions made by the data from the three studies to the understanding of the self-absorption paradox. This is followed by the clinical implications of the findings. The final section of this chapter focuses on methodological considerations and directions for future research.

Research Aim 1: Identification of Intrapersonal and Interpersonal Dimensions of Rumination and Reflection

In fulfilment of the first thesis aim, the Revised-Rumination and Reflection Scale was expanded to allow for self-reported measurement of individual levels of rumination and reflection that have different self-focused directions. Conceptually, rumination and reflection have been demonstrated to include measurable public and private aspects. However, the factor structure of the Revised-Rumination and Reflection Scale remained similar to that of the Rumination and Reflection Questionnaire (Trapnell & Campbell, 1999). This indicates that the new scale maintains the integrity of the original measure of rumination and reflection. Therefore, findings regarding the link between rumination and reflection and private self-consciousness are comparable to those found previously by Trapnell and Campbell. The findings regarding the unidimensional nature of ruminative and reflective self-focus add to the existing body of knowledge on cognitive processes, particularly in the area of self-awareness. The following section discusses the development of the revised scale. Then, after a discussion of the correlates of and individual differences in rumination and reflection, it is proposed that rumination and reflection are mechanisms that underlie self-consciousness.

Development of the Revised-Rumination and Reflection Scale

As Trapnell and Campbell's (1999) Rumination and Reflection Questionnaire (RRQ) is focused on private self-consciousness, a prerequisite for using intrapersonal and interpersonal dimensions of rumination and reflection was

to establish that these dimensions exist and could be measured with self-report methodology. Therefore, the initial procedure in Study 1 was to redevelop the Rumination and Reflection Questionnaire. Although previous research had implied that rumination and reflection were likely to encompass both intrapersonal and interpersonal dimensions this had yet to be tested empirically.

The first stage of Study 1 was to re-word a number of rumination and reflection items in the Rumination and Reflection Questionnaire (Trapnell & Campbell, 1999). The second stage of Study 1 established that the majority of the items from the Revised-Rumination and Reflection Scale, could be identified as belonging to their respective constructs, that is, the items had good face validity. A similar process, using the same sample of participants ($N = 122$), was conducted with the Self-Consciousness Scale-Revised Version (Scheier & Carver, 1985). A series of factor analytic procedures was conducted in the third stage of Study 1, using a large and independent sample ($N = 353$). Initially, this revealed that there were two robust factors of rumination and reflection in the Revised-Rumination and Reflection Scale.

A separate factor analysis of the new rumination and reflection scales were then conducted in the next stage of Study 1. This analysis found that while there were indications of two components to both rumination and reflection, one measuring a public domain and one measuring a private domain, empirical support for these were not strong. The data indicated that within those individuals who tended to ruminate, a distinction might be made between those who ruminate on

their internal world of thoughts and feelings and those who ruminate on themselves in terms of the wider social context. Similarly, within those individuals who tended to reflect, a distinction might be made between those who reflect on their internal world and those who are socially curious; that is, they think about themselves as being in relation to the wider society.

There were minor differences in the item content of the hypothesised public and private, rumination and reflection factors and the factors found through exploratory factor analysis in Study 1. Yet, their basic constructs remained intact. Interpretation of each factor was consistent with the hypothesised definitions of public and private, rumination and reflection. However, using an independent sample ($N = 313$) the factors of *public rumination*, *private rumination*, *public reflection* and *private reflection* failed to be ratified in Study 2. Although the findings supported single factor congeneric models, two-factor congeneric models while displaying a good fit to the data also demonstrated high intercorrelations between public and private rumination, and again between public and private reflection. This indicated a lack of discriminant validity between the dimensions. It was concluded that individual differences in the tendency to be privately self-conscious but not publicly self-conscious are not adequately operationalised in the Revised-Rumination and Reflection Scale as different forms of ruminative and reflective self-focus. The results from Study 2 did not empirically support the formation of a four-factor scale of rumination and reflection. At this stage, it appears that the tendencies to ruminate or reflect over *non-social* aspects of oneself

(private self-focus) are not able to be differentiated from tendencies to ruminate or reflect over the *social* aspects of oneself (public self-focus). However, it is suggested that the problem of lack of discriminant validity may derive from the uncertain construct validity of the original public and private self-consciousness measures (e.g., Creed & Funder, 1998, 1999; Silvia & Duval, 2001), rather than the potentially useful extension of the private-public dimensions of rumination and reflection.

Self-Consciousness with Rumination and Reflection

The Scheier and Carver (1985) Self-Consciousness Scale-Revised was used to establish a link to rumination and reflection through self-consciousness. In Study 1, a series of bivariate correlations revealed that rumination and reflection had significant differences in the magnitude of the correlations depending on whether they were correlated with private or public self-consciousness. Thus, the independence of rumination and reflection, as separate types of self-focused thought processes, was supported.

Subsidiary analysis of the Self Consciousness Scale-Revised (Scheier & Carver, 1985) in the last stage of Study 1 found primary factors of private self-consciousness, public self-consciousness and social anxiety. The private self-consciousness scale was identified through two factors labelled *internal state awareness* and *self-reflectiveness*. These factors are consistent with previous research findings (e.g., Conway & Giannopoulos, 1993; Mittal & Balasubramanian, 1987; Ruiperez & Belloch, 2002). In addition, this analysis failed to identify two

public self-consciousness factors previously found of *impression consciousness* and *appearance consciousness*. Social anxiety maintained its original form with its item content remaining unchanged. This current factorial solution is consistent with previous findings (e.g., Martin & Debus, 1999).

The finding that the private self-consciousness domain consists of two individual factors and the public self-consciousness domain consists of one factor still corresponds to Buss's (1980) original theoretical stance and demonstrates congruence with existing empirical research. The correspondence of the factor structure of the Self Consciousness Scale-Revised in this research with earlier studies suggests that the characteristics of rumination and reflection are unlikely to be an artefact of sample characteristics.

In addition, the data revealed a relationship between rumination and social anxiety. Rumination had a significantly higher correlation with social anxiety and public self-consciousness than did reflection. This indicates that ruminative individuals are publicly self-consciousness who also tend to be more socially anxious. It also provides support for the contention originally made by Buss (1980) and more recently by Ruiperez and Belloch (2003) that it is the public aspect of self-consciousness that occurs prior to the appearance of social anxiety.

The data also revealed a significant relationship between rumination and private self-consciousness. This relationship was strong for rumination with self-reflectiveness. However, rumination was not associated to the other aspect of private self-consciousness, internal state awareness. It becomes clear, in using the

factors of rumination, reflection, and self-consciousness that the strong link between rumination and social anxiety provides some support for rumination being an antecedent to social anxiety in the same way that public self-consciousness is thought to be. In addition, it was found that there is a complex relationship between rumination and private self-consciousness. Self-reflectiveness encompasses negative ruminations that are directed internally as well as externally, whereas internal state awareness involves reflection but not the more negative thought process of rumination.

Individual Differences in Rumination and Reflection

Individual differences in levels of rumination and reflection were also examined. Hypotheses were formed on the basis of previous empirical research. Contrary to expectations, scores for rumination and reflection were not related to gender nor were they related to the order of scale presentation. However, scores for rumination and reflection were related to whether the participant was a psychology student or not.

It makes conceptual sense and there is empirical support for the idea (e.g., Trudeau & Reich, 1996) that psychology students are more interested in gaining self-knowledge (i.e., reflective) than other members of the population. Yet, the finding that they are more ruminative is surprising. A possible explanation involves the notion that rumination and reflection are basically independent tendencies. This thesis has provided support for this claim. Although psychology students are significantly more interested in gaining greater insight than other members of the

population, for those students who have some degree of depression or anxiety, the attempt to gain more insight into their problems indicates that they are probably engaging in rumination (Lyubomirsky & Nolen-Hoeksema, 1993) rather than reflection. The likely outcome is that regardless of any supposed benefits in ruminating, insights generated through ruminations are going to be negative and ineffectual. Ruminations act as a hindrance to any real problem solving solutions and provide further fuel for a depressive mood (Lyubomirsky & Nolen-Hoeksema, 1995; Watkins & Baracaia, 2001; Ward, Lyubomirsky, Sousa & Nolen-Hoeksema, 2003). Therefore, as the data suggest, there are subgroupings within the student population: those who tend to be more reflective and those who tend to be more ruminative, and that these subgroupings appear when using the rumination and reflection scale.

The Mechanisms Underlying Self-Consciousness

The data obtained in this thesis also support the general argument that psychological processes involving rumination and reflection underlie self-consciousness. Wicklund and Gollwitzer (1987) had previously maintained that self-consciousness should not be measured using a self-report scale such as the Fenigstein et al. (1979) Self-Consciousness Scale because it neglected the psychological processes that underlie a very complex concept. Through the evidence supplied by this current thesis it may now be argued that there are complex psychological processes, such as rumination and reflection, involved in the concept of the self that are able to be successfully measured using self-report

methods such as the Trapnell and Campbell (1999) Rumination and Reflection Questionnaire and the Revised-Rumination and Reflection Scale. Indeed, these findings suggest that the creation of an instrument such as the Revised-Rumination and Reflection Scale fulfils the need for a new measure of the self-consciousness construct which takes into account its association with the Big-Five dimensions of personality (Ruiperez & Belloch, 2003).

Summary of Research Aim 1

In summary, the first aim of this thesis was fulfilled in Study 1 and Study 2 with a psychometric evaluation of the Revised-Rumination and Reflection Scale. Analysis of the data revealed that rumination and reflection are indeed separate self-focusing tendencies. However, it is yet to be properly evidenced that there are some individuals who tend to ruminate on their inner self, or whether there are others who ruminate on themselves as part of their social world. In addition, it is yet to be found whether there are some individuals who tend to reflect on their inner world, or others who are more socially curious.

Research Aim 2: The Examination of the Self-Absorption Paradox Through a Ruminative and Reflective Self-Focus

Having established that the psychometric properties of the Revised-Rumination and Reflection Scale were sound, it was possible to explore the self-absorption paradox using the new self-report measure. As a fulfilment of the

second aim of this thesis, the results of Study 2 confirmed that the self-absorption paradox could be explained in terms of a ruminative and reflective self-focus. A ruminative self-focus appears to be indicative of psychological distress: rumination being associated with neuroticism and moderate to strong levels of symptoms of distress. In contrast, a reflective self-focus appears to be associated with psychological health: reflection being associated with openness to experience and relatively independent of distressing symptoms.

The following section involves a discussion of rumination and reflection as part of a self-attentive trait. Next, adaptive and maladaptive self-absorption are explained. It was concluded that rumination and reflection are an important part of the self-regulatory cycle and that there is a progression from reflection and psychological health to rumination and psychological distress.

The Self-Absorption Paradox and a Self-Attentive Trait

An important implication for the central role of rumination and reflection in the self-absorption paradox is that these processes and thus the self-absorption paradox can be linked to the motivations that lie behind individual personality factors. The motivation behind rumination is believed to be that of the neurotic's fear of threats to the self, whereas the motivation behind reflection is believed to be greater self-knowledge (Joireman et al., 2002; Teasdale & Green, 2004; Trapnell & Campbell, 1999). This provides further evidence of a self-attentive trait. The trait of self-attention could be thought of as a dichotomous construct; one form of the dichotomy being the way that the neurotic processes information, that is, by

focusing and ruminating about past negative experiences, the other form being the way that the more open personality processes information, that is, by self-reflection.

Adaptive and Maladaptive Self-Absorption Explained

Ruminative thoughts constitute *an attempt to control the uncontrollable*. The more this is attempted, the more ruminative and fixated self-focused attention becomes, leading to the consumption of cognitive resources, an inability to successfully process trauma (Gold & Wegner, 1995) and behavioural paralysis (Ward et al., 2003). In contrast, self-focused attention can also be seen as flexible and responsive because of the reflective thought process. The essence of reflection is that it is a thought process involved in a broad range of intellectual pursuits which are not motivated by the suppression or repression of traumatic events but by a natural curiosity. Thus, the reflective person is more in control of their thoughts, cognitive resources are not consumed by past traumatic events, and therefore problem-solving abilities are enhanced.

This understanding of the self-absorption paradox provides confirmation of Trapnell and Campbell's (1999) research findings on rumination and reflection. At the same time, the findings from this present thesis offer a plausible explanation for Ingram's (1990a) contention that self-absorption is maladaptive or pathological if self-focused attention remains fixated, and self-absorption is adaptive or non-pathological if it is more flexible. On the basis of the present data it now appears more appropriate to argue that self-focused attention can become fixated and rigid

because of the ruminative thought process. Furthermore, the findings support the conclusions of Davis and Nolen-Hoeksema (2000), in that rumination is linked to an inflexible cognitive style.

Self-Regulation and Rumination

In addition to rumination being considered as an unsuccessful attempt to control uncontrollable thoughts of past traumatic experiences, it can also be seen as the mechanism which prevents disengagement from the self-regulatory cycle. Pyszczynski and Greenberg (1987) proposed that some individuals get stuck in the self-regulatory cycle when they are unable to stop focusing on a perceived discrepancy between their current and desired state. The consequences of being stuck are an intensification of self-focus and the development of negative affect. Thus, it appears that the cognitions that are involved in a negative focus on discrepancy attainment or its nonattainment, which Pyszczynski and Greenberg contend is a depressive self-focusing style, appear to parallel that of a ruminative self-focusing style. Therefore, the fixated and rigid thoughts of Ingram's (1990a) model of self-absorption correspond to Pyszczynski and Greenberg's (1987) inability to disengage in the self-regulatory cycle. The ability to abandon unobtainable goals (i.e., disengage) and to re-engage efforts in alternative goals is associated with ratings of high subjective well-being (Wrosch et al., 2003) and are consistent with the self-reflective style.

The Progression from Psychological Health to Psychological Distress

Not only has the current research provided evidence for the underlying mechanisms of a self-attentive trait, and involvement in the self-regulatory cycle, the self-absorption paradox can be further explained through the different associations that these thought processes have with psychological health. Through the current research it has emerged that there is a progression from psychological health to psychological distress in terms of the association that reflection, and rumination, respectively, have with psychopathology. The implications of this progression are that the further a person moves away from an internally focused, intellectual curiosity to an externally focused rumination, the higher the likelihood there is of psychological ill-health (i.e., an increase in distressing symptoms).

The Reflection Factor and Psychological Health

The cognitive process of reflection was found to be relatively independent of symptoms of psychological distress. Specifically, reflection was found to have significant but low correlations with a number of symptom types including obsessive-compulsiveness, depression, anxiety, phobic anxiety, and psychoticism. A promising explanation for the link of reflection to low levels of distress is the issue of lack of control. That is, other people's perceptions cannot be controlled. When self-knowledge relies on a concern about what others think or say (e.g., Item 23 'I often look at how I relate to others, in philosophical ways'; Item 19 'People say I'm a deep introspective person') there is always going to be a degree of uncertainty and ambiguity in that self-knowledge leading to doubt. When the

external world (i.e., other people) is involved in the structure of one's self-identity it appears this opens up the possibility of becoming vulnerable to distress. The form of this distress can actually be seen in the correlations between reflection and the Brief Symptom Inventory measure of symptoms of distress. In particular, individuals who are reflective are to some extent concerned with checking and double checking what they do (obsessive-compulsive); feel tense or keyed up (anxiety); feel afraid in open spaces or on the streets (phobic anxiety); feel nervous when left alone (psychoticism); or experience nausea or an upset stomach (somatic symptoms of depression). Overall, these symptoms indicate that to some extent those who reflect are concerned with the matter of control, in that they experience anxiety or fear over a lack of control of their environment.

The positive aspects of reflection were highlighted in regression analyses. Interestingly, these analyses found that reflection is a complex dimension, in that, it is predicted by three different aspects of personality, conscientiousness, openness to experience, and narcissism or more specifically, self-admiration and by two aspects of self-consciousness, that is, self-reflectiveness and internal state awareness.

Overall, the pattern of associations, which reflection has with the variables of openness to experience, self-reflectiveness, internal state awareness, conscientiousness and narcissism, indicates that a healthy state of psychological mindedness encompasses an internal curiosity that can be measured by the cognitive process of reflection as well as a broad range of personality features. The

lack of association between reflection and symptoms of psychological distress is consistent with the notion proposed by Trudeau and Reich (1995) and Ryff (1989, 1995) that psychological mindedness, in the form of reflectivity, is indicative of psychological well-being.

Intriguingly, the results also indicate that psychological health involves some level of narcissism, in particular, self-admiration. Items from the Narcissistic Personality Inventory (Raskin & Terry, 1988) which correlated significantly, albeit weakly, with items from the reflection scale included 'I know I'm good because everyone keeps telling me so', 'I think I'm a special person', 'I like to look at my body' and 'I like to look at myself in the mirror'. However, this relationship does not sit easily with previous research on the differences between adaptive and maladaptive narcissism. The items involved in this present study do not appear to reflect a realistic form of narcissism that would be a prerequisite for adaptive functioning (Watson & Biderman, 1993). Indeed, the ambiguity of the results regarding reflection and narcissism indicate that this is an area that needs further investigation.

The Rumination Factor and Psychological Health

In contrast to the association that reflection has with symptoms of psychological distress, rumination was found to have moderate to strong correlations with psychopathology, and linked with more of the unhealthy aspects of personality, that is, with neuroticism, and disagreeableness. The pattern of associations for rumination is relatively straightforward in a conceptual sense. That

is, the very concept of rumination is that these thoughts are chronic, negative and self-focused, driven by fear and anxiety, and evident in a more neurotic personality. Notably, the pattern of negative aspects of personality coupled with symptoms of distress was evidenced in the correlational data as well as in a series of regression analyses.

The correlational data showed that rumination was associated with paranoid ideation, phobic anxiety, and anxiety. Although paranoia is said to be a common human experience even in a nonclinical, college student population (Ellett, Lopes & Chadwick, 2003), ruminating about the outside world, in the sense of not trusting others or blaming others for their problems contributes to a person's vulnerability to experience further psychological distress. Indeed, suspiciousness, as a primary characteristic of paranoia has a ready correspondence with public self-consciousness and paranoid reasoning (von Gemmingen, Sullivan & Pomerantz, 2003). Heightened or extreme public self-consciousness is a prominent feature in subclinical paranoid thinking (Fenigstein & Vanable, 1992). Subclinical paranoid thinking is marked by exaggerated self-referential biases, which are relatively stable tendencies toward suspiciousness, feelings of ill will or resentment, mistrust and belief in external control or influence (Combs, Penn, & Fenigstein, 2002). It appears that there is a three-fold relationship among paranoia, public self-consciousness, and rumination. This relationship indicates that for the person who is a ruminator their self-focused attention is often negative, and fixated on the self as a focus of social attention. Where this pattern is also associated with paranoia the

person's perception of the world becomes distorted. Blame is located in others and external attributions are made for negative experiences (Kinderman & Bentall, 1997).

Social comparison theory would suggest that comparing oneself to others allows the individual to gain self-knowledge (Wheeler & Miyaka, 1992). However, in the case of ruminators the resulting self-knowledge is not generally helpful and more than likely contributes to the ruminative cycle. The motives that drive social comparison in rumination seem to be similar to those involved in self-regulation. The self-regulatory process involves self-focused attention in the attainment or maintenance of discrepancies between current and desired states. It is possible that rumination is more involved in a cycle of continual upward comparison, in which attention is focused on non-achievable goals. Further, due to the relationship that rumination has with psychological distress, it is probable that rumination entails a focus on the negative feelings associated with the nonattainment of goals and which in turn would lead to increasing levels of negative affect.

The current research has revealed that the motive behind rumination, rather than a drive for self-knowledge per se, appears to be to attain a view of oneself *in comparison to others*. However, continual upward comparison to others' situations or performance often results in nonattainable discrepancies. More often than not, the self-knowledge that ruminators gain is that they are not going to be successful in meeting these goals, and is often accompanied by paranoid thoughts. This in turn

seems to lead to depressive-like feelings of failure and loss and thus higher levels of distress.

***Research Aim 3: To Investigate a Typology of Coping and Adjustment Using
Different Combinations of Rumination and Reflection***

Prior to this research, no studies had directly examined Trapnell and Campbell's (1999) coping and adjustment typology. To fulfill this aim, four groups were formed in Study 3 using different combinations of levels of rumination and reflection. The groups were differentiated in terms of personality, in particular, the traits of neuroticism, agreeableness, openness to experience and narcissism. Two linked studies were reported in Study 3 that compared four different styles of the coping and adjustment typology. The first study investigated group differences on self-report measures of psychological symptoms of distress, personality factors, and self-consciousness. The second study examined a subsample from the four groups and compared them on the retrieval of autobiographical memories. The first section discusses the differences between the four groups in terms of self-report data. Next, is a brief discussion on the overlap between the Trapnell and Campbell (1999) typology and the Weinberger et al. (1979) typology. Following this is a discussion on the differences between the four groups for the cognitive experiential task of autobiographical memory retrieval. In particular, the focus of this discussion is on the repressive coping group.

The Adaptive Group

The first group formed with adaptive individuals (i.e., a high level of reflective self-focus and a low level of ruminative self-focus), self-reported very little psychological distress. As expected, the adaptive model of information processing is more about being inquisitive than being fearful, and is linked to the positive characteristics of the openness to experience personality. These are individuals who actively seek to know more about themselves and the world around them. However, they process such information in a healthy, reflective way that does not leave them vulnerable to psychological distress.

The findings of the present study also provide an interesting conceptual link to that of the resilient individual. Psychological resilience is characterised by an ability to explore and experiment with alternative options when faced with negative experiences (Bonnano, 2004) and encompasses curiosity and openness to new experiences (Block & Kremen, 1996). Individuals with positive type coping styles have effective coping resources that buffer against negative emotional life experiences (Tugade & Fredrickson, 2004). Thus, it appears that the reflective thought process that is captured in the adaptive typology possibly converges with the resilient individual in their similar approaches to coping with emotional stress (i.e., flexibility of thought). This also suggests that the adaptive individual possesses an ability to regulate positive and negative emotions, or in other words, they are likely to be emotionally intelligent (Salovey, Bedell, Detweiler & Mayer,

1999). This is an interesting connection that provides a further area for future development.

The Repressive Group

Different patterns of problems were evident in the maladaptive groups. The repressive individuals (i.e., low levels of both ruminative & reflective self-focus) displayed a very similar symptom profile to adaptive individuals, in that they self-reported low to very low levels of symptoms of psychological distress. However, interestingly, this is a group of individuals who are not psychologically minded, that is, they are not openly curious or reflective about themselves, in particular, repressives admit to being closed to introspection.

The importance of being able to identify emotional states cannot be overstated. To know how one feels “helps to inform us about the significance of the immediate situation, to work out what we should do next, and to indicate what, if anything, we should do about changing how we feel” (Feldman Barrett, Gross, Christensen & Benvenuto, 2001, p.714). Feldman Barrett et al. have established that the regulation of emotions is positively related to the ability to distinguish between different emotional experiences. In contrast, the chief concern of repressors is to maintain a view of themselves as not emotionally reactive. To this end they employ defensive techniques, such as distancing from emotional responses to regulate their affect (Weinberger & Davidson, 1994), and tend to suppress negative emotional experiences. By these strategies they deny themselves the opportunity of regulating their emotions, or of changing how they feel.

Despite the connection between the repressive coping style and emotional distancing, the current research found that repressors acknowledge experiences of being socially anxious. However, it would appear that if the repressors do not normally report symptoms of anxiety or distress, then they would not be acknowledging 'social' anxiety unless it is for a particular reason. Oakman, Gifford and Chlebowski (2003) suggested that there are two possibilities for the repressors' high level of social anxiety. One is that put forward by Schlenker and Leary (1982) that social anxiety occurs in an attempt to maintain a positive self-image. The other possibility is in terms of Trower et al.'s (1990) proposal that social anxiety is a mechanism of social dominance, in that it acts as an early warning system of a potential attack from more dominant members of society. Forms of social anxiety were especially evident in the qualitative content of repressor's responses in the personal memory study. It was found that, in comparison to the adaptive individuals, repressors display a need to be high achievers. Thus, it seems likely that repressors engage in social comparison based on independent needs. One is to preserve a positive self-image (Schlenker & Leary, 1982) and the other is to maintain dominance over others (Trower et al., 1990). However, upward social comparison leaves the individual vulnerable to decreased subjective well-being (Wheeler & Miyake, 1992).

The Sensitiser Group

As hypothesised, the sensitisers (high levels of ruminative self-focus & high levels of reflective self-focus) displayed the opposite pattern of self-focusing to the

repressive group. Indeed, this was evidenced in Study 3 in the way that they openly admitted to being very self- and other-interested (i.e., self-reported very high levels of both private & public self-consciousness). In addition, they reported high levels of psychological distress. Yet, this strong level of self-interest appears to be for a very different reason than the self-interest of the adaptive group. Sensitisers appear to be more motivated by a neurotic's fear and anxiety, having significantly higher levels of neuroticism than the adaptive individuals.

Contrary to expectations, there was no mediating influence of reflection on the sensitiser group's level of psychological distress. Clearly, the sensitiser typology parallels that of high-trait anxiety individuals from the Weinberger et al. (1979) typology in their vigilance and hypersensitivity to negative information (Calvo & Eysenck, 2000). It appears that just as high-anxious individuals selectively attend to threatening information (Williams, Watts, MacLeod & Mathews, 1997), sensitisers are characterised by a similar bias in attention. Previous findings for high-anxious individuals show that they overestimate unpleasant affect and process threat-related stimuli more thoroughly than low-anxiety individuals (Cutler, Larsen & Bunce, 1996). This is believed to be due to a cognitive bias, which leads them to exaggerate the threat of external and internal stimuli (Eysenck, 2000). For example, Eysenck, MacLeod and Matthews (1988) found that when asked to write down the spelling of verbally presented homophones that have both threatening and neutral meanings (e.g., guilt, gilt; die, dye), high trait anxiety individuals will write more threatening interpretations (die,

guilt) than low-anxiety participants. Thus, the sensitiser display a similar pattern of attentional bias, which makes them hypervigilant to negative stimuli (i.e., highly ruminative & reflective) and to overestimate their effects.

The Vulnerable Group

The vulnerable group displayed the most obvious pattern of distress. In contrast to the adaptive and sensitiser groups, the vulnerable group (high levels of ruminative but not reflective self-focus) were neither openly curious nor particularly self-interested. However, this is a group who are more other-interested, in that they are higher in public self-consciousness and social anxiety than the more adaptive group. Correspondingly, this group had a lower level of narcissism than the others. Principally, it is the vulnerable individuals' strong linkage to the personality factor of neuroticism that appears to leave them most vulnerable to psychological distress. There is no offset of this negative aspect of personality with other more positive characteristics that perhaps would help to buffer their exposure to psychopathology. To be sure, emotional stability is such a strong predictor of subjective well-being (Vitterso, 2001), that it seems plausible to assume that emotional instability (neuroticism) and its concomitant style of thought processing evident in a ruminative self-focus would be and is a strong predictor of psychological distress.

Evaluation of Typology Overlap with Weinberger et al. (1979) Typology

Study 3 also provided an opportunity to compare the two typologies on self-report measures. When the Trapnell and Campbell (1999) variables were compared

to the Weinberger et al. (1979) variables they were best differentiated in terms of anxiety rather than social desirability. Rather than presenting a socially desirable self-image there appeared to be a different pattern of cognitive functioning in the two typologies. For example, those who met the criteria for Weinberger et al. repressor and the Trapnell and Campbell (1999) repressor were similar to the adaptive group in terms of low anxiety but were not different in terms of social desirability. The factors that differentiated the repressor group from the adaptable group were more in terms of personality and self-consciousness. The self-other deception that the Weinberger et al. repressor engages in was not found. Their deception, in this case, appears to be in the terms of self-reporting low levels of anxiety and other symptoms of psychological distress. However, by not being engaged in psychological insight their deception is purely in terms of the self.

Although the Trapnell and Campbell (1999) coping and adjustment typology does show some similarities with the Weinberger et al. (1979) coping and avoidance typology there appears to be fundamental differences in their make-up. The Weinberger et al. model portrays coping and avoidance in terms of self- and other-perception. The current study found that the rumination and reflection typology portrays coping and adjustment in terms of the way individuals attend to the self. For instance, adaptive individuals appear to cope with negative emotions by trying to figure things out. On the other hand, other individuals tend to ruminate and stay in a chronic cycle of negative thoughts. In addition, repressors appear to block out negative emotions by avoiding self-analysis. It becomes clear that there

are enough differences between the typologies to justify the separate use of the new coping and adjustment typology, which uses different combinations of rumination and reflection to identify individual cognitive styles of dealing with negative emotions.

Autobiographical Memory Retrieval

Examination of the differences between the groups on autobiographical memory retrieval allowed an investigation on how differences might be exemplified in terms of self-relevant information. The retrieval of autobiographical memories was through a cognitive experiential task based on Williams and Broadbents' (1986) Autobiographical Memory Task. Overall, the results for the retrieval of autobiographical memories in Study 3 were not as expected. It was found that all participants, regardless of level of rumination and reflection, retrieved more specific memories for positive experiences than for negative experiences. Retrieval of personal memories was more general for depressive experiences than for anxiety experiences. Unlike the recent studies by Teasdale and Green (2004) or Dickson and Bates (2005), the association that rumination or repression has with overgeneral memory did not emerge.

The data were contrary to expectations, and reflected a complex pattern of findings. Differences in generality (less specificity) and latency were not found between the groups. However, within each group subtle differences in retrieval of personal memories emerged, particularly for that of the repressor group. The results revealed that repressive individuals did not retrieve their negative autobiographical

memories any differently (i.e., less specifically) when compared to non-repressive individuals. Nonetheless, the repressors displayed a positive bias for pleasant experiences, in that they retrieved positive memories at a significantly faster rate than their depressive or anxiety experiences. This indicates that although the repressive group did not differ from the other groups in the quality of their personal memories, they tended to differ in their accessibility. It has been suggested that repressors are more likely to access pleasant thoughts to cope with negative emotional experiences (Boden & Baumeister, 1997). This phenomenon can be seen in regard to the current study, in that it was easier (faster) for the repressive group to retrieve pleasant experiences than unpleasant experiences.

Clinical Implications

The data from this thesis reveal that there would be clinical utility in determining the characteristics of a client's cognitive style. Awareness of a cognitive style, that is, whether the person is a self-ruminator or self-reflector, could be used to alert the therapist to the client's suitability for psychotherapy, their psychological mindedness and the consequences of these characteristics for their psychological health. This knowledge also has the potential to assist the therapist to anticipate possible difficulties in the therapeutic relationship and barriers that may prevent a full engagement in therapy. Indeed, the specific personality styles and the cognitive biases associated with the different styles of information processing have

implications in terms of appropriate treatment options and likely treatment outcomes. In this section, these clinical implications are considered and discussed.

At a broad level, the findings of the present investigation provide further support that clients characterised by a ruminative coping style have a negative self-focus, which leaves them vulnerable to a number of forms of psychological distress. Clients with a more self-reflective style are more open to therapeutic work as reflection is thought of as being an indicator of patient suitability for therapy (Shill & Lumley, 2002). At a more micro level the findings regarding the differential associations that rumination and reflection have with symptoms of psychological distress indicate that these are important differences in cognitive styles and thus will impact greatly in the clinical setting. This applies more so to those who are ruminators as this particular cognitive style is linked strongly to paranoia.

Moreover, the findings point to the differences in type as well as intensity of symptoms of psychological distress between the groups in the Trapnell and Campbell (1999) typology of coping and adjustment. The first of these groups to be discussed are the sensitiser and vulnerable as these are individuals who are most likely to be vulnerable to depression and anxiety, as characterised by chronic, negative self-focused and self-critical thoughts. However, the sensitiser individual also possesses self-reflective abilities, which might assist in the therapeutic process. Despite the sensitiser's over-vigilance toward threat, self-reflective abilities as seen in aspects of their personality (e.g., openness to experience) and self-consciousness

(private self-consciousness) may be indicative of a level of psychological mindedness. For example, being candid when reporting aspects of their distress (Hjelle & Bernard, 1994); desiring to know and understand oneself (Franzoi et al., 1990); having some aspects of the more open personality (Schmutte & Ryff, 1997), and being privately self-conscious (Creed & Funder, 1998, 1999) are all thought to be indicators of patient suitability for therapy. Given that they have self-reflective abilities and are keenly interested in gaining further self-knowledge, clients characterised by the sensitiser style may benefit from interpretations, explanations and clarifications inherent in an insight-oriented therapy.

Conversely, evidence suggests that rumination exacerbates and prolongs depression (Nolen-Hoeksema, McBride & Larson, 1997; Nolen-Hoeksema & Morrow, 1993), and minimises the effectiveness of problem solving abilities (Lyubormirsky & Nolen-Hoeksema, 1995). Therefore, both the sensitiser and vulnerable clients (both highly ruminative) would benefit from a skills-based therapeutic approach, such as that found in cognitive behavioural therapy. For example, challenging negative self-statements, diarising everyday events, self-affirmation, graded assignments, and restructuring or reframing past negative experiences, would all contribute to lessening the influence of negative self-critical thoughts on the client's psychological health (Koole, Smeets, van Knippenberg & Dijksterhuis, 1999; Treynor et al., 2003). Moreover, cognitive therapy attempts to increase positive coping responses (e.g., distraction & relaxation) and decrease negative coping responses (e.g., self-medication & avoidance) through cognitive

and behavioural techniques. Koole et al. (1999) have found that rumination can be reduced when participants in their study were encouraged to self-affirm after failing a task, which in turn led to an increase in positive affect.

The bias toward engaging in negative rumination shown by sensitiser and vulnerable individuals results in easy access to specific negative memories. As indicated by the data from this thesis, sensitiser and vulnerable individuals have an excess of specific information to support their self-critical negative beliefs. Moreover, as previously suggested by Mikulincer and Orbach (1995), easy access to specific negative memories for anxious individuals is likely to be accompanied by an inability to regulate inner distress. Thus, sensitiser and vulnerable clients might need assistance to focus on specific positive experiences and events, and to contain the negative affects associated with unpleasant memories. Indeed, increasing access to more specific memories contributes to an improvement in the long term in psychological health (Raes et al., 2003). Taken together these strategies might enable sensitiser and vulnerable clients to counteract their negative self-evaluations and interrupt their rumination on negative affects and experiences. However, the therapist would need to bear in mind that increasing a client's exposure to more specific negative memories and associated affect will cause additional emotional disturbance in the short term (Raes et al., 2003).

The lack of psychological insight and suppression of negative affect, seen in the repressive coping style, also has implications regarding approaches to therapy with repressive individuals. A hurdle would be for the repressive clients to

overcome their repressive style. Repressive individuals might have less need for repressive coping strategies if they are given assistance in developing more effective strategies for dealing with events and experiences that threaten their self-concept. In this sense, therapy could focus on supporting repressive clients in acknowledging, accepting and processing negative affects and experiences. However, repressors have been found to be resistant to interventions designed to modify their constricted style of emotional processing and expression (Weinberger & Davidson, 1994). For example, Jamner and Schwartz (1985) found that 9 months of treatment were required before one client's report of subjective distress regularly correlated positively rather than negatively with his blood pressure levels.

Methodological Considerations and Directions for Future Research

There are several methodological considerations related to the present research that should be considered when interpreting its findings. First, it is important to note that the majority of findings are from self-report methodology. Self-report methods limit the interpretative capability of research findings. Future research should include longitudinal designs to examine causal relations between psychopathology and cognitive style. A longitudinal design would be appropriate to further explore any ambiguous results such as those found for the sensitiser group where the mediating effect expected by high levels of reflection did not occur. Over time, the nature of the mediating effect of reflection may be established. Or it might

be that there are other variables involved in the mediation process. One particular area of interest is that of the roles that rumination and reflection play in mediating the relationship between shame, guilt and empathy. All of these constructs are implicated in positive or negative well-being, particularly in the area of personal relationships (Joireman, 2004; Joireman et al., 2002). Future research could also expand on the definition of well-being to include positive affect. In addition, to increase the scale's sensitivity any further development of the scale might include the use of a 7-point scale rather than a 5 point-scale.

Second, although the study did not empirically support rumination and reflection as having intrapersonal and interpersonal dimensions it was conducted in a fairly heterogeneous sample of university students (i.e., young adults) it would be advantageous to develop the scale further in other populations. Moreover, it appears that item wording has played a role in the failure to evidence the rumination factors but not in the reflection factors.

A third methodological concern is with regard to the relations between cognitive information processing styles and personality that have been studied in the present research in terms of general or global personality factors of neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. This approach could be extended by incorporating a more fine-grained examination of the facets involved in different personality characteristics, including that of the role played by narcissism. This also opens up the interesting possibility that the reflective individual is also a resilient individual. Further to this, future studies

could also examine the association between vulnerability to depression or anxiety and the continual negative evaluation of chances of success in reaching particular life goals. In effect, ruminators appear to find it difficult to disengage from perceived goal discrepancies, particularly so when they are constantly engaged in upward social comparison.

In addition, the Trapnell and Campbell (1999) coping and adjustment styles also suggest some concordance with Higgins' (1987) self-discrepancy theory. When self-awareness is high (e.g., sensitiser & vulnerable groups), self-discrepancies promote attributions and predict emotional experience (Phillips & Silvia, 2005). In particular, discrepancies that are perceived between an actual and an idealised self can lead to dejection, or another's ideal state can lead to shame and embarrassment (Silvia & Duval, 2001). When self-awareness is low, self-discrepancies are not associated with an emotional state (Phillips & Silvia, 2005) yet this could suggest the avoidant coping style associated with the repressive individual.

Future research could also involve a comparison of the Trapnell and Campbell (1999) coping and adjustment typology with core features of attachment style theory. Attachment theory implies a strong overlap between the coping and adjustment typology and the way that the quality of early relationships impacts on the cognitive mechanisms of rumination and reflection. Specifically, chronic hypervigilance is seen in the insecurely attached anxious child and also in the 'sensitiser' (high rumination & high reflection) coping and adjustment style.

(Lopez, Mauricio, Gormley, Simko & Berger, 2001). In addition, the avoidant attachment orientation conceptually overlaps with the 'repressive' coping style. Moreover, Fuendeling (1998) concludes that there are two attachment styles, that is, avoidant and anxious that represent different self-regulatory strategies for managing anxiety.

Conclusion

In conclusion, this thesis demonstrated that the Revised-Rumination and Reflection Scale is a psychometrically sound self-report measure, which assesses individual levels of rumination and reflection. It has also provided meaningful connections from rumination to psychopathology. These connections can be seen in the groups formed through the Trapnell and Campbell (1999) typology of coping and adjustment. This new typology is distinguishable from the well-established Weinberg et al. (1979) typology of coping and avoidance in the way that it gives specific information on patterns of ruminative and reflective self-focus and how they connect to personality and psychopathology. One of the most important gains from the data is that there is a progression from psychological health to psychological distress in terms of the association that reflection and rumination, respectively, have with psychological distress. This thesis has also provided numerous directions for previous research.

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Appendix A.1 : The original Trapnell and Campbell's (1999) Rumination and Reflection Questionnaire (RRQ) Items

1. My attention is often focused on aspects of myself I wish I'd stop thinking about
2. I always seem to be rehashing in my mind recent things I've said or done to others
3. Sometimes it is hard for me to shut off thoughts about myself
4. Long after an argument or disagreement is over with, my thoughts keep going back to what happened
5. I tend to 'ruminate' or dwell over things that have happened for a really long time afterwards
6. I don't waste time rethinking things that are over and done with in my life (-)
7. Often I'm playing back over in my mind how I acted towards others in a past situation
8. I often find myself re-evaluating something I've done
9. I never ruminate or dwell on myself for very long (-)
10. It is easy for me to put unwanted thoughts about others out of my mind (-)
11. I often reflect on embarrassing episodes in life that I should no longer concern myself with
12. I spend a great deal of time thinking back over my disappointing moments
13. Philosophical or abstract thinking about life doesn't appeal to me that much (-)
14. I don't really meditate about the world around me (-)
15. I love exploring my inner self
16. My attitudes and feelings about other people fascinate me
17. I don't really care for introspective or self-reflective thinking (-)
18. I love analysing why I do things
19. People often say I'm a deep, introspective type of person
20. I don't care much for self-analysis (-)
21. I'm very self-inquisitive by nature
22. I love to meditate on the nature of people and the meaning of things
23. I often look at situations I find myself in, in philosophical ways
24. Contemplating myself isn't my idea of fun (-)

Item response options are strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5)

Appendix A.2 : Category Definitions for the Revised Rumination and Reflection Scale

Reflection

Reflection is a category of self-attentiveness defined as the attending to one's inner thoughts and feelings. It is a constructive form of self-focus associated with curiosity and interest in the self, motivated not by distress about the self but by an intrinsic interest in abstract or philosophical thinking.

Category 1 : Reflection – Private

Private reflection is a type of thought process that relates directly to a philosophical exploration of the inner personal self. It is a way of providing greater self- knowledge of a person's thoughts and feelings. Private reflection or contemplation of oneself is intrinsically a pleasurable, meditative experience and is believed to an aspect of psychological well-being. It is also linked to positive affect.

Category 2 : Reflection - Public

Public reflection is a general awareness of the self as a social object or social stimulus that has an effect on others. The emphasis of this type of thought process is on the reactions of others to the individual and the contemplation of the world around them. Public reflection is inherently philosophical in the way the person meditates on their interactions and relationships with others.

Rumination

Rumination is a category of self-attentiveness defined as neurotic, recurrent thinking or ruminations about the self that are prompted by threats, losses or injustices to the self (i.e. self-related recurrent thoughts associated with anxiety, depression and anger respectively). This form of chronic self-focus is primarily past oriented, in contrast to the closely related construct 'worry' which tends to be future oriented.

Category 3 : Rumination – Private

The focus of private ruminations is the thoughts and the attendance to feelings that deal with the individual's inner world. The privately ruminative person tends to constantly churn over negative aspects of their personal self. While these negative aspects are not necessarily or readily observable by the outside world they continually cause serious concern for the ruminative individual. Private ruminations, like intrusive thoughts, are continual, unwanted and often unwarranted negative thoughts about the personal self.

Category 4: Rumination – Public

The focus of public rumination is on being aware of and concerned about the personal self as a social object or as a social stimulus. The person who is high in public rumination constantly reworks or rehashes conversations that they have recently had with others, or goes over events that have occurred which have included others. In particular their thoughts are generally self-critical in how they must have appeared to others and the effect or impact that their performance has had. Public ruminations are negative thoughts that keep recurring about external events and conversations.

Revised Rumination and Reflection Scale - Categories

Item	Category
1. (15) I love exploring my inner self	()
2. (11) I often keep thinking about times when I have been embarrassed in front of others	()
3. (24) Contemplating myself isn't my idea of fun	()
4. (5) I tend to 'ruminate' or dwell over my interactions with others for a really long time afterwards	()
5. (21) I'm very self-inquisitive by nature	()
6. (3) Sometimes it is hard for me to shut off thoughts about myself	()
7. (17) I don't really care for introspective or self-reflective thinking that much	()
8. (20) I don't care much for self-analysis	()
9. (19) People often say I'm a deep, introspective type of person	()
10.(1) My attention is often focused on aspects of myself I wish I'd stop thinking about	()
11.(23) I often look at how I relate to others, in philosophical ways	()
12.(2) I always seem to be rehashing in my mind recent things I've said or done to others	()
13.(22) I love to meditate on the nature of people and the meaning of things	()
14.(16) My attitudes and feelings about other people fascinate me	()
15.(14) I don't really meditate about the world around me	()
16.(13) Philosophical or abstract thinking about how I relate to others doesn't appeal to me	()
17.(8) I often find myself re-evaluating something I've done	()
18.(9) I never ruminate or dwell on myself for very long	()
19.(12) I spend a great deal of time thinking back over my disappointing moments	()
20.(18) I love analysing why I do things	()
21.(6) I don't waste time going over experiences that are over and done with in my life	()
22.(4) Long after an argument or disagreement is over with, my thoughts keep going back to what happened	()
23.(7) Often I'm playing back over in my mind how I acted towards others in a past situation	()
24.(10) It is easy for me to put unwanted thoughts about others out of my mind	()

Revised Rumination and Reflection Scale – Answer Sheet for Categories

Item	Category
1. (15) I love exploring my inner self	(1)
2. (11) I often keep thinking about times when I have been embarrassed in front of others	(4)
3. (24) Contemplating myself isn't my idea of fun (-)	(1)
4. (5) I tend to 'ruminate' or dwell over my interactions with others for a really long time afterwards	(4)
5. (21) I'm very self-inquisitive by nature	(1)
6. (3) Sometimes it is hard for me to shut off thoughts about myself	(3)
7. (17) I don't really care for introspective or self-reflective thinking (-)	(1)
8. (20) I don't care much for self-analysis (-)	(1)
9. (19) People often say I'm a deep, introspective type of person	(2)
10.(1) My attention is often focused on aspects of myself I wish I'd stop thinking about	(3)
11.(23) I often look at how I relate to others, in philosophical ways	(2)
12.(2) I always seem to be rehashing in my mind recent things I've said or done to others	(4)
13.(22) I love to meditate on the nature of people and the meaning of things	(2)
14.(16) My attitudes and feelings about other people fascinate me	(2)
15.(14) I don't really meditate about the world around me (-)	(2)
16.(13) Philosophical or abstract thinking about how I relate to others doesn't appeal to me that much (-)	(2)
17.(8) I often find myself re-evaluating something I've done	(3)
18.(9) I never ruminate or dwell on myself for very long (-)	(3)
19.(12) I spend a great deal of time thinking back over my disappointing moments	(3)
20.(18) I love analysing why I do things	(1)
21.(6) I don't waste time going over experiences that are over and done with in my life (-)	(3)
22.(4) Long after an argument or disagreement is over with, my thoughts keep going back to what happened	(4)
23.(7) Often I'm playing back over in my mind how I acted towards others in a past situation	(4)
24.(10) It is easy for me to put unwanted thoughts about others out of my mind (-)	(4)

Category Definitions for the Self-Consciousness Scale (Fenigstein, Scheier & Buss, 1975).

Category 1 : Private Self-Consciousness

Private self-consciousness encompasses self-examination of personal attitudes, motives and behaviour. It is operationalised as a general concern or awareness of a person's inner thoughts and feelings. It has a narrow focus on knowing the way the person's mind works and is similar to that of the introvert whose internal world is one of ideas and concepts.

Category 2 : Public Self-Consciousness

Public self-consciousness is operationalised as awareness of the self as a social object or social stimulus that has an effect on others. It is related to the conceptions of Mead (1934) who argued that consciousness of the self comes about when the person becomes aware of another's perspective; then he can view himself as a social object. The emphasis is on sensitivity to the reactions and impressions of others, of being concerned with appearance and public presentation.

Category 3 : Social Anxiety

Social anxiety is related to public self-consciousness, but it appears to involve a more negative type of public self-focus. It has been defined as shyness, embarrassment and anxiety in the company of others. The experience of social anxiety assumes a focus on the public self, but this does not mean that public self-awareness leads to social anxiety. Social anxiety encompasses an apprehension of being evaluated by others and on doubts about the person's performance.

Self-Consciousness Scale - Categories

Item	Category
1. I'm always trying to figure myself out	()
2. I'm concerned about my style of doing things	()
3. It takes me time to get over my shyness in new situations	()
4. I think about myself a lot	()
5. I care a lot about how I present myself to others	()
6. I often daydream about myself	()
7. It's hard for me to work when someone is watching me	()
8. I never take a hard look at myself	()
9. I get embarrassed very easily	()
10. I'm self-conscious about the way I look	()
11. It's easy for me to talk to strangers	()
12. I generally pay attention to my inner feelings	()
13. I usually worry about making a good impression	()
14. I'm constantly thinking about my reasons for doing things	()
15. I feel nervous when I speak in front of a group	()
16. Before I leave my house, I check how I look	()
17. I sometimes step back (in my mind) in order to examine myself from a distance	()
18. I'm concerned about what other people think of me	()
19. I'm quick to notice changes in my mood	()
20. I'm usually aware of my appearance	()
21. I know the way my mind works when I work through a problem	()
22. Large groups make me nervous	()

Self-Consciousness Scale – Answer Sheet for Categories

Item	Category
1. I'm always trying to figure myself out	(1)
2. I'm concerned about my style of doing things	(2)
3. It takes me time to get over my shyness in new situations	(3)
4. I think about myself a lot	(1)
5. I care a lot about how I present myself to others	(2)
6. I often daydream about myself	(1)
7. It's hard for me to work when someone is watching me	(3)
8. I never take a hard look at myself (-)	(1)
9. I get embarrassed very easily	(3)
10. I'm self-conscious about the way I look	(2)
11. It's easy for me to talk to strangers (-)	(3)
12. I generally pay attention to my inner feelings	(1)
13. I usually worry about making a good impression	(2)
14. I'm constantly thinking about my reasons for doing things	(1)
15. I feel nervous when I speak in front of a group	(3)
16. Before I leave my house, I check how I look	(2)
17. I sometimes step back (in my mind) in order to examine myself from a distance	(1)
18. I'm concerned about what other people think of me	(2)
19. I'm quick to notice changes in my mood	(1)
20. I'm usually aware of my appearance	(2)
21. I know the way my mind works when I work through a problem	(1)
22. Large groups make me nervous	(3)

Appendix A.3 : Cover letter included in Study 1 questionnaire package**SWINBURNE UNIVERSITY OF TECHNOLOGY
SCHOOL OF SOCIAL AND BEHAVIOURAL SCIENCES****Project Title : Public and private self-attention**

There are certain internal experiences that appear to be closely related to our emotional states. The attached questionnaire is designed to explore the public and private dimension of self-attentiveness.

This research is being conducted as part of my Profession Doctorate in Counselling Psychology at Swinburne University of Technology. It conforms to the principles set out in the Statement of Research Ethics endorsed by the School of Behavioural Sciences/Institute of Social Research and has been approved by the SBS/IRS Research Ethics Committee, Swinburne University of Technology.

Your participation in this study is completely voluntary, and you are free to withdraw at any time. Anonymously returning the questionnaire will be taken to imply your informed consent to participate in the study. If you do chose to participate, all information obtained will be completely anonymous and confidential. Please do not include your name or any other identifying information when you return the questionnaire. Results of this study may, upon completion, appear in psychological publications but only reported as group data.

The questionnaire should take only 5 to 10 minutes to complete. Please answer all questions as honestly as possible. It is important not to spend too long on any one question, your initial reaction is best.

Thank you for your time and participation.

Lorraine Fleckhammer

If you have any further questions or concerns, or would like to know the results of the study, please contact myself on (03) 57747551 or Dr. Glen Bates, Department of Psychology (03) 9214 8100 or Janet Dickson, Department of Psychology, (03) 92157146. If this questionnaire raises any personal issues for you, the Swinburne Centre for Psychological Services can be contacted on (03) 9214 8653.

Any complaints arising from participation in this study can be directed to The Chair, Human Ethics Committee, Swinburne University of Technology, PO Box 218, Hawthorn, Vic, 3122, (03) 9214 5223.

Appendix A.4 : Study 1 Questionnaire

Age: _____

Gender: 1. Male 2. Female

Instructions:

Here are a number of statements about self-attentiveness. Please use the scale listed below and circle the number which best reflects to what extent you agree or disagree with each statement.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
1	2	3	4	5	
My attention is often focused on aspects of myself I wish I'd stop thinking about	1	2	3	4	5
I always seem to be rehashing in my mind recent things I've said or done to others	1	2	3	4	5
Sometimes it is hard for me to shut off thoughts about myself	1	2	3	4	5
Long after an argument or disagreement is over with, my thoughts keep going back to what happened	1	2	3	4	5
I tend to 'ruminate' or dwell over my interactions with others for a really long time afterwards	1	2	3	4	5
I don't waste time going over experiences that are over and done with in my life	1	2	3	4	5
Often I'm playing back over in my mind how I acted towards others in a past situation	1	2	3	4	5
I often find myself re-evaluating something I've done	1	2	3	4	5
I never ruminate or dwell on myself for very long	1	2	3	4	5
It is easy for me to put unwanted thoughts about others out of my mind	1	2	3	4	5
I often keep thinking about times when I have been embarrassed in front of others	1	2	3	4	5
I spend a great deal of time thinking back over my disappointing moments	1	2	3	4	5
Philosophical or abstract thinking about how I relate to others doesn't appeal to me that much	1	2	3	4	5
I don't really meditate about the world around me	1	2	3	4	5
I love exploring my inner self	1	2	3	4	5
My attitudes and feelings about other people fascinate me	1	2	3	4	5
I don't really care for introspective or self-reflective thinking	1	2	3	4	5
I love analysing why I do things	1	2	3	4	5
People often say I'm a deep, introspective type of person	1	2	3	4	5
I don't care much for self-analysis	1	2	3	4	5
I'm very self-inquisitive by nature	1	2	3	4	5
I love to meditate on the nature of people and the meaning of things	1	2	3	4	5
I often look at how I relate to others, in philosophical ways	1	2	3	4	5
Contemplating myself isn't my idea of fun	1	2	3	4	5

The following is a list of statements about self-consciousness. Please use the scale below and circle the number to indicate the extent to which each of statements is like you. Try to be as honest and as accurate as you can. There are no correct or incorrect answers.

Not at all like me	A little like me	Somewhat like me	A lot like me	
0	1	2	3	
I'm always trying to figure myself out	0	1	2	3
I'm concerned about my style of doing things	0	1	2	3
It takes me time to get over my shyness in new situations	0	1	2	3
I think about myself a lot	0	1	2	3
I care a lot about how I present myself to others	0	1	2	3
I often daydream about myself	0	1	2	3
It's hard for me to work when someone is watching me	0	1	2	3
I never take a hard look at myself	0	1	2	3
I get embarrassed very easily	0	1	2	3
I'm self-conscious about the way I look	0	1	2	3
It's easy for me to talk to strangers	0	1	2	3
I generally pay attention to my inner feelings	0	1	2	3
I usually worry about making a good impression	0	1	2	3
I'm constantly thinking about my reasons for doing things	0	1	2	3
I feel nervous when I speak in front of a group	0	1	2	3
Before I leave my house, I check how I look	0	1	2	3
I sometimes step back (in my mind) in order to examine myself from a distance	0	1	2	3
I'm concerned about what other people think of me	0	1	2	3
I'm quick to notice changes in my mood	0	1	2	3
I'm usually aware of my appearance	0	1	2	3
I know the way my mind works when I work through a problem	0	1	2	3
Large groups make me nervous	0	1	2	3

Appendix A.5 : Table of means for the rumination, reflection and self-consciousness dimensions – Study 1

Table A.5.1

Descriptive Statistics for Rumination, Reflection and Self-Consciousness Dimensions – Study 1

	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness Statistic	Std. Error	Kurtosis Statistic	Std. Error
Rumination	353	17	60	39.17	8.02	-.086	.130	-.190	.259
Reflection	353	19	60	41.47	7.98	.006	.130	-.191	.259
Private SC	353	3	27	15.58	4.87	.037	.130	-.314	.259
Public SC	353	0	21	12.39	4.51	-.145	.130	-.551	.259
SA	353	0	18	8.97	4.10	-.004	.130	-.687	.259
Public Rum	353	7	35	22.97	5.23	-.255	.130	-.163	.259
Pvt Rum	353	6	25	16.20	3.62	-.082	.130	-.429	.259
Public Ref	353	7	25	16.86	3.58	-.066	.130	-.118	.259
Private Ref	353	8	30	20.99	4.49	-.117	.130	-.383	.259
Self Ref	353	0	18	9.18	3.93	-.023	.130	-.381	.259
ISA	353	0	12	8.27	2.21	-.275	.130	-.283	.259
New PbSc	353	0	18	10.82	4.08	-.128	.130	-.567	.259

Note. Public Rum=Public Rumination (R-RRS); Pvt Rum=Private Rumination (R-RRS); Private SC=Private Self-Consciousness (SCS-R); Public SC=Public Self-Consciousness (SCS-R); SA=Social Anxiety (SCS-R); Public Ref=Public Reflection (R-RRS); Private Ref=Private Reflection (R-RRS); Self Ref=Self-Reflectiveness (SCS-R); ISA=Internal State Awareness (SCS-R); New Pb Sc=New Public Self-Consciousness

Pattern matrices for rumination and reflection items using principle components factor analysis – 4 factor solution

Table A.6.1

Factor Patterns and Structure Coefficients of the Revised-Rumination and Reflection Scale – Four Factor Solution

Items	Factor 1		Factor 2		Factor 3		Factor 4	
	Pattern	Structure	Pattern	Structure	Pattern	Structure	Pattern	Structure
16. My attitudes and feelings	.81	.77	.09	.07	-.11	.14	.03	-.15
24. Contemplating myself	.78	.70	.02	.00	-.05	.13	.31	.14
15. I love exploring my inner self	.78	.76	.05	.03	-.12	.12	-.06	.23
18. I love analysing why I do things	.75	.75	.21	.19	-.12	.18	-.13	.30
23. I often look at how I relate to	.63	.70	-.01	.03	-.03	.23	-.30	.45
17. I don't really care	.57	.68	-.14	.02	.27	.39	-.14	.30
20. I don't care much for self-analysis	.57	.68	.09	.09	.25	.42	-.18	.34
13. Philosophical or abstract thinking	.54	.63	-.09	.04	.33	.45	-.01	.17
22. I love to meditate	.53	.64	-.30	.01	.10	.26	-.39	.52
14. I don't really meditate	.46	.54	-.22	.16	.37	.38	.07	.07
4. Long after an argument	-.10	.04	.78	.79	-.03	.25	-.18	.21
5. I tend to ruminate	.03	.09	.76	.81	.14	.42	.01	.07
11. I often keep thinking about	.20	.05	.71	.70	.02	.29	.33	.21
2. I always seem	.03	.10	.70	.75	.13	.40	.01	.09
7. Often I'm playing back	-.01	.06	.68	.75	.17	.42	-.03	.10
12. I spend a great deal of time	.09	.08	.68	.71	.13	.36	.29	.20
8. I often find myself re-evaluating	-.04	.06	.62	.66	.07	.31	-.27	-.31
9. I never ruminate or dwell	-.02	.19	.05	.33	.77	.78	.14	.10
10. It is easy for me	.04	.17	.16	.36	.58	.63	.14	.05
6. I don't waste time going over	.02	.17	.16	.37	.55	.62	.16	.23
3. Sometimes it is hard for me	.04	.11	.33	.52	.54	.64	-.04	-.05
1. My attention is often focused	-.11	.07	.35	.54	.53	.63	-.10	-.16
21. I'm very self-inquisitive by nature	.33	.49	.03	.12	.10	.28	-.57	-.66
19. People often say I'm	.33	.43	.17	.20	-.04	.16	-.46	-.54

N=353

Appendix A.6 : Pattern matrices for rumination and reflection items using principle axis factor analysis – 2 factor solution

Table A.6.2

Factor Patterns and Structure Coefficients of the Revised-Rumination and Reflection Scale – Two Factor Solution

	Factor 1		Factor 2	
	Pattern	Structure	Pattern	Structure
23. I often look at how I relate to others, in philosophical ways	.72	.72	-.03	.14
15. I love exploring my inner self	.71	.70	-.08	.09
16. My attitudes and feelings about other people fascinate me	.70	.69	-.04	.13
22. I love to meditate on the nature of people and the meaning of things	.69	.68	-.04	.12
18. I love analysing why I do things	.70	.71	.07	.24
17. I don't really care for introspective or self-reflective thinking *	.69	.69	-.01	.16
20. I don't care much for self-analysis *	.68	.70	.09	.25
13. Philosophical or abstract thinking about how I relate to others doesn't appeal to me that much *	.60	.62	.08	.22
24. Contemplating myself isn't my idea of fun *	.57	.55	-.08	.06
21. I'm very self-inquisitive by nature	.55	.57	.09	.22
14. I don't really meditate about the world around me *	.53	.51	-.08	.04
19. People often say I'm a deep, introspective type of person	.43	.46	.13	.23
5. I tend to ruminate or dwell over my interactions with others for a really long time afterwards	-.06	.13	.80	.79
7. Often I'm playing back over in my mind how I acted towards others in a past situation	-.06	.12	.74	.73
2. I always seem to be rehashing in my mind recent things I've said or done to others	-.01	.16	.73	.73
4. Long after an argument or disagreement is over with, my thoughts keep going back to what happened	-.15	.02	.72	.69
12. I spend a great deal of time thinking back over my disappointing moments	-.10	.06	.67	.65
1. My attention is often focused on aspects of myself I wish I'd stop thinking about	.03	.18	.63	.64
11. I often keep thinking about times when I have been embarrassed in front of others	-.04	.11	.62	.61
3. Sometimes it is hard for me to shut off thoughts about myself	.05	.19	.61	.62
8. I often find myself re-evaluating something I've done	-.00	.14	.61	.61
9. I never ruminate or dwell on myself for very long *	.18	.29	.49	.53
6. I don't waste time going over experiences that are over and done with in my life *	.17	.27	.46	.50
10. It is easy for me to put unwanted thoughts about others out of my mind *	.11	.22	.45	.48

N=353

Appendix A.6 : Pattern matrices for rumination items using principle axis factor analysis – 2 factor solution

Table A.6.3

Factor Patterns and Structure Coefficients of the Rumination Scale Items

Items	Factor 1		Factor 2	
	Pattern	Structure	Pattern	Structure
4. Long after an argument or disagreement is over with, my thoughts keep going back to what happened	.85	.73	-.17	.40
5. I tend to ruminate or dwell over my interactions with others for a really long time afterwards	.79	.80	.02	.56
2. I always seem to be rehashing in my mind recent things I've said or done to others	.64	.73	.14	.58
7. Often I'm playing back over in my mind how I acted towards others in a past situation	.62	.72	.15	.56
11. I often keep thinking about times when I have been embarrassed in front of others	.59	.63	.07	.47
12. I spend a great deal of time thinking back over my disappointing moments	.57	.65	.11	.50
8. I often find myself re-evaluating something I've done	.57	.62	.07	.46
9. I never ruminate or dwell on myself for very long *	-.13	.41	.80	.71
1. My attention is often focused on aspects of myself I wish I'd stop thinking about	.22	.57	.52	.67
3. Sometimes it is hard for me to shut off thoughts about myself	.21	.55	.51	.65
10. It is easy for me to put unwanted thoughts about others out of my mind *	.09	.41	.47	.53
6. I don't waste time going over experiences that are over and done with in my life *	.12	.42	.45	.53

N=353

Appendix A.7 : Summary of MANOVA analyses of differences among gender, status and order for rumination, reflection, private self-consciousness, public self-consciousness and social anxiety

Individual Differences for Rumination, Reflection, Private Self-Consciousness, Public Self-Consciousness and Social Anxiety

Interactions among the dependent measures of rumination, reflection, private self-consciousness, public self-consciousness, and social anxiety were investigated using a 3-way between-subjects MANOVA. There was no three-way interaction found among Gender, Status and Order (Wilks' Lambda = .996, $F(5,339) = .30, p = .91, \eta^2 = .00$). Similarly, no two-way interactions were found between Gender and Status (Wilks' Lambda = .978, $F(5,339) = 1.56, p = .17, \eta^2 = .02$); Order and Gender (Wilks' Lambda = .988, $F(5,339) = .80, p = .55, \eta^2 = .01$); or for Order and Status (Wilks' Lambda = .995, $F(5,339) = .31, p = .91, \eta^2 = .01$).

Individual Differences in Public and Private, Rumination and Reflection Scores

Interactions among the dependent measures of public and private, rumination and reflection were investigated. There was no three-way interaction found among Gender, Status and Order (Wilks' Lambda = .987, $F(4,340) = 1.08, p = .36, \eta^2 = .01$). Similarly, no two-way interaction was found between Gender and Status (Wilks' Lambda = .983, $F(4,340) = 1.46, p = .21, \eta^2 = .02$) or between Order and Gender (Wilks' Lambda = .989, $F(4,340) = .92, p = .45, \eta^2 = .01$), or between Order and Status (Wilks' Lambda = .995, $F(4,340) = .41, p = .80, \eta^2 = .01$).

Individual Differences for Internal State Awareness, Self-Reflectiveness, Public Self-Consciousness, and Social Anxiety

Interactions among all dependent measures were investigated. There was no three-way interaction found among Gender, Status and Order (Wilks' Lambda = .991, $F(4,340) = .79$, $p = .53$, $\eta^2 = .01$). Similarly, no two-way interactions were found between Gender and Status (Wilks' Lambda = .987, $F(4,340) = 1.15$, $p = .33$, $\eta^2 = .01$); Gender and Order (Wilks' Lambda = .986, $F(4,340) = 1.21$, $p = .31$, $\eta^2 = .01$); or for Order and Status (Wilks' Lambda = .997, $F(4,340) = .22$, $p = .93$, $\eta^2 = .00$).

Appendix B.1 : Cover letter included in Study 2 questionnaire package

**SWINBURNE UNIVERSITY OF TECHNOLOGY
SCHOOL OF SOCIAL AND BEHAVIOURAL SCIENCES**

Project Title : Self-directed thoughts, emotional states and personal memories

There are certain thoughts, directed at the self, that appear to be closely related to our emotional states. The attached questionnaire is designed to explore the public and private dimensions of self-directed thoughts and their impact on our personal memories.

This research is in 2 parts. Participation in Part One involves the completion of series of questionnaires, which will take approximately 30 minutes. Please answer all questions as honestly as possible. It is important not to spend too long on any one question, your initial reaction is best. Your participation in these studies is completely voluntary, and you are free to withdraw at any time. Anonymously returning the questionnaire will be taken to imply your informed consent to participate in the Part One of the study and any information obtained will be completely confidential.

The second part of the research is separate to the first part and involves recalling past personal memories. Most people find the procedure and experiment interesting and it will be an opportunity to see how experimental psychological research is carried out. This second part will take approximately 40 minutes to complete and will take place at either the Hawthorn or Lilydale campuses at a mutually convenient time. If you would like to participate in the second study, please write your first name and a contact phone number on the last sheet of the questionnaire. Any identification given will only be used to arrange a time for the second study, after you are contacted this information will be destroyed.

Results of this study may, upon completion, appear in psychological publications but would only be reported as group data. All information provided will remain completely confidential.

Your participation is very important to the study and would be greatly appreciated.

Lorraine Fleckhammer

This research is being conducted as part of my Professional Doctorate in Counselling Psychology at Swinburne University of Technology. It conforms to the principles set out in the Statement on Research Ethics endorsed by the School of Behavioural Sciences/Institute of Social Research and has been approved by the SBS/IRS Research Ethics Committee, Swinburne University of Technology.

If you have any further questions or concerns, or would like to know the results of the study, please contact myself on (03) 57747551 or Dr. Glen Bates, Department of Psychology, (03) 92148100 or Janet Dickson, Department of Psychology, (03) 92157146. If this questionnaire raises any personal issues for you, the Swinburne Centre for Psychological Services can be contacted on (03) 92148653.

Any complaints arising from participation in this study can be directed to The Chair, Human Ethics Committee, Swinburne University of Technology, PO Box 218, Hawthorn, Vic. 3122, (03) 92145223.

Scale Key

Brief Symptom Inventory (Derogatis, 1993) p. 351-353

Somatisation – Items 2, 7, 23, 29, 30, 33 and 37

Obsessive-compulsive – Items 5, 15, 26, 27, 32, and 36

Interpersonal sensitivity – Items 20, 21, 22 and 42

Depression – Items 9, 16, 17, 18, 35, and 50

Anxiety – Items 1, 12, 19, 38, 45, and 49

Hostile anxiety – Items 6, 13, 40, 41 and 46

Phobic anxiety – Items 8, 28, 31, 43, and 47

Paranoid ideation – Items 4, 10, 24, 48, and 51

Psychoticism – Items 3, 14, 34, 44, 53

Additional items – Items 11, 25, 39 and 52

MMPI-Anxiety (Butcher et al., 1990) p. 354

NEO-FFI (Costa & McCrae, 1992) p. 355-358

Neuroticism – Items 1, 6, 11, 16, 21, 26, 31, 36, 41, 46, 51, and 56.

Extraversion – Items 2, 7, 12, 17, 22, 27, 32, 37, 42, 47, 52, and 57.

Openness to Experience – Items 3, 8, 13, 18, 23, 28, 33, 38, 43, 48, 53, and 58.

Agreeableness – Items 4, 9, 14, 19, 24, 29, 34, 39, 44, 49, 54, and 59.

Conscientiousness – Items 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, and 60.

Narcissistic Personality Inventory (Raskin & Terry, 1988) p. 359-360

Marlowe-Crowne Social Desirability Scale – Short Form C (Reynolds, 1982) p. 361

Self-Consciousness Scale-Revised Version (Scheier & Carver, 1985) p. 362

Private self-consciousness – Items 1, 4, 6, 8, 12, 14, 17, 19, and 21

Public self-consciousness – Items 2, 5, 10, 13, 16, 18, and 20

Social anxiety – Items 3, 7, 9, 11, 15, and 22

Revised-Rumination and Reflection Scale (Fleckhammer, 2004) p.364

Rumination – Items 1 to 12

Reflection – Items 13 to 24

Appendix B.2 : Study 2 questionnaire**DEMOGRAPHICS**

Age : _____ years **Gender:** Male Female (please circle)

Education Level : _____

Ethnicity : _____

Student Status : _____

Work Status : _____

Current Occupation : _____

Marital Status : _____

INSTRUCTIONS:

On the next page is a list of problems people sometimes have. Please read each one carefully, and circle the number that best describes **HOW MUCH THAT PROBLEM HAS DISTRESSED OR BOTHERED YOU DURING THE PAST SEVEN DAYS INCLUDING TODAY**. Circle only one number for each problem and do not skip any items. If you change your mind, erase your first mark carefully.

- 0 = NOT AT ALL**
1 = A LITTLE BIT
2 = MODERATELY
3 = QUITE A BIT
4 = EXTREMELY

HOW MUCH WERE YOU DISTRESSED BY:

0	1	2	3	4	Nervousness or shakiness inside
0	1	2	3	4	Faintness or dizziness
0	1	2	3	4	The idea that someone else can control your thoughts
0	1	2	3	4	Feeling others are to blame for most of your troubles
0	1	2	3	4	Trouble remembering things
0	1	2	3	4	Feeling easily annoyed or irritated
0	1	2	3	4	Pains in heart or chest
0	1	2	3	4	Feeling afraid in open spaces or on the streets
0	1	2	3	4	Thoughts of ending your life
0	1	2	3	4	Feeling that most people cannot be trusted
0	1	2	3	4	Poor appetite
0	1	2	3	4	Suddenly scared for no reason
0	1	2	3	4	Temper outbursts you could not control
0	1	2	3	4	Feeling lonely even when you are with people

- 0 = **NOT AT ALL**
 1 = **A LITTLE BIT**
 2 = **MODERATELY**
 3 = **QUITE A BIT**
 4 = **EXTREMELY**

HOW MUCH WERE YOU DISTRESSED BY:

0	1	2	3	4	Feeling blocked in getting things done
0	1	2	3	4	Feeling lonely
0	1	2	3	4	Feeling blue
0	1	2	3	4	Feeling no interest in things
0	1	2	3	4	Feeling fearful
0	1	2	3	4	Your feelings being easily hurt
0	1	2	3	4	Feeling that people are unfriendly or dislike you
0	1	2	3	4	Feeling inferior to others
0	1	2	3	4	Nausea or upset stomach
0	1	2	3	4	Feeling that you are watched or talked about by others
0	1	2	3	4	Trouble falling asleep
0	1	2	3	4	Having to check and double-check what you do
0	1	2	3	4	Difficulty making decisions
0	1	2	3	4	Feeling afraid to travel on buses, subways, or trains
0	1	2	3	4	Trouble getting your breath
0	1	2	3	4	Hot or cold spells
0	1	2	3	4	Having to avoid certain things, places, or activities because they frighten you
0	1	2	3	4	Your mind going blank
0	1	2	3	4	Numbness or tingling in parts of your body
0	1	2	3	4	The idea that you should be punished for your sins

- 0 = NOT AT ALL
 1 = A LITTLE BIT
 2 = MODERATELY
 3 = QUITE A BIT
 4 = EXTREMELY

HOW MUCH WERE YOU DISTRESSED BY:

0	1	2	3	4	Feeling hopeless about the future
0	1	2	3	4	Trouble concentrating
0	1	2	3	4	Feeling weak in parts of your body
0	1	2	3	4	Feeling tense or keyed up
0	1	2	3	4	Thoughts of death or dying
0	1	2	3	4	Having urges to beat, injure, or harm someone
0	1	2	3	4	Having urges to break or smash things
0	1	2	3	4	Feeling very self-conscious with others
0	1	2	3	4	Feeling uneasy in crowds, such as shopping or at a movie
0	1	2	3	4	Never feeling close to another person
0	1	2	3	4	Spells of terror or panic
0	1	2	3	4	Getting into frequent arguments
0	1	2	3	4	Feeling nervous when you are left alone
0	1	2	3	4	Others not giving you proper credit for your achievements
0	1	2	3	4	Feeling so restless you couldn't sit still
0	1	2	3	4	Feelings of worthlessness
0	1	2	3	4	Feeling that people will take advantage of you if you let them
0	1	2	3	4	Feelings of guilt
0	1	2	3	4	The idea that something is wrong with your mind

Please read each of the statements below and circle True or False alongside each one. If the statement is mostly true then circle True or mostly false then circle False.

- | | | |
|---|------|-------|
| 1. I work under a great deal of tension. | True | False |
| 2. I have nightmares every few nights. | True | False |
| 3. I find it hard to keep my mind on a task or job. | True | False |
| 4. My sleep is fitful and disturbed. | True | False |
| 5. Most nights I go to sleep without thoughts or ideas bothering me. | True | False |
| 6. I am afraid of losing my mind. | True | False |
| 7. I frequently find myself worrying about something. | True | False |
| 8. I hardly ever notice my heart pounding and I am seldom short of breath. | True | False |
| 9. I believe I am no more nervous than most others. | True | False |
| 10. Life is a strain for me much of the time. | True | False |
| 11. I worry over money and business. | True | False |
| 12. I cannot keep my mind on one thing. | True | False |
| 13. I feel anxiety about something or someone almost all the time. | True | False |
| 14. I have certainly had more than my share of things to worry about. | True | False |
| 15. I have sometimes felt that difficulties were piling up so high that
I could not overcome them. | True | False |
| 16. I am usually calm and not easily upset. | True | False |
| 17. I am apt to take disappointments so keenly that I can't put them out
of my mind. | True | False |
| 18. I worry quite a bit over possible misfortunes. | True | False |
| 19. Several times a week I feel as if something dreadful is about to happen. | True | False |
| 20. I sometimes feel that I am about to go to pieces. | True | False |
| 21. I am not feeling much pressure or stress these days. | True | False |
| 22. Having to make important decisions makes me nervous. | True | False |
| 23. I worry a great deal over money. | True | False |

Please read each of the statements below and indicate, using the scale shown, how much you think the statement is true or false, or how much you agree or disagree with the statement.

	1		2		3		4		5
1. I am not a worrier.		1		2		3		4	5
2. I like to have a lot of people around me.		1		2		3		4	5
3. I don't like to waste my time daydreaming.		1		2		3		4	5
4. I try to be courteous to everyone I meet.		1		2		3		4	5
5. I keep my belongings clean and neat.		1		2		3		4	5
6. I often feel inferior to others.		1		2		3		4	5
7. I laugh easily.		1		2		3		4	5
8. Once I find the right way to do something, I stick to it.		1		2		3		4	5
9. I often get into arguments with my family and co-workers.		1		2		3		4	5
10. I'm pretty good about pacing myself so as to get things done on time.		1		2		3		4	5
11. When I'm under a great deal of stress, sometimes I feel like I'm going to pieces.		1		2		3		4	5
12. I don't consider myself especially "light-hearted".		1		2		3		4	5
13. I am intrigued by the patterns I find in art and nature.		1		2		3		4	5
14. Some people think I'm selfish and egotistical.		1		2		3		4	5
15. I am not a very methodical person.		1		2		3		4	5
16. I rarely feel lonely or blue.		1		2		3		4	5
17. I really enjoy talking to people.		1		2		3		4	5
18. I believe letting students hear controversial speakers can only confuse and mislead them.		1		2		3		4	5

- 1 Strongly disagree or definitely false**
2 Disagree or mostly false
3 Neutral or equally true or false
4 Agree or mostly true
5 Strongly agree or definitely true

19. I would rather co-operate with others than compete with them.	1	2	3	4	5
20. I try to perform all the tasks assigned to me conscientiously.	1	2	3	4	5
21. I often feel tense and jittery.	1	2	3	4	5
22. I like to be where the action is.	1	2	3	4	5
23. Poetry has little or no effect on me.	1	2	3	4	5
24. I tend to be cynical and sceptical of others' intentions.	1	2	3	4	5
25. I have a clear set of goals and work toward them in an orderly fashion.	1	2	3	4	5
26. Sometimes I feel completely worthless.	1	2	3	4	5
27. I usually prefer to do things alone.	1	2	3	4	5
28. I often try new and foreign foods.	1	2	3	4	5
29. I believe that most people will take advantage of you if you let them.	1	2	3	4	5
30. I waste a lot of time before settling down to work.	1	2	3	4	5
31. I rarely feel fearful or anxious.	1	2	3	4	5
32. I often feel as if I'm bursting with energy.	1	2	3	4	5
33. I seldom notice the moods or feelings that different environments produce.	1	2	3	4	5
34. Most people I know like me.	1	2	3	4	5
35. I work hard to accomplish my goals.	1	2	3	4	5
36. I often get angry at the way people treat me.	1	2	3	4	5
37. I am a cheerful, high-spirited person.	1	2	3	4	5

- 1 Strongly disagree or definitely false**
2 Disagree or mostly false
3 Neutral or equally true or false
4 Agree or mostly true
5 Strongly agree or definitely true

38. I believe we should look to our religious authorities for decisions on moral issues.	1	2	3	4	5
39. Some people think of me as cold and calculating.	1	2	3	4	5
40. When I make a commitment, I can always be counted on to follow through.	1	2	3	4	5
41. Too often, when things go wrong, I get discouraged and feel like giving up.	1	2	3	4	5
42. I am not a cheerful optimist.	1	2	3	4	5
43. Sometimes when I am reading poetry or looking at a work of art, I feel a chill or wave of excitement.	1	2	3	4	5
44. I'm hard-headed and tough-minded in my attitudes.	1	2	3	4	5
45. Sometimes I'm not as dependable or reliable as I should be.	1	2	3	4	5
46. I am seldom sad or depressed.	1	2	3	4	5
47. My life is fast-paced.	1	2	3	4	5
48. I have little interest in speculating on the nature of the universe or the human condition.	1	2	3	4	5
49. I generally try to be thoughtful and considerate.	1	2	3	4	5
50. I am a productive person who always gets the job done.	1	2	3	4	5
51. I often feel helpless and want someone else to solve my problems.	1	2	3	4	5
52. I am a very active person.	1	2	3	4	5
53. I have a lot of intellectual curiosity.	1	2	3	4	5
54. If I don't like people, I let them know it.	1	2	3	4	5
55. I never seem to be able to get organised.	1	2	3	4	5

- 1 Strongly disagree or definitely false**
- 2 Disagree or mostly false**
- 3 Neutral or equally true or false**
- 4 Agree or mostly true**
- 5 Strongly agree or definitely true**

56. At times I have been so ashamed I just wanted to hide.	1	2	3	4	5
57. I would rather go my own way than be a leader of others.	1	2	3	4	5
58. I often enjoy playing with theories or abstract ideas.	1	2	3	4	5
59. If necessary, I am willing to manipulate people to get what I want.	1	2	3	4	5
60. I strive for excellence in everything I do.	1	2	3	4	5

Over the next two pages are statements which reflect certain beliefs that people have about themselves. Please indicate by circling True or False the extent to which each statement is like you. Try to be honest as you can.

1. I have a natural talent for influencing people. True False
2. Modesty doesn't become me. True False
3. I would do almost anything on a dare. True False
4. I know that I'm good because everyone keeps telling me so. True False
5. If I ruled the world it would be a much better place. True False
6. I can usually talk my way out of anything. True False
7. I like to be the centre of attention. True False
8. I will be a success. True False
9. I think I am a special person. True False
10. I see myself as a good leader. True False
11. I am assertive. True False
12. I like to have authority over other people. True False
13. I find it easy to manipulate people. True False
14. I insist on getting the respect that is due me. True False
15. I like to display my body. True False
16. I can read people like a book. True False
17. I like to take responsibility for making decisions. True False
18. I want to amount to something in the eyes of the world. True False
19. I like to look at my body. True False
20. I'm apt to show off if I get the chance. True False
21. I always know what I am doing. True False
22. I rarely depend on anyone else to get things done. True False
23. Everybody likes to hear my stories. True False
24. I expect a great deal from other people. True False

- | | | | |
|-----|--|------|-------|
| 25. | I will never be satisfied until I get all that I deserve. | True | False |
| 26. | I like to be complimented. | True | False |
| 27. | I have a strong will to power. | True | False |
| 28. | I like to start new fads and fashions. | True | False |
| 29. | I like to look at myself in the mirror. | True | False |
| 30. | I really like to be the centre of attention. | True | False |
| 31. | I can live my life in any way I want to. | True | False |
| 32. | People always seem to recognise my authority. | True | False |
| 33. | I would prefer to be a leader. | True | False |
| 34. | I am going to be a greater person. | True | False |
| 35. | I can make anybody believe anything I want them to. | True | False |
| 36. | I am a born leader. | True | False |
| 37. | I wish somebody would someday write my biography. | True | False |
| 38. | I get upset when people don't notice how I look when I go out in public. | True | False |
| 39. | I am more capable than other people. | True | False |
| 40. | I am an extraordinary person. | True | False |

Please circle True or False alongside the following statements. If you feel the statement is mostly true or often true then circle True or if the statement is mostly false or often false then circle False.

- | | | |
|---|------|-------|
| 1. It is sometimes hard for me to go on with my work if I am not encouraged. | True | False |
| 2. I sometimes feel resentful when I don't get my way. | True | False |
| 3. On a few occasions, I have given up doing something because I thought too little of my ability. | True | False |
| 4. There have been times when I felt like rebelling against people in authority even though I knew they were right. | True | False |
| 5. No matter who I'm talking to, I'm always a good listener. | True | False |
| 6. There have been occasions when I took advantage of someone. | True | False |
| 7. I'm always willing to admit it when I make a mistake. | True | False |
| 8. I sometimes try to get even rather than forgive and forget. | True | False |
| 9. I'm always courteous, even to people who are disagreeable. | True | False |
| 10. I have never been irked when people expressed ideas very different from my own. | True | False |
| 11. There have been times when I was quite jealous of the good fortune of others. | True | False |
| 12. I am sometimes irritated by people who ask favours of me. | True | False |
| 13. I have never deliberately said something that hurt someone's feelings. | True | False |

The following is a list of statements about self-consciousness. Please use the scale below and circle the number to indicate the extent to which each of statements is like you. Try to be as honest and as accurate as you can. There are no correct or incorrect answers.

Not at all like me	A little like me	Somewhat like me	A lot like me	
0	1	2	3	
I'm always trying to figure myself out	0	1	2	3
I'm concerned about my style of doing things	0	1	2	3
It takes me time to get over my shyness in new situations	0	1	2	3
I think about myself a lot	0	1	2	3
I care a lot about how I present myself to others	0	1	2	3
I often daydream about myself	0	1	2	3
It's hard for me to work when someone is watching me	0	1	2	3
I never take a hard look at myself	0	1	2	3
I get embarrassed very easily	0	1	2	3
I'm self-conscious about the way I look	0	1	2	3
It's easy for me to talk to strangers	0	1	2	3
I generally pay attention to my inner feelings	0	1	2	3
I usually worry about making a good impression	0	1	2	3
I'm constantly thinking about my reasons for doing things	0	1	2	3
I feel nervous when I speak in front of a group	0	1	2	3
Before I leave my house, I check how I look	0	1	2	3
I sometimes step back (in my mind) in order to examine myself from a distance	0	1	2	3
I'm concerned about what other people think of me	0	1	2	3
I'm quick to notice changes in my mood	0	1	2	3
I'm usually aware of my appearance	0	1	2	3
I know the way my mind works when I work through a problem	0	1	2	3
Large groups make me nervous	0	1	2	3

Instructions:

Here are a number of statements about self-attentiveness. Please use the scale listed below and circle the number which best reflects to what extent you agree or disagree with each statement.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
1	2	3	4	5	
My attention is often focused on aspects of myself I wish I'd stop thinking about	1	2	3	4	5
I always seem to be rehashing in my mind recent things I've said or done to others	1	2	3	4	5
Sometimes it is hard for me to shut off thoughts about myself	1	2	3	4	5
Long after an argument or disagreement is over with, my thoughts keep going back to what happened	1	2	3	4	5
I tend to 'ruminate' or dwell over my interactions with others for a really long time afterwards	1	2	3	4	5
I don't waste time going over experiences that are over and done with in my life	1	2	3	4	5
Often I'm playing back over in my mind how I acted towards others in a past situation	1	2	3	4	5
I often find myself re-evaluating something I've done	1	2	3	4	5
I never ruminate or dwell on myself for very long	1	2	3	4	5
It is easy for me to put unwanted thoughts about others out of my mind	1	2	3	4	5
I often keep thinking about times when I have been embarrassed in front of others	1	2	3	4	5
I spend a great deal of time thinking back over my disappointing moments	1	2	3	4	5
Philosophical or abstract thinking about how I relate to others doesn't appeal to me that much	1	2	3	4	5
I don't really meditate about the world around me	1	2	3	4	5
I love exploring my inner self	1	2	3	4	5
My attitudes and feelings about other people fascinate me	1	2	3	4	5
I don't really care for introspective or self-reflective thinking	1	2	3	4	5
I love analysing why I do things	1	2	3	4	5
People often say I'm a deep, introspective type of person	1	2	3	4	5
I don't care much for self-analysis	1	2	3	4	5
I'm very self-inquisitive by nature	1	2	3	4	5
I love to meditate on the nature of people and the meaning of things	1	2	3	4	5
I often look at how I relate to others, in philosophical ways	1	2	3	4	5
Contemplating myself isn't my idea of fun	1	2	3	4	5

Appendix B.3 : Table of means for the rumination, reflection, self-consciousness, social desirability and anxiety scales – Study 2

Table B.3.1

Descriptive Statistics for the Rumination, Reflection Dimensions, Self-Consciousness Dimensions, Social Desirability and Anxiety Scales – Study 2

	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness		Kurtosis	
						Statistic	Std. Error	Statistic	Std. Error
Rumination	313	24	59	41.29	7.45	-.007	.138	-.478	.275
Reflection	313	19	60	40.51	8.36	.035	.138	-.400	.275
Public Rum	313	13	35	24.24	5.03	-.093	.138	-.299	.275
Pvt Rum	313	10	24	17.05	3.22	.106	.138	-.421	.275
Public Ref	313	8	25	16.63	3.80	.000	.138	-.449	.275
Private Ref	313	7	30	20.39	4.49	-.099	.138	-.201	.275
Self Ref	313	0	15	7.93	3.45	.051	.138	-.661	.275
ISA	313	2	12	7.43	2.26	-.060	.138	-.518	.275
New PbSc	313	0	18	11.46	4.11	-.140	.138	-.758	.275
Sa	313	0	18	9.76	4.09	-.219	.138	-.759	.275
Social Desir	313	0	13	6.54	2.86	-.070	.138	-.659	.275
Anxiety	313	0	22	9.99	5.10	.067	.138	-.828	.275

Note. Public Rum=Public Rumination (R-RRS); Pvt Rum=Private Rumination (R-RRS); Public Ref=Public Reflection (R-RRS); Private Ref=Private Reflection (R-RRS); Self Ref=Self-Reflectiveness (SCS-R);ISA=Internal State Awareness (SCS-R); New PbSc=New Public Self-Consciousness (SCS-R); Social Desir=Social Desirability (MC), Anxiety (A-MMPI)

Appendix B.4 : Table of transformation statistics for the BSI symptom dimensions – Study 2

Table B.4.1

Original Distribution Statistics with Transformation Statistics for the BSI Symptom Dimensions – Study 2

	Original Distribution				Square Root				Natural Logarithm				Reciprocal Square Root			
	Skewness		Kurtosis		Skewness		Kurtosis		Skewness		Kurtosis		Skewness		Kurtosis	
	Stat	Std.E	Stat	Std.E	Stat	Std.E	Stat	Std.E	Stat	Std.E	Stat	Std.E	Stat	Std.E	Stat	Std.E
Somatisation	1.037	.138	.157	.275	.040	.138	-.808	.275	.637	.138	-.424	.275	.334	.138	-.917	.275
Sensitivity	.588	.138	-.573	.275	-.373	.138	-.457	.275	-.056	.138	-1.002	.275	-.377	.138	-.858	.275
Depression	.781	.138	-.241	.275	-.203	.138	-.667	.275	.133	.138	-1.021	.275	-.174	.138	-.1046	.275
Anxiety	.692	.138	-.518	.275	-.090	.138	-.440	.275	.324	.138	-.751	.275	.010	.138	-.946	.275
Obs-Com	.363	.138	.157	.275	-.482	.138	.270	.275	-.298	.138	-.486	.275	-.662	.138	.024	.275
Hostility	.832	.138	-.311	.275	-.048	.138	-.392	.275	.360	.138	-.738	.275	.034	.138	-.902	.275
Phobic Anx	1.079	.138	-.075	.275	.698	.138	-.508	.275	1.226	.138	.617	.275	.955	.138	-.194	.275
Paranoid	.817	.138	-.372	.275	-.062	.138	-.820	.275	.334	.138	-.934	.275	.038	.138	-1.132	.275
Psychoticism	.984	.138	.137	.275	.010	.138	-.785	.275	.431	.138	-.757	.275	.123	.138	-1.090	.275

Note. Sensitivity=Interpersonal Sensitivity; Obs-Com=Obsessive-Compulsive; Phobic Anx=Phobic Anxiety; Paranoid=Paranoid Ideation

**Appendix B.5 : Pattern matrix for factor analysis of the rumination and
neuroticism items**

Table B.5.1

*Factor Loadings for Rumination (R-RRS) Items and Neuroticism
(NEO-FFI; Costa & McCrae, 1992) Items*

Item Number	Factor 1	Factor 2
Neo26	.71	.01
Neo16	.69	-.09
Neo41	.69	-.11
Neo21	.68	.01
Neo11	.65	-.01
Neo31	.59	-.01
Neo6	.59	-.00
Neo46	.50	-.01
Neo51	.46	.03
Neo56	.46	.15
Neo36	.40	.22
Neo1	.38	.09
R10	.20	.14
R7	-.16	.87
R5	-.03	.79
R2	-.05	.76
R4	.01	.67
R8	-.04	.66
R6	-.01	.53
R3	.22	.47
R12	.29	.41
R11	.21	.40
R1	.32	.33
R9	.10	.29

Appendix B.5 : Pattern matrix for factor analysis of the reflection and openness to experience items

Table B.5.2

Factor Loadings for Reflection (R-RRS) Items and Openness to Experience (NEO-FFI; Costa & McCrae, 1992) Items

Item Number	Factor 1	Factor 2	Factor 3	Factor 4
R18	.80	-.06	-.07	.03
R22	.77	.06	.07	-.14
R21	.77	-.01	.01	-.06
R16	.66	-.07	-.04	.12
R19	.65	.09	-.11	-.01
R23	.63	.05	.04	.01
R15	.63	.02	.01	.09
R24	.33	-.02	.11	.24
Neo43	.03	.96	-.16	.01
Neo23	-.03	-.75	.10	-.02
Neo13	.02	.50	.16	.07
Neo8	-.06	.11	.06	.05
Neo48	.03	-.12	-.69	.01
Neo53	.06	-.05	.61	-.07
Neo58	.20	.15	.51	-.15
Neo18	-.19	-.01	.48	.13
R13	.20	-.02	.42	.19
Neo28	-.12	.17	.38	-.10
Neo33	-.02	.06	-.36	-.03
R14	.04	.14	.28	.19
Neo3	.06	-.09	.26	.01
Neo38	-.03	.09	-.17	-.01
R17	-.02	.14	-.03	.87
R20	.27	-.12	.05	.55

Appendix C.1 : Summary of MANOVA analyses of differences between the four Weinberger et al. (1979) groups for rumination, reflection, personality factors, self-consciousness, and psychological symptoms – Study 3

Results for the Weinberger et al. Groups - Rumination and Reflection

A one-way between-groups MANOVA with group as the independent variable (low-anxious, repressor, high-anxious & defensive high-anxious) was performed for the two dependent variables of rumination and reflection. Box's M test for homogeneity of variance/covariance was nonsignificant ($p > .05$). Levene's Test of Equality of Error Variances was nonsignificant for both dependent variables (both p 's $> .05$). The MANOVA revealed an overall group difference for the Weinberger et al. (1979) groups (low-anxious, repressor, high-anxious & defensive high-anxious) for rumination and reflection, Wilks' Lambda = .706, $F(6, 612) = 19.38, p < .001, \eta^2 = .16$. The means, standard deviations and Univariate F statistics for the dependent variables are presented in Table C.1.1.

After Bonferroni correction for multiple dependent variables, planned comparisons indicated that the repressor and low-anxious group had significantly lower means for rumination than the defensive high-anxious and high-anxious groups. However, there were no significant differences between the groups for reflection.

These results indicate that the repressor and low-anxious group are lower on rumination than the high anxiety groups. This is consistent with expectations that rumination is more associated with anxiety than is reflection.

Table C.1.1

Means, Standard Deviations and Univariate F Statistics for Rumination and Reflection (R-RRS) for the Four Weinberger et al. (1979) Groups

Variables	Weinberger Groups				Univariate F (3, 307)	η^2
	Low	Reps	High	Def High		
Rumination						
<i>M</i>	38.82 ^a	36.87 ^a	46.02 ^b	44.41 ^b	41.23***	.29
<i>SD</i>	6.48	6.40	6.08	6.43		
Reflection						
<i>M</i>	39.63	40.39	40.72	42.56	.98	.40
<i>SD</i>	8.82	8.22	8.51	6.97		

$N = 313$

Note. Low = Low-anxious; Reps = Repressor; High = High-anxious; Def High = Defensive High-anxious; a, b = different superscripts represent significant differences and same superscripts reflect nonsignificant differences using planned comparisons

* $p < .05$, ** $p < .01$, *** $p < .001$

Results for the Weinberger et al. Groups - Personality Factors

A one-way between-groups MANOVA with group as the independent variable (low-anxious, repressor, high-anxious & defensive high-anxious) was performed for the six dependent variables of neuroticism, extraversion, openness to experience, agreeableness, conscientiousness, and narcissism. Box's M test for homogeneity of variance/covariance was nonsignificant ($p > .05$). Levene's Test of Equality of Error Variances was nonsignificant for all dependent variables (all p 's $> .05$).

The MANOVA revealed that there was an overall difference between the Weinberger et al. (1979) groups (low-anxious, repressor, high-anxious &

defensive high-anxious) for neuroticism, extraversion, openness to experience, agreeableness, conscientiousness, and narcissism, Wilks' Lambda = .526, $F(18, 854) = 12.12, p < .001, \eta^2 = .19$. The means, standard deviations and Univariate F statistics for the dependent variables are presented in Table C.1.2

Table C.1.2

Means, Standard Deviations and Univariate F Statistics for the NEO-FFI (Costa & McCrae, 1992) and the NPI (Raskin & Terry, 1988) for the Four Weinberger et al. (1979) Groups

Variables	Weinberger Groups				Univariate F (3, 307)	η^2
	Low	Reps	High	Def High		
Neuroticism						
<i>M</i>	21.21 ^a	16.44 ^a	30.62 ^b	29.41 ^b	65.22***	.39
<i>SD</i>	7.20	6.45	6.51	7.11		
Extraversion						
<i>M</i>	30.85 ^a	31.78 ^a	27.60 ^b	22.91 ^b	11.72***	.10
<i>SD</i>	5.62	5.97	5.87	6.13		
Openness						
<i>M</i>	28.07	29.02	27.92	28.16	.50	.01
<i>SD</i>	6.69	6.56	6.72	6.33		
Agreeableness						
<i>M</i>	31.64 ^b	34.03 ^c	28.83 ^a	32.81 ^{b,c}	21.74***	.18
<i>SD</i>	4.90	4.39	4.67	4.12		
Conscientiousness						
<i>M</i>	28.56 ^{a,b}	31.69 ^b	26.73 ^a	28.19 ^a	8.72***	.08
<i>SD</i>	7.48	6.55	6.68	5.80		
Narcissism						
<i>M</i>	17.96 ^b	17.78 ^{a,b}	18.26 ^b	14.72 ^a	2.88*	.03
<i>SD</i>	6.48	6.29	6.43	5.36		

$N = 313$

Note. Low = Low-anxious; Reps = Repressor; High = High-anxious; Def High = Defensive High-anxious; a, b, c = different superscripts represent significant differences and same superscripts reflect nonsignificant differences using planned comparisons

* $p < .05$, ** $p < .01$, *** $p < .001$

The results indicated that, after Bonferroni correction for multiple dependent variables, planned comparisons revealed that there are significant differences between Weinberger et al. (1979) groups for personality factors. For example, the high-anxious and defensive high-anxious groups had significantly higher scores for neuroticism, and significantly lower scores for extraversion than the low-anxious and repressor groups. The high-anxious group also had significantly lower levels of agreeableness than the three other groups. However, there were no significant differences between the groups for openness to experience.

Results for the Weinberger et al. Groups - Self-Consciousness

A one-way between-groups MANOVA with group as the independent variable (low-anxious, repressor, high-anxious & defensive high-anxious) was performed using the three dependent variables of self-reflectiveness, internal state awareness, new public self-consciousness, and social anxiety. Box's M test for homogeneity of variance/covariance was nonsignificant ($p > .05$). Levene's Test of Equality of Error Variances was nonsignificant for all dependent variables (all p 's $> .05$).

The MANOVA revealed an overall group difference for the Weinberger et al. (1979) groups (low-anxious, repressor, high-anxious & defensive high-anxious) and the self-consciousness factors, Wilks' Lambda = .795, $F(12, 804) = 6.06$, $p < .001$, $\eta^2 = .07$. The means, standard deviations and Univariate F statistics for the dependent variables are presented in Table C.1.3

These results indicate that, after Bonferroni correction for multiple dependent variables, planned comparisons revealed that there are significant differences between the groups for aspects of self-consciousness.

Table C.1.3

Means, Standard Deviations and Univariate F Statistics for the SCS-R Subfactors (Scheier & Carver, 1985) for the Four Weinberger et al. (1979) Groups

Variables	Weinberger Groups				Univariate F	η^2 (3, 307)
	Low	Reps	High	Def High		
Self-reflect						
<i>M</i>	7.38 ^{a,b}	6.48 ^a	9.31 ^c	8.75 ^{b,c}	13.62***	.12
<i>SD</i>	3.55	3.28	3.11	2.83		
ISA						
<i>M</i>	7.23	7.40	7.51	7.75	.48	.01
<i>SD</i>	2.21	2.26	2.34	2.24		
Public S'ness						
<i>M</i>	11.06 ^a	9.74 ^a	13.37 ^b	10.69 ^a	15.31***	.13
<i>SD</i>	3.73	3.92	3.77	3.91		
Social Anxiety						
<i>M</i>	9.46 ^{a,b}	8.53 ^a	11.02 ^b	9.75 ^{a,b}	6.48***	.06
<i>SD</i>	4.01	3.94	3.86	4.52		

$N = 313$

Note. Self-reflect = Self-reflectiveness; ISA = Internal state awareness; Public S'ness = Public self-consciousness; Low = Low-anxious; Reps = Repressor; High = High-anxious; Def High = Defensive High-anxious; a, b, c = different superscripts represent significant differences and same superscripts reflect nonsignificant differences using planned comparisons

* $p < .05$, ** $p < .01$, *** $p < .001$

These results indicate that, after Bonferroni correction for multiple dependent variables, planned comparisons revealed significant differences between the groups for self-reflectiveness, public self-consciousness, and social anxiety. However, there was no difference between the groups for internal state awareness.

Results for the Weinberger et al. Groups - Psychological Symptoms

A one-way between-groups MANOVA with group as the independent variable (low anxious, repressor, high anxious & defensive high-anxious) was performed for the nine dependent variables of somatisation, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. Box's M test for homogeneity of variance/covariance was significant ($p < .001$). Levene's Test of Equality of Error Variances was nonsignificant for obsessive-compulsive and significant for the other dimensions (all p 's $> .05$).

The MANOVA revealed that there was an overall group difference for the Weinberger et al. (1979) groups (low anxious, repressor, high anxious & defensive high-anxious) and the nine symptom dimension, Wilks' Lambda = .513, $F(27, 873) = 8.32, p < .001, \eta^2 = .20$. The means, standard deviations and Univariate F statistic for the dependent variables are presented in Table C.1.4.

These results indicate that, after Bonferroni correction for multiple dependent variables, planned comparisons revealed that there are significant differences between the Weinberger et al. (1979) groups. The low-anxious and repressor groups are significantly lower in all nine symptoms than the high-

anxious and defensive high-anxious groups. There are no significant differences in the nine symptom dimensions between the low anxiety and repressor groups. Neither are there any significant differences between the high anxious and the defensive high anxious groups.

Table C.1.4

Means, Standard Deviations and Univariate F Statistics for the BSI Symptoms (Derogatis, 1993) for the Four Weinberger et al. (1979) Groups

Variables	Weinberger Groups				Univariate F (3, 307)	η^2
	Low	Reps	High	Def High		
Somatisation						
<i>M</i>	.51 ^a	.42 ^a	1.05 ^b	.87 ^b	20.48***	.17
<i>SD</i>	.58	.45	.72	.77		
Obsessive						
<i>M</i>	1.20 ^a	.97 ^a	1.92 ^b	1.80 ^b	41.35***	.29
<i>SD</i>	.60	.60	.70	.78		
Sensitivity						
<i>M</i>	.99 ^a	.76 ^a	1.99 ^b	1.44 ^b	40.99***	.29
<i>SD</i>	.74	.71	.96	.91		
Depression						
<i>M</i>	.68 ^a	.60 ^a	1.81 ^b	1.65 ^b	56.50***	.36
<i>SD</i>	.61	.59	.91	1.01		
Anxiety						
<i>M</i>	.62 ^a	.48 ^a	1.35 ^b	1.21 ^b	43.58***	.30
<i>SD</i>	.50	.48	.69	.75		
Hostility						
<i>M</i>	.79 ^{a,b}	.48 ^a	1.48 ^b	1.01 ^b	37.64***	.27
<i>SD</i>	.65	.46	.82	.70		
Phobic Anxiety						
<i>M</i>	.24 ^a	.18 ^a	.57 ^b	.48 ^b	18.10***	.15
<i>SD</i>	.37	.30	.49	.48		
Paranoid Ideation						
<i>M</i>	.63 ^a	.43 ^a	1.47 ^b	1.32 ^b	43.02***	.30
<i>SD</i>	.65	.48	.86	.87		
Psychoticism						
<i>M</i>	.56 ^a	.37 ^a	1.37 ^b	1.20 ^b	42.24***	.29
<i>SD</i>	.65	.42	.82	.90		

$N = 313$

Note. Obsessive = Obsessive-Compulsive; Sensitivity = Interpersonal Sensitivity; Low = Low-anxious; Reps = Repressor; High = High-anxious; Def High = Defensive High-anxious; a, b, c = different superscripts represent significant differences and same superscripts reflect nonsignificant differences using planned comparisons

* $p < .05$, ** $p < .01$, *** $p < .001$

**Appendix C.2 : List of potential stimulus words – Autobiographical memory
Study 3**

CUE WORDS

Please rate each of the following words for either **unpleasantness** or **pleasantness** by **CIRCLING** the appropriate number

FROM '0=EXTREMELY UNPLEASANT' TO '5=EXTREMELY PLEASANT'

1. BUD	0	1	2	3	4	5
2. NEGLECTED	0	1	2	3	4	5
3. MISERABLE	0	1	2	3	4	5
4. CAPABLE	0	1	2	3	4	5
5. SPY	0	1	2	3	4	5
6. SADLY	0	1	2	3	4	5
7. AGITATION	0	1	2	3	4	5
8. TRUSTWORTHY	0	1	2	3	4	5
9. COLLECTOR	0	1	2	3	4	5
10. LONELY	0	1	2	3	4	5
11. TORMENTED	0	1	2	3	4	5
12. CONFIDENT	0	1	2	3	4	5
13. PERSECUTE	0	1	2	3	4	5
14. HOPELESSLY	0	1	2	3	4	5
15. AGONY	0	1	2	3	4	5
16. CREATIVE	0	1	2	3	4	5
17. DIAMOND	0	1	2	3	4	5
18. ABANDONED	0	1	2	3	4	5
19. AWFUL	0	1	2	3	4	5

20. FORTUNATE	0	1	2	3	4	5
21. WHISPER	0	1	2	3	4	5
22. DEFEAT	0	1	2	3	4	5
23. GASPING	0	1	2	3	4	5
24. CAREFREE	0	1	2	3	4	5
25. RECIPE	0	1	2	3	4	5
26. HATED	0	1	2	3	4	5
27. UPSET	0	1	2	3	4	5
28. BRILLIANT	0	1	2	3	4	5
29. THREAT	0	1	2	3	4	5
30. REJECT	0	1	2	3	4	5
31. DREAD	0	1	2	3	4	5
32. RELAXED	0	1	2	3	4	5
33. NUMBER	0	1	2	3	4	5
34. DESPISED	0	1	2	3	4	5
35. DEPRESSED	0	1	2	3	4	5
36. CALM	0	1	2	3	4	5
37. FOLLOW	0	1	2	3	4	5
38. AFRAID	0	1	2	3	4	5
39. FEAR	0	1	2	3	4	5
40. ENERGETIC	0	1	2	3	4	5
41. FACE	0	1	2	3	4	5
42. ISOLATED	0	1	2	3	4	5
43. BROODING	0	1	2	3	4	5
44. CLEVER	0	1	2	3	4	5

45. HATE	0	1	2	3	4	5
46. FAIL	0	1	2	3	4	5
47. CONFUSED	0	1	2	3	4	5
48. TALENTED	0	1	2	3	4	5
49. POETRY	0	1	2	3	4	5
50. REJECTED	0	1	2	3	4	5
51. SADNESS	0	1	2	3	4	5
52. SAFE	0	1	2	3	4	5
53. JEALOUS	0	1	2	3	4	5
54. MISERY	0	1	2	3	4	5
55. CONFUSED	0	1	2	3	4	5
56. GENEROUS	0	1	2	3	4	5
57. CENT	0	1	2	3	4	5
58. LOATHED	0	1	2	3	4	5
59. DESPAIR	0	1	2	3	4	5
60. POPULAR	0	1	2	3	4	5
61. POISON	0	1	2	3	4	5
62. GUILTY	0	1	2	3	4	5
63. TERRIFIED	0	1	2	3	4	5
64. CONTENTED	0	1	2	3	4	5
65. HAT	0	1	2	3	4	5
66. FAILURE	0	1	2	3	4	5
67. SORROW	0	1	2	3	4	5
68. HAPPY	0	1	2	3	4	5
69. DEATH	0	1	2	3	4	5

70. CRY	0	1	2	3	4	5
71. UNSETTLED	0	1	2	3	4	5
72. ADMIRER	0	1	2	3	4	5
73. WHEEL	0	1	2	3	4	5
74. INFERIOR	0	1	2	3	4	5
75. SUFFER	0	1	2	3	4	5
76. RELAXED	0	1	2	3	4	5
77. STARE	0	1	2	3	4	5
78. WORRY	0	1	2	3	4	5
79. DISTRESS	0	1	2	3	4	5
80. CARING	0	1	2	3	4	5
81. PARLIAMENT	0	1	2	3	4	5
82. INCOMPETENT	0	1	2	3	4	5
83. HURT	0	1	2	3	4	5
84. FRIEND	0	1	2	3	4	5
85. SUSPICION	0	1	2	3	4	5
86. DEPRESSION	0	1	2	3	4	5
87. EDGY	0	1	2	3	4	5
88. ELATED	0	1	2	3	4	5
89. RAN	0	1	2	3	4	5
90. FOOLISH	0	1	2	3	4	5
91. HOPELESS	0	1	2	3	4	5
92. SUCCESS	0	1	2	3	4	5
93. EVIL	0	1	2	3	4	5
94. LOW	0	1	2	3	4	5

95. DANGER	0	1	2	3	4	5
96. LOVABLE	0	1	2	3	4	5
97. HUMILIATED	0	1	2	3	4	5
98. GRIEF	0	1	2	3	4	5
99. COMFORTABLE	0	1	2	3	4	5
100. ALARMED	0	1	2	3	4	5
101. STABLE	0	1	2	3	4	5
102. USELESS	0	1	2	3	4	5
103. GLOOMY	0	1	2	3	4	5
104. APPROVAL	0	1	2	3	4	5
105. UNPROTECTED	0	1	2	3	4	5
106. ENTERTAINING	0	1	2	3	4	5
107. STUPID	0	1	2	3	4	5
108. DEJECTED	0	1	2	3	4	5
109. BRIGHT	0	1	2	3	4	5
110. SCARED	0	1	2	3	4	5
111. CONSIDERATE	0	1	2	3	4	5
112. SCORNED	0	1	2	3	4	5
113. ANGUISH	0	1	2	3	4	5
114. TRANQUIL	0	1	2	3	4	5
115. LOST	0	1	2	3	4	5
116. AMUSING	0	1	2	3	4	5

**Appendix C.3 : Sign-up form, consent form, and instruction sheet for
autobiographical memory study**

STUDY TWO : SIGN-UP FORM

Yes, I am interested in participating in the second study on personal memories.

My first name is _____

I can be contacted on (phone no.) _____

Or on _____

The most convenient day and time to contact me is
(e.g. Thursdays, after 6.00pm) _____

**SWINBURNE UNIVERSITY OF TECHNOLOGY
SCHOOL OF SOCIAL AND BEHAVIOURAL SCIENCES**

Project Title: Self-directed thoughts, emotional states and personal memories

Thank you for your time and willingness to participate in the second stage of this study. All data collected during this stage remains anonymous and confidential.

In this study you will be asked to read a series of sentences that refer to past life experiences, for example “A past situation in which I felt relaxed”.

Your task will involve the recollection of an actual personal memory that corresponds to that experience. As soon as you have read the sentence please indicate this to myself as I will be keeping a time record. Then when you are confident that you have an appropriate memory, again indicate this to me as I will be keeping a record of how long this task took. It doesn't matter how long ago the experience may have occurred. Once you have finished reading each sentence you will have 60 seconds to recall an experience. I will tell you when 60 seconds have passed. If a specific memory cannot be recalled, within the 60 second time limit, do not be concerned, just simply move on to the next sentence.

When you have recalled a personal memory, you are required to write out the gist of the experience in a few sentences. There is no time limit on this activity. You do not have to give too much information, just enough for the reader to get an idea of what happened. However, it is important that you try to report a specific memory and any feelings that you remember having had.

You will be given two practice items to help familiarize you with the task. Feel free to discuss your answers to the practice items with myself if you are unsure whether your responses fit the requirements. However, for the items of the main task please keep your responses private. This booklet will be sealed in the envelope at the end of the session.

INFORMED CONSENT FORM

I am conducting research to study our thoughts and feelings regarding our past life experiences.

As a participant, you will be asked to recall and write a few brief personal memories.

All these descriptions will remain anonymous and confidential.

The total time involved in the task should take approximately 40 minutes. Participation in this study is voluntary and your initial agreement to participate does not stop you from discontinuing participation at any time.

Please consider the purposes and time commitment of this study before you decide whether or not to participate. Indicate your decision below.

Thank you.

Signature of Investigator _____

Yes, I voluntarily choose to participate in this study

No, I do not wish to participate in this study

Signature of Participant

Appendix C.4: Examples of specific, extended and categorical memories**CODING EXAMPLES**

“A past situation in which I felt happy

GENERAL

“When I was on holiday”

SPECIFIC

“When I was on holiday with my family at Surfers Paradise. We went to the beach on the first morning of the holiday and I felt happy and free of worries.”

MODERATE

“Being on holiday with my family at Surfers Paradise.”

EXAMPLES (for participants)

A time when I felt relieved

GENERAL

“After my exams”

SPECIFIC

“When I finished my last exam. I handed my paper in and walked out of the room. I went to wait in the cafeteria for my friends. A group of us stayed for quite a while, having coffee, discussing questions, laughing at our nervousness. I felt happy and relieved to be finished”.

Appendix C.5 : Autobiographical memory booklet

A time when I was absorbed in a book.

Appendix C.6 : Table of crosstabulations for inter-rater reliability for the autobiographical memory study

Table C.6.1

Crosstabulations for Inter-Rater Reliability on Memory Type - Study 3

Rater 1	Rater 2			Total
	Categoric	Extended	Specific	
Categoric	40	2	0	42
Extended	7	125	21	153
Specific	0	8	326	334
Total	47	135	347	529

Inter-rater reliability = .91

Appendix D.1 – Selection of data analyses output from SPSS for Study 1

Appendix D.1.1 – Study 1 : Stage 2 - Chi-Square Tests for Categorisation Task

a. Rumination and Reflection Scale Item 6

	Observed N	Expected N	Residual
rum private	48	39.0	9.0
rum public	30	39.0	-9.0
Total	78		

	R6
Chi-Square(a)	4.154
df	1
Asymp. Sig.	.042

b. Rumination and Reflection Scale Item 10

	Observed N	Expected N	Residual
public rumination	57	43.5	13.5
public reflection	30	43.5	-13.5
Total	87		

	R10
Chi-Square(a)	8.379
df	1
Asymp. Sig.	.004

c. Rumination and Reflection Scale Item 19

	Observed N	Expected N	Residual
ref private	60	54.0	6.0
ref public	48	54.0	-6.0
Total	108		

	R19
Chi-Square(a)	1.333
df	1
Asymp. Sig.	.248

d. Self-Consciousness Scale Item 2

	Observed N	Expected N	Residual
Private self-consciousness	86	57.0	29.0
Public self-consciousness	28	57.0	-29.0
Total	114		

	S2
Chi-Square(a)	29.509
df	1
Asymp. Sig.	.000

e. Self-Consciousness Scale Item 3

	Observed N	Expected N	Residual
social anxiety	57	53.0	4.0
private self-consciousness	49	53.0	-4.0
Total	106		

	S3
Chi-Square(a)	.604
df	1
Asymp. Sig.	.437

f. Self-Consciousness Scale Item 7

	Observed N	Expected N	Residual
Private self-consciousness	41	40.7	.3
Public self-consciousness	33	40.7	-7.7
Social anxiety	48	40.7	7.3
Total	122		

	S7
Chi-Square(a)	2.770
df	2
Asymp. Sig.	.250

g. Self-Consciousness Scale Item 11

	Observed N	Expected N	Residual
Public self-consciousness	85	59.0	26.0
Social anxiety	33	59.0	-26.0
Total	118		

	S11
Chi-Square(a)	22.915
df	1
Asymp. Sig.	.000

Appendix D.1.2 – Study 1 : Stage 3 – Factor Analyses of Rumination and Reflection Items

a. Principle-components analysis of the Revised-Rumination and Reflection Scale items - 2 forced factors

	Mean	Std. Deviation	Analysis N
R1	3.09	1.05	318
R2	3.41	.98	318
R3	3.26	1.05	318
R4	3.70	.99	318
R5	3.20	1.08	318
R6	3.48	.94	318
R7	3.43	.92	318
R8	3.64	.84	318
R9	3.29	1.01	318
R10	3.12	1.06	318
R11	2.91	1.05	318
R12	2.73	1.08	318
R13	3.43	1.04	318
R14	3.50	.96	318
R15	3.54	1.04	318
R16	3.50	.97	318
R17	3.88	.92	318
R18	3.35	.99	318
R19	3.01	1.00	318
R20	3.73	.94	318
R21	3.67	.91	318
R22	3.69	.94	318
R23	3.31	.95	318
R24	3.10	1.04	318

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.900
Bartlett's Test of Sphericity	Approx. Chi-Square	3177.157
	df	276
	Sig.	.000

Communalities

	Initial	Extraction
R1	1.000	.460
R2	1.000	.570
R3	1.000	.443
R4	1.000	.541
R5	1.000	.643
R6	1.000	.321
R7	1.000	.571
R8	1.000	.421
R9	1.000	.356
R10	1.000	.289
R11	1.000	.429
R12	1.000	.485
R13	1.000	.440
R14	1.000	.322
R15	1.000	.537
R16	1.000	.524
R17	1.000	.517
R18	1.000	.543
R19	1.000	.272
R20	1.000	.534
R21	1.000	.385
R22	1.000	.515
R23	1.000	.556
R24	1.000	.367

Extraction Method: Principal Component Analysis.

Component Matrix(a)

	Component	
	1	2
R20	.627	-.377
R18	.622	-.395
R5	.585	.548
R2	.577	.487
R23	.569	-.482
R13	.566	-.346
R17	.561	-.449
R9	.556	
R7	.546	.522
R1	.543	.406
R16	.543	-.479
R3	.542	.387
R21	.540	-.305
R22	.538	-.475
R6	.525	
R15	.522	-.514
R8	.496	.418
R19	.479	
R10	.478	
R11	.475	.452
R4	.462	.573
R12	.466	.517
R24	.417	-.439
R14	.383	-.418

Extraction Method: Principal Component Analysis.
a. 2 components extracted.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings(a)
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	6.715	27.980	27.980	6.715	27.980	27.980	5.798
2	4.327	18.028	46.008	4.327	18.028	46.008	5.752
3	1.202	5.010	51.018				
4	1.018	4.243	55.261				
5	.984	4.100	59.361				
6	.873	3.638	62.999				
7	.788	3.284	66.283				
8	.740	3.085	69.367				
9	.689	2.870	72.238				
10	.686	2.860	75.097				
11	.644	2.682	77.780				
12	.567	2.363	80.143				
13	.550	2.292	82.435				
14	.535	2.229	84.664				
15	.493	2.053	86.717				
16	.448	1.867	88.584				
17	.430	1.790	90.374				
18	.399	1.664	92.037				
19	.388	1.615	93.653				
20	.363	1.512	95.165				
21	.342	1.426	96.591				
22	.291	1.214	97.806				
23	.276	1.152	98.958				
24	.250	1.042	100.000				

Extraction Method: Principal Component Analysis.

a When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Pattern Matrix(a)

	Component	
	1	2
R23	.751	
R15	.746	
R16	.731	
R22	.725	
R17	.720	
R18	.716	
R20	.705	
R13	.641	
R24	.618	
R21	.592	
R14	.580	
R19	.475	
R5		.812
R7		.766
R2		.757
R4		.753
R12		.711
R1		.670
R11		.664
R3		.654
R8		.651
R9		.527
R6		.503
R10		.501

Extraction Method: Principal Component Analysis.
 Rotation Method: Oblimin with Kaiser Normalization.
 a. Rotation converged in 7 iterations.

Structure Matrix

	Component	
	1	2
R23	.745	
R18	.733	
R15	.728	
R20	.725	
R16	.723	
R17	.719	
R22	.716	
R13	.659	
R21	.613	
R24	.599	
R14	.560	
R19	.504	
R5		.800
R2		.755
R7		.754
R4		.720
R12		.689
R1		.677
R3		.664
R11		.654
R8		.649
R9	.302	.567
R6		.540
R10		.526

Extraction Method: Principal Component Analysis.
 Rotation Method: Oblimin with Kaiser Normalization.

Component Correlation Matrix

Component	1	2
1	1.000	.213
2	.213	1.000

Extraction Method: Principal Component Analysis.
 Rotation Method: Oblimin with Kaiser Normalization.

**b. Principle components analysis of the Rumination Scale items (1-12)
- 2 forced factors**

	Mean	Std. Deviation	Analysis N
R1	3.10	1.06	333
R2	3.40	.99	333
R3	3.26	1.06	333
R4	3.70	.99	333
R5	3.21	1.07	333
R6	3.50	.94	333
R7	3.42	.93	333
R8	3.65	.83	333
R9	3.29	1.00	333
R10	3.14	1.06	333
R11	2.92	1.06	333
R12	2.73	1.09	333

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.919
Bartlett's Test of Sphericity	Approx. Chi-Square	1548.708
	df	66
	Sig.	.000

Communalities

	Initial	Extraction
R1	1.000	.525
R2	1.000	.607
R3	1.000	.511
R4	1.000	.624
R5	1.000	.672
R6	1.000	.446
R7	1.000	.578
R8	1.000	.459
R9	1.000	.655
R10	1.000	.453
R11	1.000	.502
R12	1.000	.512

Extraction Method: Principal Component Analysis.

Component Matrix(a)

	Component	
	1	2
R5	.790	-.219
R2	.764	-.153
R7	.747	-.143
R4	.693	-.379
R1	.689	.226
R12	.687	-.201
R3	.671	.247
R11	.664	-.247
R8	.653	-.180
R9	.580	.564
R6	.544	.387
R10	.531	.414

Extraction Method: Principal Component Analysis.

a 2 components extracted.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings(a)
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	
1	5.423	45.195	45.195	5.423	45.195	45.195	4.982
2	1.120	9.334	54.529	1.120	9.334	54.529	3.832
3	.893	7.438	61.967				
4	.753	6.277	68.244				
5	.682	5.681	73.925				
6	.568	4.732	78.657				
7	.516	4.302	82.959				
8	.497	4.145	87.105				
9	.451	3.759	90.864				
10	.407	3.392	94.256				
11	.373	3.111	97.367				
12	.316	2.633	100.000				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Pattern Matrix(a)

	Component	
	1	2
R4	.870	-.165
R5	.788	5.486E-02
R11	.723	-.026
R2	.706	.120
R12	.695	3.502E-02
R7	.683	.125
R8	.650	4.704E-02
R9	-.114	.867
R10	-.007	.677
R6	2.916E-02	.651
R3	.255	.541
R1	.288	.524

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.
a. Rotation converged in 5 iterations.

Structure Matrix

	Component	
	1	2
R5	.818	.494
R4	.778	.320
R2	.772	.513
R7	.753	.506
R12	.715	.423
R11	.708	.377
R8	.676	.409
R9	.369	.804
R1	.580	.684
R3	.556	.683
R10	.370	.673
R6	.392	.667

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.

Component Correlation Matrix

Component	1	2
1	1.000	.557
2	.557	1.000

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.

c. Principle Components Analysis of the Reflection Scale items (13-24)
Item 21 dropped

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
R13	3.45	1.04	336
R14	3.50	.97	336
R15	3.55	1.05	336
R16	3.50	.97	336
R17	3.88	.93	336
R18	3.38	.98	336
R19	3.02	1.01	336
R20	3.73	.94	336
R22	3.70	.94	336
R23	3.32	.97	336
R24	3.11	1.05	336

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.895
Bartlett's Test of Sphericity	Approx. Chi-Square	1447.036
	df	55
	Sig.	.000

Communalities

	Initial	Extraction
R13	1.000	.501
R14	1.000	.562
R15	1.000	.572
R16	1.000	.663
R17	1.000	.522
R18	1.000	.628
R19	1.000	.337
R20	1.000	.539
R22	1.000	.605
R23	1.000	.617
R24	1.000	.538

Extraction Method: Principal Component Analysis.

Component Matrix(a)

	Component	
	1	2
R23	.755	.218
R15	.745	-.131
R18	.745	-.270
R20	.726	-.108
R16	.720	-.380
R17	.716	-.100
R22	.701	.337
R13	.667	.236
R24	.611	-.406
R14	.556	.503
R19	.523	.251

Extraction Method: Principal Component Analysis.

a 2 components extracted.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings(a)
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	
1	5.131	46.646	46.646	5.131	46.646	46.646	4.406
2	.954	8.669	55.315	.954	8.669	55.315	4.012
3	.859	7.810	63.125				
4	.733	6.664	69.789				
5	.656	5.968	75.757				
6	.655	5.951	81.708				
7	.510	4.637	86.345				
8	.446	4.054	90.399				
9	.440	3.996	94.395				
10	.325	2.952	97.346				
11	.292	2.654	100.000				

Extraction Method: Principal Component Analysis.

a When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Pattern Matrix(a)

	Component	
	1	2
R16	.843	-.055
R24	.803	-.138
R18	.746	7.824E-02
R15	.601	.232
R20	.566	.247
R17	.551	.251
R14	-.172	.833
R22	9.002E-02	.724
R23	.247	.620
R13	.173	.596
R19	6.740E-02	.540

Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.

a Rotation converged in 9 iterations.

Structure Matrix

	Component	
	1	2
R16	.813	.420
R18	.790	.497
R15	.732	.570
R24	.725	.313
R20	.705	.565
R17	.692	.561
R22	.497	.774
R23	.595	.758
R14	.296	.736
R13	.508	.693
R19	.371	.578

Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.

Component Correlation Matrix

Component	1	2
1	1.000	.562
2	.562	1.000

Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.

Appendix D.1.3 – Study 1 : Stage 3 - Scale Reliabilities

a. Rumination Scale (Items 1-12)

		N	%
Cases	Valid	333	94.3
	Excluded(a)	20	5.7
	Total	353	100.0

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.887	.887	12

	Mean	Std. Deviation	N
r1	3.10	1.061	333
r2	3.40	.988	333
r3	3.26	1.055	333
r4	3.70	.988	333
r5	3.21	1.072	333
r6	3.50	.937	333
r7	3.42	.930	333
r8	3.65	.833	333
r9	3.29	1.004	333
r10	3.14	1.060	333
r11	2.92	1.060	333
r12	2.73	1.086	333

	Mean	Minimum	Maximum	Range		Variance	N of Items
Inter-Item Correlations	.397	.234	.620	.386	2.649	.009	12

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
r1	36.22	54.535	.613	.432	.876
r2	35.92	54.298	.687	.512	.872
r3	36.06	54.806	.599	.395	.877
r4	35.62	55.435	.602	.481	.877
r5	36.11	52.967	.715	.575	.870
r6	35.83	57.668	.473	.261	.884
r7	35.90	55.164	.669	.477	.874
r8	35.68	57.425	.567	.380	.879
r9	36.03	56.547	.511	.347	.882
r10	36.18	56.785	.461	.242	.885
r11	36.40	54.964	.585	.457	.878
r12	36.59	54.345	.609	.475	.877

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
39.32	65.273	8.079	12

b. Reflection Scale (Items 13-24)

		N	%
Cases	Valid	334	94.6
	Excluded(a)	19	5.4
	Total	353	100.0

a Listwise deletion based on all variables in the procedure.

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.889	.890	12

	Mean	Std. Deviation	N
r13	3.45	1.046	334
r14	3.50	.970	334
r15	3.55	1.046	334
r16	3.50	.970	334
r17	3.88	.927	334
r18	3.37	.983	334
r19	3.03	1.006	334
r20	3.73	.946	334
r21	3.66	.921	334
r22	3.70	.939	334
r23	3.32	.966	334
r24	3.11	1.047	334

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Inter-Item Correlations	.402	.174	.612	.437	3.514	.008	12

The covariance matrix is calculated and used in the analysis.

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
r13	38.36	52.543	.587	.424	.881
r14	38.31	54.879	.468	.324	.887
r15	38.25	51.444	.666	.478	.876
r16	38.31	52.681	.633	.474	.878
r17	37.93	53.100	.636	.461	.878
r18	38.43	52.036	.672	.520	.876
r19	38.78	54.708	.459	.269	.888
r20	38.07	52.718	.650	.483	.877
r21	38.14	54.313	.544	.354	.883
r22	38.10	53.047	.630	.507	.879
r23	38.49	52.040	.687	.556	.875
r24	38.69	53.468	.521	.352	.885

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
41.81	62.542	7.908	12

c. Public Rumination Scale (7 Items)

		N	%
Cases	Valid	341	96.6
	Excluded(a)	12	3.4
	Total	353	100.0

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.867	.867	7

	Mean	Std. Deviation	N
r2	3.42	.992	341
r4	3.70	.986	341
r5	3.21	1.076	341
r7	3.43	.929	341
r8	3.66	.834	341
r11	2.93	1.053	341
r12	2.74	1.090	341

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Inter-Item Correlations	.483	.296	.617	.320	2.081	.006	7

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
--	----------------------------	--------------------------------	----------------------------------	------------------------------	----------------------------------

r2	19.67	20.123	.674	.466	.843
r4	19.39	20.344	.651	.467	.846
r5	19.87	19.097	.729	.553	.835
r7	19.65	20.704	.655	.443	.846
r8	19.42	21.998	.564	.365	.858
r11	20.16	20.338	.596	.437	.854
r12	20.34	19.891	.620	.462	.851

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
23.08	27.105	5.206	7

d. Private Rumination Scale (5 items)

		N	%
Cases	Valid	344	97.5
	Excluded(a)	9	2.5
	Total	353	100.0

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.744	.744	5

	Mean	Std. Deviation	N
r1	3.09	1.061	344
r3	3.26	1.049	344
r6	3.49	.948	344
r9	3.28	1.004	344
r10	3.16	1.061	344

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Inter-Item Correlations	.367	.300	.500	.200	1.665	.004	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
r1	13.19	8.546	.534	.324	.688
r3	13.03	8.533	.547	.324	.683
r6	12.79	9.455	.452	.218	.718
r9	13.00	8.685	.556	.315	.681
r10	13.12	8.994	.450	.208	.721

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
16.28	12.984	3.603	5

e. Private Reflection Scale (6 items)

		N	%
Cases	Valid	344	97.5
	Excluded(a)	9	2.5
	Total	353	100.0

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.844	.845	6

	Mean	Std. Deviation	N
r15	3.54	1.043	344
r16	3.50	.963	344
r17	3.86	.929	344
r18	3.38	.979	344
r20	3.73	.936	344
r24	3.10	1.039	344

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Inter-Item Correlations	.476	.368	.566	.197	1.535	.003	6

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
r15	17.56	13.506	.641	.417	.815
r16	17.61	13.802	.668	.457	.809
r17	17.25	14.357	.609	.419	.821
r18	17.73	13.771	.658	.457	.811
r20	17.38	14.231	.623	.439	.818
r24	18.00	14.155	.547	.308	.834

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
21.11	19.507	4.417	6

f. Public Reflection Scale (5 items)

		N	%
Cases	Valid	343	97.2
	Excluded(a)	10	2.8
	Total	353	100.0

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.765	.767	5

	Mean	Std. Deviation	N
r13	3.44	1.049	343
r14	3.49	.973	343
r19	3.03	1.002	343
r22	3.69	.951	343
r23	3.31	.975	343

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Inter-Item Correlations	.397	.231	.621	.390	2.687	.013	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
r13	13.52	8.239	.552	.356	.717
r14	13.47	8.887	.488	.285	.739
r19	13.93	9.270	.392	.165	.772
r22	13.27	8.438	.601	.447	.701
r23	13.65	8.070	.658	.507	.679

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
16.96	12.665	3.559	5

g. Private Self-Consciousness Scale (9 items)

		N	%
Cases	Valid	331	93.8
	Excluded(a)	22	6.2
	Total	353	100.0

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.797	.793	9

	Mean	Std. Deviation	N
s1	1.85	.976	331
s4	1.64	.835	331
s6	1.16	.971	331
s8	2.48	.719	331
s12	2.10	.833	331
s14	1.71	.891	331
s17	1.34	.960	331
s19	1.91	.823	331
s21	1.91	.815	331

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Inter-Item Correlations	.299	.065	.559	.494	8.636	.014	9

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
s1	14.26	17.513	.618	.442	.757
s4	14.46	18.455	.608	.444	.761
s6	14.94	19.127	.405	.260	.789
s8	13.62	21.248	.264	.131	.802
s12	14.01	19.257	.487	.292	.777
s14	14.39	18.427	.561	.380	.767
s17	14.77	17.858	.583	.364	.763
s19	14.20	19.261	.495	.275	.776
s21	14.20	20.304	.346	.190	.794

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
16.11	23.513	4.849	9

h. Public Self-Consciousness Scale (7 Items)

		N	%
Cases	Valid	346	98.0
	Excluded(a)	7	2.0
	Total	353	100.0

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.855	.857	7

	Mean	Std. Deviation	N
s2	1.59	.891	346
s5	1.98	.851	346
s10	1.71	.926	346
s13	1.82	.857	346
s16	1.71	.943	346
s18	1.76	.867	346
s20	1.90	.803	346

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Inter-Item Correlations	.462	.269	.677	.408	2.513	.013	7

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
s2	10.88	16.509	.405	.186	.865
s5	10.49	14.877	.706	.511	.823
s10	10.75	15.079	.598	.367	.839
s13	10.64	15.094	.661	.528	.829
s16	10.75	14.734	.637	.477	.833
s18	10.71	14.829	.696	.548	.824
s20	10.56	15.435	.658	.488	.831

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
12.46	20.232	4.498	7

i. Social Anxiety Scale (6 items)

		N	%
Cases	Valid	343	97.2
	Excluded(a)	10	2.8
	Total	353	100.0

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.785	.783	6

	Mean	Std. Deviation	N
s3	1.60	1.003	343
s7	1.59	.948	343
s9	1.39	.921	343
s11	1.32	.972	343
s15	1.90	1.027	343
s22	1.26	1.027	343

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Inter-Item Correlations	.376	.097	.527	.430	5.417	.015	6

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
s3	7.47	11.221	.675	.485	.715
s7	7.48	13.180	.391	.194	.785
s9	7.68	12.208	.577	.356	.742
s11	7.75	13.143	.380	.239	.788
s15	7.17	11.644	.581	.379	.740
s22	7.81	11.477	.609	.396	.733

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
9.07	16.767	4.095	6

Appendix D.1.4 – Study 1 : Stage 3 – 3-way between subjects MANOVAs

a. Individual differences for Rumination, Reflection, Private Self-Consciousness, Public Self-Consciousness, and Social Anxiety (D.V.'s)

Between-Subjects Factors

		Value Label	N
Gender	1	Male	109
	2	Female	242
Student Status	1	Psychology Student	248
	2	Non-psychology student	103
Order	1	R-RRS first	169
	2	SCS-R first	182

Box's Test of Equality of Covariance Matrices(a)

Box's M	122.743
F	1.084
df1	105
df2	37735.979
Sig.	.261

Levene's Test of Equality of Error Variances(a)

	F	df1	df2	Sig.
Reflection	1.064	7	343	.386
Rumination	1.292	7	343	.253
Private SC	1.015	7	343	.420
Public SC	1.219	7	343	.291
Social anx	1.090	7	343	.369

Multivariate Tests(b)

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
gender	Pillai's Trace	.039	2.751(a)	5.000	339.000	.019	.039
	Wilks' Lambda	.961	2.751(a)	5.000	339.000	.019	.039
status	Pillai's Trace	.098	7.394(a)	5.000	339.000	.000	.098
	Wilks' Lambda	.902	7.394(a)	5.000	339.000	.000	.098
order	Pillai's Trace	.028	1.946(a)	5.000	339.000	.086	.028
	Wilks' Lambda	.972	1.946(a)	5.000	339.000	.086	.028
gender * status	Pillai's Trace	.022	1.558(a)	5.000	339.000	.171	.022
	Wilks' Lambda	.978	1.558(a)	5.000	339.000	.171	.022
gender * order	Pillai's Trace	.012	.800(a)	5.000	339.000	.550	.012
	Wilks' Lambda	.988	.800(a)	5.000	339.000	.550	.012
status * order	Pillai's Trace	.005	.311(a)	5.000	339.000	.906	.005
	Wilks' Lambda	.995	.311(a)	5.000	339.000	.906	.005
gender * status * order	Pillai's Trace	.004	.304(a)	5.000	339.000	.910	.004
	Wilks' Lambda	.996	.304(a)	5.000	339.000	.910	.004

Tests of Between-Subjects Effects

Source	Dependent Variable	Type IV Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
gender	Reflection	64.674	1	64.674	1.115	.292	.003
	Rumination	128.050	1	128.050	2.078	.150	.006
	Private SC	5.076	1	5.076	.225	.635	.001
	Public SC	169.957	1	169.957	8.810	.003	.025
	Social anx	61.243	1	61.243	3.652	.057	.011
status	Reflection	1729.349	1	1729.349	29.806	.000	.080
	Rumination	662.564	1	662.564	10.755	.001	.030
	Private SC	441.912	1	441.912	19.625	.000	.054
	Public SC	93.876	1	93.876	4.866	.028	.014
	Social anx	.102	1	.102	.006	.938	.000
order	Reflection	13.437	1	13.437	.232	.631	.001
	Rumination	172.893	1	172.893	2.806	.095	.008
	Private SC	44.180	1	44.180	1.962	.162	.006
	Public SC	1.028	1	1.028	.053	.818	.000
	Social anx	36.566	1	36.566	2.181	.141	.006
gender * status	Reflection	313.867	1	313.867	5.410	.021	.016
	Rumination	33.991	1	33.991	.552	.458	.002
	Private SC	27.504	1	27.504	1.221	.270	.004
	Public SC	1.806	1	1.806	.094	.760	.000
	Social anx	33.247	1	33.247	1.983	.160	.006
gender * order	Reflection	11.359	1	11.359	.196	.658	.001
	Rumination	36.509	1	36.509	.593	.442	.002
	Private SC	2.878	1	2.878	.128	.721	.000
	Public SC	42.769	1	42.769	2.217	.137	.006
	Social anx	37.682	1	37.682	2.247	.135	.007
status * order	Reflection	.375	1	.375	.006	.936	.000
	Rumination	64.205	1	64.205	1.042	.308	.003
	Private SC	.037	1	.037	.002	.968	.000
	Public SC	8.907	1	8.907	.462	.497	.001
	Social anx	11.067	1	11.067	.660	.417	.002
gender * status * order	Reflection	72.082	1	72.082	1.242	.266	.004
	Rumination	.734	1	.734	.012	.913	.000
	Private SC	8.748	1	8.748	.389	.533	.001
	Public SC	3.846	1	3.846	.199	.656	.001
	Social anx	.971	1	.971	.058	.810	.000

b. Individual differences for Public Rumination, Private Rumination, Public Reflection and Private Reflection (D.V.'s)

Between-Subjects Factors

		Value Label	N
Order	1	R-RRs first	169
	2	SCS first	182
Gender	1	Male	109
	2	Female	242
Student Status	1	Psychology Student	248
	2	Non-psychology student	103

Box's Test of Equality of Covariance Matrices(a)

Box's M	96.761
F	1.302
df1	70
df2	40267.997
Sig.	.046

Levene's Test of Equality of Error Variances(a)

	F	df1	df2	Sig.
Public Rumination	1.289	7	343	.255
Private Rumination	.887	7	343	.516
Private Reflection	1.343	7	343	.229
Public Reflection	1.188	7	343	.309

Multivariate Tests(c)

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
ORDER	Pillai's Trace	.012	1.058(b)	4.000	340.000	.377	.012
	Wilks' Lambda	.988	1.058(b)	4.000	340.000	.377	.012
GENDER	Pillai's Trace	.016	1.393(b)	4.000	340.000	.236	.016
	Wilks' Lambda	.984	1.393(b)	4.000	340.000	.236	.016
STATUS	Pillai's Trace	.112	10.711(b)	4.000	340.000	.000	.112
	Wilks' Lambda	.888	10.711(b)	4.000	340.000	.000	.112
ORDER * GENDER	Pillai's Trace	.011	.917(b)	4.000	340.000	.454	.011
	Wilks' Lambda	.989	.917(b)	4.000	340.000	.454	.011
ORDER * STATUS	Pillai's Trace	.005	.408(b)	4.000	340.000	.803	.005
	Wilks' Lambda	.995	.408(b)	4.000	340.000	.803	.005
GENDER * STATUS	Pillai's Trace	.017	1.461(b)	4.000	340.000	.214	.017
	Wilks' Lambda	.983	1.461(b)	4.000	340.000	.214	.017
ORDER * GENDER * STATUS	Pillai's Trace	.013	1.088(b)	4.000	340.000	.362	.013
	Wilks' Lambda	.987	1.088(b)	4.000	340.000	.362	.013

Tests of Between-Subjects Effects

Source	Dependent Variable	Type IV Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
ORDER	Public rumination	101.269	1	101.269	3.807	.052	.011
	Private rumination	9.521	1	9.521	.765	.382	.002
	Private reflection	.764	1	.764	.043	.837	.000
	Public reflection	1.932	1	1.932	.156	.693	.000
GENDER	Public rumination	15.207	1	15.207	.572	.450	.002
	Private rumination	55.002	1	55.002	4.421	.036	.013
	Private reflection	21.783	1	21.783	1.213	.271	.004
	Public reflection	4.198	1	4.198	.339	.561	.001
STATUS	Public rumination	198.086	1	198.086	7.447	.007	.021
	Private rumination	136.096	1	136.096	10.939	.001	.031
	Private reflection	655.341	1	655.341	36.496	.000	.096
	Public reflection	162.715	1	162.715	13.139	.000	.037
ORDER * GENDER	Public rumination	32.814	1	32.814	1.234	.267	.004
	Private rumination	9.855E-02	1	9.855E-02	.008	.929	.000
	Private reflection	17.548	1	17.548	.977	.324	.003
	Public reflection	2.764E-02	1	2.764E-02	.002	.962	.000
ORDER * STATUS	Public rumination	17.693	1	17.693	.665	.415	.002
	Private rumination	14.490	1	14.490	1.165	.281	.003
	Private reflection	2.390E-02	1	2.390E-02	.001	.971	.000
	Public reflection	2.034	1	2.034	.164	.686	.000
GENDER * STATUS	Public rumination	10.054	1	10.054	.378	.539	.001
	Private rumination	7.072	1	7.072	.568	.451	.002
	Private reflection	53.452	1	53.452	2.977	.085	.009
	Public reflection	70.915	1	70.915	5.726	.017	.016
ORDER * GENDER * STATUS	Public rumination	8.085	1	8.085	.304	.582	.001
	Private rumination	3.947	1	3.947	.317	.574	.001
	Private reflection	38.403	1	38.403	2.139	.145	.006
	Public reflection	4.437	1	4.437	.358	.550	.001

Appendix D.1.5 – Study 1 : Stage 4 – Factor Analyses

a. Principle-components analysis of the Self-Consciousness Scale-Revised Version items - unforced

	Mean	Std. Deviation	Analysis N
S1	1.86	.98	322
S2	1.59	.88	322
S3	1.61	1.01	322
S4	1.66	.84	322
S5	1.98	.84	322
S6	1.16	.97	322
S7	1.61	.95	322
S8	2.49	.71	322
S9	1.40	.92	322
S10	1.70	.92	322
S11	1.35	.97	322
S12	2.10	.83	322
S13	1.81	.84	322
S14	1.72	.90	322
S15	1.89	1.04	322
S16	1.71	.93	322
S17	1.34	.96	322
S18	1.74	.86	322
S19	1.91	.82	322
S20	1.89	.79	322
S21	1.91	.81	322
S22	1.25	1.03	322

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.863
Bartlett's Test of Sphericity	Approx. Chi-Square	2586.006
	df	231
	Sig.	.000

Communalities

	Initial	Extraction
s1	1.000	.580
s2	1.000	.410
s3	1.000	.672
s4	1.000	.602
s5	1.000	.658
s6	1.000	.493
s7	1.000	.320
s8	1.000	.368
s9	1.000	.577
s10	1.000	.516
s11	1.000	.429
s12	1.000	.539
s13	1.000	.634
s14	1.000	.604
s15	1.000	.643
s16	1.000	.631
s17	1.000	.502
s18	1.000	.625
s19	1.000	.491
s20	1.000	.647
s21	1.000	.376
s22	1.000	.632

Extraction Method: Principal Component Analysis.

Component Matrix(a)

	Component			
	1	2	3	4
s18	.686		-.366	
s5	.669		-.457	
s20	.666		-.372	
s4	.649			
s13	.641		-.446	
s10	.614		-.346	
s14	.606	.316		-.346
s16	.605		-.473	
s2	.600			
s1	.568	.378	.312	
s17	.560	.337		
s6	.497			-.463
s7	.488			
s15	.480	-.454		.344
s19	.478	.321		.327
s22	.467	-.453	.408	
s12	.319	.575		
s11		-.571		
s3	.444	-.543	.424	
s9	.507	-.533		
s21		.505		
s8		.401		.419

Extraction Method: Principal Component
a 4 components extracted.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings (a)
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	
1	6.097	27.711	27.711	6.097	27.711	27.711	4.115
2	2.740	12.455	40.167	2.740	12.455	40.167	3.646
3	1.985	9.022	49.189	1.985	9.022	49.189	4.676
4	1.128	5.128	54.317	1.128	5.128	54.317	2.420
5	.985	4.479	58.796				
6	.931	4.231	63.027				
7	.839	3.813	66.840				
8	.781	3.551	70.391				
9	.726	3.301	73.692				
10	.687	3.122	76.815				
11	.606	2.756	79.570				
12	.574	2.611	82.181				
13	.540	2.453	84.635				
14	.502	2.282	86.916				
15	.474	2.155	89.071				
16	.434	1.975	91.046				
17	.389	1.767	92.813				
18	.366	1.665	94.478				
19	.346	1.575	96.053				
20	.316	1.438	97.491				
21	.301	1.370	98.861				
22	.251	1.139	100.000				

Extraction Method: Principal Component Analysis.

a When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

Pattern Matrix(a)

	Component			
	1	2	3	4
s14	.740			
s6	.709			
s4	.695			
s1	.639			
s17	.516			.324
s2	.475			
s3		-.812		
s22		-.804		
s15		-.783		
s9		-.660		
s11		-.556		-.335
s7		-.426		
s16			-.811	
s5			-.793	
s20			-.764	
s13			-.749	
s18			-.718	
s10			-.667	
s12				.645
s8				.617
s19				.590
s21	.314			.466

Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.
a. Rotation converged in 15 iterations.

Structure Matrix

	Component			
	1	2	3	4
s14	.770		-.352	
s4	.762		-.345	
s1	.714			.435
s6	.674			
s17	.632			.456
s2	.591		-.413	
s3		-.812		
s22		-.785		
s15		-.765		
s9		-.729	-.353	
s11		-.551		-.369
s7		-.509	-.348	
s5	.353		-.805	
s16			-.780	
s20			-.778	
s18	.367	-.315	-.774	
s13	.359		-.773	
s10	.304		-.707	
s12	.353			.706
s19	.379			.628
s8				.600
s21	.357			.535

Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.

Component Correlation Matrix

Component	1	2	3	4
1	1.000	-.221	-.350	.263
2	-.221	1.000	.286	.058
3	-.350	.286	1.000	-.101
4	.263	.058	-.101	1.000

Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.

Appendix D.1.6 – Study 1 : Stage 4 – Scale Reliabilities

a. Self-Reflectiveness Scale

		N	%
Cases	Valid	342	96.9
	Excluded (a)	11	3.1
	Total	353	100.0

a Listwise deletion based on all variables in the procedure.

Cronbach's Alpha	N of Items
.803	6

	Mean	Std. Deviation	N
s1	1.84	.979	342
s2	1.58	.895	342
s4	1.63	.848	342
s6	1.16	.969	342
s14	1.70	.895	342
s17	1.35	.963	342

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
s1	7.44	10.616	.622	.757
s2	7.69	11.616	.512	.782
s4	7.64	11.252	.628	.758
s6	8.11	11.562	.462	.795
s14	7.57	11.131	.605	.762
s17	7.92	11.140	.541	.777

b. Internal State Awareness Scale

		N	%
Cases	Valid	339	96.0
	Excluded (a)	14	4.0
	Total	353	100.0

a. Listwise deletion based on all variables in the procedure.

Cronbach's Alpha	N of Items
.588	4

	Mean	Std. Deviation	N
s8	2.47	.731	339
s12	2.09	.830	339
s19	1.90	.825	339
s21	1.91	.818	339

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
s8	5.91	3.388	.253	.597
s12	6.29	2.643	.471	.431
s19	6.48	2.747	.430	.467
s21	6.47	3.001	.329	.549

c. New Public Self-Consciousness Scale

		N	%
Cases	Valid	346	98.0
	Excluded (a)	7	2.0
	Total	353	100.0

a. Listwise deletion based on all variables in the procedure.

Cronbach's Alpha	N of Items
.865	6

Item Statistics

	Mean	Std. Deviation	N
s5	1.98	.851	346
s10	1.71	.926	346
s13	1.82	.857	346
s16	1.71	.943	346
s18	1.76	.867	346
s20	1.90	.803	346

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
s5	8.90	11.749	.692	.837
s10	9.17	11.833	.600	.854
s13	9.06	11.800	.675	.840
s16	9.16	11.464	.651	.845
s18	9.12	11.641	.695	.837
s20	8.97	12.153	.663	.843

order	Roy's Largest Root	.049	4.165(b)	4.000	340.000	.003	.047	.920
	Pillai's Trace	.013	1.109(b)	4.000	340.000	.352	.013	.349
	Wilks' Lambda	.987	1.109(b)	4.000	340.000	.352	.013	.349
status	Hotelling's Trace	.013	1.109(b)	4.000	340.000	.352	.013	.349
	Roy's Largest Root	.013	1.109(b)	4.000	340.000	.352	.013	.349
	Pillai's Trace	.059	5.323(b)	4.000	340.000	.000	.059	.972
gender * order	Wilks' Lambda	.941	5.323(b)	4.000	340.000	.000	.059	.972
	Hotelling's Trace	.063	5.323(b)	4.000	340.000	.000	.059	.972
	Roy's Largest Root	.063	5.323(b)	4.000	340.000	.000	.059	.972
gender * status	Pillai's Trace	.014	1.213(b)	4.000	340.000	.305	.014	.380
	Wilks' Lambda	.986	1.213(b)	4.000	340.000	.305	.014	.380
	Hotelling's Trace	.014	1.213(b)	4.000	340.000	.305	.014	.380
order * status	Roy's Largest Root	.014	1.213(b)	4.000	340.000	.305	.014	.380
	Pillai's Trace	.013	1.155(b)	4.000	340.000	.330	.013	.363
	Wilks' Lambda	.987	1.155(b)	4.000	340.000	.330	.013	.363
gender * order * status	Hotelling's Trace	.014	1.155(b)	4.000	340.000	.330	.013	.363
	Roy's Largest Root	.014	1.155(b)	4.000	340.000	.330	.013	.363
	Pillai's Trace	.003	.221(b)	4.000	340.000	.927	.003	.098
gender * order * status	Wilks' Lambda	.997	.221(b)	4.000	340.000	.927	.003	.098
	Hotelling's Trace	.003	.221(b)	4.000	340.000	.927	.003	.098
	Roy's Largest Root	.003	.221(b)	4.000	340.000	.927	.003	.098
gender * order * status	Pillai's Trace	.009	.790(b)	4.000	340.000	.532	.009	.253
	Wilks' Lambda	.991	.790(b)	4.000	340.000	.532	.009	.253
	Hotelling's Trace	.009	.790(b)	4.000	340.000	.532	.009	.253
gender * order * status	Roy's Largest Root	.009	.790(b)	4.000	340.000	.532	.009	.253
	Root							

a Computed using alpha = .05

b Exact statistic

c Design: Intercept+gender+order+status+gender * order+gender * status+order * status+gender * order * status

Tests of Between-Subjects Effects

Source	Dependent Variable	Type IV Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Observed Power(a)
Corrected Model	Self-reflection	353.879(b)	7	50.554	3.406	.002	.065	.963
	Internal State Awareness	89.664(c)	7	12.809	2.704	.010	.052	.905
	New public self-consciousness	397.662(d)	7	56.809	3.628	.001	.069	.974
	Social anxiety	156.208(e)	7	22.315	1.331	.235	.026	.567
Intercept	Self-reflection	18611.125	1	18611.125	1253.727	.000	.785	1.000
	Internal State Awareness	15927.112	1	15927.112	3362.819	.000	.907	1.000
	New public self-consciousness	25898.453	1	25898.453	1653.789	.000	.828	1.000
	Social anxiety	19223.234	1	19223.234	1146.432	.000	.770	1.000
gender	Self-reflection	.131	1	.131	.009	.925	.000	.051
	Internal State Awareness	4.315	1	4.315	.911	.340	.003	.158
	New public self-consciousness	165.136	1	165.136	10.545	.001	.030	.899
	Social anxiety	61.243	1	61.243	3.652	.057	.011	.478
order	Self-reflection	9.235	1	9.235	.622	.431	.002	.123
	Internal State Awareness	7.985	1	7.985	1.686	.195	.005	.254
	New public self-consciousness	.054	1	.054	.003	.953	.000	.050
	Social anxiety	36.566	1	36.566	2.181	.141	.006	.313
status	Self-reflection	280.802	1	280.802	18.916	.000	.052	.991
	Internal State Awareness	42.401	1	42.401	8.952	.003	.025	.847
	New public self-consciousness	55.382	1	55.382	3.537	.061	.010	.466
	Social anxiety	.102	1	.102	.006	.938	.000	.051
gender * order	Self-reflection	1.579	1	1.579	.106	.745	.000	.062
	Internal State Awareness	.047	1	.047	.010	.920	.000	.051
	New public self-consciousness	51.803	1	51.803	3.308	.070	.010	.442
	Social anxiety	37.682	1	37.682	2.247	.135	.007	.321
gender * status	Self-reflection	2.472	1	2.472	.167	.683	.000	.069
	Internal State Awareness	9.674	1	9.674	2.043	.154	.006	.297
	New public self-consciousness	3.632	1	3.632	.232	.630	.001	.077
	Social anxiety	33.247	1	33.247	1.983	.160	.006	.290
order * status	Self-reflection	1.612	1	1.612	.109	.742	.000	.062
	Internal State Awareness	.232	1	.232	.049	.825	.000	.056
	New public self-consciousness	5.711	1	5.711	.365	.546	.001	.092
	Social anxiety	11.067	1	11.067	.660	.417	.002	.128

gender *	Self-reflection	15.361	1	15.361	1.035	.310	.003	.174
order *	Internal State Awareness	1.824	1	1.824	.385	.535	.001	.095
status	New public self-consciousness	5.522	1	5.522	.353	.553	.001	.091
	Social anxiety	.971	1	.971	.058	.810	.000	.057
Error	Self-reflection	5091.711	343	14.845				
	Internal State Awareness	1624.530	343	4.736				
	New public self-consciousness	5371.403	343	15.660				
	Social anxiety	5751.382	343	16.768				
Total	Self-reflection	35077.000	351					
	Internal State Awareness	25757.000	351					
	New public self-consciousness	47017.000	351					
	Social anxiety	34123.000	351					
Corrected Total	Self-reflection	5445.590	350					
	Internal State Awareness	1714.194	350					
	New public self-consciousness	5769.066	350					
	Social anxiety	5907.590	350					

a Computed using alpha = .05

b R Squared = .065 (Adjusted R Squared = .046)

c R Squared = .052 (Adjusted R Squared = .033)

d R Squared = .069 (Adjusted R Squared = .050)

e R Squared = .026 (Adjusted R Squared = .007)

Appendix D.2 – Selection of data analyses from Study 2

Appendix D.2.1 Confirmatory Factor Analyses

a. The Public Rumination Model

Number of variables in your model: 15

Number of observed variables: 7

Number of unobserved variables: 8

Number of exogenous variables: 8

Number of endogenous variables: 7

Observed, endogenous variables

RRS2
RRS4
RRS5
RRS7
RRS8
RRS11
RRS12

Unobserved, exogenous variables

E2
E4
E5
Pub rum
E7
E8
E11
E12

Parameter summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	8	0	0	0	0	8
Labeled	0	0	0	0	0	0
Unlabeled	6	1	8	0	0	15
Total	14	1	8	0	0	23

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 28

Number of distinct parameters to be estimated: 15

Degrees of freedom (28 - 15): 13

Result (Default model)

Minimum was achieved

Chi-square = 28.210

Degrees of freedom = 13

Probability level = .008

Bollen-Stine Bootstrap (Default model)

The model fit better in 191 bootstrap samples.

It fit about equally well in 0 bootstrap samples.

It fit worse or failed to fit in 9 bootstrap samples.

Testing the null hypothesis that the model is correct, Bollen-Stine bootstrap $p = .050$

Scalar Estimates (Group number 1 - Default model)**Maximum Likelihood Estimates****Regression Weights: (Group number 1 - Default model)**

	Estimate	S.E.	C.R.	P Label
R2 <--- PUB RUM	1.000			
R4 <--- PUB RUM	.876	.081	10.852	***
R5 <--- PUB RUM	1.055	.087	12.084	***
R7 <--- PUB RUM	.996	.079	12.623	***
R8 <--- PUB RUM	.719	.068	10.520	***
R11 <--- PUB RUM	.776	.097	7.967	***
R12 <--- PUB RUM	.856	.097	8.810	***

Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
R2 <--- PUB RUM	.730
R4 <--- PUB RUM	.666
R5 <--- PUB RUM	.745
R7 <--- PUB RUM	.783
R8 <--- PUB RUM	.645
R11 <--- PUB RUM	.489
R12 <--- PUB RUM	.540

Covariances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P Label
E11 <--> E12	.334	.062	5.437	***

Correlations: (Group number 1 - Default model)

	Estimate
E11 <--> E12	.353

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P Label
PUB RUM	.513	.073	7.018	***
E2	.449	.045	10.067	***
E4	.494	.046	10.811	***
E5	.456	.046	9.829	***
E7	.320	.035	9.105	***
E8	.372	.034	10.991	***
E11	.985	.083	11.810	***
E12	.913	.079	11.611	***

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P Label
PUB RUM	.513	.073	7.018	***

	Estimate	S.E.	C.R.	P Label
E2	.449	.045	10.067	***
E4	.494	.046	10.811	***
E5	.456	.046	9.829	***
E7	.320	.035	9.105	***
E8	.372	.034	10.991	***
E11	.985	.083	11.810	***
E12	.913	.079	11.611	***

Squared Multiple Correlations: (Group number 1 - Default model)

	Estimate
RRS12	.286
RRS11	.239
RRS8	.418
RRS7	.613
RRS5	.555
RRS4	.442
RRS2	.533

Modification Indices (Group number 1 - Default model)

Covariances: (Group number 1 - Default model)

	M.I.	Par Change
E7 <--> E8	8.718	.068
E2 <--> E12	4.572	-.080
E2 <--> E11	7.522	.106

Variances: (Group number 1 - Default model)

M.I. Par Change

Regression Weights: (Group number 1 - Default model)

	M.I.	Par Change
R7 <--- R8	4.727	.099

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	15	28.210	13	.008	2.170
Saturated model	28	.000	0		
Independence model	7	791.859	21	.000	37.708

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.027	.975	.945	.453
Saturated model	.000	1.000		
Independence model	.379	.451	.268	.338

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	.964	.942	.980	.968	.980
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.619	.597	.607
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	15.210	3.592	34.549
Saturated model	.000	.000	.000
Independence model	770.859	682.567	866.556

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.090	.049	.012	.111
Saturated model	.000	.000	.000	.000
Independence model	2.538	2.471	2.188	2.777

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.061	.030	.092	.246
Independence model	.343	.323	.364	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	58.210	59.000	114.403	129.403
Saturated model	56.000	57.474	160.894	188.894
Independence model	805.859	806.227	832.082	839.082

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	.187	.149	.249	.189
Saturated model	.179	.179	.179	.184
Independence model	2.583	2.300	2.890	2.584

HOELTER

Model	HOELTER	HOELTER
	.05	.01
Default model	248	307
Independence model	13	16

b. The Private Rumination Model**Variable counts (Group number 1)**

Number of variables in your model: 11

Number of observed variables: 5
 Number of unobserved variables: 6
 Number of exogenous variables: 6
 Number of endogenous variables: 5

Parameter summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	5	0	1	0	0	6
Labeled	0	0	0	0	0	0
Unlabeled	5	2	5	0	0	12
Total	10	2	6	0	0	18

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 15
 Number of distinct parameters to be estimated: 12
 Degrees of freedom (15 - 12): 3

Result (Default model)

Minimum was achieved
 Chi-square = 7.984
 Degrees of freedom = 3
 Probability level = .046

Bollen-Stine Bootstrap (Default model)

The model fit better in 178 bootstrap samples.
 It fit about equally well in 0 bootstrap samples.
 It fit worse or failed to fit in 22 bootstrap samples.
 Testing the null hypothesis that the model is correct, Bollen-Stine bootstrap p = .114

Estimates (Group number 1 - Default model)**Scalar Estimates (Group number 1 - Default model)****Maximum Likelihood Estimates****Regression Weights: (Group number 1 - Default model)**

	Estimate	S.E.	C.R.	P Label
R1 <--- PVT RUM	.627	.071	8.867	***
R3 <--- PVT RUM	.886	.081	11.005	***
R6 <--- PVT RUM	.298	.059	5.093	***
R9 <--- PVT RUM	.397	.063	6.347	***
R10 <--- PVT RUM	.287	.062	4.668	***

Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
R1 <--- PVT RUM	.604
R3 <--- PVT RUM	.846
R6 <--- PVT RUM	.330
R9 <--- PVT RUM	.408
R10 <--- PVT RUM	.300

Covariances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P Label
E6 <--> E9	.216	.048	4.525	***
E6 <--> E10	.107	.044	2.426	.015

Correlations: (Group number 1 - Default model)

	Estimate
E6 <--> E9	.284
E6 <--> E10	.137

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P Label
PVT RUM	1.000			
E1	.685	.080	8.542	***
E3	.312	.118	2.648	.008
E6	.728	.061	11.958	***
E9	.790	.069	11.499	***
E10	.836	.069	12.066	***

Model Fit Summary**CMIN**

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	12	7.984	3	.046	2.661
Saturated model	15	.000	0		
Independence model	5	235.014	10	.000	23.501

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.031	.990	.952	.198
Saturated model	.000	1.000		
Independence model	.243	.736	.603	.490

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	.966	.887	.979	.926	.978
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.300	.290	.293
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	4.984	.065	17.443
Saturated model	.000	.000	.000
Independence model	225.014	178.780	278.676

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.026	.016	.000	.056
Saturated model	.000	.000	.000	.000
Independence model	.753	.721	.573	.893

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.073	.008	.137	.210
Independence model	.269	.239	.299	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	31.984	32.454	76.938	88.938
Saturated model	30.000	30.588	86.193	101.193
Independence model	245.014	245.210	263.745	268.745

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	.103	.087	.142	.104
Saturated model	.096	.096	.096	.098
Independence model	.785	.637	.957	.786

HOELTER

Model	HOELTER	HOELTER
	.05	.01
Default model	306	444
Independence model	25	31

c. The Public Reflection Model

Notes for Model (Default model)**Computation of degrees of freedom (Default model)**

Number of distinct sample moments: 15

Number of distinct parameters to be estimated: 10

Degrees of freedom (15 - 10): 5

Result (Default model)

Minimum was achieved

Chi-square = 3.268

Degrees of freedom = 5

[Probability level = .659](#)**Group number 1 (Group number 1 - Default model)**

			Estimate	S.E.	C.R.	P Label
RRS17	<---	Pri Ref	.559	.052	10.656	***
RRS18	<---	Pri Ref	.779	.060	13.088	***
RRS24	<---	Pri Ref	.595	.060	9.993	***
RRS20	<---	Pri Ref	.619	.056	10.971	***
RRS15	<---	Pri Ref	.744	.057	12.994	***
RRS16	<---	Pri Ref	.687	.053	13.085	***

			Estimate	S.E.	C.R.	P Label
RRS17	<---	Pri Ref	.608			
RRS18	<---	Pri Ref	.712			
RRS24	<---	Pri Ref	.572			
RRS20	<---	Pri Ref	.622			
RRS15	<---	Pri Ref	.707			
RRS16	<---	Pri Ref	.711			
E20	<-->	E17	.208	.042	4.976	***

		Estimate
E20	<--> E17	.365

	Estimate	S.E.	C.R.	P Label
Pri Ref	1.000			
E15	.553	.058	9.572	***
E16	.461	.048	9.505	***

	Estimate			
E18	.593	.062	9.502	***
E20	.608	.058	10.558	***
E17	.534	.050	10.677	***
E24	.729	.066	11.098	***

		M.I.	Par Change
E16 <-->	E24	5.270	-.087

M.I. Par Change

M.I. Par Change

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	10	3.268	5	.659	.654
Saturated model	15	.000	0		
Independence model	5	360.758	10	.000	36.076

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.019	.996	.987	.332
Saturated model	.000	1.000		
Independence model	.369	.613	.419	.408

BASELINE COMPARISONS

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.991	.982	1.005	1.010	1.000
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

PARSIMONY-ADJUSTED MEASURES

Model	PRATIO	PNFI	PCFI
Default model	.500	.495	.500
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	.000	.000	6.131
Saturated model	.000	.000	.000
Independence model	350.758	292.372	416.563

FMIN

Model	FMIN	F0	LO 90	HI 90
-------	------	----	-------	-------

Model	FMIN	F0	LO 90	HI 90
Default model	.010	.000	.000	.020
Saturated model	.000	.000	.000	.000
Independence model	1.156	1.124	.937	1.335

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.000	.000	.063	.897
Independence model	.335	.306	.365	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	23.268	23.660	60.730	70.730
Saturated model	30.000	30.588	86.193	101.193
Independence model	370.758	370.954	389.489	394.489

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	.075	.080	.100	.076
Saturated model	.096	.096	.096	.098
Independence model	1.188	1.001	1.399	1.189

HOELTER

Model	HOELTER	HOELTER
	.05	.01
Default model	1058	1441
Independence model	16	21

d. The Private Reflection Model**Notes for Model (Default model)****Computation of degrees of freedom (Default model)**

Number of distinct sample moments: 21

Number of distinct parameters to be estimated: 13

Degrees of freedom (21 - 13): 8

Result (Default model)

Minimum was achieved

Chi-square = 12.672

Degrees of freedom = 8

[Probability level = .124](#)

Variable Summary (Group number 1)**Your model contains the following variables (Group number 1)**

Observed, endogenous variables

R15

R16

R17

R18

R20

R24

Unobserved, exogenous variables

Pvt Ref

E15
E16
E17
E18
E20
E24

Variable counts (Group number 1)

Number of variables in your model: 13
Number of observed variables: 6
Number of unobserved variables: 7
Number of exogenous variables: 7
Number of endogenous variables: 6

Parameter summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	6	0	1	0	0	7
Labeled	0	0	0	0	0	0
Unlabeled	6	1	6	0	0	13
Total	12	1	7	0	0	20

Bollen-Stine Bootstrap (Default model)

The model fit better in 128 bootstrap samples.
It fit about equally well in 0 bootstrap samples.
It fit worse or failed to fit in 72 bootstrap samples.
Testing the null hypothesis that the model is correct, Bollen-Stine bootstrap $p = .363$

Estimates (Group number 1 - Default model)

Scalar Estimates (Group number 1 - Default model)

Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P Label
R15 <--- Pvt Ref	.753	.057	13.179	***
R16 <--- Pvt Ref	.688	.052	13.131	***
R17 <--- Pvt Ref	.559	.052	10.677	***
R18 <--- Pvt Ref	.781	.059	13.141	***
R20 <--- Pvt Ref	.620	.056	11.010	***
R24 <--- Pvt Ref	.594	.059	9.988	***

Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
R15 <--- Pvt Ref	.714
R16 <--- Pvt Ref	.712
R17 <--- Pvt Ref	.608
R18 <--- Pvt Ref	.713
R20 <--- Pvt Ref	.623
R24 <--- Pvt Ref	.571

Covariances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P Label
E17 <--> E20	.209	.042	5.015	***

Correlations: (Group number 1 - Default model)

Estimate

E17 <--> E20 .368

Variances: (Group number 1 - Default model)

Estimate S.E. C.R. P Label

Pvt Ref	1.000			
E15	.545	.057	9.488	***
E16	.459	.048	9.523	***
E17	.534	.050	10.699	***
E18	.591	.062	9.516	***
E20	.607	.057	10.573	***
E24	.730	.066	11.121	***

Model Fit Summary**CMIN**

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	13	12.672	8	.124	1.584
Saturated model	21	.000	0		
Independence model	6	612.258	15	.000	40.817

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.028	.987	.965	.376
Saturated model	.000	1.000		
Independence model	.392	.494	.292	.353

BASELINE COMPARISONS

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	.979	.961	.992	.985	.992
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

PARSIMONY-ADJUSTED MEASURES

Model	PRATIO	PNFI	PCFI
Default model	.533	.522	.529
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	4.672	.000	18.507
Saturated model	.000	.000	.000
Independence model	597.258	520.023	681.902

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.041	.015	.000	.059
Saturated model	.000	.000	.000	.000

Model	FMIN	F0	LO 90	HI 90
Independence model	1.962	1.914	1.667	2.186

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.043	.000	.086	.545
Independence model	.357	.333	.382	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	38.672	39.269	87.373	100.373
Saturated model	42.000	42.964	120.670	141.670
Independence model	624.258	624.534	646.736	652.736

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	.124	.109	.168	.126
Saturated model	.135	.135	.135	.138
Independence model	2.001	1.753	2.272	2.002

HOELTER

Model	HOELTER	HOELTER
	.05	.01
Default model	382	495
Independence model	13	16

Appendix D.2.2 - Multiple and hierarchical regressions – Study 2

a. Rumination Model

All variables entered

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.741(a)	.549	.519	5.161

a Predictors: (Constant), Psychoticism, Internal state awareness, Social Anxiety, Social Desirability, Conscientiousness, Extraversion, Agreeableness, Phobic Anxiety, Self-reflectiveness, Neuroticism, Obsessive-Compulsive, New public self-consciousness, Somatisation, Hostility, MMPI Anxiety, Paranoid Ideation, Sensitivity, Anxiety, Depression

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9425.556	19	496.082	18.624	.000(a)
	Residual	7751.242	291	26.637		
	Total	17176.797	310			

a Predictors: (Constant), Psychoticism, Internal state awareness, Social Anxiety, Social Desirability, Conscientiousness, Extraversion, Agreeableness, Phobic Anxiety, Self-reflectiveness, Neuroticism, Obsessive-Compulsive, New public self-consciousness, Somatisation, Hostility, MMPI Anxiety, Paranoid Ideation, Sensitivity, Anxiety, Depression

b Dependent Variable: Rumination

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	23.311	3.284		7.097	.000		
	Self-reflectiveness	.313	.122	.145	2.567	.011	.487	2.054
	Internal state awareness	-.201	.156	-.061	1.286	.200	.687	1.456
	New public self-consciousness	.365	.102	.202	3.580	.000	.487	2.054
	Social Anxiety	.059	.097	.033	.614	.540	.546	1.832
	Neuroticism	.253	.057	.292	4.457	.000	.362	2.766
	Extraversion	.125	.061	.103	2.039	.042	.605	1.652
	Agreeableness	-.045	.073	-.030	-.613	.540	.627	1.594
	Conscientiousness	.018	.050	.017	.354	.723	.692	1.445
	Social Desirability	-.052	.128	-.020	-.405	.686	.639	1.566
	MMPI Anxiety	.373	.101	.256	3.704	.000	.325	3.081
	Somatisation	-.303	.666	-.028	-.455	.650	.420	2.382
	Sensitivity	.365	.554	.048	.658	.511	.291	3.439
	Obsessive-Compulsive	-1.247	.584	-.129	2.134	.034	.422	2.372
	Depression	.219	.643	.028	.340	.734	.231	4.337
	Anxiety	1.854	.764	.176	2.427	.016	.295	3.390
	Hostility	-.627	.586	-.066	1.070	.286	.403	2.483

Phobic Anxiety	-1.957	.956	-.116	-	.042	.483	2.071
Paranoid Ideation	1.198	.625	.137	2.046	.056	.304	3.293
Psychoticism	-.320	.803	-.035	-.398	.691	.199	5.021

a Dependent Variable: Rumination

Final Model Summary for Rumination

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.673(a)	.454	.450	5.527	.454	128.670	2	310	.000
2	.690(b)	.476	.471	5.421	.022	13.238	1	309	.000

a Predictors: (Constant), New public self-consciousness, Neuroticism

b Predictors: (Constant), New public self-consciousness, Neuroticism, Self-reflectiveness

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	24.422	1.107		22.066	.000
	Neuroticism	.428	.039	.493	10.869	.000
	New public self-consciousness	.558	.082	.308	6.780	.000
2	(Constant)	23.515	1.114		21.113	.000
	Neuroticism	.400	.039	.462	10.183	.000
	New public self-consciousness	.439	.087	.242	5.048	.000
	Self-reflectiveness	.370	.102	.171	3.638	.000

a Dependent Variable: Rumination

b. Reflection Model

All variables entered

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.780(a)	.609	.575	5.461

a Predictors: (Constant), Postive Symptom Distress Index, Openness, Narcissism, Conscientiousness, Social Anxiety, Internal state awareness, Social Desirability, Phobic Anxiety, Rumination, Agreeableness, Extraversion, Self-reflectiveness, Somatisation, Obsessive-Compulsive, New public self-consciousness, Hostility, Neuroticism, Paranoid Ideation, MMPI Anxiety, Sensitivity, Anxiety, Depression, Psychoticism, Postive Symptom Total, Global Severity Index

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13231.516	25	529.261	17.746	.000(a)
	Residual	8500.053	285	29.825		
	Total	21731.569	310			

a Predictors: (Constant), Postive Symptom Distress Index, Openness, Narcissism, Conscientiousness, Social Anxiety, Internal state awareness, Social Desirability, Phobic Anxiety, Rumination, Agreeableness, Extraversion, Self-reflectiveness, Somatisation, Obsessive-Compulsive, New public self-consciousness, Hostility, Neuroticism, Paranoid Ideation, MMPI Anxiety, Sensitivity, Anxiety, Depression, Psychoticism, Postive Symptom Total, Global Severity Index

b Dependent Variable: Reflection

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	14.848	4.638		3.201	.002		
	Self-reflectiveness	1.089	.136	.449	7.983	.000	.434	2.304
	Internal state awareness	.446	.169	.121	2.642	.009	.657	1.522
	New public self-consciousness	-.228	.114	-.112	1.991	.047	.433	2.311
	Social Anxiety	-.082	.108	-.040	-.762	.447	.493	2.030
	Rumination	.033	.064	.029	.517	.606	.427	2.340
	Narcissism	.130	.064	.099	2.046	.042	.585	1.710
	Neuroticism	-.037	.063	-.038	-.580	.562	.327	3.059
	Extraversion	-.107	.071	-.079	1.506	.133	.500	2.001
	Openness	.500	.057	.395	8.777	.000	.679	1.472
	Agreeableness	.038	.085	.023	.444	.657	.525	1.906
	Conscientiousness	.130	.054	.110	2.401	.017	.658	1.520
	Social Desirability	.307	.137	.105	2.239	.026	.626	1.597
	MMPI Anxiety	.098	.112	.060	.877	.381	.297	3.366
	Somatisation	-1.251	1.422	-.102	-.880	.380	.103	9.700
	Sensitivity	-.407	.816	-.048	-.499	.618	.150	6.659
	Obsessive-Compulsive	-.137	1.219	-.013	-.113	.910	.108	9.225
	Depression	-1.066	1.267	-.121	-.841	.401	.066	15.038
	Anxiety	-.374	1.390	-.032	-.269	.788	.100	10.023
	Hostility	.340	1.004	.032	.339	.735	.154	6.514
	Phobic Anxiety	.424	1.427	.022	.297	.766	.243	4.116
	Paranoid Ideation	.247	1.030	.025	.240	.811	.125	7.986
	Psychoticism	-.977	1.260	-.095	-.776	.439	.091	11.031
	Global Severity Index	8.914	8.616	.670	1.035	.302	.003	305.745
	Postive Symptom Total	-.189	.097	-.285	1.952	.052	.064	15.575
	Postive Symptom Distress Index	-2.686	1.697	-.160	1.582	.115	.135	7.420

a Dependent Variable: Reflection

Final Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.751(a)	.565	.559	5.550	.565	99.872	4	308	.000
2	.755(b)	.570	.563	5.523	.006	4.054	1	307	.045

a Predictors: (Constant), Internal state awareness, Conscientiousness, Openness, Self-reflectiveness

b Predictors: (Constant), Internal state awareness, Conscientiousness, Openness, Self-reflectiveness, Narcissism

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12306.253	4	3076.563	99.872	.000(a)
	Residual	9487.977	308	30.805		
	Total	21794.230	312			
2	Regression	12429.920	5	2485.984	81.501	.000(b)
	Residual	9364.310	307	30.503		
	Total	21794.230	312			

a Predictors: (Constant), Internal state awareness, Conscientiousness, Openness, Self-reflectiveness

b Predictors: (Constant), Internal state awareness, Conscientiousness, Openness, Self-reflectiveness, Narcissism

c Dependent Variable: Reflection

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	9.838	1.852		5.311	.000
	Openness	.545	.051	.430	10.637	.000
	Self-reflectiveness	.963	.104	.397	9.223	.000
	Conscientiousness	.152	.046	.128	3.287	.001
	Internal state awareness	.434	.163	.118	2.670	.008
2	(Constant)	8.709	1.927		4.520	.000
	Openness	.546	.051	.431	10.705	.000
	Self-reflectiveness	.932	.105	.384	8.875	.000
	Conscientiousness	.145	.046	.122	3.142	.002
	Internal state awareness	.401	.163	.108	2.464	.014
	Narcissism	.102	.051	.078	2.014	.045

a Dependent Variable: Reflection

Appendix D.3 - Selection of data analyses from SPSS for Study 3

D.3.1 – one-way between groups MANOVA for the Four Rumination and Reflection Groups

a. Social Desirability and Anxiety

Between-Subjects Factors

		Value Label	N
RUMREF	1	Adaptive	70
GP	2	Sensitive	84
	3	Repressive	92
	4	Vulnerable	65

Box's Test of Equality of Covariance Matrices(a)

Box's M	11.857
F	1.302
df1	9
df2	822961.48
	7
Sig.	.230

Multivariate Tests(d)

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
RUMREFGP	Pillai's Trace	.273	16.205	6.000	614.000	.000	.137
	Wilks' Lambda	.727	17.633(b)	6.000	612.000	.000	.147

Levene's Test of Equality of Error Variances(a)

	F	df1	df2	Sig.
Social Desirability	1.266	3	307	.286
Anxiety	2.526	3	307	.058

Tests of Between-Subjects Effects

Source	Dependent Variable	Type IV Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
RUMREFGP	Social Desirability	182.448	3	60.816	7.961	.000	.072
	Anxiety	2141.295	3	713.765	36.948	.000	.265
Error	Social Desirability	2345.166	307	7.639			
	Anxiety	5930.653	307	19.318			

Post Hoc Tests

Social Desirability

Scheffe

RUMREFGP	N	Subset	
		1	2
Vulnerable	65	5.65	
Sensitive	84	5.79	
Repressive	92		7.21
Adaptive	70		7.31
Sig.		.992	.996

Anxiety

Scheffe

RUMREFGP	N	Subset	
		1	2
Repressive	92	7.28	
Adaptive	70	7.73	
Sensitive	84		12.71
Vulnerable	65		12.72
Sig.		.942	1.000

b. Self-consciousness

Box's Test of Equality of Covariance Matrices(a)

Box's M	35.106
F	1.142
df1	30
df2	229149.68
	3
Sig.	.270

Multivariate Tests(d)

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power(a)
Intercept	Pillai's Trace	.956	1667.433(b)	4.000	306.000	.000	.956	6669.731	1.000
	Wilks' Lambda	.044	1667.433(b)	4.000	306.000	.000	.956	6669.731	1.000
	Hotelling's Trace	21.797	1667.433(b)	4.000	306.000	.000	.956	6669.731	1.000
	Roy's Largest Root	21.797	1667.433(b)	4.000	306.000	.000	.956	6669.731	1.000
rumrefgp	Pillai's Trace	.534	16.664	12.000	924.000	.000	.178	199.973	1.000
	Wilks' Lambda	.531	18.247	12.000	809.891	.000	.190	190.296	1.000
	Hotelling's Trace	.762	19.345	12.000	914.000	.000	.203	232.140	1.000
	Roy's Largest Root	.537	41.358(c)	4.000	308.000	.000	.349	165.432	1.000

a. Computed using alpha = .05

Levene's Test of Equality of Error Variances(a)

	F	df1	df2	Sig.
Self-reflectiveness	1.985	3	309	.116
Internal state awareness	2.090	3	309	.101
New public self-consciousness	.952	3	309	.416
Social Anxiety	.287	3	309	.835

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.
a. Design: Intercept+rumrefgp

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Observed Power(a)
rumrefgp	Self-reflectiveness	1097.808	3	365.936	43.346	.000	.296	1.000
	Internal state awareness	329.708	3	109.903	26.763	.000	.206	1.000
	New public self-consciousness	835.105	3	278.368	19.379	.000	.158	1.000
	Social Anxiety	515.163	3	171.721	11.272	.000	.099	.999
Error	Self-reflectiveness	2608.645	309	8.442				
	Internal state awareness	1268.924	309	4.107				
	New public self-consciousness	4438.563	309	14.364				
	Social Anxiety	4707.342	309	15.234				

Post Hoc Tests**Self-reflectiveness**

Scheffe

Rumination & Reflection groups	N	Subset		
		1	2	3
Repressive	93	5.613		
Vulnerable	65		7.308	
Adaptive	71		8.507	
Sensitive	84			10.488
Sig.		1.000	.090	1.000

Internal state awareness

Scheffe

Rumination & Reflection groups	N	Subset	
		1	2
Repressive	93	6.29	
Vulnerable	65	6.60	
Sensitive	84		8.42
Adaptive	71		8.51
Sig.		.826	.995

New public self-consciousness

Scheffe

RUMREFGP	N	Subset	
		1	2
Adaptive	71	9.7887	
Repressive	93	10.0000	
Vulnerable	65		12.9077
Sensitive	84		13.3571
Sig.		.989	.910

Social Anxiety

Scheffe

RUMREFGP	N	Subset	
		1	2
Adaptive	71	7.70	
Repressive	93		9.49
Sensitive	84		10.68
Vulnerable	65		11.22
Sig.		1.000	.061

d. Personality Factors**Box's Test of Equality of Covariance Matrices(a)**

Box's M	64.232
F	.984
df1	63
df2	196469.67
	0
Sig.	.513

Multivariate Tests(d)

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
RUMREFGP	Pillai's	.642	13.880	18.000	918.000	.000	.214
	Trace						
	Wilks'	.466	14.798	18.000	860.327	.000	.225
	Lambda						

Levene's Test of Equality of Error Variances(a)

	F	df1	df2	Sig.
Neuroticism	1.381	3	309	.248
Extraversion	.253	3	309	.859
Openness	.786	3	309	.503
Agreeableness	2.009	3	309	.113
Conscientiousness	.704	3	309	.550
Narcissism	.172	3	309	.915

Tests of Between-Subjects Effects

Source	Dependent Variable	Type IV Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
RUMREFGP	Neuroticism	6813.607	3	2271.202	43.223	.000	.296
	Extraversion	330.817	3	110.272	2.967	.032	.028
	Openness	3735.120	3	1245.040	39.111	.000	.275
	Agreeableness	170.993	3	56.998	2.260	.081	.021
	Conscientiousness	476.442	3	158.814	3.287	.021	.031
	Narcissism	682.261	3	227.420	5.833	.001	.054
Error	Neuroticism	16236.636	309	52.546			
	Extraversion	11482.934	309	37.162			
	Openness	9836.567	309	31.834			
	Agreeableness	7793.639	309	25.222			
	Conscientiousness	14930.784	309	48.320			
	Narcissism	12047.056	309	38.987			

Post Hoc Tests**Neuroticism**

Scheffe

RUMREFGP	N	Subset	
		1	2
Adaptive	71	20.00	
Repressive	93	20.12	
Sensitive	84		28.82
Vulnerable	65		30.08
Sig.		1.000	.765

Extraversion

Scheffe

RUMREFGP	N	Subset
		1
Sensitive	84	28.20
Vulnerable	65	28.88
Adaptive	71	30.30
Repressive	93	30.63
Sig.		.109

Openness

Scheffe

RUMREFGP	N	Subset	
		1	2

Intercept	Pillai's Trace	.812	144.528(b)	9.000	301.000	.000	.812
	Wilks' Lambda	.188	144.528(b)	9.000	301.000	.000	.812
	Pillai's Trace	.358	4.561	27.000	909.000	.000	.119
	Wilks' Lambda	.669	4.817	27.000	879.718	.000	.126

Levene's Test of Equality of Error Variances(a)

	F	df1	df2	Sig.
Somatisation	4.668	3	309	.003
Obsessive-Compulsive	2.986	3	309	.031
Sensitivity	2.619	3	309	.051
Depression	6.998	3	309	.000
Anxiety	4.465	3	309	.004
Hostility	7.182	3	309	.000
Phobic Anxiety	9.393	3	309	.000
Paranoid Ideation	5.616	3	309	.001
Psychoticism	3.582	3	309	.014

Tests of Between-Subjects Effects

Source	Dependent Variable	Type IV Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
RUMREFGP	Somatisation	10.064	3	3.355	7.733	.000	.070
	Obsessive-Compulsive	16.985	3	5.662	10.302	.000	.091
	Sensitivity	59.298	3	19.766	25.279	.000	.197
	Depression	51.390	3	17.130	22.944	.000	.182
	Anxiety	27.782	3	9.261	22.276	.000	.178
	Hostility	21.088	3	7.029	12.596	.000	.109
	Phobic Anxiety	4.011	3	1.337	7.304	.000	.066
	Paranoid Ideation	32.105	3	10.702	17.125	.000	.143
	Psychoticism	28.611	3	9.537	16.428	.000	.138
Error	Somatisation	134.044	309	.434			
	Obsessive-Compulsive	169.805	309	.550			
	Sensitivity	241.612	309	.782			
	Depression	230.700	309	.747			
	Anxiety	128.456	309	.416			
	Hostility	172.435	309	.558			
	Phobic Anxiety	56.562	309	.183			
	Paranoid Ideation	193.096	309	.625			
	Psychoticism	179.392	309	.581			

Post Hoc Tests

Somatisation

Scheffe

RUMREFGP	N	Subset	
		1	2

Adaptive	71	.4326	
Repressive	93	.6375	.6375
Sensitive	84		.8520
Vulnerable	65		.9033
Sig.		.296	.102

Obsessive-Compulsive

Scheffe

RUMREFGP	N	Subset	
		1	2
Repressive	93	1.2240	
Adaptive	71	1.2315	
Vulnerable	65		1.5744
Sensitive	84		1.7560
Sig.		1.000	.513

Sensitivity

Scheffe

RUMREFGP	N	Subset	
		1	2
Adaptive	71	.8204	
Repressive	93	.9651	
Vulnerable	65		1.6923
Sensitive	84		1.8185
Sig.		.795	.854

Depression

Scheffe

RUMREFGP	N	Subset	
		1	2
Adaptive	71	.7465	
Repressive	93	.7652	
Vulnerable	65		1.5154
Sensitive	84		1.6052
Sig.		.999	.937

Anxiety

Scheffe

RUMREFGP	N	Subset	
		1	2
Repressive	93	.5935	
Adaptive	71	.6221	
Vulnerable	65		1.1615
Sensitive	84		1.2302
Sig.		.995	.933

Hostility

Scheffe

RUMREFGP	N	Subset	
		1	2
Adaptive	71	.6535	
Repressive	93	.7613	
Sensitive	84		1.2244
Vulnerable	65		1.2338
Sig.		.850	1.000

Phobic Anxiety

Scheffe

RUMREFGP	N	Subset	
		1	2
Adaptive	71	.2338	
Repressive	93	.2667	
Sensitive	84		.4762
Vulnerable	65		.4800
Sig.		.973	1.000

Paranoid Ideation

Scheffe

RUMREFGP	N	Subset	
		1	2
Repressive	93	.6172	
Adaptive	71	.6451	
Sensitive	84		1.2452
Vulnerable	65		1.3000
Sig.		.997	.980

Psychoticism

Scheffe

RUMREFGP	N	Subset	
		1	2
Adaptive	71	.5500	
Repressive	93	.5978	
Vulnerable	65		1.0208
Sensitive	84		1.2643
Sig.		.985	.272

Appendix D.4 – Selection of data analyses from SPSS Autobiographical Memory Study 3

D.4.1 Mixed design ANOVA for the four Rumination and Reflection Groups for specificity

a. Positive and negative memory cue types

Within-Subjects Factors

cue	Dependent Variable
1	poscue
2	negcue

Between-Subjects Factors

	Value Label	N
Rum/Ref group 1	Adaptive	14
2	Repressive	18
3	Sensitiser	16
4	Vulnerable	13

Descriptive Statistics

	Rum/Ref group	Mean	Std. Deviation	N
Average specificity of positive memories	Adaptive	2.7143	.45021	14
	Repressive	2.6111	.47486	18
	Sensitiser	2.5625	.59278	16
	Vulnerable	2.5128	.66130	13
	Total	2.6011	.53686	61
Average specificity of negative memories	Adaptive	2.5476	.29547	14
	Repressive	2.3519	.44972	18
	Sensitiser	2.3750	.63099	16
	Vulnerable	2.2564	.70912	13
	Total	2.3825	.53519	61

Multivariate Tests(b)

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
cue	Pillai's Trace	.136	8.946(a)	1.000	57.000	.004	.136
	Wilks' Lambda	.864	8.946(a)	1.000	57.000	.004	.136
	Hotelling's Trace	.157	8.946(a)	1.000	57.000	.004	.136
	Roy's Largest Root	.157	8.946(a)	1.000	57.000	.004	.136
	Pillai's Trace	.006	.107(a)	3.000	57.000	.956	.006
cue * group	Wilks' Lambda	.994	.107(a)	3.000	57.000	.956	.006
	Hotelling's Trace	.006	.107(a)	3.000	57.000	.956	.006
	Roy's Largest Root	.006	.107(a)	3.000	57.000	.956	.006

Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
cue	Sphericity Assumed	1.420	1	1.420	8.946	.004	.136
	Greenhouse-Geisser	1.420	1.000	1.420	8.946	.004	.136
	Huynh-Feldt	1.420	1.000	1.420	8.946	.004	.136
	Lower-bound	1.420	1.000	1.420	8.946	.004	.136
cue * group	Sphericity Assumed	.051	3	.017	.107	.956	.006
	Greenhouse-Geisser	.051	3.000	.017	.107	.956	.006
	Huynh-Feldt	.051	3.000	.017	.107	.956	.006
	Lower-bound	.051	3.000	.017	.107	.956	.006
Error(cue)	Sphericity Assumed	9.048	57	.159			
	Greenhouse-Geisser	9.048	57.000	.159			
	Huynh-Feldt	9.048	57.000	.159			
	Lower-bound	9.048	57.000	.159			

Tests of Within-Subjects Contrasts

Source	cue	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
cue	Linear	1.420	1	1.420	8.946	.004	.136
cue * group	Linear	.051	3	.017	.107	.956	.006
Error(cue)	Linear	9.048	57	.159			

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	745.604	1	745.604	1733.328	.000	.968
group	.862	3	.287	.668	.575	.034
Error	24.519	57	.430			

Paired samples T-Test - Positive & negative cues for specificity

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Average specificity of positive memories	2.6011	61	.53686	.06874
	Average specificity of negative memories	2.3825	61	.53519	.06852

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Average specificity of positive memories - Average specificity of negative memories	.21858	.55071	.07051	.07754	.35962	3.100	60	.003

b. Positive, anxiety and depressive cue types**Within-Subjects Factors**

cue	Dependent Variable
1	poscue
2	anxcue
3	depcue

Between-Subjects Factors

	Value Label	N
Rum/Ref group 1	Adaptive	14
2	Repressive	18
3	Sensitiser	16
4	Vulnerable	13

Descriptive Statistics

	Rum/Ref group	Mean	Std. Deviation	N
Average specificity of positive memories	Adaptive	2.7143	.45021	14
	Repressive	2.6111	.47486	18
	Sensitiser	2.5625	.59278	16
	Vulnerable	2.5128	.66130	13
	Total	2.6011	.53686	61
Average specificity of anxious memories	Adaptive	2.6905	.38038	14
	Repressive	2.5556	.61570	18
	Sensitiser	2.4167	.74536	16
	Vulnerable	2.3846	.76795	13
	Total	2.5137	.63995	61
Average specificity of depressed memories	Adaptive	2.4048	.49231	14
	Repressive	2.1481	.51414	18
	Sensitiser	2.3333	.66667	16
	Vulnerable	2.1282	.79975	13
	Total	2.2514	.61661	61

Multivariate Tests(c)

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
cue	Pillai's Trace	.243	9.000(a)	2.000	56.000	.000	.243
	Wilks' Lambda	.757	9.000(a)	2.000	56.000	.000	.243
	Hotelling's Trace	.321	9.000(a)	2.000	56.000	.000	.243
	Roy's Largest Root	.321	9.000(a)	2.000	56.000	.000	.243
cue * group	Pillai's Trace	.040	.390	6.000	114.000	.884	.020
	Wilks' Lambda	.960	.386(a)	6.000	112.000	.886	.020
	Hotelling's Trace	.042	.382	6.000	110.000	.889	.020
	Roy's Largest Root	.038	.726(b)	3.000	57.000	.541	.037

Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
cue	Sphericity Assumed	3.896	2	1.948	9.017	.000	.137
	Greenhouse-Geisser	3.896	1.999	1.949	9.017	.000	.137
	Huynh-Feldt	3.896	2.000	1.948	9.017	.000	.137
	Lower-bound	3.896	1.000	3.896	9.017	.004	.137
cue * group	Sphericity Assumed	.518	6	.086	.399	.878	.021
	Greenhouse-Geisser	.518	5.996	.086	.399	.878	.021
	Huynh-Feldt	.518	6.000	.086	.399	.878	.021
	Lower-bound	.518	3.000	.173	.399	.754	.021
Error(cue)	Sphericity Assumed	24.626	114	.216			
	Greenhouse-Geisser	24.626	113.924	.216			
	Huynh-Feldt	24.626	114.000	.216			
	Lower-bound	24.626	57.000	.432			

Tests of Within-Subjects Contrasts

Source	cue	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
cue	Linear	3.607	1	3.607	17.106	.000	.231
	Quadratic	.289	1	.289	1.306	.258	.022
cue * group	Linear	.251	3	.084	.397	.756	.020
	Quadratic	.267	3	.089	.402	.752	.021
Error(cue)	Linear	12.019	57	.211			
	Quadratic	12.608	57	.221			

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
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Pair 3	Average specificity of anxious memories - Average specificity of depressed memories	.26230	.65860	.08433	.09362	.43097	3.111	60	.003
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D.4.2 Paired samples t-tests for within group differences

a. Adaptive group

Paired Samples Test

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Average specificity of positive memories - Average specificity of anxious memories	.02381	.53051	.14178	-.28250	.33012	.168	13	.869
Pair 2	Average specificity of positive memories - Average specificity of depressed memories	.30952	.53051	.14178	.00322	.61583	2.183	13	.048
Pair 3	Average specificity of anxious memories - Average specificity of depressed memories	.28571	.65185	.17421	-.09065	.66208	1.640	13	.125

b. Repressive Group

Paired Samples Test

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Average specificity of positive memories - Average specificity of anxious memories	.05556	.84984	.20031	-.36706	.47817	.277	17	.785
Pair 2	Average specificity of positive memories - Average specificity of depressed memories	.46296	.70608	.16642	.11184	.81409	2.782	17	.013
Pair 3	Average specificity of anxious memories - Average specificity of depressed memories	.40741	.69127	.16293	.06365	.75117	2.500	17	.023

c. Sensitiser Group

Paired Samples Test

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Average specificity of positive memories - Average specificity of anxious memories	.14583	.59590	.14897	-.17170	.46336	.979	15	.343
Pair 2	Average specificity of positive memories - Average specificity of depressed memories	.22917	.68550	.17137	-.13611	.59444	1.337	15	.201
Pair 3	Average specificity of anxious memories - Average specificity of depressed memories	.08333	.63828	.15957	-.25678	.42345	.522	15	.609

d. Vulnerable Group

Paired Samples Test

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Average specificity of positive memories - Average specificity of anxious memories	.12821	.53642	.14878	-.19595	.45236	.862	12	.406
Pair 2	Average specificity of positive memories - Average specificity of depressed memories	.38462	.63605	.17641	.00025	.76898	2.180	12	.050
Pair 3	Average specificity of anxious memories - Average specificity of depressed memories	.25641	.66880	.18549	-.14774	.66056	1.382	12	.192

D.4.3 Mixed design ANOVA for the High vs Low Rumination Groups for specificity

a. Positive, anxiety and depressive cue types

Within-Subjects Factors

cue	Dependent Variable
1	poscue
2	anxcue
3	depcue

Between-Subjects Factors

	Value Label	N
High ruminant/low ruminant groups	High	29
	Low	32

Multivariate Tests(b)

Effect		Value	F	Hypothesis df	Error df	Sig.
cue	Pillai's Trace	.243	9.302(a)	2.000	58.000	.000
	Wilks' Lambda	.757	9.302(a)	2.000	58.000	.000
	Hotelling's Trace	.321	9.302(a)	2.000	58.000	.000
	Roy's Largest Root	.321	9.302(a)	2.000	58.000	.000
cue * highlow	Pillai's Trace	.022	.647(a)	2.000	58.000	.527
	Wilks' Lambda	.978	.647(a)	2.000	58.000	.527
	Hotelling's Trace	.022	.647(a)	2.000	58.000	.527
	Roy's Largest Root	.022	.647(a)	2.000	58.000	.527

Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
cue	Sphericity Assumed	3.956	2	1.978	9.389	.000
	Greenhouse-Geisser	3.956	1.999	1.979	9.389	.000
	Huynh-Feldt	3.956	2.000	1.978	9.389	.000
	Lower-bound	3.956	1.000	3.956	9.389	.003
cue * highlow	Sphericity Assumed	.284	2	.142	.674	.512
	Greenhouse-Geisser	.284	1.999	.142	.674	.511
	Huynh-Feldt	.284	2.000	.142	.674	.512
	Lower-bound	.284	1.000	.284	.674	.415
Error(cue)	Sphericity Assumed	24.860	118	.211		
	Greenhouse-Geisser	24.860	117.925	.211		
	Huynh-Feldt	24.860	118.000	.211		
	Lower-bound	24.860	59.000	.421		

Tests of Within-Subjects Contrasts

Source	cue	Type III Sum of Squares	df	Mean Square	F	Sig.
cue	Linear	3.671	1	3.671	17.755	.000
	Quadratic	.285	1	.285	1.330	.253
cue * highlow	Linear	.072	1	.072	.346	.559
	Quadratic	.213	1	.213	.990	.324
Error(cue)	Linear	12.198	59	.207		
	Quadratic	12.662	59	.215		

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	1098.062	1	1098.062	1664.504	.000
highlow	.612	1	.612	.927	.339
Error	38.922	59	.660		

D.4.4 – Within group differences – paired samples t-tests

a. High Rumination Group

Paired Samples Test

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Average specificity of positive memories - Average specificity of anxious memories	.13793	.56003	.10399	-.07509	.35095	1.326	28	.195
Pair 2	Average specificity of positive memories - Average specificity of depressed memories	.29885	.65674	.12195	.04904	.54866	2.451	28	.021
Pair 3	Average specificity of anxious memories - Average specificity of depressed memories	.16092	.64624	.12000	-.08490	.40674	1.341	28	.191

b. Low Rumination Group

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Average specificity of positive memories - Average specificity of anxious memories	.04167	.71717	.12678	-.21690	.30024	.329	31	.745
Pair 2	Average specificity of positive memories - Average specificity of depressed memories	.39583	.63040	.11144	.16855	.62312	3.552	31	.001
Pair 3	Average specificity of anxious memories - Average specificity of depressed memories	.35417	.66633	.11779	.11393	.59440	3.007	31	.005

Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
cue	Sphericity Assumed	648.420	1	648.420	24.749	.000	.303
	Greenhouse-Geisser	648.420	1.000	648.420	24.749	.000	.303
	Huynh-Feldt	648.420	1.000	648.420	24.749	.000	.303
	Lower-bound	648.420	1.000	648.420	24.749	.000	.303
cue * group	Sphericity Assumed	212.133	3	70.711	2.699	.054	.124
	Greenhouse-Geisser	212.133	3.000	70.711	2.699	.054	.124
	Huynh-Feldt	212.133	3.000	70.711	2.699	.054	.124
	Lower-bound	212.133	3.000	70.711	2.699	.054	.124
Error(cue)	Sphericity Assumed	1493.397	57	26.200			
	Greenhouse-Geisser	1493.397	57.000	26.200			
	Huynh-Feldt	1493.397	57.000	26.200			
	Lower-bound	1493.397	57.000	26.200			

Tests of Within-Subjects Contrasts

Source	cue	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
cue	Linear	648.420	1	648.420	24.749	.000	.303
cue * group	Linear	212.133	3	70.711	2.699	.054	.124
Error(cue)	Linear	1493.397	57	26.200			

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	14734.433	1	14734.433	167.004	.000	.746
group	188.108	3	62.703	.711	.550	.036
Error	5028.994	57	88.228			

Paired samples t-test for positive and negative memory cue type for latency**Paired Samples Statistics**

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Average time for positive memories	8.6666	61	6.67012	.85402
	Average time for negative memories	13.4943	61	8.41943	1.07800

Paired Samples Test

		Paired Differences				t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower Upper			
Pair 1	Average time for positive memories - Average time for negative memories	4.82776	7.53996	.96539	6.75883 2.89669	5.001	60	.000

b. Positive, anxiety and depressive cue types

Within-Subjects Factors

cue	Dependent Variable
1	postime
2	deptime
3	anxtime

Between-Subjects Factors

	Value Label	N
Rum/Ref group	1 Adaptive	14
	2 Repressive	18
	3 Sensitiser	16
	4 Vulnerable	13

Descriptive Statistics

	Rum/Ref group	Mean	Std. Deviation	N
Average time for positive memories	Adaptive	8.2981	8.10632	14
	Repressive	5.8309	3.00415	18
	Sensitiser	12.0323	8.43756	16
	Vulnerable	8.8472	4.70413	13
	Total	8.6666	6.67012	61
Average time for anxious memories	Adaptive	11.5205	8.43030	14
	Repressive	15.6243	10.69982	18
	Sensitiser	12.4183	9.99856	16
	Vulnerable	12.3238	7.25831	13
	Total	13.1381	9.27967	61
Average time for depressed memories	Adaptive	11.7714	9.70360	14
	Repressive	13.4022	11.93986	18
	Sensitiser	15.7123	12.73810	16
	Vulnerable	14.4187	9.59598	13
	Total	13.8505	11.03802	61

Multivariate Tests(c)

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
cue	Pillai's Trace	.306	12.361(a)	2.000	56.000	.000	.306
	Wilks' Lambda	.694	12.361(a)	2.000	56.000	.000	.306
	Hotelling's Trace	.441	12.361(a)	2.000	56.000	.000	.306
	Roy's Largest Root	.441	12.361(a)	2.000	56.000	.000	.306
cue * group	Pillai's Trace	.153	1.571	6.000	114.000	.162	.076
	Wilks' Lambda	.848	1.602(a)	6.000	112.000	.153	.079
	Hotelling's Trace	.178	1.632	6.000	110.000	.145	.082
	Roy's Largest Root	.172	3.267(b)	3.000	57.000	.028	.147

Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
cue	Sphericity Assumed	886.483	2	443.242	8.686	.000	.132
	Greenhouse-Geisser	886.483	1.819	487.418	8.686	.001	.132
	Huynh-Feldt	886.483	1.974	449.018	8.686	.000	.132
	Lower-bound	886.483	1.000	886.483	8.686	.005	.132
cue * group	Sphericity Assumed	427.571	6	71.262	1.397	.222	.068
	Greenhouse-Geisser	427.571	5.456	78.364	1.397	.228	.068
	Huynh-Feldt	427.571	5.923	72.191	1.397	.223	.068
	Lower-bound	427.571	3.000	142.524	1.397	.253	.068
Error(cue)	Sphericity Assumed	5817.068	114	51.027			
	Greenhouse-Geisser	5817.068	103.668	56.113			
	Huynh-Feldt	5817.068	112.533	51.692			
	Lower-bound	5817.068	57.000	102.054			

Tests of Within-Subjects Contrasts

Source	cue	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
cue	Linear	773.129	1	773.129	18.249	.000	.243
	Quadratic	113.354	1	113.354	1.899	.174	.032
cue * group	Linear	90.850	3	30.283	.715	.547	.036
	Quadratic	336.722	3	112.241	1.880	.143	.090
Error(cue)	Linear	2414.882	57	42.366			
	Quadratic	3402.186	57	59.687			

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	25300.691	1	25300.691	165.526	.000	.744
group	189.329	3	63.110	.413	.744	.021
Error	8712.470	57	152.850			

Oneway ANOVA for latency

a. Positive, anxiety and depressive cue types

		Sum of Squares	df	Mean Square	F	Sig.
Average time for positive memories	Between Groups	328.310	3	109.437	2.664	.056
	Within Groups	2341.117	57	41.072		
	Total	2669.427	60			
Average time for anxious memories	Between Groups	164.800	3	54.933	.626	.601
	Within Groups	5001.940	57	87.753		
	Total	5166.740	60			
Average time for depressed memories	Between Groups	123.790	3	41.263	.327	.806
	Within Groups	7186.481	57	126.079		
	Total	7310.271	60			

Post Hoc

Average time for positive memories

Student-Newman-Keuls

Rum/Ref group	N	Subset for alpha = .05	
		1	2
Repressive	18	5.8309	
Adaptive	14	8.2981	8.2981
Vulnerable	13	8.8472	8.8472
Sensitiser	16		12.0323
Sig.		.407	.255

Average time for anxious memories

Student-Newman-Keuls

Rum/Ref group	N	Subset for alpha = .05
		1
Adaptive	14	11.5205
Vulnerable	13	12.3238
Sensitiser	16	12.4183
Repressive	18	15.6243
Sig.		.629

Average time for depressed memories

Student-Newman-Keuls

Rum/Ref group	N	Subset for alpha = .05
		1
Adaptive	14	11.7714
Repressive	18	13.4022
Vulnerable	13	14.4187
Sensitiser	16	15.7123
Sig.		.772

D.4.6 Within group differences - Paired Samples T-Tests

a. Adaptive Group

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Average time for positive memories - Average time for anxious memories	3.22238	10.25040	2.73953	9.14078	2.69602	1.176	13	.261
Pair 2	Average time for positive memories - Average time for depressed memories	3.47333	8.10878	2.16716	8.15520	1.20854	1.603	13	.133
Pair 3	Average time for anxious memories - Average time for depressed memories	-.25095	10.50579	2.80779	6.31682	5.81491	-.089	13	.930

b. Repressive Group

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Average time for positive memories - Average time for anxious memories	9.79333	10.81855	2.54996	15.17327	4.41339	3.841	17	.001
Pair 2	Average time for positive memories - Average time for depressed memories	7.57130	11.76348	2.77268	13.42114	1.72145	2.731	17	.014
Pair 3	Average time for anxious memories - Average time for depressed memories	2.22204	13.32657	3.14110	-4.40511	8.84918	.707	17	.489

c. Sensitiser Group

Paired Samples Test

		Paired Differences				t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower Upper			
Pair 1	Average time for positive memories - Average time for anxious memories	-.38604	8.52700	2.13175	-4.92976 4.15768	-.181	15	.859
Pair 2	Average time for positive memories - Average time for depressed memories	3.68000	7.88819	1.97205	-7.88332 .52332	1.866	15	.082
Pair 3	Average time for anxious memories - Average time for depressed memories	3.29396	12.65151	3.16288	10.03547 3.44755	1.041	15	.314

d. Vulnerable Group

Paired Samples Test

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	Average time for positive memories - Average time for anxious memories	3.47667	6.60450	1.83176	-7.46772	.51439	1.898	12	.082
Pair 2	Average time for positive memories - Average time for depressed memories	5.57154	7.57836	2.10186	10.15109	-.99198	2.651	12	.021
Pair 3	Average time for anxious memories - Average time for depressed memories	2.09487	8.14885	2.26009	-7.01917	2.82943	-.927	12	.372