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The Creative Process:

A Phenomenological and Psychometric Investigation of Artistic Creativity

Christopher Barnaby Nelson

A thesis submitted in total fulfillment of the requirements of the degree of Doctor of Philosophy

Produced on archival quality paper

August, 2005
Department of Psychology
The University of Melbourne

Abstract

Although a variety of approaches have been adopted to researching creativity, the phenomenology of creativity has not been well-represented in the literature. This constitutes a significant obstacle to achieving a comprehensive, satisfactory model of the creative process. The current thesis aimed to provide a systematic analysis of the phenomenology of artistic creativity. The thesis also attempted to integrate the analysis of phenomenological aspects of artistic creativity with the more established approaches of creativity-personality and creativity-psychopathology research. Specifically, the research investigated whether the phenomenology of artistic creativity varies in relation to features of personality and psychopathology.

These aims were addressed through two studies. The phenomenology of artistic creativity was explicated through a qualitative study guided by the principles of phenomenological psychology (Study 1). This study was based around semi-structured interviews conducted with a range of artists. A second, psychometric study consisted of two experiments with a larger group (N = 100) of artists. Experiment 1 developed a questionnaire, the Experience of Creativity Questionnaire (ECQ), based on the qualitative findings of Study 1. Experiment 2 examined the relationship of experiential and existential aspects of creativity, as measured by the ECQ, to a range of personality and psychopathological features – specifically, self-report measures of the five-factor model of personality, mental boundaries, positive schizotypy, and affective disturbance.

The qualitative findings indicated a range of constituents to the experiential and existential dimensions of artistic creativity. The major dynamics operating within the experiential dimension were: an intuition-analysis dynamic; a unity-division dynamic; and a freedom-constraint dynamic. The major dynamic operating within the existential dimension was meaning-meaninglessness. The qualitative findings placed particular emphasis on the shift in sense of self associated with the creative process and the

energising effect of the sense of a synthesis of disparate elements. The findings were discussed in relation to theories of 'flow' and spiritual experience.

In comparison to norm data, the Study 2 sample was elevated in Openness to Experience, Neuroticism, thin mental boundaries, positive schizotypy, and both unipolar and bipolar affective disturbance. The ECQ was found to consist of five statistically-derived factors (labelled Distinct Experience, Anxiety, Absorption, Power/Pleasure, Clarity/Preparation) in its experiential dimension and three factors (Transformation, Centrality, Beyond the Personal) in its existential dimension. The results indicated that positive schizotypy is a particularly strong predictor of a variety of experiential and existential features of the creative process, supporting the notion of creativity being an instance of 'happy schizotypy'. The neurologically-based construct of latent inhibition was proposed as a possible mechanism that accounts for the relationship between schizotypy and 'flow'-type aspects of creative experience. The findings indicated that although the *experience* of the creative process by neurotic or affectively disturbed individuals may be marked by anxiety, the creative process may provide longer-term or delayed relief from negative affective states. A bidirectional, cyclical model of the causal relationship between experiential and existential aspects of artistic creativity and personality and psychopathological features was proposed.

This is to certify that

(i) the thesis comprises only my original work,

(ii) due acknowledgment has been made in the text to all other material used,

(iii) the thesis is less than 100,000 words in length, exclusive of tables, maps, bibliographies and appendices.

……

Christopher Barnaby Nelson

August, 2005

I, Christopher Barnaby Nelson, declare that the research reported in this thesis was conducted in accordance with the principles for the ethical treatment of human participants as approved for this research by the University Human Research Ethics Committee.

……

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There are a number of people I would like to thank for supporting me in this endeavour. Firstly, I would like to thank my supervisor, Dr. David Rawlings, for his encouraging attitude, his thoughtful input, and his constructive feedback – and for maintaining a good sense of humour throughout. I would like to thank Professor Henry Jackson for encouraging the writing ball to start rolling and for finding the time to provide considered feedback. Also, I express my gratitude to Dr. Peter Parker and Dr. Jennifer McIntosh, who introduced me to the world of phenomenological psychology, and to Professor Mike Kyrios for his mentorship.

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The Creative Process: A Phenomenological and Psychometric Investigation of Artistic Creativity

Table of Contents

Abstract ii
Declaration of Authorship iv
Ethics Declaration v
Acknowledgments vi
List of Tables x
List of Figures xii
List of Appendices xiii

Chapter 1. Introduction and Thesis Overview 1

1.1 Introduction 1
1.2 Organisation of the Thesis 7

Chapter 2. Creativity, Personality and Psychopathology 9

2.0 Overview 9
2.1 Definition and Measurement of Creativity 9
2.2 Creativity Research 14
2.3 Creativity and Personality Research 16
2.4 The Creativity and 'Madness' Debate 34
2.5 Summary 61

Chapter 3. Phenomenological Research and Research Questions 63

3.0 Overview 63
3.1 The Move Towards Psychology as a Human Science 64
3.2 Principles of Phenomenological Psychology 67
3.3 Phenomenological Studies of Creativity 72
3.4 The Current State of Creativity Research 87
3.5 Research Questions 102
3.6 Summary 103

Chapter 4. Study 1 – An Empirical Phenomenological Study of Artistic Creativity 105

4.0 Overview 105
4.1 Research Question 105
4.2 Participant Selection 105
4.3 Pilot Study 108
4.4 The Interview Questions 111
4.5 The Phenomenological Interview Process 112
4.5.1 Self-Reflection 113
4.6 Phenomenological Analyses 114
4.6.1 The Analysis Leading to Individual Structures 115
4.6.2 The Analysis Leading to General Structures 118
4.7 Inter-Rater Reliability and Member Check 120
4.8 Findings 123
4.8.1 General Structure of the Artistic Creative Process: The Experiential Dimension 123
4.8.2 General Structure of the Artistic Creative Process: The Existential Dimension 136
4.9 Summary 141

Chapter 5. Discussion of Study 1 Findings 143

5.0 Overview 143
5.1 Consideration of the General Structures 143
5.2 Discussion of Findings with Regard to the Literature 147
5.2.1 The Experiential Dimension of the Artistic Creative Process 147
5.2.2 The Existential Dimension of the Artistic Creative Process 161
5.3 Directions for Future Research 167
5.4 Summary 169

Chapter 6. Study 2 - A Psychometric Investigation of the Relationship Between the Phenomenology of Artistic Creativity, Personality Characteristics, and Psychopathology 171

6.0 Overview 171
6.1 Introduction 171
6.2 Experiment 1 – The Development of the Experience of Creativity Questionnaire (ECQ) 180
6.2.1 Method 180
6.2.1.1 Participants 180
6.2.1.2 Recruitment 181
6.2.1.3 Experience of Creativity Questionnaire (ECQ) 182
6.2.1.4 Procedure 183
6.2.2 Results 184

6.2.2.1 Factor Analysis of the Experience of Creativity Questionnaire (ECQ) 184
6.2.2.2 Development of the Final Experience of Creativity Questionnaire (ECQ) 189
6.3 Experiment 2 – The Relationship Between the ECQ and Personality and Psychopathology Measures 198
6.3.1 Hypotheses 198
6.3.2 Method 203
6.3.2.1 Questionnaires 203
6.3.2.2 Procedure 207
6.3.3 Results 208
6.3.3.1 Descriptive Statistics 208
6.3.3.2 Interpretive Statistics 215
6.4 Discussion 229
6.4.1 Hypotheses 230
6.4.2 Exploratory Findings 232
6.4.2.1 Personality and Psychopathology Measures 232
6.4.2.2 The Relationship Between Personality and Psychopathology Measures and the ECQ Scales 233
6.4.2.3 The Relationship Between Experiential and Existential Dimensions of the ECQ 235
6.4.3 Consideration of Findings and Discussion in Relation to Previous Literature 236
6.4.3.1 The Personality and Psychopathology Measures 236
6.4.3.2 Differences Between Artistic Mediums 247
6.4.3.3 The Relationship Between Personality and Psychopathological Features and Experiential and Existential Dimensions of Artistic Creativity 251
6.4.4 Methodological Considerations 279
6.4.5 Suggestions Regarding Future Research 281
6.5 Summary 285

Chapter 7. General Discussion 287

7.0 Overview 287
7.1 Summary and Consideration of the Findings 287
7.1.1 Study 1 – The Phenomenology of Artistic Creativity 287
7.1.2 Study 2 – The Relationship Between the Phenomenology of Artistic Creativity, Personality, and Psychopathology 290
7.1.3 Issues of Causality and the Nomothetic Versus the Idiographic 295
7.2 Revisiting the Aims of the Thesis 297
7.3 Summary 303

References 305

List of Tables

Table 2.1 *Description of Six Research Approaches to Three Research Paradigms* 15

Table 3.1 *Concerns of the 'New' and 'Old' Paradigms in Psychology* 66

Table 4.1 *Study 1 Participant Details* 107

Table 4.2 *Pilot Study Participant Details* 109

Table 4.3 *Steps in the Analysis of Individual Protocols* 117

Table 4.4 *Steps in the Analysis for the General Structure* 119

Table 6.1 *Percent of Variance Accounted For by Each of the Six ECQ-A Factors* 187

Table 6.2 *Pattern Matrix Following Maximum Likelihood Extraction and Promax Rotation of Items in the Final ECQ-Part A* 191

Table 6.3 *Correlations Between the Five ECQ-Part A Factors* 192

Table 6.4 *Means, Standard Deviations, and Guttman Reliability Coefficients for the Experience of Creativity Questionnaire (ECQ) Part A Sub-Scales* 193

Table 6.5 *Pattern Matrix Following Maximum Likelihood Extraction and Promax Rotation of Items in the Final ECQ-Part B* 195

Table 6.6 *Means, Standard Deviations, and Guttman Reliability Coefficients for the Experience of Creativity Questionnaire (ECQ) Part B Sub-Scales* 196

Table 6.7 *Correlations Between the ECQ Scales* 197

Table 6.8 *Original Categorisation and Adjusted Categorisation of Participants by Medium* 209

Table 6.9 *BFI Scale Scores and One-Sample t-Test Comparisons with an Australian University Student Sample* 209

Table 6.10 *BQ-Sh and BQ-Sh Sub-Scale Scores and One-Sample t-Test Comparisons with an Australian University Student Sample* 211

Table 6.11 *Comparison of GBI-Defined Affective Conditions Between the Current Sample and Two Studies using Non-Clinical Populations Not Selected for High Creativity* 213

Table 6.12 *Descriptive Statistics for Continuous Scores on the General Behavior Inventory (GBI) and One-Sample t-Test Comparisons with Frantom and Sherman's (1999) data* 214

Table 6.13 *Correlations Between the Personality and Psychopathology Measures* 216

Table 6.14 *Correlations Between the ECQ Scales and the BFI* 215

Table 6.15 *Correlations Between UnuExp, BQ-Sh, GBI, and the ECQ Scales* 217

Table 6.16 *Correlations Between the BQ-Sh Sub-Scales and the ECQ Scales* 217

Table 6.17 *Results of Independent Samples t-Tests Comparing the ECQ, BFI, UnuExp, BQ-Sh, and GBI Scores by Gender Gender (*DF *= 98;* N *= 43 (males), 57 (females) for all cells)* 218

Table 6.18 *Pearson Correlations Between Age and the ECQ Scales* 219

Table 6.19 *Pearson Correlations Between Age and the BFI, UnuExp, BQ-Sh, and the GBI* 219

Table 6.20 *Pearson Correlations Between Years of Experience and the ECQ Scales* 220

Table 6.21 *Correlations Between Years of Experience and the BFI, UnuExp, BQ-Sh, and the GBI* 220

Table 6.22 *Means and One-Way ANOVA Results of the ECQ Scales by Medium (DF = 2, 88 for all cells)* 221

Table 6.23 *Means and One-Way ANOVA Results of the BFI, UnuExp, and GBI Scales by Medium (DF = 2, 88 for all cells)* 222

Table 6.24 *Means and One-Way ANOVA results of BQ-Sh Scales by Medium (DF = 2, 88 for all cells)* 224

Table 6.25 *Stepwise Regression Analyses Employing ECQ Scales as Dependent Variables with Personality and Psychopathology Measures as Independent Variables* 226

Table 6.26 *Pearson Correlations Between the ECQ Scales and the Personality and Psychopathology Measures* 228

Table 6.27 *Significant Predictors of ECQ Scales Amongst the Personality and Psychopathology Measures, as Indicated by Stepwise Regression Analyses* 229

List of Figures

Figure 3.1 Russ' (1993) model of personality traits, affective processes, and cognitive abilities involved in creativity, with a proposed 'experiential' dimension added by the current researcher. 98

Figure 6.1. Scree plot for Maximum Likelihood analysis of ECQ-A scores. 186

Figure 6.2. Scree plot for Maximum Likelihood analysis of ECQ-B scores. 188

Figure 6.3. Scree plot for Maximum Likelihood analysis of final ECQ-A scores. 190

Figure 6.4. Scree plot for Maximum Likelihood analysis of final ECQ-B scores. 194

Figure 6.5. Plot of scores as a joint function of dichotomous depression and hypomania/mania + biphasic GBI scores. 213

Figure 7.1. Diagrammatic representation of the bidirectional, cyclical model of causal factors in creativity. 296

Figure 7.2. The relationship between the experiential/existential, personality and psychopathology, affective, and cognitive dimensions of creativity (modified from Russ (1993): the two right-hand columns are from Russ (1993) and the two left-hand columns have been added.) 301

List of Appendices

Appendix A. Approaches to Creativity Research	350
Appendix B. Principles of Phenomenological Psychology	358
Appendix C. Methodological Implications of Phenonomenological Psychology	367
Appendix D. Biographical Details of Study 1 Participants	371
Appendix E. Advertisement for Study 1	373
Appendix F. Plain Language Statement for Study 1	374
Appendix G. Debriefing Statement for Study 1 and 2	375
Appendix H. Individual Structure of the Artistic Creative Process: Chris (Participant One)	376
Appendix I. Plain Language Statement for Study 2	383
Appendix J. The Experience of Creativity Questionnaire (ECQ) – Initial Version	384
Appendix K. Pattern Matrix Following Maximum Likelihood Extraction and Promax Rotation of Items in the Initial ECQ-Part A	390
Appendix L. Matrix of Inter-Correlations Between the Initial ECQ-Part A Factors	391
Appendix M. Pattern Matrix Following Maximum Likelihood Extraction and Promax Rotation of Items in the Initial ECQ-Part B	392
Appendix N. Items in the final Experience of Creativity Questionnaire	393
Appendix O. The Experience of Creativity Questionnaire (ECQ) – Final Version	398

Chapter 1

Introduction and Thesis Overview

1.1 Introduction

Creativity is surely one of the most significant psychological constructs. On the level of individual psychological processes, cognitive psychology has argued that nearly every moment of conscious awareness is a response to an internal or external 'situation', requiring adaptation through a synthesis of known and new information (Neisser, 1967; Nisbett & Ross, 1980; Schwartz & Reisberg, 1991). While such mental processes certainly involve what is referred to as intelligence, they are inherently creative because they involve the individual constructing or 'creating' their experience. Apart from this cognitive aspect of individual psychology, a fascination with creativity also has a prominent place in cultural history. Creativity has, as it were, captured the cultural imagination. Stories abound in religious and mythological systems of acts of creation, often to explain the origin of various aspects of the world: the initial shaping of man out of clay or mud by Jehovah in the Bible, in the Qur'an, and in early Chinese legends; the creation of mankind in God's image from the Judeo-Christian tradition; the extensive origin stories of Greek mythology; the creation and destruction of the universe by the dance of Shiva in the Hindu tradition; and so on. Indeed, these rich mythologies and religious stories of creation are themselves a testament to human creativity. Modern science, arguably the contemporary equivalent of these systems of meaning as a dominant social paradigm, continues as a brilliant expression of human creativity.

The significance of creativity on both the individual and socio-cultural level has led numerous authors to describe it as residing at the core of human existence. May (1975), in discussing Plato's vision of artists, comments: "These poets and other creative persons are the ones who express being itself, (Plato) held. As I would put it, these are the ones who enlarge human consciousness. Their creativity is the most basic manifestation of a man or woman fulfilling his or her own being in the world" (p.39-40). Csikszentmihalyi (1996) regards creativity as a central source of meaning in our lives

due to it being 'species-specific' – that is, creativity is a function that makes us distinctively human, distinguishing us from all other species. Additionally, Csikszentmihalyi (1996) argues for the centrality of creativity, drawing on his theory of 'flow', due to the sense of fulfilment and self-actualisation associated with it: "…when we are involved in it, we feel that we are living more fully than during the rest of life…(Creative activity) comes close to the ideal fulfilment we all hope to get from life, and so rarely do" (p.2). This observation is echoed in the prominent place creativity and aesthetic needs take in Maslow's (1954) hierarchy of human needs. Creativity has also been regarded as humanity's basic 'survival kit'; a means of coping with anxiety resulting from internal or external threats (Grossman, 1981).

Given the central role creativity plays in human experience, it is curious that creativity research has traditionally, in Sternberg and Lubart's (1999) words, "been one of psychology's orphans" (p.4). Guilford (1950), in his APA Presidential Address, contrasted the critical role of creativity in the fulfilment of human potential with the neglect it received as an object of psychological research. While it is true that this challenge sparked a growth in creativity research, studies in this area have remained limited considering its significance. Sternberg and Lubart (1999) examined entries in *Psychological Abstracts* from 1975 to 1994 and found that approximately 0.5% of the indexed articles concerned creativity, broadly defined. This was contrasted with the 1.5% of entries in *Psychological Abstracts* in the same 20-year period that concerned reading.

A number of psychological approaches have been employed in researching creativity. These include personality, cognitive, contextual, psychometric, psychoanalytic, and pragmatic approaches. These approaches have tended to focus on correlates of creativity (such as personality traits or psychopathology), characteristics of creative thought (the cognitive approach), developmental pathways to creativity (often through a case study methodology), or contexts of creativity (looking at social, environmental, or historical variables). The approaches seem to be guided by two dominant assumptions: firstly, that identifying the *conditions* of creativity (in the form of personal, cognitive, developmental, or social factors) will automatically provide an understanding of creativity itself; and secondly, that creativity is valuable and that the identification of characteristics and conditions of creativity will enable the facilitation or enhancement of creative ability.

However, while these research approaches are certainly rich and varied, psychological research has neglected the phenomenology of creativity, or the manner in which creativity is *experienced*. Despite a recent increase in the phenomenological emphasis in creativity research, it has not yet established itself as an approach in its own right. The current research locates itself within the framework provided by the recent growth of phenomenological studies of creativity.

The rationale for the current research is based on four main points:

1. A thorough understanding of the phenomenology of creativity is of inherent importance.
2. An understanding of the phenomenology of creativity may contribute to other, more established approaches in creativity research.
3. The phenomenological approach may assist in the development of a comprehensive, integrated model of creativity.
4. The research functions as an exploration of methodological possibilities, particularly the utility of combining qualitative and quantitative methodologies.

These points will be outlined sequentially, followed by a description of the structure of the thesis. Each point is addressed in full in section 3.4.

Phenomenology of creativity is inherently important

Phenomenological psychology maintains that modern psychology is based largely on the model of the natural sciences rather than the human sciences, creating a bias towards research questions based on criteria of correspondence and prediction (Giorgi, 1975; Smith, Harré, & Van Langenhove, 1995a). Through empirical qualitative research, phenomenological psychology attempts to apply a 'corrective' to this dominant approach by asking research questions concerned with experience or lived meaning. Hence, the phenomenological approach emphasises rigorous description and understanding (questions regarding the 'what-ness' of psychological phenomena) rather than prediction and explanation (questions regarding the 'why' of psychological phenomena). Since its emergence in the 1970s and ‘80s, the phenomenological approach has been usefully applied to a number of areas of psychological research, including a range of areas in clinical psychology (Fischer, 1989; Halling & Nill, 1989; Moss, 1989; Parnas, 2000; Rulf, 2003; Savoie, 1996; Sass, 1990, 1994), cognitive psychology (Giorgi, 1975, 1989a;

Wertz, 1989), developmental psychology (Briod, 1989), social psychology (von Eckartsberg, 1989), attachment theory (McIntosh, 1997), and affective experience (Fischer, 1989; Jager, 1989). As indicated above, the attitude of the current thesis is that creativity research has suffered from the bias of prediction and explanation identified by phenomenological psychology and lacks a thorough investigation of the 'shape' of the phenomenon itself. The phenomenological 'corrective' involves posing questions such as: how is creativity experienced? What are the essential features of this experience? What role does this experience of creativity play in an individual's being-in-the-world (the 'lived meaning')? The phenomenological attitude informs the assertion that understanding experiential aspects of the phenomenon of creativity is inherently important to a psychological investigation of creativity.

Phenomenology of creativity may contribute to other research approaches

There has been a paucity of attempts to link findings of phenomenological investigations to other research approaches. While phenomenological findings can certainly stand as 'ends in themselves', this need not be the case. Indeed, isolating the phenomenological approach through lack of dialogue with other research approaches will surely maintain phenomenological psychology's position at the periphery of psychology (see Chapter 3). Relating phenomenological components to the findings of other research approaches is particularly called for in the area of creativity research due to repeated observations that multiple factors have been associated with creativity, without the identification of complex and specific 'profiles' of creativity (Kaufmann, 2003; Mayer, 1999; Mumford, 2003a; Russ, 2003). For instance, studies looking at the relationship between creativity and personality have yielded a 'shopping list' of personality traits associated with creativity (see Feist (1999) for a review), yet a detailed formulation of the role of these personality traits is lacking (Policastro & Gardner, 1999). Similarly, studies that have looked at the relationship between creativity and affect have produced somewhat contradictory findings, with several authors suggesting that more complex models of the relationship are required (e.g., Kaufmann 2003; Russ, 1993). Mayer (1999), commenting on creativity research as a whole, describes the necessity of applying "…a combination of research methodologies that will move the field from speculation to specification" (p.459).

Through its focus on the experiential dimension, a phenomenological analysis of creativity clearly has implications for other schools of creativity research, particularly the personality, affective, and motivational approaches. These points of intersection occur through questions such as the following: do the ways in which creativity is experienced contribute to our understanding of why people with particular dispositions or personality characteristics are attracted to creative work? Do affective components of the experience of the creative process shed light on the contradictions in the creativity-affect studies? How do experiential aspects of the creative process relate to the motivational factors driving creative activity? The current research contends that these points of intersection will assist in generating more specific, refined research questions in existing approaches to creativity research (thus assisting with the accumulation of empirical findings) and be of value in building more complex theoretical models to account for existing findings and to drive continuing research. The particular focus of the current research is an exploration of the relationship between experiential aspects of creativity and creativity-personality research and creativity-psychopathology research.

The phenomenological approach may assist in development of a comprehensive, integrated model of creativity

A related aspect of the rationale for the current research emerges from recent comments that there has been a 'splintering' of endeavours in the field of creativity research, with a lack of dialogue and cross-fertilisation between the approaches (Mayer, 1999; Mumford, 2003a; Russ, 1993). These commentaries maintain that there is a need for models that draw on diverse research approaches in order to stimulate new approaches and theoretical conceptualisations, and which 'piece together' an overall picture of creativity. It is unlikely that a satisfactory comprehensive model of creativity can be developed without a thorough exploration of the phenomenology of creativity. The phenomenological approach promises to add greater complexity to our understanding of creativity and to suggest relationships between relevant variables. An example of this is the issue of causality, as discussed in section 3.4. These assertions are not only based on a philosophical commitment to phenomenological psychology, but also on the utility of a phenomenological exploration of creativity in shedding light on existing research approaches, as indicated above.

The current research as exploration of methodological possibilities

Finally, the current research serves as an exploration of methodological approaches, particularly the possibility of combining qualitative and quantitative methodologies. These research approaches are traditionally not combined in single studies. This methodological exploration is of importance because the successful application of combined qualitative and quantitative methodologies offers the possibility of greater flexibility in research questions, research design and methods of investigation, both in creativity research and other research areas. In the case of creativity research, repeated calls have been made for such methodological innovations (Mayer, 1999; Mumford, 2003a; Russ, 1993; Sass, 2000-2001a).

Why focus on artistic creativity?

Creativity researchers have tended to assume that creativity is rooted in general skills or traits that transcend particular domains. However, a growing body of research suggests that creative performance is domain specific (e.g., Baer, 1991; 1993; 1998; Brown, 1989; Kaufman & Baer, 2005). The domains that have most commonly been discussed are the fields of the arts and the sciences and, within these domains, further distinctions have been made. The generality or specificity of creativity is a debate far from resolved. However, following Baer (1998), who argues that the assumption of domain specificity will yield more useful results than approaching creativity as a general phenomenon, the current investigation approaches the construct of creativity through an examination of artistic creativity. The domain of the arts was chosen for two main reasons. Firstly, creativity research has most commonly used creative artists as prime instances of 'creativity', providing a rich background with which to compare results. Secondly, the phenomenological method of investigation draws on particular experiences of the phenomenon of concern. There is greater social recognition of artistic activity being a creative activity compared to other domains, such as scientific research. Indeed, several authors (Getzels & Csikszentmihalyi, 1976; Jung, 1984) emphasise that the artist's creation is commonly viewed as the definitive expression of the human capacity to create. Therefore, it was expected that artists would be more able to identify 'creative' experiences on which to draw for description than individuals from other domains.

1.2 Organisation of the Thesis

The thesis is comprised of seven chapters. Chapter 2 presents an overview of creativity research, with particular attention to creativity-personality and creativity-psychopathology research. Chapter 3 describes the main theoretical principles of phenomenological psychology, including an overview of its philosophical background and positioning within the general field of psychological research. The current state of creativity research is considered. A rationale is detailed for a phenomenological study of artistic creativity and for a study of the relationship between the phenomenology of artistic creativity and features of personality and psychopathology. Research questions are presented for the study as a whole.

Chapter 4 presents the first of two studies, an empirical phenomenological investigation of artistic creativity. The data gathering and data analysis procedures are detailed. A pilot study is presented. One of the outcomes of the pilot study was a decision to expand the phenomenological study of artistic creativity (the experiential dimension) to include a study of the personal meaning of artistic creativity (the existential dimension). The phenomenological findings of the interviews are presented according to the experiential and existential dimensions. Chapter 5 discusses the phenomenological findings in relation to previous research and considers directions for future research that emerge out of the phenomenological study.

Chapter 6 presents Study 2, which consists of two experiments. The chapter starts by summarising the relevant theoretical and empirical background, drawing on material presented in Chapter 2. Experiment 1 outlines the development of a questionnaire, the Experience of Creativity Questionnaire (ECQ), which measures the different experiential and existential aspects of creativity that emerged in Study 1. Experiment 2 is a psychometric investigation of the relationship between the phenomenology of artistic creativity, as measured by the ECQ, and personality and psychopathological features. The findings of the study as a whole are discussed in relation to the hypotheses and previous literature. Methodological limitations are considered and suggestions are made for future research.

Finally, Chapter 7 summarises and integrates the findings of the thesis. These are discussed with regard to existing literature, with particular reference to how the phenomenological findings can be integrated with the findings of more established approaches to creativity research. A bidirectional, cyclical model of the causal effect of experiential and existential aspects of creativity and personality and psychopathological features is proposed.

Chapter 2

Creativity, Personality and Psychopathology

2.0 Overview

The present chapter begins with a consideration of the definition and measurement of creativity. The various approaches to creativity research are outlined. This is followed by an overview of the areas of mainstream creativity research most relevant to the current program: creativity-personality studies and creativity-psychopathology studies. Phenomenological studies of creativity are reviewed in the following chapter.

2.1 Definition and Measurement of Creativity

The way in which creativity is conceptualised is of fundamental importance, because this provides a guide for research in the area. In the early days of creativity research, the definition of creativity was the subject of long debate (Ghiselin, 1963; McKinnon, 1965). The last decade seems to have produced a general agreement that creativity involves the production of novel, useful products (Mayer, 1999; Mumford, 2003a). However, as Parkhurst (1999) notes, this begs the questions of *how* novel or useful a product must be in order for it to be considered 'creative' and *who* judges the product to be novel or useful. Such a definition also emphasises a piece of work ('the product') rather than the person or the act. This definition also requires a fairly broad use of the term 'useful' – it must encompass both the 'usefulness' of a painting (in terms of evoking certain responses, advancing a tradition, and so on) as well as a scientific discovery, which might have obvious practical usefulness as, for example, in the sense of saving lives.

Despite the growth of agreement on a suitable definition of creativity, authors have continued to emphasise the heterogeneity of the concept (e.g., Becker, 2000-2001; Sass, 1992). Sass (2000-2001a), for example, suggests that the construct of creativity may remain an instance of what Wittgenstein (1953) called a 'family-resemblance concept', which refers to a grouping based on an open set of overlapping similarities or

shared features, no one of which need be present in all instances of the category. Sass reminds us that "what merits the honorific term *creative* will vary according to the context of production and the perspective, largely culturally determined, in which the product is seen, interpreted, and judged" (p.57). Of course, the relativity of the judgment of creativity not only applies to eminent creativity within a broad cultural context, but also to judgments researchers might make about the relative creativity of responses on specific creativity tests or on what counts as a 'real world' creative activity.[1]

The definition of creativity has generally proceeded along two lines: approaching creativity as an individual trait or using social recognition as an indicator of creativity. Eysenck (1993) usefully distinguishes these two conceptualisations as 'trait creativity' and 'achievement creativity'. The concept of trait creativity is based on viewing creativity as an individual trait that is normally distributed across the general population, akin to intelligence or dimensions of normal personality (Eysenck, 1995). This trait is regarded as underlying, and possibly existing independently of, actual creative behaviour. It might therefore be thought of as more primary than 'creative achievement'. Understanding creativity in this way makes it amenable to examination in everyday, non-eminent individuals. Based on the understanding that creativity involves novelty of thought, trait creativity has frequently been assessed using measures of divergent thinking, such as the Torrance Tests of Creative Thinking (Torrance, 1974) and the Wallach and Kogan (1965) divergent thinking battery. Divergent thinking tasks involve posing problems for which there are a multiple number of solutions (e.g., "Tell me all the different ways you could use a chair/newspaper/knife/tire" (Wallach & Kogan, 1965)). In contrast, convergent thinking tasks involve problems for which there is a single correct answer as, for example, in typical intelligence tests. With some differences of detail between investigators, divergent thinking is measured by the fluency, flexibility, originality, and elaboration of responses. Other measures of trait creativity include personality-based measures, interest or attitude inventories, word association tasks, and aesthetic preference measures (e.g., the Barron-Welsh Art Scale (BWAS); Welsh, 1987).

[1] A related point is that debate surrounding the broad issue of the definition of creativity has evolved within a Western cultural context. The contextual approach to creativity has led to recent attempts to examine cross-cultural differences in the understanding of creativity (see Lubart (1999) for a review). Lubart (1999), for instance, argues that some Eastern conceptions of creativity are less focused on innovative products, instead

The validity and reliability of trait creativity measures is an area of ongoing debate (see Hovecar & Bachelor, 1989; Plucker & Renzulli, 1999). Divergent thinking tests have face validity, in that highly creative people rely on original thinking to produce novel work (Eysenck, 1995). While there is strong evidence for the reliability of divergent thinking tests (e.g., Cline, Richards, & Abe, 1962; Eisen, 1989; Hoepfner & Hemenway, 1973; Torrance, 1981; Williams, 1979, 1980), the predictive and discriminant validity of these tests enjoys mixed support (Bachelor, 1989; Clapham, 1996; Cooper, 1991; Fox, 1985; Renzulli, 1985; Rosen, 1985; Thompson & Anderson, 1983). For example, Weisberg (1993) asserts that divergent thinking tests "do not measure either creative thinking or the capacity to become creative" (p.61). Others have suggested that divergent thinking tests are strongly confounded by testing conditions, susceptibility to coaching, and the participants' motivation levels (Hattie, 1980; Rawlings, Twomey, Burns, & Morris, 1998; Wallach, 1976). Although there is some evidence of construct validity – for example, in empirical findings that artists score significantly higher on measures of original thinking than non-artists (e.g., O'Reilly, Dunbar, & Bentall, 2001; Ralevski, 2001) – the evidence is not unequivocal (e.g., Dellas & Gaier, 1970). The question of construct validity is complicated by the lack of ecological validity of these tests – that is, they may tap specific mental abilities that have little in common with the actual activities engaged in by creative people (see Conrad, 1990). Hovecar and Bachelor (1989) maintain that the construct validity of trait creativity measures is also thrown into question by their frequently weak inter-correlations. While they note that this might reflect the multidimensional nature of creativity, they suggest that "only those studies that include a measure of real-life creativity" (Hovecar & Bachelor, 1989, p.62) warrant serious attention.

The definition and measurement of real-life or 'achievement creativity' is based on the production of works that are publicly recognised as novel and useful. Mumford and Gustafson (1988) argue that there are three ways in which public recognition might be operationalised: in the form of social acclaim; recognition of the novelty of production by the field in which an individual works; and esteem from knowledgeable figures in the field, such as peers, teachers or supervisors. Eysenck (1994) maintains that while high

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emphasizing creativity as involving a state of personal fulfillment (see Sundararajan (2004) for an analysis of Chinese aesthetics).

trait creativity is necessary for achievement creativity, recognition and esteem from others is dependent on a number of other factors, including intelligence, particular environmental conditions (e.g., education level, socioeconomic background), and personality traits such as confidence and non-conformity.

Clearly, studies of achievement creativity have generally used significantly smaller sample sizes than studies of trait creativity, with a case study method commonly being employed (see Gardner, 1997; Gruber & Wallace, 1999; Policastro & Gardner, 1999). The advantage of researching creativity defined in this way is that one circumvents the need for an artificial, and potentially limited, measure of creativity. Creativity is ensured, as it were, by the real-world shared recognition of its existence in the individual. As Simonton (1999) writes, this approach examines "…those creative individuals whose status as creators is unquestionable" (p.116).

However, there are complexities to researching creativity in this way. As noted above, it has been argued that judgments of eminence, worldly success or public endorsement are highly context-dependent, always occurring against the backdrop of prevalent social values, attitudes, and conventions (e.g., Sass, 1992; 2000-2001b). Focusing studies of creativity on eminent individuals in a particular historical period might unduly emphasise cultural conceptions of creativity in operation during that period. This point is illustrated by Sass' (2000-2001b, 2000-2001c) criticisms of Jamison's (1993) emphasis on romantic conceptions of creativity. Secondly, it is possible that factors associated with recognition and fame in fact contaminate the study of creativity in eminent individuals (Kinney et al., 2000-2001; Sass, 2000-2001b; Schuldberg, 2000-2001a). Several studies have indicated that certain characteristics distinguish eminent artists from non-eminent artists. Götz and Götz (1979b) found that the personality trait of tough-mindedness was higher in the former than the latter. Ralevski (2001) found that eminent painters tend to be older, more narcissistic and show a greater inclination towards isolation and anhedonia than non-eminent painters. While it is possible to interpret these characteristics simply as indicators of higher creativity leading to greater social recognition, it is also possible that they reflect independent factors that increase the likelihood of an individual's work being publicly recognised. For example, an individual who is more ambitious, more tolerant of criticism, who shares the concerns of her audience, and who is able to foster professional networks and promote her work, may

have more chance of being publicly recognised than an individual who lacks these personal qualities yet whose work has equal creative merit. In other words, success in a domain may not necessarily be synonymous with originality. Difficulties with studies of eminent individuals will be returned to in section 3.6., when the creativity-psychopathology relationship is addressed.

These complexities, along with the practical difficulties of conducting research with eminent individuals outside the case-study method, have led researchers to study creativity by virtue of group membership and vocational or avocational activities – for example, studying non-eminent artists. Studies of this sort have taken a prominent role in creativity research. This approach preserves the advantage of a 'real-world' definition of creativity, avoiding the need for an artificial measure of creativity. One might speculate about the possible conflating factor of self-image or role adherence ('playing artistic roles') in such a population. However, as Schuldberg (2000-2001b) suggests, the problem of role adherence may in fact be less operative in this population of sub-eminent creativity than in eminent individuals. Additionally, the phenomena of role adherence and conformity may be inescapable in any behaviour or at any level of measurement (Schuldberg, 2000-2001b).

Defining creativity by group membership ('artists') is the approach used in the current research. This approach was adopted for the following reasons. Firstly, the empirical phenomenological approach is based on concrete descriptions of experiences of the phenomenon under investigation. Therefore, it is highly desirable to use participants who can readily identify and describe experiences of creativity. This is more likely to be the case in a sample of artists than in the general population. Secondly, the use of this population avoids the difficulties with trait creativity measures noted above. Finally, as described above, using this population preserves the advantages of a 'real world' definition of creativity while avoiding the possibly contaminating factors associated with eminence. While the sample used in the current research consists mainly of professional artists, some of whom are well known within their field, it does not include participants who are eminent in the sense of having achieved wide social acclaim.

2.2 Creativity Research

Since Guilford's (1950) catalysing APA Presidential address, creativity research has proceeded along a number of lines. These approaches to creativity research have varied in their emphasis on the creative person, the creative product, or the creative process. Another, relatively recent, point of variation has been whether to focus research on the individual or on the individual-context relationship. Two fairly recent handbooks, *Creativity Research Handbook* (Runco, 1997) and *Handbook of Creativity* (Sternberg, 1999), provide a sampling of the variety of research approaches in the area. Mayer (1999), in the second of these handbooks, provides a useful taxonomy of the "seemingly chaotic diversity of research methodologies and questions" (p.449). He argues that creativity research has fallen into six major categories: the psychometric, psychological, biographical, biological, computational, and contextual approaches, with the first three of these approaches being the most well-established. Each of these six approaches has focused on three distinct research paradigms: describing the nature of creativity, comparing creativity and non-creativity, and relating factors to creativity. These approaches are summarised in Table 2.1, which is adapted from Mayer (1999), and described in greater detail in Appendix A. The concern with lived experience in the phenomenological approach is not represented in any of these approaches, a point that is addressed in section 3.4 when presenting the rationale for the current thesis.

The following sections review the literature in three areas of creativity research most relevant to the current thesis - creativity and personality research; creativity and psychopathology research; and phenomenological studies of creativity.

Table 2.1 *Description of Six Research Approaches to Three Research Paradigms*

Approach and Paradigm	Description
Psychometric	
Describe	Develop a test to measure creativity
Compare	Compare people who score high and low on creativity
Relate	Determine relations between creativity measures and other measures
Psychological	
Describe	Describe the cognitive processes involved in creative thinking
Compare	Compare the cognitive processes in creative and noncreative thinking
Relate	Determine factors that affect or improve creative thinking
Biographical	
Describe	Provide a qualitative narrative of a case history of a creative person
	Provide a quantitative analysis of a case history of a creative person
Compare	Provide a qualitative description of commonalities of case histories of creative people
	Provide a quantitative analysis of commonalities of case histories of creative people
Relate	Identify life events in a case history that foster the development of a creative person
	Provide a quantitative analysis of events in case histories that foster the development of creative people
Biological	
Describe	Describe the biological correlates of creative thinking
Compare	Compare the biological characteristics of creative and noncreative people
Relate	Determine how biological impairments affect creativity
Computational	
Describe	Produce computer code that simulates creative production
Compare	Compare computer programs that are creative and noncreative
Relate	Determine how changes in a program affect creativity
Contextual	
Describe	Describe creativity in social and cultural contexts
Compare	Describe conceptions of creativity in different cultures
Relate	Identify techniques to overcome barriers to creativity in a social context
	Identify the evolutionary processes that shape human creativity

Adapted from Mayer (1999).

2.3 Creativity and Personality Research

The relationship between personality traits and creativity has played a prominent role in creativity research. Using Mayer's (1999) taxonomy of approaches in creativity research, the personality trait perspective falls most clearly in the 'comparing' and 'relating' research paradigms of the psychometric approach. Following the distinction between trait creativity and real-life creativity (Eysenck, 1993), there have been two major types of studies examining the relationship between creativity and personality: studies that address the relationship between measures of creativity and specific personality traits and studies that attempt to identify the personality characteristics of creative individuals. Measures used in both types of studies are diverse, including a variety of self-report measures (e.g., checklists, rating scales) and teacher/external ratings of past behaviour, personality, and attainments (Plucker & Renzulli, 1999).

Overall, there has been a fair degree of consistency in the findings of studies of personality characteristics associated with creativity. Barron and Harrington (1981), in a review of the personality trait research, assembled a list of the core characteristics of creative individuals identified in the research: high valuation of aesthetic qualities in experience, broad interests, attraction to complexity, high energy, independence of judgement, autonomy, intuition, self-confidence, ability to resolve antinomies or to accommodate apparently opposite or conflicting traits in one's self-concept, and a firm sense of self as 'creative'. They noted that this research is consistent with early findings in the field, such as in the research programs of Barron (1969), MacKinnon (1965), and Cattell and Butcher (1968). In turn, there is a significant degree of overlap between Barron and Harrington's (1981) list and the core personality characteristics associated with creativity identified by Davis (1992) in a review of the literature a decade later. Davis (1992) concluded that personality characteristics of creative people include awareness of their creativity, originality, independence, risk-taking, personal energy, curiosity, humour, attraction to complexity and novelty, artistic sense, open-mindedness, need for privacy, and heightened perception.

As indicated by these lists, the range of personality constructs that have been associated with creativity is fairly extensive. A full consideration of creativity-personality research is beyond the scope of the current section. Rather, this section reviews the

research relating creativity to two major models of personality - McCrae and Costa's (1987) 5-factor model and Eysenck and Eysenck's (1976; Eysenck, 1992) 3-factor model. We focus on these two models both because of their prominence in the personality literature and because they include personality constructs which have shown substantial correlations to creativity in past research. This is followed by a consideration of the relationship between creativity and the construct of mental boundaries, which is of particular relevance to the current research. Finally, several general models of the causal mechanisms underlying the relationship between personality traits and creativity are described.

Costa and McCrae's five-factor model

McCrae and Costa's (1987) popular five-factor model of personality (FFM) is only one version of the five-factor approach to personality, which has a long history (see Deary, 1996; Goldberg, 1990, 1993; Norman, 1963; Tupes & Christal, 1961, reprinted 1992 for other five-factor models). However, McCrae and Costa's model is of particular interest to the current discussion due to its broad Openness to Experience factor, which has been found to be of particular relevance to creativity. As noted by writers such as Goldberg (1993), adjective based five-factor models in English frequently produce somewhat narrower 'openness' factors, which emphasise the intellectual components of the construct. Indeed, Goldberg's own openness factor is called 'Intellect', in recognition of this difference. Goldberg (1993) argues that Costa and McCrae's broader Openness to Experience factor reflects the history of their model, in which the current five-factor model grew from an earlier three-factor model.

The five broad bipolar dimensions that constitute Costa and McCrae's version of the model include Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness. Each of these domains is composed of six facets, or lower-level traits. Although direct examination of the relationship between creativity and the FFM has not been widely conducted, enough work has accumulated on the separate FFM domains and creativity for trends to be identified (see Feist (1999) for a review). The domain that has been related to creativity most consistently, both in theoretical and empirical work, has been Openness to Experience. It is of note that Openness is a factor thought to be substantially uncorrelated with Eysenck's P dimension; indeed, McCrae (1987) found a correlation coefficient of 0.0. McCrae and Costa (1997)

conceptualise Openness as a mode of processing experience that can be thought of in both structural and motivational terms. Specifically, Openness involves interest in a variety of experiences for their own sake in the areas of fantasy, aesthetics, feelings, actions, ideas, and values. A defining feature of this personality domain is the recurrent need to enlarge and examine experience. Clearly, there are strong *prima facie* connections between this domain and creativity.

In empirical studies, Openness consistently emerges as having a positive relationship with creativity measures. McCrae (1987) reports that the correlation between Openness (whether self-, peer-, or spouse-rated, and whether assessed by questionnaire or by adjective checklist) and a variety of divergent thinking measures tends to be around .40. McCrae and Costa (1997) provide a thorough review of the literature relating to Openness and in fact use the creative behaviour of artists as the prime example of individuals high in this domain ("…artists can be seen as the exemplars of Openness just as neurotics are exemplars of Neuroticism" (p.842)). Personality characteristics which correlate with Openness include: unconventional, perceptive, empathic, flexible, high need for change, variability in mood, wide range of interests, variety of mood states, tolerance of ambiguity, preference for complexity, and sensation seeking (McCrae & Costa, 1997). Many of these characteristics have been reported in studies of the personality correlates of creativity.

Evidence for the relationship between Openness and creativity has been found in studies examining both trait creativity and 'real life' creativity. The McCrae (1987) findings are based on trait creativity, as assessed through divergent thinking measures. High Openness has been found to be positively associated with trait creativity measures other than divergent thinking, lending further weight to its association with the general construct of creativity. For example, Rawlings et al. (1998) used a measure of aesthetic preference in a sample of undergraduate students. They found that Openness was associated with a liking for polygons that were self-defined as "complex" and "meaningful". As preference for complexity in visual figures has been found to indicate creativity, this finding suggests an association between Openness and creativity. Dollinger, Urban, and James (2004) administered a range of creative cognition and creative personality measures to a student sample and found that Openness related positively to most of these measures.

In terms of 'real life' creativity, a large number of studies have found elevated Openness scales in creative samples. For example, Caraca, Loura, and Martins (2000) administered the NEO-Personality Inventory-Revised (NEO-PI-R; Costa & McCrae, 1992) to a 'real life' creative sample (18 sculptors and 19 scientific researchers) and a non-creative sample. The creative group scored significantly higher on the Openness scale than the non-creative sample. This difference was due mainly to raised scores on the Aesthetics and Ideas facets, suggesting that creative individuals may be characterised particularly by a readiness to like new ideas and a fondness for solving puzzles, in addition to their interest in a range of 'aesthetic' pursuits. Studies of 'real life' creativity using personality tests other than Big Five model inventories have yielded results consistent with the high Openness findings. For instance, Domino (1974) studied cinematographers and found that they were interested in seeking out new experiences. More recently, Pufal-Struzik (1992) used Cattell's 16PF to examine personality differences between a large sample of artists (painters, poets, writers, and film directors) and a control group of non-creators. Results indicated that artists were more aesthetically oriented, imaginative, and intuitive than the control group.

Most of the studies examining the relationship between 'real life' creativity and the FFM have examined artistic creativity. However, as indicated by the Caraca et al. (2000) study mentioned above, high Openness has been found to be associated with both artistic and scientific creativity. Although direct measures of the FFM have not been widely used, a number of studies provide indirect evidence of Openness in scientific creativity. Many of these findings stem from data on the flexibility scale (Fe) of the California Psychological Inventory (CPI; Gough, 1987). The Fe scale taps into flexibility and adaptability of thought and behaviour, as well as the preference for change and novelty. A consistent finding is that creative and eminent scientists tend to be more open to experience and more flexible in thought than less creative and eminent scientists (Feist & Barron, 1996; Garwood, 1964; Gough, 1961; Helson, 1971; Helson & Crutchfield, 1970; Parloff & Datta, 1965).

Although attempts to explain the relationship between Openness and creativity have not been as 'neat' as Eysenck's suggestion of a common over-inclusive thinking style between P and creativity, a number of persuasive reasons for the connection have been

advanced. McCrae (1987) suggests three possibilities. Firstly, open people may be more fascinated with open-ended, creative, problem-solving tasks. This would result in higher scores on such tasks, which are often used in trait creativity studies, and also draw open individuals towards careers in 'creative' areas. Secondly, open individuals may have developed cognitive skills associated with creative, divergent thinking, namely flexibility and fluidity of thought. This is consistent with McCrae's (1994) argument that a "fluid and permeable" structure of consciousness typifies open individuals. Finally, open people may have an interest in seeking sensation and more varied experiences, and this experiential base may serve as the foundation for flexibility and fluency of thinking. Further research is required to determine the accuracy of these speculations.

Of relevance to the Openness-creativity relationship is the argument that open individuals have more access to thoughts, feelings, and impulses than non-open individuals (McCrae & Costa, 1997). McCrae and Costa (1997) maintain that this is facilitated by two processes. Firstly, open individuals have a greater tolerance of ambiguity, enabling a variety of thoughts and feelings to be experienced simultaneously. Secondly, open individuals have greater access to 'primary process' thinking, a concept derived from psychoanalytic literature which refers to the mechanism by which unconscious instinctual energy surfaces in the form of images or ideas. Both of these constructs have played an important role in creativity research and are thought to be particularly prominent in creative individuals (Cohen, 1961; Gamble & Kellner, 1968; Murray & Russ, 1981; McCrae & Costa, 1997; Pine & Holt, 1960; Sternberg, 1988; Suler, 1980; Vernon, 1970). McCrae and Costa (1997) suggest that these processes may be responsible for the strong capacity for absorption and deeply focused attention in the open individual, attributes which have also been found to characterise the process of creative production (Csikszentmihalyi, 1996).

McCrae's (1987) finding that the other domains of the FFM correlated at near-zero levels with divergent thinking led him to maintain that creativity is uniquely related to Openness to Experience. However, other findings have been reported which suggest relationships between each of the other four domains and creativity. Although these studies are certainly not as extensive and have often not used direct measures of the FFM, relationships between creativity and neuroticism, lack of conscientiousness, introversion, and lack of agreeableness have been reported (see Feist (1999) for a review).

The relationship between creativity and neuroticism has been of particular research interest. As noted below in relation to Eysenck's model of personality, features associated with neuroticism, such as anxiety, emotionality, and sensitivity, have been found to be linked with creativity (Barron, 1972; Bakker, 1991; Hammond & Edelmann, 1991; Jamison, 1993; Kemp, 1981; Marchant-Haycox & Wilson, 1992). For example, Marchant-Haycox and Wilson (1992) administered the Eysenck Personality Profiler (Eysenck, Barrett, Wilson, & Jackson, 1992) to 162 performing artists (actors, dancers, actors, and singers) and found that this group scored significantly higher than control participants on anxiety, guilt, and hypochondriasis. Similarly, Pufal-Struzik (1992) found that a large sample of artists displayed intensified neurotic tendencies on the 16PF compared to a group of non-creators. Importantly, she found that these neurotic tendencies did not disturb effective functioning.

However, the relationship between neuroticism and creativity does not seem to be domain general. Research suggests that neuroticism is a feature more characteristic of artistic creativity than other domains of creativity, such as scientific creativity (Bamber, Bill, Boyd, & Corbett, 1983; Cross, Cattell, & Butcher, 1967; Russ, 1993; Sheldon, 1994). That is, the common stereotype of the artist as an emotionally labile and sensitive person has generally been supported by the empirical literature. For instance, Sheldon (1994) compared advanced art and science students on measures of emotionality and subjective well-being. He found that the artist group experienced more frequent negative affectivity, more anxiety symptoms, and more global symptomatology compared to the scientist group. In contrast, scientists have been found to be less susceptible to negative emotions and more emotionally stable, relative to artists or population norms (Cattell, 1963; Cattell & Drevdahl, 1955; Drevdahl, 1956; Eiduson, 1962). Research looking at the relationship between neuroticism and creativity has generally been conducted with 'real world' samples. Further exploration of the relationship between neuroticism and trait creativity would provide greater subtlety to our understanding of the role of neurotic personality features in creative behaviour. For example, widening the research approach would assist in addressing the question of whether there is a general relationship between neuroticism and creative cognition or whether it is a feature associated more with occupational role (e.g., being a professional artist)?

Research findings have suggested that not only is artistic creativity characterised by greater neuroticism and associated features, but also that it is characterised by a greater openness to affective states and greater affect intensity (Gardner, 1973; Russ, 1993; Sheldon, 1994). For example, in Sheldon's (1994) study of advanced art and science students, he found that the artists were higher in affect intensity and listed fewer strivings to contain or control emotional experience. Russ (1993) argues that this may reflect the particular requirements of this domain of creativity. She states, "One of the main differences between artistic and scientific creativity may be the importance of getting more deeply into affect states and thematic material in artistic creativity" (p.67). For the sake of generating interesting material for artworks, it may be necessary to "…get to basic affective content, primary process material, or drive-laden material…" (Russ, 1993, p.67). This understanding of the art-making process is also apparent in Rothenberg's (1990) description of the anxiety that uncovering primary process material can cause in writers. The openness to and ability to tolerate affective states, unpleasant as well as pleasant, for the sake of the art-making process suggests a strong underlying commitment to and sense of the importance of this process. An influential formulation of this process is the psychoanalytically-derived concept of regression in the service of the ego (Kris, 1952), which will be discussed further in section 2.4.

However, one must be cautious not to exaggerate the notion of emotionality being associated exclusively with the creative process in art and not being present in other creative domains, such as science. Research suggests that this is not the case (e.g., Feist, 1991; Shaw, 1994). Feist (1991), for example, found that the discovery stages of scientific creativity are often very intuitive and emotional, just as the elaboration stages of artistic creativity can be very technical and tedious. This is also apparent in Gardner's (1993, 1997) case studies of eminent creators.

Eysenck's 3-factor model

While Eysenck's early attempts to associate personality and aesthetic preference concentrated on the Extraversion (E) dimension, his more recent and most substantial theoretical work in the areas of creativity and aesthetic preference emphasised the Psychoticism (P) dimension of personality. The P dimension, along with E and Neuroticism (N), forms the third major personality dimension in Eysenck's theory and is

thought to underlie predisposition to psychotic and criminal behaviour (Eysenck & Eysenck, 1976). Although not used in the current research, considerable research on the relation of personality and creativity has involved P, which will therefore be discussed in some detail.

Eysenck (1993), in an attempt to provide an integrated theory of creativity and personality, posits that the mechanism linking creativity and P is a common over-inclusive thinking style. Over-inclusive thinking involves extension of the boundaries of relevance. While this can result in creative cognition through unusual associations, it is also a major component of psychotic thought disorder. A number of studies have been used to support the contention of a common element underlying creative cognitive processes and P or psychotic thought processes more generally. For example, Dykes and McGhie (1976) examined attentional processes in highly creative adults, low creative adults and patients with schizophrenia. They found that, compared to the low creativity group, highly creative adults and patients with schizophrenia both demonstrated abnormally wide attention ("allusive thinking"), as judged by responses on the Lovibond (1954) Object Sorting Test. They concluded that creative and psychotic thought processes both involve sampling a wide range of available environmental input, providing support for the over-inclusive thinking hypothesis. Dykes and McGhie (1976) maintain that the involuntary widening of attention tends to have a deleterious effect on performance in the case of psychotic thought processes; in contrast, the highly creative individual is more able to successfully process the greater input without this incurring a performance deficit. This notion of differential 'use' of an over-inclusive thinking style is summarised in Woody and Claridge's (1977) use of the terms "controlled usefulness" and "uncontrollable impairment" to refer to over-inclusive thinking in creative cognition and psychotic thinking respectively. Eysenck (1993) introduces the possibility of a neural underpinning of over-inclusive thinking in the form of the dopaminergic and serotonergic systems of the brain.

There is substantial empirical support for the association between the P dimension and creativity, both from studies assessing creativity with psychometric tests and from real-life measures. Divergent thinking tasks have often been used as an indirect measure of over-inclusive thinking due to their conceptual similarity. Woody and Claridge (1977) examined the relationship between measures from the Wallach-Kogan (1965) divergent

thinking tests and the Eysenck Personality Questionnaire (EPQ; Eysenck & Eysenck, 1975) in a student sample. Strong positive correlations emerged between creativity scores (high divergent thinking) and P scores, while no relationship was found between creativity and the E or N scales, suggesting that P is of particular relevance to creative cognition. Stavridou and Furnham (1996) replicated these findings, again using a student sample, although they also found significant correlations between scores on the *visual* tasks of the Wallach-Kogan (1965) divergent thinking tests and both N (in a negative direction) and E.

With regards to real-life measures, a number of studies indicate that creative samples rate higher on the P scale than the general population. Merten and Fischer (1999) administered the EPQ to 40 writers and actors and found that this sample scored significantly higher on the P scale, but not on the N and E scales, compared to a control group. This finding was replicated in a large sample of painters and sculptors (Götz & Götz, 1979a). Rushton (1990) assessed personality, using the EPQ, and creativity, using a measure of publication and citation counts and enjoyment of research, in a sample of university professors. Although this method is questionable due to the possibility of conflating other factors, such as ambition, with creativity, a positive association between creativity and P emerged. Of note is Götz and Götz's (1979b) finding that P was particularly elevated amongst successful artists compared to less successful artists, but that there was no correlation between success and originality. This suggests that personality traits represented by the P dimension may contribute to achieving *success* in a domain, independent of the creativity or originality of one's contribution.

While there is substantial empirical support for the connection between the P dimension of Eysenck's model and creativity, the evidence is not unequivocal. Several trait creativity studies have found weak correlations between the P scale and measures of divergent thinking (Kidner, 1976; Rawlings, 1985; Rushton, 1990). Ralevski (2001) measured personality, word association, and affective symptomatology in a sample of 80 accomplished artists and 34 control participants. Although a variety of psychosis-proneness measures were found to be elevated in the artist sample, P was found to be negatively associated with originality, as measured by responses on the word association task. Cox and Leon (1999) found that P was associated with measures of

creative personality and perception in a student sample, but that it demonstrated no relationship with divergent thinking. Instead, divergent thinking was found to be related to a measure of social anhedonia. While this finding is consistent with Eysenck's (1993) general contention of a relationship between P and creativity, it presents a challenge to the notion of over-inclusive thinking being the central mechanism in this relationship.

Indeed, it has been suggested that the association between P and creativity may in fact be due not so much to a common over-inclusive thinking style but to a common factor characterised by a willingness to be unconventional or engage in mildly antisocial behaviour (Woody & Claridge, 1977). This factor may result in behaviours or responses that appear to be original because of their unconventional or socially deviant nature. This suggestion is consistent with the findings of Rawlings and Toogood (1997), who examined the relationship between P and divergent thinking tasks. Instead of rating responses on the divergent thinking tasks only in terms of fluency and originality, which is the standard method of scoring these tasks, the researchers also rated responses in terms of their mildly antisocial or socially 'taboo' nature. The findings indicated that there were two factors responsible for the variance in P: one characterised by 'original' responses, the other characterised by over-inclusive thinking, schizotypal traits and 'taboo' responses. P was found to be equally and significantly correlated with both 'unoriginal taboo' and 'original taboo' responses, but no significant association was found with 'non-taboo original' responses, a pattern of results also reported by Rawlings (1984). These findings suggest that over-inclusive thinking alone does not account for creative behaviour, as measured by divergent thinking tests. Furthermore, the association of P with taboo responses rather than original responses *per se* suggests that socially deviant responses may indeed play a role in the relationship between P and creativity. This is consistent with recent research indicating a relationship between creativity measures and a personality construct labelled 'the need to be different', which represents the value set on behavioural variation for its own sake (Joy, 2004; Joy & Hicks, 2004).

Although the P dimension was constructed as a measure of a continuum ranging from psychotic through average to highly socialised, conventional, and altruistic, it has been argued that the P scale is in fact a measure of antisocial tendencies, rather than being strongly related to psychosis (Block, 1977; Claridge, 1981; Nettle, 2001). Indeed, it is

empirically well established that the P dimension captures socially deviant and antisocial personality traits (Cravens-Brown, 2003; Deary, Peter, Austin, & Gibson, 1998; Eysenck & Eysenck, 1977; Rebollo, Herrero, & Colom, 2002). For example, Chapman, Chapman, and Kwapil (1994) found that the P scale strongly predicted criminality and substance abuse, but not psychotic breakdown, over a ten-year period in a large cohort of college students. Drawing on personality studies of creativity and a review of eminent people who have been jailed, Brower (1999) observes that there are a number of 'points of contact' between the constructs of creativity and deviance: creative individuals rebel against and disrupt dominant ways of thinking; they are characterised by non-conformity, attending to personal rather than group values; and are more willing to take risks.

Although there is no evidence of an association between creativity and more extreme manifestations of antisocial behaviour (see Eisenman, 1992, 1999), a number of studies support the possibility of an association with mild social deviance. Welsh (1975), in an adjective checklist study, found that creative students rated themselves as unstable, disorderly, rebellious, tactless, self-seeking, rejecting of rules, uncooperative, and impulsive, amongst other traits. This is consistent with Garwood's (1964) finding, using a group of male science students, that highly creative students score significantly lower than less creative students on measures of socialisation, self-control, affection, and desire to make a good impression. A host of studies looking at personality traits of creative artists reveal a pattern of results depicting personalities that are conflicted, impulsive, non-conformist, rule-doubting, sceptical, independent, and not concerned with obligations or duties (see Feist (1999) for a review). Feist (1999) notes that only one study has reported a negative relationship between being an artist and radicalism (Buttsworth & Smith, 1994), and that this may partly be explained by the nature of the sample used – performance-oriented music students.

Further support for a relationship between creativity and mild social deviance is found in studies that indicate that creativity, both in the artistic and scientific domains, is associated with personality characteristics such as hostility, aloofness, unfriendliness, arrogance, and lack of warmth (Bachtold & Werner, 1972; Drevdahl & Cattell, 1958; Feist, 1993; Getzels & Csikszentmihalyi, 1976; Ham & Schaughnessy, 1992; Marchant-Haycox & Wilson, 1992). However, many of these studies suffer from a possible conflation of achievement or eminence with creativity. For example, Feist (1993)

reported a structural equation model of scientific eminence in which the path between observer-rated hostility and eminence was direct and the path between arrogant working style and eminence was indirect but significant. Interpreting these findings purely as indicating a positive relationship between hostility and arrogance and scientific creativity ignores the presumably important role of ambition and drive to achieve in eminent individuals, which may in part be independent of creative ability. However, this criticism is tempered by the findings of two studies that reported a similar pattern of results in creative children and adolescents, a population in which one would expect the effect of factors possibly associated with creative achievement, such as ambition, drive and competitiveness, to be less marked. Both of these studies (Carlsson & Smith, 1986; Smith & Carlsson, 1986) found positive associations between a measure of creativity and identification with an aggressive role. In contrast, participants who scored low on the creativity measure identified more readily with a passive, surrendering role.

Sitting hand-in-hand with findings of social deviance being related to creativity are findings that creativity is associated with personal independence, independence of judgement, autonomy, and unconventional values (Bachtold & Werner, 1973; Barton & Cattell, 1972; Cattell & Kline, 1977; Csikszentmihalyi & Getzels, 1973; Jurcova & Stubnova, 1999; Kusa, 1999; Perkins, 1993). For example, both Bachtold and Werner (1973) and Barton and Cattell (1972) found that artists not only rated low on Conformity (Factor G) and high on Radicalism (Factor Q1), but also high on the Self-Sufficiency factor (Factor Q2) of the Sixteen Personality Factor Questionnaire (16PF; Cattell, Eber, & Tatsuoka, 1970). While these studies emphasise more positive and functional aspects of the creative personality, they complement the hypothesis of mild social deviance being associated with creativity.

A number of other studies have found not only the P scale, but also the N scale, to be elevated in creative samples (Booker, Fearn, & Francis, 2001; Wills, 1984). This finding has been replicated across cultural groups: Hu and Gong (1990) and Mohan and Tiwana (1987) both found elevated P and N scales in samples of Chinese and Indian writers respectively. The relationship between creativity and the construct of neuroticism was addressed in the discussion of the 5-factor model of personality, as there is a strong similarity between the N constructs as they appear in the 3-factor and the 5-factor models.

In sum, there is good empirical support for an association between the P dimension of Eysenck's model of personality and creativity. This support has been gathered from a range of studies which have used both trait-based and achievement-based measures of creativity and which have assessed creativity in different domains (e.g., artists, scientists, engineers) and sub-domains (e,g., painters, musicians, writers). It remains an open question whether the association between P and creativity is due primarily to a common over-inclusive thinking style or to socially deviant personality traits resulting in more 'original' behaviour, or to a combination of both of these possibilities. Additionally, there is some evidence for the N dimension being related to creativity, although this finding has generally emerged in studies of artistic creativity. This is consistent with general findings that the artistically creative person has a disposition towards intense affective experience and has been found to be more anxious, emotionally labile, and impulsive than creative scientists (see Feist (1999) for a review).

Now that the relationship of creativity to two major models of personality has been reviewed, discussion will turn to the construct of mental boundaries, which has particular relevance to the current research.

Mental boundaries

Hartmann's (1991) concept of mental boundaries emerged from his studies of dreams and nightmares. In these studies, he noted a tendency for nightmare sufferers to frequently show a distinctive pattern of personality characteristics: open, sensitive, vulnerable, artistic, trusting, defenceless, and fluid (Hartmann, 1984; Hartmann, Russ, Oldfield, Sivan, & Cooper, 1987). Hartmann (1991) argued that the concept of 'thin' or permeable boundaries captures these personality traits in a single construct. Variants on the concept of boundaries have a long history in psychology and psychiatry, appearing in the work of Freud, Jung, and James, and more directly in the work of Lewin (1936), Rapaport (1960), Blatt and Ritzler (1974), and Gardner, Holzman, Klein, Linton, and Spence (1959).

Hartmann (1991) conceptualises mental boundaries as a broad construct with relevance to a wide variety of domains. Individuals with 'thin' boundaries are presumed to have relative difficulty distinguishing sleeping from waking experience; to report 'unusual

experiences' in a range of situations; to have difficulty differentiating thought from feeling; to be close to their childhood feelings; to frequently get 'too close' in personal relationships; to be sensitive to the feelings of others; place no importance on neatness and precision; prefer living areas with flexible spaces; and believe a good teacher or parent should remain in part a child. In addition, such individuals dislike clear and specific roles in organisations; believe that there are no sharp distinctions between the sexes or between people from different ethnic or religious groups; and believe that there is no clear line between right and wrong. Hartmann and his colleagues developed the Boundary Questionnaire (BQ; Hartmann et al., 1987) in order to assess the above domains and provide an overall measure of mental boundaries.

The construct of mental boundaries has been researched in relation to a number of other constructs, including primary process thinking (Levin, Galin, & Zywiak, 1991), schizotypy (Levin & Raulin, 1991), and hypnotisability (Hartmann, 1991). Hartmann (1991) cites studies that have examined mental boundaries in relation to other personality measures, such as the Minnesota Multiphasic Personality Inventory (MMPI; Dahlstrom & Welsh, 1972), and personality disorders. He also suggests that individuals with thin boundaries may be slightly more vulnerable to disorders of the schizophrenia spectrum, while individuals with thick boundaries may be more likely to develop obsessive-compulsive disorder, although he acknowledges that these connections are preliminary observations that require further investigation. In terms of the relationship with creativity, Hartmann (1991) notes that people with thin boundaries are more likely than average to find employment in the arts, while people with thick boundaries are frequently employed in areas requiring less creativity, such as business, engineering, or the military. Consistent with this is Hartmann et al.'s (1987) observation that participants in their study of chronic nightmare sufferers were most likely to be artists or students.

Levin, Galin, and Zywiak (1991) provided a more direct examination of the relationship between mental boundaries and creativity in their study of nightmares, creativity, and access to, and adaptive usage of, primary process. The BQ, the Rorschach test, and two measures of divergent thinking (the Unusual Uses Brick Test and Remote Associates Test) were administered to 40 nightmare sufferers and 39 matched controls, all from a student population. When analyses were conducted with extreme contrasted groups, a positive association was found between frequent nightmare sufferers (who

were found to have thin boundaries) and creativity scores. Although nightmare sufferers demonstrated more primary process thinking, they showed less adaptation of this material than controls. This is somewhat inconsistent with Kris' (1952) proposition of a central feature of creativity being 'regression in the service of the ego', a process characterised by making adaptive use of primary process material. Overall, this study provided partial support for the notion of a relationship between thin boundaries and creativity.

A further source of support for the relationship between mental boundaries and creativity are findings that indicate a positive relationship between thin boundaries and the Openness to Experience domain of the Five Factor Model. Indeed, McCrae and Costa (1999) describe mental boundaries as a modern psychodynamic perspective on the Openness domain. McCrae (1994) conducted a factor analytic study of a range of personality measures and found that the BQ loaded highly on a factor identified as Openness, as well as having a smaller loading on the Neuroticism factor. Van Hiel and Mervielde's (2004) study of Openness to Experience and mental boundaries in relation to conservative cultural and economic beliefs supported McCrae's (1994) findings. This study suggested two dimensions representing boundaries in the mind, one of which was positively related to Openness to Experience and negatively to conservatism and the second showing high positive correlations with Neuroticism. Evidence supporting an association between creativity and transliminality (e.g., see Thalbourne, Bartemucci, Delin, Fox, & Nofi, 1997; Thalbourne, 2000), a construct closely related to the boundaries construct, also supports the thin boundaries-creativity relationship.

Causal models of the personality-creativity link

Several proposals have been made regarding the precise mechanisms linking identified personality characteristics with creativity, as outlined above. However, this line of inquiry has been limited and has focused on a narrow range of personality characteristics. The specific nature of the causal dynamics between personality and creativity remains very much an open area of debate. Useful contributions have been made to this debate by attempts to integrate the personality, cognitive, and affective processes identified as being relevant to creativity (see James & Asmus, 2001; Martindale, 1989; Russ, 1993). While a full review of these integrative models is beyond the scope of the current

section, aspects of these models most relevant to personality findings will now be addressed.

James and Asmus (2001) delineate three ways in which researchers have proposed that personality influences creativity. Firstly, personality may influence creativity indirectly by way of impacts on cognitive styles and skills. For example, behavioural flexibility, emotional variability, and risk taking as personality tendencies may incline individuals towards relatively high variability and novelty or originality of ideas. Eysenck's proposition that Psychoticism is characterised by over-inclusive thinking, and that this cognitive style predisposes individuals to creativity, is an example of this approach. According to this model, the cognitive styles associated with the personality dimensions are the most direct cause of heightened creativity. Theorists writing along these lines propose that directly assessing the relevant cognitive styles and using them to predict creativity is a more effective approach than assessing personality traits that predispose an individual to such cognitive styles (see Cropanzona, James, & Citera, 1993; Runco & Shaw, 1994; Sternberg & Lubart, 1991).

The second approach argues that real-world creativity requires the proper conjunction or interaction of personality, cognitive skills, and situational conditions. In this approach, the *motivation* to be creative is seen as primary, with the ability to be creative of secondary importance, although both are necessary for creative success (see Amabile, 1996; James, Clark, & Cropanzano, 1999; Osche, 1990). Personality variables may influence whether individuals possess a general motivation to pursue creative goals and how situational conditions impact on that motivation. This approach emphasises the interaction of creative ability and the effects of personality, rather than creative ability mediating personality effects, as in the first approach.

The third approach identified by James and Asmus (2001) emphasises that real-world creativity is not a single, invariable entity. Rather, it is multi-faceted, with different creative domains posing different demands on individuals. Particular personality clusters and cognitive skills are seen as being differentially effective in promoting creativity across these various domains, providing a strong explanation for the variability in predictive power of personality on real-world creativity (Amabile, 1996; Gardner, 1994; Osche, 1990). Osche (1990) provides compelling support for this view in his review of

evidence that social independence and even social maladjustment may be predictive of creativity that is more object or abstract based, but less so of creativity that involves a substantial collaborative or persuasive element. Based on their case study findings, Policastro and Gardner (1999) posit that there are five different forms of creative behaviour and speculate that these may relate to different personality and ability profiles.

James and Asmus (2001) note that these approaches are not mutually exclusive, as demonstrated by the approaches of a number of researchers. Eysenck (1994), for instance, argued that cognitive skills both mediate and interact with personality effects on everyday creativity, whereas James (1995; James et al., 1999) proposed that personality influences both cognitive style and skill patterns, as well as motivation to apply such skills to different types of creative activity.

James and Asmus' (2001) outline of proposed connections between personality characteristics and creativity focuses on cognitive features. However, there has also been a line of research that emphasises the role of affective components of creativity. Russ (1993), for instance, advances a tentative model of creativity that integrates cognitive processes, affective processes, and personality traits. For example, she maintains that the affective processes of access to affect-laden material and openness to internal affect states facilitate the cognitive processes of divergent thinking and transformation abilities, and that both of these affective and cognitive processes are related to the global personality traits of tolerance of ambiguity and openness to experience. An assumption of this model is that there are specific affective processes, in addition to personality traits, that facilitate creative cognitive abilities.

It should also be noted that there have been suggestions that creativity is characterised not so much by single personality traits, but by an ability to operate through a wide spectrum of personality dimensions (e.g., Csikszentmihalyi, 1996, 1999; Rothenberg, 1990). Perhaps the strongest proponent of this view has been Csikszentmihalyi (1996, 1999), who maintains that the creative personality should be approached with a dialectical notion of personality features, rather than with a unipolar trait approach. This assertion is based on a combination of Csikszentmihalyi's psychometric and interview-based findings. The findings suggest ten personality dimensions prominent in creative individuals and that these individuals are able to operate at both ends of the polarities of

these dimensions depending on the demands of the interaction between the creative individual and the domain in which they are working. For instance, rather than viewing creative individuals as being introverted *or* extroverted, Csikszentmihalyi's view is of a dynamic movement between these characteristics based on the phase of the creative process in which the individual is engaged. He writes, "When gathering ideas, a creative scientist is gregarious and sociable; when starting to work, he or she might become a secluded hermit for weeks on end" (Csikszentmihalyi, 1999, p.331). The defining feature of the creative individual, according to this view, is the commitment to and intrinsic motivation associated with creative production - the rest is malleable and responsive to situational features.

The suggestion that it is not single states as much as an ability to shift *between* states that characterises creativity is echoed in research into anxiety and defence mechanisms associated with creativity (Carlsson, 1990, 1992, 2002; Carlsson, Amnér, & Smith, 2001; Carlsson & Smith, 1997). Carlsson (2002) examined these constructs using a cohort of students assessed for creativity with a perception-based creativity test (Creative Functioning Test (CFT; Smith & Carlsson, 2000)). The author interpreted his results as suggesting that creative people have a greater variability of arousal levels. As noted by Martindale (1981), this is a psychophysiological restatement of the psychoanalytically-derived notion that creative people are more variable on the primary-secondary process continuum (Kris, 1952). Interestingly, there is also evidence that excessive physiological variability of arousal is present in psychosis (e.g., Clarke, 2002; Hempel et al., 2005; Morrison, 1998; Tarrier & Turpin, 1992). In Carlsson's (2002) study, the high-creative group were found to utilise a more varied repertoire of defence mechanisms than the low-creative group. The author suggests the existence of a creative defensive style characterised by the concomitant appearance of both mature and immature defences, again drawing a parallel with the theory of creative individuals being able to move more freely along the primary-secondary process continuum.

These proposals are certainly compelling, especially given some of the somewhat variable findings in the personality-creativity literature (James & Asmus, 2001), and demand further empirical exploration. The emphasis on a movement between states is also consistent with some of the literature examining the relationship between creativity and psychopathology. It is to this area of research that we now turn.

2.4 The Creativity and 'Madness' Debate

The only difference between me and a madman is that I am not mad.
- Salvador Dali

The connection between creativity and psychopathology is firmly planted in popular mythology. The figure of the moody, eccentric, or self-destructive artist who may suddenly enter a flurry of creative activity, or the 'mad' scientist possessed by a drive to invent or discover, consistently appears in general public discourse concerning creativity or psychopathology and in cultural products, whether on the screen or on the page. This led the literary critic Lionel Trilling (1950) to note that the conception of the artist as mentally ill "is indeed one of the characteristic notions of our culture" (p.100). The issue of the cultural and historical connections between creativity and madness is addressed at length by Becker (2000-2001), Jamison (1993), Nettle (2001), Rothenberg (1990), and Sass (1992).

The current section will deal with modern psychological and psychiatric research into the relationship between creativity and psychopathology. Firstly, a brief outline of research addressing the issue of a general connection between creativity and psychopathology is provided. This is followed by a consideration of the research examining the relationship between creativity and the schizophrenia spectrum, before addressing research examining the relationship between creativity and affective disorders. It should be noted that the distinction between these two psychiatric dimensions is far from clear-cut (see Claridge, 1997; Nettle, 2001; Sass, 2000-2001b, c). Some authors have argued that bipolar affective psychosis and schizophrenia are in fact manifestations of a single underlying psychotic disorder rather than distinct disease entities, a position referred to as an Eintheitspsychose or unitary psychosis theory (see Berrios, 1995; Claridge, 1997; Kendell, 1991). These authors maintain that the distinction between the two dimensions has been based on an allegiance to Kraepelinian diagnostic categories rather than on firm empirical grounds. Indeed, there is evidence for the unitary psychosis theory from symptom analysis (Taylor, 1992; Kendell & Brockington, 1980), the interchangeability of treatments (Delva & Letemendia, 1982; Abraham & Kulhara, 1987), similarities noted in

a range of experimental data (Andreasen & Powers, 1974; Dolan, Calloway, & Mann, 1985; Iacono et al., 1982), and genetic findings (Baron & Gruen, 1991; Crow, 1986, 1991). However, research into the relationship between creativity and psychopathology has generally identified itself with one or the other of these two dimensions, and will therefore be addressed this way in the current review. Finally, some general conclusions are presented, along with several criticisms of research in the area and suggestions regarding future research.

Creativity-psychopathology research

Evidence for a positive association between creativity and psychopathology is derived from a number of different types of studies (Nettle, 2004). Firstly, studies have examined psychopathology in creative individuals, both in eminent and less eminent groups (e.g., Andreasen, 1987; Goertzel, Goertzel, & Goertzel, 1978; Jamison, 1993; Juda, 1949; Karlsson, 1978; Ludwig, 1992; Post, 1994, 1996; Wills, 2003). In the studies of eminent individuals, retrospective diagnoses have been broad and many: schizophrenia, paranoia, depression, hypomania, manic-depression, cyclothymia, schizoaffective illness, borderline personality disorder, psychopathology, neurosis, hysteria, megalomania, narcissism, compulsions, and hypochondria (Brod, 1997). Brod (1997) compiled a detailed list of the specific psychological difficulties these studies have attributed to eminent creative individuals. Given the extended time-period over which these studies have been conducted, it is important to keep in mind the various adjustments that have been made to psychiatric diagnostic categories. Nevertheless, the list does suggest a significant degree of psychological distress in high-achieving individuals in creative domains. It should be noted that that these studies do not indicate that creative output was contiguous with mental illness. Rather, the creative periods and products tended to occur before or during remission from periodic illness or from a background of sub-clinical symptoms or behaviours (Brod, 1997).

The family histories of many of the individuals who have been studied also indicate psychopathology or psychosocial problems. For instance, Post (1994), in a psychobiographical analysis of 291 eminent individuals, found that 55.5 per cent of his participants had relatives with histories of schizophrenia, depression, suicide, alcoholism, and other instabilities. This study also indicated that the degree of psychopathology was discipline-dependent, with scientists the least affected, and

creative writers the most affected. Trait-cluster psychopathology, as defined by the revised third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-III-R*; American Psychiatric Association (APA), 1987), increased from scientists (42.2 per cent), through composers (61.6 per cent), politicians (63 per cent), thinkers (74 per cent), artists (75 per cent), to writers (90 per cent).

Many of these studies are biographical and are therefore subject to the limitations of potentially biased source information, retrospective diagnoses, and lack of control groups. The studies have also often fallen prey to oversimplified and reductionistic clinical assumptions (see Rothenberg, 1990). Additionally, researchers are surely not immune from the *expectation* of deviance implicit in sociocultural conceptions of 'mad' creators. However, several studies (e.g., Akiskal and colleagues (unpublished studies cited in Jamison, 1993); Andreasen, 1987; Andreasen & Canter, 1974; Jamison, 1989; Richards, Kinney, Lunde, Benet, & Merzel, 1988) have surmounted some of these limitations. These studies have compared rates of psychopathology in less eminent, but nevertheless creatively successful, individuals with controls matched on other variables and/or with rates in the general population. Aside from the Richards et al. (1998) study, which assigned creativity ratings based on participants' scores on the Lifetime Creativity Scales, the participants in these studies consisted of a variety of living artists. The pattern of results generally suggests significantly raised levels of affective disorder in creative artists. However, these studies are subject to their own limitations, which will be discussed in the creativity–affective disorder section.

A second type of study has been family studies of psychiatric patients, including biological relatives separated by adoption (e.g., Heston, 1966; Karlson, 1970; NcNeil, 1971). The findings of these studies indicate elevated creative interests and aptitudes in close relatives of psychiatric patients. The highest level of creativity is often manifest in relatives who are themselves free of psychopathology, and who may have been separated by adoption from their psychiatric patient relative (e.g., Heston, 1966). When taken in conjunction with the psychobiographical studies, these findings suggest that, although full-blown psychopathological symptoms may interfere with creative activity, there may be personality or cognitive traits that underlie both psychopathology and creativity. Furthermore, these traits may have a genetic basis.

Another group of studies have investigated creativity in psychiatric patients, usually with a diagnosis of schizophrenia (e.g., Andreasen & Powers, 1975; Hasenfus & Magaro, 1976; Keefe & Magaro, 1980). The studies have tended to show that the clinical group demonstrate superior performance on divergent thinking tasks than a control group. These findings have often been interpreted as indicating a common cognitive style, such as over-inclusive thinking (Eysenck, 1993), in psychotic and creative thought (e.g., Hasenfus & Magaro, 1976). However, the findings of these studies are open to debate, as discussed in section 2.3. Specifically, high scores on divergent thinking tasks may not *necessarily* indicate high creative ability – they might also indicate disinhibition or willingness to be deviant.

Studies have also examined the relationship between performance on creativity tests and scores on scales designed to assess liability to psychopathology in the general population (e.g., Eysenck, 1993; Fisher et al., 2004; Schuldberg, 1988, 1990, 2000-2001a). Overall, these studies have yielded positive correlations between the two types of measures. Schuldberg's (1988, 1990, 2000-2001a) studies, for instance, indicate moderate correlations between tests of creative performance or self-rated creativity and scales that assess liability to either positive psychotic symptoms or hypomania. In this set of studies, creativity has tended to be negatively associated with measures related to anhedonia or flattened affect.

Finally, studies have approached the creativity–psychopathology link through psychometric assessment of successful creators (e.g., Barron, 1969; Eysenck, 1993; Pufal-Struzik, 1992), a literature reviewed in section 2.3. Some of these research findings suggest overlapping personality features between creative individuals and clinical groups. For example, Nowakowska, Strong, Santosa, Wang, & Ketter (2005) found that both a group of creative individuals and a group of bipolar patients displayed high levels of the personality traits neuroticism and openness to experience compared to a healthy control group. These studies provide evidence for a *general* connection between creativity and psychopathology. The more specific findings will now be addressed, starting with the schizophrenia spectrum.

Creativity and the schizophrenia spectrum

The term 'schizophrenia spectrum' has been adopted by many researchers to refer to a variety of disorders presumed to be syndromally or etiologically related to schizophrenia. This spectrum has traditionally included bipolar disorder, which is indicative of the difficulty of any easy, clear-cut distinction between psychotic and mood disorders. To adopt the terminology of Schuldberg and Sass (1999), the schizophrenia spectrum is thought to have both a 'horizontal' and a 'vertical' dimension. The horizontal dimension includes different types of disorders on approximately the same level of severity (e.g., schizoaffective and schizophreniform disorders), which may overlap in symptomatology and be seen as related. The vertical dimension refers to a continuum of severity in psychological disturbance ranging from exemplary functioning, through 'normality', sub-clinical symptoms, to less severe psychopathology (e.g. schizotypal and schizoid personality disorders), to the most severe mental disorders. Indeed, research has suggested that rather than there being categorical differences in the presence of psychotic-like characteristics (i.e., either present or absent), these characteristics are present in varying degrees of severity in the population, blending from the normal to the pathological (Eaton, 1995; Van Os, Hannsen, Bijl, & Ravelli 2000; Van Os, Hannsen, Bijl, & Vollebergh, 2001). The presence of sub-clinical, psychotic-like characteristics in the normal population has been represented in such constructs as 'psychoticism' (Eysenck & Eysenck, 1976), 'psychosis-proneness' (Chapman & Chapman, 1985), and 'schizotypy' (Rado, 1953; Bentall, Claridge, & Slade, 1989; Claridge, 1997).

Much of the early research into the relationship between creativity and psychopathology focused on the connection with schizophrenia and related disorders. Although the last 25 years of research has witnessed a shift towards an interest in the role of affective disorders, particularly bipolar disorder, in the area of creativity, interest has been renewed, relatively recently, in the role of the schizophrenia spectrum.[2] The initial emphasis on the role of the schizophrenia spectrum was due to a large extent to the assumption that cognitive rather than affective characteristics were instrumental in the relationship between creativity and psychopathology (Sass & Schuldberg, 2000-2001b).

[2] The *Creativity Research Journal*, for instance, dedicated a special issue to the subject (see Sass & Schuldberg, 2000-2001a).

The strong influence of psychoanalytic theory on conceptualisations of schizophrenia and creativity also played a role in this early focus of research. As Sass and Schuldberg (2000-2001b) write, "Schizophrenia was viewed as a "primitive" disorder involving fixation at or regression to early instinct- and affect-dominated modes of experience that are relatively devoid of the capacity for self-consciousness or of a sense of differentiation between self and world" (p.1). This 'primary process' mode of experience was also considered to be operative in creative cognition. Although understandings of the primary process have changed over time, it refers in general terms to instinctual, unconscious, repressed material and illogical thinking related to this material (Holt, 1977). Kris' (1952) influential concept of 'regression in the service of the ego' postulated that the creative individual has a heightened ability to regress to an earlier mode of thinking dominated by the primary process. Other psychoanalytically-oriented theorists have proposed that the concept of regression to an *earlier* mode of thought is not necessary – it is simply *access* to primary process material that is characteristic of creative work (e.g., Arieti, 1976; Giovacchini, 1960; Suler, 1980). Regardless of this distinction, according to this theoretical position, the primary process mode of thinking provides a basis for creative work. For example, the primary process mechanism of condensation (combining multiple diverse elements) has been considered the basis of metaphor creation, and the mechanism of displacement (shifting onto something smaller) has been credited with producing various poetic features ranging from rhyming and alliteration to symbolisation (Rothenberg, 1990). As illustrated by these examples, the theorising was implicitly directed, for the most part, towards *artistic* creativity (see Kris, 1952; Storr, 1972).

According to the psychoanalytically-oriented position, the element that was thought to differentiate the psychotic from the creative individual was the ability to *utilise* the primary process in adaptive ways. Access to the primary process is controlled in creative individuals, enabling them to shift back and forth between this type of thinking and critical evaluative thinking. Concepts such as the aforementioned 'regression in the service of the ego' (Kris, 1952) and 'ego strength' (Barron, 1972) have been used to capture this distinguishing characteristic of creative individuals (see Arieti, 1976; Fodor, 1995). Fodor (1995), for instance, reports that the combination of being high on both psychosis-proneness and ego strength correlated significantly higher with creativity scores in a student sample than all other combinations of these two measures. This is

consistent with Barron's (1993) notion of 'controllable oddness' being fertile ground for creativity.

Although studies have tended to focus on sub-threshold psychotic-like characteristics, a number of studies have used patients with schizophrenia and/or their biological relatives. Keefe and Magaro (1980) compared paranoid and nonparanoid schizophrenia patients with psychiatric and normal controls on several measures of creativity. The nonparanoid schizophrenia patients scores higher than the other groups on an 'unusual uses' test. As discussed in section 2.3, Dykes and McGhie (1976) found evidence that both schizophrenia patients and highly creative adults displayed abnormally wide attention ("allusive thinking"), providing support for a common over-inclusive thinking style in psychotic and creative thought processes. However, a number of other early studies indicated that creative ability is lower in frank schizophrenia (Hebeison, cited in Torrance, 1962; Kidner, 1978; Soueif & Farag, 1971). An important issue here is the role of disorganised thought and lack of discipline in frank schizophrenia, as well as the effects of medication and institutionalisation. It is possible that creative cognition might be strong in such a population, but that these abilities are not fully utilised due to compromised cognitive abilities in other domains or motivational factors.

Studies by Heston and Denney (1968), Karlsson (1970), and Kauffman, Grunebaum, Cohler, and Gamer (1979) all found high levels of creativity in samples of the healthier biological relatives of patients diagnosed with schizophrenia. Karlsson (1970) examined an Icelandic sample and found that the biological relatives of patients with schizophrenia were more likely than people in the general population to be recognised for their work in creative professions. Kauffman et al. (1979) conducted tests and interviews with children of 18 mothers with schizophrenia, 22 mothers with a bipolar or unipolar affective psychosis, and 22 mothers with no major mental disorder. Among the children of mothers with a psychotic disorder was a group of six children judged to be more "competent, creative and talented" than any of the control children. Five of these six children had a mother with schizophrenia or schizoaffective disorder. Heston and Denney (1968) compared 47 adult adoptees who were separated shortly after birth from mothers who suffered from schizophrenia with a matched control group of adoptees who were born to nonpsychotic mothers. Apart from finding a higher prevalence of schizophrenia in the former group, the authors also discovered that this group included a

subgroup that had more creative jobs and hobbies than the control adoptees. Members of this subgroup were all psychologically healthy and were not found to be schizophrenic, sociopathic, neurotic, or retarded.

Although these studies all point in the same direction – towards a positive association between creativity and predisposition to psychosis – they all suffer from significant limitations. In Karlsson's (1970) study, the only indicator of creativity used was whether a participant was listed in *Who's Who* as being in a profession judged to be very creative, such as the fine arts. No direct assessment of creative activities or accomplishments was conducted. As discussed in section 2.3, success in a domain associated with creativity may not necessarily be synonymous with originality. The Götz and Götz (1979a, b) and Ralevski (2001) studies found that particular personality characteristics distinguish eminent from non-eminent artists (see section 2.3). Given Karlsson's lack of direct measurement of creativity, it is possible that predisposition to psychosis is in fact related to these personality characteristics, rather than to creative ability *per se*. The results relating to creativity of both Heston and Denney's (1968) and Kauffman et al.'s (1979) studies were serendipitous discoveries, based on post hoc analyses. While this, in itself, is not a strong limitation of the studies, their designs involved the investigators not always being blind to participants' personal and family histories of psychopathology. Additionally, as with the Karlsson (1970) study, these studies employed 'loose' methods of judging creativity based on clinical impressions of anecdotal reports of participants' creative activities. It is also important to remember, given the time at which these studies were conducted, that there was a tendency to overdiagnose schizophrenia and underdiagnose bipolar disorders compared to current standards (Kinney et al., 2000-2001).

Kinney et al. (2000-2001) attempted to resolve the uncertainty surrounding the findings of these early studies by employing a more rigorous design. Their study used a Danish sample of 36 adopted adult offspring of biological parents with a diagnosis of schizophrenia, a control group of 36 demographically matched adoptees of biological parents who had not been hospitalised for mental illness, more recent diagnostic criteria (*DSM-III* (APA, 1980)), and creativity and diagnostic assessments that were made blindly with respect to each other. Research scales with demonstrated reliability and validity were used to assess creativity in a broad range of real-life vocational and

avocational activities, which overcame the problems of creativity assessments being limited to eminent levels or restricted to certain vocational fields such as the arts and sciences.

The results of this study suggested no significant difference between the index adoptees and the control adoptees on creativity ratings. However, a subgroup of the index adoptees who had been diagnosed with schizotypal or schizoid personality disorder or with multiple schizotypal signs (labelled 'wide-schizophrenia-spectrum') demonstrated higher creativity than control adoptees who did not belong to this spectrum, although this difference did not reach statistical significance. When all wide-spectrum participants were compared to the non-spectrum participants in the total sample (i.e., the combined index and control samples), the wide-spectrum cases demonstrated a significantly higher creativity rating than both the non-spectrum control adoptees and the non-schizophrenic non-spectrum adoptees. The results also revealed an inverted-U curve relationship between overall creativity ratings and increasing severity of the wide-schizophrenia-spectrum. That is, creativity ratings progressively increased in accordance with the number of schizotypal signs, started to decrease for participants with a schizotypal or schizoid personality disorder, and was at its lowest for the single participant with frank schizophrenia. When examining particular symptoms of the wide-schizophrenia-spectrum, it was found that overall creativity was particularly high for the nonschizophrenic participants who had positive signs of magical thinking, recurrent illusions, odd speech, or all of these. The findings of this study provide the strongest evidence to date in support of the hypothesis that traits associated with increased liability for schizophrenia are also associated with increased creativity, and provide further weight to the findings of the methodologically weaker earlier studies. The inverted-U finding of the relationship between creativity ratings and increased schizophrenia symptom severity is consistent with the studies cited above indicating reduced creativity in frank schizophrenia.

These results are complemented by observations from the 'other direction' – that is, from the analysis of psychosis in eminent creative individuals. Sass (1992) argues that a number of the most influential avant-garde and modernist artists of the twentieth century may have been in the schizophrenia spectrum, if not suffered from actual schizophrenia. This observation is anticipated by Karl Jaspers' (1913/1964, 1977) comment on the

remarkable number of people with schizophrenia who have been of profound cultural importance in European society since 1800, compared to before 1800. According to Sass (1992), apart from being heavily *influenced* by the production of individuals in the schizophrenia spectrum, modern culture might also contribute to the rise of schizophrenic-like symptoms and display a peculiar openness to production reflecting this sort of psychological state. Indeed, it has been argued that creative individuals cultivate something close to the schizotypal experience as a way into their work (see Nettle, 2001; Sass, 1992). This is perhaps captured most famously by the French modernist poet Arthur Rimbaud's proclamation that poetry must proceed by a "systematic derangement of the senses".

The Kinney et al. (2000-2001) findings that increased liability for schizophrenia is associated with creativity are consistent with a number of positive findings of studies investigating the relationship between sub-threshold psychotic-like symptoms and creativity. As reviewed in section 2.5, a number of studies indicate a positive relationship in non-clinical samples between personality variables associated with liability for psychopathology or emotional maladjustment and creativity (e.g., Barron, 1969; Götz & Götz, 1979a; MacKinnon, 1962). Gottesman (1965) reviewed several studies that reported that nonhospitalised participants with high scores on the Schizophrenia scale of the MMPI were especially likely to be described as "inventive" or "imaginative" by people who knew them well. Despite the controversy surrounding the scale (see section 2.5), Eysenck's Psychoticism scale consistently correlates with creativity (see Eysenck, 1983). Related findings have shown that individuals who score highly on scales related to positive but not negative psychotic symptoms make broader semantic associations between stimuli (Mohr, Graves, Gianotti, Pizzagalli, & Brugger, 2001) and score highly on a divergent thinking battery (Green & Williams, 1999).

Schuldberg (1988, 1990, 2000-2001a) has presented a series of studies addressing the relationship between a range of subclinical traits and creativity measures. These studies have used large samples drawn from a nonclinical, noneminent student population. The studies demonstrate moderate correlations between tests of creative performance or self-rated creativity and scales measuring subclinical traits. Specifically, two scales of positive schizotypal symptoms (Perceptual Aberration and Magical Ideation; Chapman & Chapman, 1985) related positively with creativity measures, whereas dimensions related

to anhedonia or flattened affect related negatively to creativity measures. However, the strongest positive correlations with creativity measures were found with measures of hypomanic traits, a point which will be addressed below. These studies are particularly persuasive due to their use of large samples and a wide range of measures.

The creativity-schizotypy association indicated in Schuldberg's studies are consistent with other studies. Wiggins and Pincus (1989), for example, found that in a large sample of college students high scores on a schizotypal personality disorder scale were associated with high scores on a personality test of openness to experience, which other studies have found to be positively correlated with creativity (see section 2.5). A recent study by Nettle (2004) reinforces the finding of positive but not negative schizotypal symptoms being associated with creativity. However, Nettle's findings indicate the importance of domain-specificity in the discussion of the creativity-psychopathology association: although artistic creativity was associated with high positive and low negative symptoms, mathematical creativity was found to be associated with a low positive and slightly raised negative symptom profile. Nettle concludes that different domains of creativity may require different cognitive profiles, with poetry and art associated with divergent thinking, schizophrenia and affective disorder, and mathematics associated with convergent thinking and tendencies towards the autistic spectrum.

Nettle's (2004) study is also of interest in relation to the inverted-U model of the creativity-schizophrenia spectrum relationship described above (see also Akiskal & Akiskal, 1988; Horrobin, 2002; Richards et al., 1988). This model would predict that creative individuals would tend to score more highly than the general population on schizotypy scales, but not as highly as those suffering frank psychopathology. However, the results of Nettle's study indicated that creative artists scored in the same range as schizophrenia patients on positive schizotypy symptoms, including unusual and sometimes chaotic thought processes, but not as high on negative schizotypy symptoms, including flattened affect and avolition. Nettle suggests that these findings support a two-factor approach, with psychopathology and creativity sharing positive symptoms but diverging in negative symptoms, a model derived from Barron's (1972) notion of ego strength being the crucial distinguishing factor between psychopathology and creativity. This interpretation needs to be qualified by the fact that the professional

artists in the sample scored marginally lower on the positive schizotypy scale than the patients, whereas those seriously involved but not making their living from their artwork scored marginally higher on this measure than the patients. While there may be several explanations for this finding, as pointed out by Nettle, it may simply reflect that lower levels of positive schizotypy are present in a highly creative group (the professional artist group) than in a less creative group (the 'seriously involved' group) and in those with frank psychopathology, which is consistent with the inverted-U model.

The precise mechanisms thought to underlie the relationship between creative and psychotic thinking were outlined in section 2.5. There have been many parallels between theoretical models of creativity and psychosis, even without direct attempts to link the two (see Stavridou & Furnham, 1996). Apart from the psychoanalytically-derived notion of the primary process, described above, the conceptualisation of creativity as based on associative processes has played a prominent role in theories of creativity (Spearman, 1931; Mednick, 1962; Wallach & Kogan, 1965). For example, Mednick (1962) hypothesised that highly creative individuals have a 'flat' associational gradient, which allows for a large number of associative responses to a stimulus, as compared with the small number of strong, stereotyped responses characteristic of low creativity. Similarly, Wallach (1970) proposed that generating associations is a defining feature of creativity and that this ability arises from the process of attention deployment. Specifically, creative individuals are able to attend to many aspects of a given stimulus and thus produce more varied associations. There is a strong similarity between these theories and the notions of 'wide associative horizons' and 'loosening of associations' thought to characterise psychosis (Andreasen & Powers, 1974; Eysenck, 1993; Upmanyu & Kaur, 1986). In both cases, the associative processes give rise to unconventional patterns of perception and cognition.

Another area of overlap between models of creativity and psychosis can be found in Martindale's (1981) arousal theory of creativity. He hypothesised that creative people have a high resting level of physiological activation and that they are oversensitive to stimuli. Their level of cortical arousal drops with increased stimulation. Lower levels of cortical arousal have been found to be associated with creative task performance (Martindale & Hines, 1975), particularly during the inspiration stage (Martindale & Hasenfus, 1978). This variability in level of arousal is facilitated by low levels of

inhibition. The notions of reduced inhibition and mood fluctuation (arousal levels rising and dropping) are common notions in the schizophrenia literature, as discussed by Stavridou and Furnham (1996). The notion of greater variability in arousal level being associated with creativity also forms an interesting link with the literature relating bipolarity to creativity, which will be discussed below.

Apart from these cognitive- and phyisiological-based explanations of the relationship between psychosis and creativity, it has also been suggested that the link may be due to motivational factors (O'Reilly, Dunbar, & Bentall, 2001). In a sample of creative arts and humanities students, O'Reilly et al. (2001) found that type of degree (creative arts) was a stronger predictor of scores on the Torrance Tests of Creative Thinking (Torrance, 1974) than schizotypy scores. Results also indicated that scores on the Unusual Experiences subscale of the schizotypy measure used, the Oxford-Liverpool Inventory of Feelings and Experiences (O-LIFE; Mason, Claridge, & Jackson, 1995), was significantly higher in the creative arts group than the humanities group. The authors proposed that openness to unusual experiences may facilitate the pursuit of a career in a highly creative occupation, and that independent factors may be involved in contributing to the kind of divergent thinking measured by most creativity tests. This suggestion of a motivational rather than a cognitive pathway in the relationship between the schizophrenia spectrum and creativity needs replication and more direct assessment.

In sum, there is strong evidence of a connection between creativity and the schizophrenia spectrum, particularly with regards to positive symptoms. Although there is considerable evidence for an inverted-U, or at least non-linear, relationship between these two constructs, some recent research suggests the possibility of the crucial factor not so much being the *extremity* of the underlying process (such as schizotypy) but rather the presence or absence of particular constituents of this process, including, possibly, negative symptoms. However, there are also suggestions that the presence or absence of these constituents are associated with different types of creativity – negative symptoms, for instance, may be present in mathematical creativity but absent in artistic creativity. Further research is required to assess the relative merits of these models and to develop greater insight into the specific causal mechanisms involved.

Creativity and mood disorders

Although there has been a recent resuscitation of interest in the relationship between creativity and the schizophrenia spectrum, considerable attention has been directed towards the role of affective disorder, particularly bipolar disorder, in creativity. Sass and Schuldberg (2000-2001b) trace this focus of interest back to Andreasen and Canter's (1974) research into the psychiatric symptoms and family history of creative writers, which suggested a considerable association between affective disorder and creativity. The shift of interest also coincided with a greater psychiatric interest in bipolar disorder, including its cognitive aspects, and with the narrowing of the American diagnostic criteria for schizophrenia (Sass & Schuldberg, 2000-2001b).

As noted above, the distinction between psychotic and mood disorders is far from clear-cut, with some authors arguing for a model of these disorders as existing on a continuum and arising from a common causal factor (e.g., Eysenck, 1993, 1995). Using the *DSM* distinction between schizophrenia and other psychotic disorders and mood disorders, biographical studies of historically eminent creative individuals have generally demonstrated a closer relationship between creative achievement and mood disorders than between creative achievement and psychotic disorders (e.g., Ludwig, 1995; Post, 1994, 1996). For example, Post's (1996) analysis of 291 eminent British and American achievers found that episodic psychiatric conditions had occurred in the majority of the sample, although mood disorders were more evident than psychotic disorders. However, these studies have generally failed to address the issue of proportion in relation to general population norms. The variation in prevalence of each type of disorder in the general population needs to be considered. Such an analysis might reveal that although a particular disorder, such as schizophrenia, is less prevalent than another disorder, such as major depression, in the sample under investigation, the *proportion* of the sample suffering the former disorder may be greater than the proportion suffering the latter disorder when compared with rates in the general population. Admittedly, difficulties with this sort of analysis include availability of epidemiological data for the general population during the time-periods from which samples have been taken and differences in criteria used to make diagnoses.

Nevertheless, a number of more specific studies have consolidated the view of a relationship between affective disorder, particularly of a bipolar variety, and creativity.

The most impressive research results are derived from studies of creative artists. One of the earliest of these studies was an historical biographical analysis. Jamison (1993) reported a study in which she analysed biographical and autobiographical material on all major British and Irish poets born between 1705 and 1805. Her analysis was guided by looking for symptoms of mania or depression, and the patterns of mood, energy, and work. A remarkably high incidence of psychiatric symptoms was observed. Six of the 36 poets were committed to lunatic asylums, while two committed suicide. More than half showed strong evidence of mood disorder, either bipolar or unipolar, frequently including overtly psychotic symptoms. In addition, many of the poets had family histories of mental disorder or suicide. Nettle (2001) summarises Jamison's research project such: "…to be a poet in Britain in the eighteenth century was to run a risk of bipolar disorder 10-30 times the national average, suicide 5 times the national average, and incarceration in the madhouse at least 20 times the national average" (p.142). The results of this study are reinforced by Wills' (2003) analysis of 40 eminent American modern jazz musicians. Using available biographical material he concluded that 28.5% of his sample had mood disorders, as defined by *DSM-IV* (APA, 1994) criteria. His findings also indicated an alarmingly high rate of drug-related problems.

Jamison (1989) extended her earlier work by researching living creators, again using the approach of studying eminent creativity. Her sample consisted of 47 poets, writers, and visual artists who had won major prizes or awards in their fields. She found that 38% of the sample had received treatment for a mood disorder. This is significantly higher than rates in the general population. For example, the Epidemiological Catchment Area Study (Robins & Regier, 1991) found incidences of 6.8% for mood disorders in the general population of North America. The percentage of people who actually seek treatment would be considerably lower than this. In Jamison's (1989) sample, poets and playwrights were found to have the highest rates of mood disorder diagnoses (55% and 63% respectively), compared to around 20% for novelists, biographers, and artists. In a subsequent study, Jamison (1993) interviewed award-winning European writers, poets, painters, sculptors and blues musicians and found that approximately half had suffered from a major depressive episode, and that nearly two thirds exhibited recurrent cyclothymic and hypomanic tendencies.

This pattern of results was also apparent in another prominent study. Andreasen (1987) interviewed 30 professional writers involved in the prestigious Iowa Writer's Workshop. She found that 80% of the writers qualified for a mood disorder diagnosis, over half with a bipolar disorder, compared to 30% in a matched control group. A link between creativity and manic features was also suggested in Andreasen and Powers' (1975) comparison of a group of writers with both manic and schizophrenic patients using an object sorting test. Both the manic patients and the writers showed evidence of overinclusive thinking, whereas the schizophrenia patients tended to be underinclusive. The finding with regards to schizophrenia patients is at odds with some of the creativity-schizophrenia spectrum studies reviewed above.

Although the above studies have yielded impressive results, they have tended to focus on creative writers and have used reasonably small sample sizes. As in the creativity-schizophrenia spectrum research, the creativity-affective disorder issue has also been approached from the reverse angle – that is, investigating whether people with mood disorders display elevated creativity. The results of these studies have tended to suggest an inverted-U relationship between mood disorders, particularly of the bipolar variety, and creativity (Akiskal & Akiskal, 1988; Ghadirian, Gregoire, & Kosmidis, 2000-2001; Richards & Kinney, 1990; Russ, 1993). Specifically, some degree of underlying bipolar risk may be a better predictor of creativity than a stronger manifestation (as in a bipolar disorder) or a lack of bipolar risk. For instance, Richards et al. (1988) administered a lifetime creativity scale to manic-depressive patients, cyclothymes, healthy first-degree relatives of these patients, and both normal and psychiatric controls. The cyclothymes and healthy relatives of the bipolar group scored higher than either the manic-depressives or the normal controls. It should be noted that the creativity measure used in this study measured creativity of participants' vocational and avocational activities in everyday life ('everyday creativity') rather than socially recognised or eminent creativity.

Subsequent studies have indicated that mild mood elevations (i.e., hypomanic traits) might play more of a role in creativity than the milder forms of the depressive phase (Richards & Kinney, 1989, 1990; Kinney, Richards, Daniels, & Linkins, 1989; Richards, Kinney, Daniels, & Linkins, 1992). Richards and Kinney (1990), using a sample of 48 participants diagnosed with unipolar and bipolar affective conditions, found that

participants identified a mildly elevated mood state from a range of mood states to be most facilitative of creativity. The authors identified six factors pertaining to cognition (e.g., rapid thinking), affect (e.g., euphoria), and motivation (e.g., energy) that characterised the most creative mood state identified by the participants. These factors overlapped considerably with characteristics of intense creative episodes reported by Jamison's (1989) eminent artists and writers. Richards and Kinney's (1990) results are consistent with Akiskal and Akiskal's (1988) findings of higher artistic creativity in a group of patients diagnosed with bipolar II and III (those with milder or latent mood elevations, along with full major depressions) than in a group of bipolar I and schizoaffective participants. These studies suggest that the key variable in the relationship between bipolarity and creativity is the particular combination of symptoms rather than purely the severity of the illness (Richards & Kinney, 1990). Specifically, mood elevations may contribute more to creativity than depressions, with mildly elevated mood states more important than extreme elevations.

The specific association of hypomania with creativity is supported by results from studies of non-clinical samples. Schuldberg (2000-2001a) presents data from a series of studies of six symptom and trait measures (positive schizotypal symptoms, negative schizotypal cognitive symptoms, negative schizotypal affective symptoms, hypomania, depressive symptoms, and impulsivity) and several measures of creativity in large nonclinical, noneminent student samples. As noted above, although positive schizotypal symptoms predicted creativity scores, hypomania demonstrated the highest correlations with creativity scores and accounted for a large amount of the variance associated with the other characteristics. It should be noted that the relative contributions of schizotypal and affective symptoms varied depending on the specific creativity measures used. Contrary to some previous findings (e.g., Haynal, 1985; Kaufmann & Vosburg, 1997), depressive symptoms were negatively correlated with creativity test scores.

A number of explanations have been advanced to account for the association between hypomanic features and creativity (see Bowden, 1994; Richards, 1981, 1994; Jamison, Gerner, Hammen, & Padesky, 1980; Schuldberg, 1990, 1994). Firstly, the cognitive features of a hypomanic state, such as increased range and speed of associations (see Solovay, Shenton, & Holzman, 1987), are thought to facilitate originality through over-inclusion and an increased ability to relate and combine information (e.g., Jamison,

1993; Nettle, 2001; Richards, 1994). Clinical research (Holzman, Shenton, & Solovay, 1986; Holzman, Solovay, & Shenton, 1985) indicates two forms of thinking distinctive to mania in contrast to schizophrenia: combinatory thinking (marked by incongruous or fabulised combination and playful confabulation) and irrelevant intrusions (looseness, flippancy). The former is particularly relevant to creative thought processes (Richards, 1994). Indeed, the ability to synthesise a wide range of concepts (concepts which might previously have even been thought of as unconnected) has played a central role in many theories of creativity. For instance, it appears in Koestler's (1964) classic account of the bisociative act of creation, Rothenberg's (1990) janusian and homospatial processes, and Mednick's (1962) theory of flat associative hierarchies. This cognitive connection between hypomanic and creative processes is in fact represented in *DSM-III*'s (APA, 1980) inclusion of "sharpened and unusually creative thinking" as one criterion for clinical hypomania.

The cognitive interpretation of the link between creativity and hypomania is supported by mood-induction research in non-clinical samples. This body of research indicates a facilitative effect of induced positive affect on task performance associated with creativity, such as unusual word associations (Isen, 1985), creative problem solving and ability to make remote associations (Isen, Daubman, & Nowicki, 1987). However, there is also mixed evidence (e.g., Jausovec, 1989; Weisberg, 1994) and evidence against (e.g., Szymanski & Repetto, 2000; Kaufmann & Vosburg, 1997, 2002) the facilitative effect of positive mood on creativity (see Kaufmann (2003) for a review). Furthermore, as Shapiro and Weisberg (1999) note, it is not clear if positive affect found in normal populations is directly comparable to the mood elevations of a hypomanic state or presumed to be present in those with a bipolar diathesis (also see Ramey & Weisberg, 2004).

A second group of reasons proposed to explain the creativity-hypomania link relate to motivation. Firstly, the characteristics of increased energy levels and reduced need for sleep are thought to aid creative output simply through increasing productivity (Bowden, 1994; Hershman & Lieb, 1988; Nettle, 2001; Richards & Kinney, 1990). Nettle (2001) suggests that increased energy not only assists in the immediate process of generating creative work, but also in persisting with a task in the absence of immediate rewards. He makes the point that many occupations traditionally identified as creative, such as

writing, painting, and composing, are lonely occupations that lack the "online feedback" (Nettle, 2001, p.153) of other domains. Instead, the creator must rely on feedback (if any at all) that is deferred to an, often indeterminate, point in the future. A related idea is of hypomania providing the individual with almost endless determination and optimism regarding their work (Bowden, 1994; Nettle, 2001). An over-confident attitude of over-rating one's prospects, combined with high energy levels, may assist the individual in persisting with creative work, despite the possibility of the work not being recognised. As Bowden (1994) notes, this characteristic is often described in intrusive, insistent terms: "The individual, in a single minded way, seems bent on imposing his will or view onto others" (p.81).

The generalisability of these suggestions relating to optimism and persistence is questionable. For example, the notion of the isolated creator would not seem to apply to all fields of creativity, even within the domain of artistic creativity (e.g., music performance or the dramatic arts). It is also unclear how the notion of persistence in the absence of immediate feedback or recognition would relate to trait creativity (e.g., individuals not involved in vocational/avocational creative pursuits, yet who rate highly on creativity tests), which has also been found to relate to hypomania (see Schuldberg, 2000-2001a). Nevertheless, these points are of value, particularly given that a substantial number of the studies supporting the creativity-bipolar link are based on samples of writers and poets, to whom the notion of the isolated creator might be most applicable.

Finally, hypomania may facilitate creativity through heightening emotional awareness (Bowden, 1994; Jamison et al., 1980; Richards, 1981, 1994). Bowden (1994) posits that increased sensitivity to and recognition of internal physiological and psychological states might lead to novel observations. Similarly, an increased acuity to various aspects of the external world provides the individual with a range of perceptions, which may increase the possibility of creative activity.

Although research has focused on the facilitative effect of hypomanic or manic mood states on creativity, the mood *swings* inherent to bipolar disorder have also been suggested as playing a role in creativity (e.g., Andreasen & Glick, 1988; Richards, 1994; Jamison, 1990, 1993; Schuldberg, 1994). Richards (1994) raises the possibility of the

'carryover' effects of learned patterns and sensitivities from one mood state into another being of creative benefit. Jamison et al.'s (1980) finding of bipolar patients reporting ongoing and lasting effects of their mood swings on creativity, productivity, and overall sensitivity provides some empirical support for this position.

Drawing on Simonton's (1988a) chance-configuration model of genius, Richards (1994) argues that mood swings may lead to higher creative capacity through effects on affective integration and on motivation for creative risk-taking (amongst other possible effects). According to Simonton's model, high creative ability is characterised by flexible access to richly interconnected mental material of cognitive and affective content. Richards (1994) emphasises the advantage of a bipolar diathesis for content availability of affective material in this interconnected mental network ('affective integration'). Individuals at risk for bipolar disorders may develop plentiful connections, not only within, but between, negative and positive affective schemata. This effect may result from forced temporal ties between affectively disparate experience through the mechanisms of sequential anticipation, contiguity, and perceived causal control.

Richards' (1994) argument relating to the *motivational* advantage of a bipolar diathesis draws on the notion of mania as a defence or flight from depression. She maintains that the bipolar individual learns through repeated experience of mood swings to limit or cope with depression through frantic activity (the hypomanic or manic episode). In addition, the bipolar individual expects, due to his/her experience of mood swings, that a particular mood state cannot be preserved, which fosters an attitude of risk-taking and confrontation. This active and risk-taking stance becomes integrated into the individual's self-concept and may encourage originality of creative work.

As with mood swings, the effect of depressed affect on creativity has been a secondary research concern compared with hypomania. This seems to have been the case due to the particularly strong findings of bipolar rather than unipolar affective conditions being associated with creativity. Some authors (e.g., Nettle, 2001) present depressed affect as serving no creative function – indeed, even as "…slow(ing) the imagination, decreas(ing) the resolve, and lower(ing) the sights" (Nettle, 2001, p.154) – and simply being compensated for by the creative benefits of hypomania. This view is consistent with results of some mood studies in normal participants. For example, Abele (1992)

induced positive, negative, and neutral moods by way of autobiographical recall and demonstrated that only positive mood resulted in superior performance on ideational fluency tasks. Similarly, Vosburg (1998a, 1998b) recorded mood immediately prior to task performance and found that positive mood facilitated and negative mood inhibited fluency of idea production. Montgomery et al. (2004) present tentative evidence that non-induced positive mood is related to creative self-perception and that non-induced negative mood is inversely related to creative self-perception.

However, it has also been argued that depressed mood may have a creativity-enhancing effect, particularly in the context of mood swings (e.g., Andreasen & Glick, 1988; Jamison, 1990, 1993; Richards, 1981). Depression may facilitate introspection and thereby provide material for creative expression (see Haynal, 1985). Although there is some disagreement on this issue (e.g., see Bowden, 1994; Jamison, 1993), such self-contemplation may not be present, or at least not be as pronounced, in the hypomanic state. Jamison (1993; also see Hershman & Lieb, 1988) makes the point that depression, especially in its milder melancholic forms, can promote a cooler editorial approach to work produced during the more driven, hypomanic state: "Depression prunes and sculpts; it also ruminates and ponders and, ultimately, subdues and focuses thought" (p.118). However, as Sass (2000-2001b) illustrates, it is the hypomanic state, chiefly through providing the "inspirational moment", which Jamison (1993) regards as primary in the creative process, with the structuring of material gained during this state of secondary value. Jamison (1993) also draws on a persistent cultural attitude that negative affective states can stimulate creative work as a means of finding relief from these states: as an 'escape' from or cathartic release of pain through creative expression; through the creative work providing structure to chaotic emotions and thoughts; or the creative work numbing pain through abstraction and the rigours of disciplined thought (see Storr (1972) for discussion of related issues).

Even though several studies have indicated high levels of unipolar as well as bipolar depression in creative samples (e.g., Andreasen, 1987; Jamison, 1989, 1990), recent theorising emphasises the creative advantage of a bipolar diathesis. However, based on their empirical results, Richards and Kinney (1990) stress that there is not a single pattern to the relationship between mood and creativity. Richards (1994) notes that creativity-mood disorder research needs to address family history as well as an

individual's symptomatology in order to shed light on the relative contributions of unipolar and bipolar tendencies to creativity. This is illustrated by a small preliminary study in which peak creativity was compared between depressive participants *with* and *without* a family history of bipolar disorder (Richards et al., 1992). The authors reasoned that possible sub-clinical effects of mood elevation during "normal", non-depressed periods in the former group might be similar to those in "normal" relatives of bipolars, who have been found to be creatively advantaged (e.g., Coryell et al., 1989; Richards et al., 1988). Indeed, the depressive group *with* the bipolar family history emerged as significantly more creative than the group *without* this history. On the basis of these findings, Richards (1994) raises the issue that some of Andreasen's (1987) eminent writers and Jamison's (1989, 1990) eminent artists and writers who were "pure" depressives may in fact have had a bipolar family history.

The creativity-mood disorder studies have not gone uncriticised. The strongest criticisms have been directed towards Andreasen's (1987) and Jamison's (1989, 1993) seminal studies. Sass (2000-2001b), for instance, asserts that prevailing conceptions of creativity in psychological and psychiatric research derive from romanticist ideas about the creative imagination - that is, as a highly emotional, Dionysian, and primitive process. Bipolar tendencies seem especially suited to creativity of this sort. Sass contrasts this with the modernist and postmodernist emphasis on hyper-self-consciousness or hyperreflexivity and alienation, which, he argues, show similarities with schizophrenia-spectrum disorders (see also Sass, 1992). Within the framework of this larger critique, Sass (2000-2001b) argues that Jamison's (1993) analysis of historical literary figures displays a 'selection bias' towards those who fall into a broad definition of the romantic tradition. Therefore, he argues, it is not surprising that her analysis indicates a tendency towards bipolar disorders in this sample. Even within this sample, Sass maintains that Jamison employs an over-inclusive approach to affective disorder diagnoses and a narrow conception of the schizophrenia spectrum.

Sass (2000-2001b) also reminds us of the difficulty of using success as a criterion for creativity, and the relationship of this issue to psychopathology. The ability to promote oneself by networking, the ability to share the concerns of one's audience, and the instinct to deviate partially but not too markedly from social expectations and norms may put those in the schizophrenia spectrum at a disadvantage compared to normals and

people with affective disorder. Indeed, bipolar affective disorder, with its characteristic symptoms of risk-taking and overconfidence, may even be advantageous when attempting to promote oneself and achieve social recognition. This point introduces further difficulties in making any easy connection between creativity and particular forms of psychopathology within eminent samples.

Sass' (2000-2001b) criticisms certainly indicate that it is inappropriate to generalise from Jamison's (1993) study to creativity as a general construct, or even within the domain of artistic creativity. However, the criticisms do not apply as forcefully to studies of contemporary creators, clinical samples, or non-creative, non-clinical samples, all of which have suggested a link with affective-type symptomatology. Nevertheless, it is certainly possible that recognition for creative achievement (for example, in the form of prizes) may still be influenced by romanticist notions of creativity; even contemporary creators, particularly within the creative arts, may subscribe to such notions of creativity when describing creative experience. Indeed, this may also apply to judgments made by researchers regarding what qualifies as 'creative'. Accompanying these more general criticisms are Rothenberg's (1990) fine-grained methodological criticisms of Andreasen's (1987) and Jamison's (1989) studies of contemporary creators. These include concerns with the lack of investigator 'blinding', selection bias, small sample size, and insufficient assessment of clinical status and reasons for participation.

A final issue regarding the creativity–mood disorder research, and indeed with regards to creativity–psychopathology research in general, relates to questions of causality and phenomenological similarity. A dominant assumption of research in the area is that features of mood states (whether hypomanic, depressed, or associated with mood swings) facilitate or enhance creativity, rather than vice verse or the causal relationship between mood states and creativity being circular (see Ramey & Weisberg, 2004; Richards, 1981, 2000-2001; Rothenberg, 1990; Shapiro & Weisberg, 1999 for discussion of issues of causality). It is entirely possible that affective states, even affective symptoms, reported by creative individuals are the result of creative activity, rather than symptoms of an underlying diathesis that positively affects the creative process. Interestingly, recent theorising concerning the aetiology of mood disorders raises the possibility that hard work and success in creative work could trigger mania (Depue & Iacono, 1989; Johnson et al., 2000; Ramey & Weisberg, 2004). Similarly, the affective

and behavioural changes reported to accompany the creative process may simply be normal features of this process rather than expressions of an underlying bipolar diathesis. Shapiro and Weisberg (1999) make the point well: "…It is not clear at what point one should distinguish low level expressions of an underlying mood disorder from the normal affective variability which accompanies creative activity" (p.743). Indeed, the phenomenological similarity between these states and processes does not necessitate that they are causally related. To assert this is to commit a logical fallacy. By way of illustration, consider the similar symptoms often manifested by very different and causally unrelated physiological disorders. As Shapiro and Weisberg (1999) note, severe headache may be an early symptom of an oncoming flu and also be a symptom of a brain tumour, yet this does not mean that there is a causal relationship between the flu and brain tumours.

There is in fact some empirical support for the notion of 'normal' aspects of creative activity being mistaken for expressions of hypomania. Shapiro and Weisberg (1999) administered a creative personality scale, the Adjective Checklist–Creative Personality Scale (ACL-CPS; Gough, 1979), and a measure of symptomatic behaviours associated with depression, mania and hypomania, the General Behavior Inventory (GBI; Depue, Krauss, Spoont, & Arbisi, 1989), to a student sample. They found that the strongest predictors of scores on the creativity scale were six GBI "symptoms", five of which were hypomania items, which could easily be seen as nonpathological affective and motivational correlates of creative activity (high energy, sensation seeking and risk taking, cognitive change, intense task absorption, ideational fluency, and accelerated processing speed). Indeed, prior to data analysis, the authors had identified four of these six items as items which described some aspect of creative activity, but which were not necessarily indicative of affective pathology. The other two predictor symptoms had also been considered for inclusion in this group. These findings suggest that what might be interpreted as a relationship between hypomania and creativity as distinct constructs may in fact simply be a phenomenological similarity between the hypomanic and the creative experience.

This set of criticisms certainly requires that the more extravagant results linking affective disorder, particularly bipolar disorder, with creativity be approached with caution. They are a reminder of the complexity of the concept of creativity – specifically, the

heterogeneity and context-dependence of the concept – and the difficulties posed by diagnostic issues. Nevertheless, the convergence of evidence from a number of different types of studies does suggest some overlap between the constructs of creativity and affective disorder. The issue of whether this 'overlap' is more than phenomenological similarity and, if so, the nature of the causal relationship between the constructs remains unclear. The creativity–mood disorder hypothesis also needs to be tested in a rigorous manner beyond the domain of literary creativity – not only more broadly within the domain of artistic creativity, but in other domains as well.

General comments

Although the empirical literature provides good evidence for the link between creativity and psychopathology, conclusions must be drawn with caution. Research indicates that the link between creativity and psychopathology exists for both schizophrenia-spectrum and affective-spectrum disorders. In both cases, there is substantial evidence for an inverted-U model of the relationship between severity of psychopathological traits, when approached as a continuum ranging from normal to pathological, and creative ability. Sub-threshold or mild symptoms on both continua appear to be associated with greater creative ability than normal and pathological states. In addition, the 'positive' symptoms, represented by constructs such as unusual experiences and hypomania, seem to play a greater role than the 'negative' symptoms, such as anhedonia, avolition, and depressive symptoms.

A prominent theory used to explain the link between creativity and psychopathology has been the notion of creative ability being a compensatory advantage for major genes associated with psychopathology. Indeed, it has been suggested that creative advantage, amongst other benefits, may be a major reason that genes related to psychopathology remain in the gene pool, despite the costs of psychopathology to individual fitness (see Gottesman, 1965; Jarvick & Chadwick, 1972; Nettle, 2001; O'Reilly et al., 2001). This argument has been applied to both the schizophrenia spectrum (e.g., Kinney et al., 2000-2001; Nettle, 2001) and the mood, particularly the bipolar, spectrum (e.g., Richards, 1993a, 1994; Richards et al, 1988). The 'compensatory advantage' argument is supported by the fact that the strongest creative benefit is found for sub-threshold or mild symptoms in each spectrum – for example, in the biological relatives of individuals with schizophrenic or bipolar disorders.

The relationship *between* the two psychopathological spectrums in relation to creativity is unclear. It is possible that both spectrums are independently associated with creativity. In this scenario, individuals with schizotypal features and without a bipolar affective diathesis and individuals with a bipolar diathesis and without schizotypal features are both creatively advantaged. It may be that the creative advantage of these spectrums is realised in different fields. For example, Kinney et al. (2000-2001) provide evidence that schizophrenia-spectrum participants are creatively advantaged in avocational activities, such as poetry writing and sophisticated photography, whereas bipolar-spectrum participants display the greatest creative advantage in vocational activities, such as being a professional dancer or small-business entrepreneur. Nettle (2004) presents evidence that positive schizotypal symptoms are associated with artistic creativity but not mathematical creativity.

Alternatively, it is possible that traits or "symptoms" from both spectrums contribute to creativity through their interaction. Drawing together theories on the role of these spectrums in relation to creativity, Nettle (2001) speculates that the most potent creative force would result from a combination of the two spectrums – providing the drive and energy of hypomania and the original, divergent thought of schizotypy (see also Richards, 2000-2001). He claims that this is the pattern that emerges from biographical analyses of many of the most successful creators. Such an approach risks over-simplification by limiting the schizophrenia-spectrum to cognitive processes and the affective-spectrum to affective processes. Neither of these spectrums are uni-dimensional, as discussed above. Indeed, there is some evidence that hypomania correlates more strongly with divergent-thinking creativity tests than positive schizotypal symptoms correlate with these tests (Schuldberg, 1997). As Schuldberg (1997) writes, there is a possibility "…that creative cognition is more akin to manic 'flight of ideas' than to schizophrenic 'loose associations'" (p.167). Nevertheless, the suggestion of a combinatorial effect of traits from both spectrums is compelling and demands further research.

Indeed, although this area of research has tended to be dichotomised between the schizophrenia- and affective disorder-spectrums, it is important not to create an artificial and easy 'either-or' distinction between the relationship of these spectrums with

creativity. There have been recent calls to focus on areas of overlap and interaction between the spectrums (see Richards, 2000-2001; Sass & Schuldberg, 2000-2001) and attempts to integrate the two approaches empirically (e.g., Ralevski, 2001) and theoretically (e.g., Nettle, 2001; Ralevski, 2001). There may be important similarities in the role of creativity for individuals in either spectrum. Storr (1972), for instance, proposes that the creative process can serve as a psychic defence against the "unpleasure and anxiety" (Freud, 1966, quoted in Storr, p.66) that is present in different forms in both the depressive and the schizoid state.

The literature reviewed in the current and previous sections suggest an association of both 'positive' personality features, such as ego strength and independence, and sub-clinical and mild psychopathological symptoms with creativity. The precise relationship between these personality and psychopathological features needs to be addressed in further detail. It is possible that 'positive' personality features compensate for and allow the creator to make use of psychopathological features that might be as marked as in psychiatric patients – for example, in the manner suggested by Barron (1972) for ego strength. Alternatively, these personality features might simply provide an individual with extra ability and motivation to use sub-threshold or mild psychopathological features, which may be present in a large number of people, for creative ends. As Richards (2000-2001) writes, ego strength may "…help creators modulate primary process (e.g., Russ, 2000-2001) and access the colors on their mental palette at will" (p.129). Nettle's (2004) results provide tentative support for the first of these suggestions in the domain of artistic creativity. The inclusion of personality measures along with psychopathological measures in future studies may shed light on the relative merits of these models and indicate other possibilities of the personality-psychopathology relationship with regards to creativity.

The research associating creativity with 'positive' personality features is consistent with the argument of authors who maintain that creativity is best understood as a healthy process resulting from a 'balanced' personality and mental state – in fact, as epitomising healthy human functioning – and who de-emphasise the psychopathological connection (e.g., Csikszentmihalyi, 1996, 1999; Maslow, 1943, 1959, 1968; Rothenberg, 1990). These authors maintain that what *appear* to be psychopathological states and processes are not necessarily so, and are probably simply the emotional and mental 'peaks' and

'valleys' associated with involvement in creative work (see Rothenberg, 1990; Shapiro & Weisberg, 1999). They argue that the connection between creativity and psychopathology may be more an artefact of cultural stereotypes ("the reigning stereotype of the tortured genius" (Csikszentmihalyi, 1996, p.19)) and social pressures, rather than reflecting any essential connection between the two constructs. With regards to the latter point, Csikszentmihalyi (1999) maintains that many findings in the area simply demonstrate that some *occupational fields* (e.g., poetry, writing, painting, music) are associated with pathology, either because they attract persons who are exceptionally sensitive or because they can offer only depressing careers, partly due to the lack of social support such fields receive (see also Poole, 2003). His own interview-based research with successful creators provides no support for a connection between creativity and psychopathology (Csikszentmihalyi, 1996).

While Csikszentmihalyi (1999) makes an important point by drawing attention to the role of social conditions in effecting mental health in particular occupational fields, his criticisms are less persuasive when applied to the positive findings of studies which have not used occupational field as a criterion for creativity, such as studies of psychiatric patients and their relatives and of creativity and liability to psychopathology in the general population.

Certainly, the issues of causality and phenomenological similarity, as discussed in the creativity-affective disorder section, require not only further empirical work but also further theoretical reflection. Detailed case study-type research, as conducted by Csikszentmihalyi (1996), Rothenberg (1990) and Gardner (1993), is well-suited to address these issues due to its sensitivity to individual experience and construction of meaning. Life-span developmental studies would also be of value in assessing the temporal role of various factors, including ambition, career choice, success or failure in a field, and experiences of psychopathology.

2.5 Summary

This chapter started by considering the definition and measurement of creativity. It outlined the different approaches in creativity research, before reviewing the creativity-

personality and the creativity-psychopathology literature in detail. The following chapter moves on to addressing phenomenological psychology, including its philosophical background and how it has been applied to creativity research, and to presenting the current research questions.

Chapter 3

Phenomenological Research and Research Questions

Pure logical thinking cannot yield us any knowledge of the empirical world; all knowledge of reality starts from experience and ends in it.

- A. Einstein, P. Podolsky, N. Rosen

3.0 Overview

This chapter has several purposes. Firstly, it aims to provide a philosophical background to the approach of phenomenological psychology. While the phenomenological approach is of most relevance to the first of the two studies in the current research, the basic principles of phenomenological psychology inform the overall attitude of the current thesis. A discussion of all aspects of and debates regarding phenomenological psychology, and the human science tradition generally, is beyond the scope of the current chapter. Rather, the aim is to outline the main theoretical features of phenomenological psychology, as they emerged from its philosophical heritage. This is valuable in the context of the current thesis given phenomenological psychology's non-mainstream status and the misunderstandings that frequently surround the field. It also provides a theoretical frame through which the methods and outcomes of the present research can be interpreted. The precise phenomenological methodology used in the current research is detailed in Chapter 4. The consideration of theoretical aspects of phenomenological psychology starts by outlining the recent move towards approaching psychology as a human science, before detailing the position of phenomenological psychology within this trend. The main theoretical principles that inform phenomenological psychology are outlined.

The chapter also reviews existing phenomenological studies of creativity. The current state of creativity research in general is considered, leading to a rationale for a

phenomenological study of artistic creativity and for a study of the relationship between the phenomenology of artistic creativity and measures of personality and psychopathology. Finally, research questions are presented for the thesis as a whole.

3.1 The Move Towards Psychology as a Human Science

Recent years have witnessed the discipline of psychology engaging in substantial self-questioning regarding the nature of the subject, the boundaries of the discipline, and means of conducting psychological research (Bruner, 1990; Smith et al., 1995b, 2003a; Watts, 1992). Much of this self-reflection has concerned the theoretical and conceptual foundations of the discipline.

It is useful to summarise the debate using the terms 'natural' science and 'human' science or hermeneutics (see Van Langenhove, 1995). Psychology has traditionally aspired to model itself on the principles of the natural sciences, partly as an attempt to gain respectability as a rigorous scientific discipline (see Gurwitsch, 1966). The emphasis of behaviourism on external measurability represented the height of this attempt at modelling. While it is true that the 'cognitive revolution' in psychological research has moved the discipline beyond this behaviourist emphasis and the methodological concomitant of the laboratory experiment, many have argued that the same positivist logic and empiricist impulse remain central to psychological inquiry (e.g., Rychlak, 1988; Smith et al., 1995a, b). Smith et al. (1995b) observe that "…research tends to be construed in terms of independent and dependent variables and the measurement of hypothesized relationships between them" (p.2). Within this project, method and measurement are accorded privileged status.

The discipline's allegiance to these natural science principles creates a limited epistemological framework to guide research and encourages the neglect of a range of alternative conceptual foundations for psychological inquiry.[3] Moreover, it has been

[3] Smith et al. (1995b) emphasise the prescriptive nature of this epistemological framework, arguing that it dictates the types of questions psychology can address and the form in which it is legitimate to ask them. Indeed, the recent, alternative theoretical frameworks and associated modes of research offer researchers the possibility of not only generating new research questions but of conceptualising traditional areas of

argued that the very attempt to model psychology on natural science principles is guided by a narrow, and even flawed, understanding of these principles. Some philosophers of science have argued that the natural sciences draw from a range of theoretical and philosophical bases and employ a range of different methods (Campbell, 1984; Mulkay, 1991; Sloman, 1976). The trajectory of the evolution of physics, perhaps the 'purest' of the natural sciences, has been away from, and often critical of, the static premises of a Newtonian scientific paradigm (see Graham, 1986), which remains at the heart of most psychological research. Harré (2004) argues that psychology's use of natural science principles, particularly the mathematical forms of representation adopted, is flawed. Together, these arguments suggest that the foundation on which psychology has attempted to build itself is based on an overly narrow conception of the principles of this foundation; that the precise use of the foundation is significantly flawed; and that this foundation is being severely questioned by the disciplines regarded as its founders and main bastions (see Koch (1965), Shotter (1975), and Smith et al. (1995b) for further discussion).

A string of 'new voices' in psychological research indicates the restlessness with the limited epistemology of mainstream psychology. While a brief summary risks caricaturing the diversity of these new voices, it would be fair to say that they tend to be based on a sense of the inadequacy of traditional psychological concepts and methods for addressing phenomena of psychological interest and of the need to develop psychology as a *human*, as opposed to natural, science. The concern is not with importing concepts and methods from sciences that deal with objects, phenomena, or laws of nature and the physical world, but with developing concepts and methods that are most suited to inquiry into human psychology. Van Langenhove (1995) summarises the attitude neatly: "…psychology should picture and treat people as persons rather than as natural objects…" (p.23). These new, post-positivist approaches have included such approaches as existential-phenomenological psychology, symbolic interactionism, idiography and the case study, social representation, discursive psychology, dialogical psychology, and narratology (see Smith et al., 1995a). The new conceptualisation of psychology also involves encouraging previously unheard or marginalised voices, as represented by cultural psychology and feminist psychology.

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research in new ways. See section 3.2 for how this applies to the current research's approach to creativity research.

This assortment of new approaches has developed to such an extent that it has been referred to as a "new paradigm" in psychology (Smith et al., 1995b). Smith et al. (1995b) present a tentative listing of the concerns of this new paradigm, in contrast to the concerns of the "old paradigm", represented in Table 3.1. The authors are careful to note

Table 3.1 *Concerns of the 'New' and 'Old' Paradigms in Psychology*

New	*Old*
Understanding, describing	Measuring, counting, predicting
Meaning	Causation, frequency
Interpretation	Statistical analysis
Language, discourse, symbol	Reduction to numbers
Holistic	Atomistic
Particularities	Universals
Cultural context	Context-free
Subjectivity	Objectivity

Source: Smith et al. (1995b)

that this listing provides a useful contrast between the paradigms for the purpose of debate rather than a definitive representation of particular positions. The terms are also poles of continua, rather than discrete entities, so researchers might adopt different positions along each continuum. This relates to the notion discussed in section 3.5 of the value of combining and integrating research approaches: rather than absolutely rejecting mainstream or 'old' paradigm psychology, the position of the current research is that the greatest value can be derived from integrating paradigms, drawing on theoretical and methodological elements of each depending on the nature of the research questions. This attitude is represented in the two contrasting studies conducted as part of the current research. While this 'integrationist' position would certainly seem to be warranted in creativity research, as discussed in section 3.4, it would also seem to be in the interest of the continuing evolution of the discipline (see Smith et al. (1995b) and Smith (1996) for further discussion of this issue).

Although a distinction is being drawn here between the 'old' and 'new' paradigms, it may in fact be more accurate to think in terms of dominant versus marginalised paradigms.

In the humanistic tradition, there is in fact a long history of questioning whether the study of the human and the study of the subject matter of the physical sciences could possibly be informed by a common epistemology. Dilthey (1927/1977) argued that human experience was to be understood and disclosed (the realm of 'verstehen'), rather than explained or measured. Similarly, Brentano (1874/1973) saw a crisis in psychology's adoption of a method and perspective without regard for the essentially human nature of what was being studied, particularly its difference from the qualities of physical objects. Wertheimer (1925/1967) bemoaned psychology being "intent upon a systematic collection of data yet often excluding through that very activity precisely that which is most vivid and real in the living phenomena it studies. Somehow the thing that matters has eluded us" (p.1).

A number of consonant research methodologies have accompanied the theoretical development of the 'human' science approaches in psychology. These methodologies have generally been qualitative in nature. Indeed, interest in and respectability of qualitative research methods has developed substantially in recent years, even by researchers not working within the 'new' paradigm approaches (see Smith, 2003a).[4] Smith et al. (1995c) summarise the main research principles of the 'human' science approaches as follows: the research is conducted in a 'real' world; the research recognises the central role of language and discourse; the research, like life, is perceived as a set of processual dynamic interactions; and the research is concerned with persons and individuals rather than statistics and variables, aiming to reflect psychological life in its lived complexity. These principles, along with the concerns listed in Table 3.1, indicate why qualitative research plays a central role in these approaches. This form of inquiry is often regarded as being more apposite than quantitative methodologies in addressing such theoretical concerns as meaning, understanding and description, discourse, and subjective experience.

3.2 Principles of Phenomenological Psychology

Rulf (2003) distinguishes between three different uses and meanings of the term 'phenomenology'. Although Rulf's discussion focuses on the uses of the term in

psychiatry, her distinctions also apply to general psychological writing. The first use of the term refers to description. For example, in North American and British psychiatry, the term phenomenology has been used to denote a description of the diverse signs and symptoms of psychiatric illnesses by an impartial and 'objective' observer. The second use of the term refers to description of subjective experience, without recourse to the notion of identifying the invariant elements of such experience. An example of this use of the term is Jaspers' (1913/1964) attempt to render psychiatric nosology more intelligible by drawing on patients' reports of their subjective experience. The final use of the term is grounded in the philosophical school of phenomenology which originated in the early years of the twentieth century.[5] This school is concerned with describing the essential features ('eidos') of many aspects of human consciousness and being-in-the-world. Central figures in this school include the Continental philosophers Husserl (1913/1931, 1954/1970), Heidegger (1927/1996), and Merleau-Ponty (1942/1963, 1945/1976). It is this final use of the term that the current thesis adopts.

As described above, there have been multiple branches to the development of psychology as a 'human' science and associated qualitative research methodologies. However, phenomenological psychology and its associated methodologies (there is not a single 'method' employed by all phenomenological researchers) is arguably the most grounded in a well-developed philosophical background. Phenomenological psychology was principally developed by the Duquesne University group in the 1970s and '80s, led by Amedeo Giorgi. These researchers took the central aspects of philosophical phenomenology as the basis for developing a method of conducting psychological research that would be more adequate to the task of determining the *meaning* of phenomena as opposed to *measuring* such phenomena. In the interest of psychology as a discipline, Giorgi (1985a) asserted that phenomenology:

> …*must not remain just a philosophy*; it must be expressed in a way that makes it proximately helpful to psychological praxis, and that would be the meaning

[4] An example of this is the establishment in 2004 of the *Qualitative Research in Psychology* journal.

[5] In fact, the term 'phenomenology' was coined in the mid-eighteenth century, and several prominent philosophers, including Kant, Hegel and Marx, employed it at various times in their writings. However, it is Husserl who is commonly referred to as the "father of phenomenology" due to supplying the term with new meaning and significance (Spinelli, 1989).

of phenomenological psychology as a human science rather
than phenomenological psychology as a subfield of philosophy (pp. 46-47).

Phenomenological philosophy initially set itself a radical task, as represented in Husserl's (1913/1931) cry to return to 'the things themselves'. That is, phenomenology aimed to develop a rigorous and unbiased study of subjective experience, of things *as they appear*, independent of and prior to any reflective interpretation, scientific or otherwise. This study of subjective experience was not for its own sake, but in order to clarify the role of the phenomena of consciousness in the process of meaning-construction; in other words, to expose how our consciousness imposes itself upon reality. It was also hoped that these phenomena of consciousness could be set aside, or 'bracketed', in order to arrive at a more adequate, if still incomplete, knowledge of reality. This original, Husserlian formulation is referred to as transcendental phenomenology. A branch of phenomenology known as existential phenomenology was developed as a result of focusing the phenomenological attitude on the very meaning of existence, a move associated with the work of Heidegger. As such, existential phenomenology is concerned with the experience of basic human issues (e.g., joy, despair, love, freedom, and choice; see Spinelli (1989) for further elaboration on the distinction between transcendental and existential phenomenology).

Phenomenological psychology applies both the transcendental and existential branches of philosophical phenomenology to human psychological phenomena. In this manner, phenomenological psychology "has become that psychological discipline that seeks to explicate the *essence*, *structure*, or *form* of both human experience and human behavior as revealed through essentially *descriptive* techniques including disciplined reflection" (italics in original; Valle, King, & Halling, 1989, p.6).[6] The choice of terms 'phenomenological psychology' or 'existential-phenomenological psychology' in contemporary writings is sometimes a matter of abbreviation or of how much emphasis the author wishes to place on existential issues.

[6] The term "explication" is frequently used by phenomenological researchers to refer to the process used to reveal the essential structure of an experience by transforming implicit awareness of a complex phenomenon into "explicit, formulated knowledge of its components" (Van Kaam, 1969, p.316).

A central element of phenomenology that underlies its empirical application is the notion of the human's engagement with the world, rather than detachment from it (McIntosh, 1997). This reflects the distinction drawn above between the human science paradigm, which recognises that the object of study in psychology is a *conscious* human subject, and the natural science paradigm, which developed in dialogue with phenomena that lacked consciousness (rocks, particles, physical laws, and so on). However, despite the claims of some critics (see Misiak & Sexton (1973)), phenomenological psychology is neither pro-introspectionism nor anti-science. Although phenomenological psychology takes subjective experience as its primary concern, its interest is not with subjectivity *per se* but with the 'invariants of experience' that are shared by humans. As McIntosh (1997) writes, "A phenomenon does not represent a mystical inner world, but rather the external world to which the subject is present in a particular way, in the moment" (p.40). Rather than adopting an anti-science stance, phenomenological psychology wishes to draw the attention of the discipline of psychology to models of science as a polymorphous activity and to expand notions of which scientific frameworks are relevant to the study of the human.[7]

It should also be noted that phenomenology, in both its philosophical and psychological guises, does not identify itself as an attempt to stand beside or replace existing systems. Rather, phenomenology attempts, where possible, to complement them and to clarify or remove other systems' unnecessary biases and assumptions. For example, Husserl (1913/1931) wrote:

> My criticism of psychological method did not at all deny the value of modern psychology, did not at all disparage the experimental work done by eminent men. Rather it laid bare certain, in the literal sense, radical defects of method upon the removal of which, in my opinion, must depend an elevation of psychology to a higher scientific level and an extraordinary amplification of its field of work. (p. xviii)

As Spinelli (1989) argues, phenomenological psychology offers a rigorous investigation of the attitudes and assumptions that underlie psychological explorations. Phenomenological investigation can reinterpret inconsistencies in data and conclusions from experimental studies in order to clarify the sources of such inconsistencies and

[7] See Spinelli (1989) for an in-depth consideration of criticisms of phenomenological psychology.

provide a more 'bias-free' set of hypotheses and predictions. In this manner, phenomenological psychology can offer a fresh way in to many areas of psychological research and engage in dialogue with existing approaches and findings. This is precisely the approach that the current research adopts.

There are a number of foundational principles to phenomenological theory and method, including intentionality, the phenomenological reduction, description, and the search for essences (Merleau-Ponty, 1945/1976).[8] These principles overlap and, to some degree, imply each other. In brief, intentionality refers to the fact that consciousness is always of or about some thing, it is always directed towards an 'object'. This concept emerges from the more general attitude of phenomenology towards the relationship between individuals and the world. Individuals are not viewed as objects *in* nature, the perspective assumed in the natural sciences. Rather, the phenomenologist sees an indissoluble unity or interrelationship between the individual and the world. The second principle of the phenomenological reduction refers to the attempt to suspend or put aside one's preconceptions and assumptions. By 'bracketing' these biases as much as possible, one is preparing the ground to approach immediate experience with an openness, to perceive freshly what may otherwise have been "worn smooth with use" (McIntosh, 1997, p.45). The third principle of description is applied to the possibilities that 'open up' through the phenomenological reduction: the phenomenologist attends to her immediate and concrete impressions and focuses on describing rather than interpreting or speculating about these impressions. Through the process of reduction and description, the phenomenological analysis seeks to provide an account of the essence of the phenomenon being researched, the fourth principle of phenomenology. The phenomenological essence is the articulation of a fundamental meaning without which a phenomenon could not present as it does; it is the most invariant meaning of a phenomenon (Giorgi, 1997). These four principles of phenomenological psychology are discussed in greater detail in Appendix B.

[8] However, it is important to recognize that phenomenology is a diverse approach (as Spinelli (1989) points out, it might more accurately be referred to as an 'orientation' than a 'school') and details of theory and method are subjects of ongoing debate.

3.3 Phenomenological Studies of Creativity

Phenomenological studies of creativity are limited in number and have not yet established themselves as a research paradigm in their own right, as indicated by their absence from various summaries of creativity research (e.g., Glover, Ronning, & Reynolds, 1989; Runco, 1997; Sternberg, 1999). However, several valuable phenomenological studies have been conducted. There have also been a number of studies which have not been conducted strictly from the perspective of phenomenological psychology, but which are concerned with providing a descriptive account of creativity through a qualitative mode of inquiry. A commonality amongst this group of studies is a greater focus on the creative *process* rather than the creative product or person. Indeed, this is the aspect of creativity that lends itself most suitably to descriptive, phenomenological study. It is also an aspect of creativity that has not been adequately studied. As Csikszentmihalyi & Getzels (1971) write: "Despite much recent research on creativity, perhaps the most critical aspect of the problem has eluded systematic inquiry: the process of creative production itself" (p.47).

The purpose of the current section is to review the phenomenological studies of creativity in order to provide a backdrop to the current research. The studies that fit most comfortably within the approach of phenomenological psychology will be outlined first, before reviewing the broader grouping of studies with a descriptive, experiential focus. Finally, attention will be drawn to constructs which have some relevance to experiential aspects of the creative process, but which do not take creativity as their sole focus.

Phenomenological studies of artistic creativity

Studies of artistic creativity from the perspective of phenomenological psychology or philosophy have been conducted by Reinders (1992), Ó Cluanáin's (1979, 1981, 1987), Bindeman (1998), Giorgi (1984), Conrad (1990), and Nardone (1996). When describing phenomenological findings it is often necessary to adopt the language and terminology of the researcher in order to do justice to the subtlety of what they are trying to capture descriptively.

Reinders (1992) investigated the phenomenology of artistic creativity through open-ended interviews with three internationally-recognised artists from the diverse fields of choreography, painting, and musical composition. The participants were asked to describe their experience of the creation of a recent or current artwork, particularly the way in which they perceived and solved problems. The data was analysed according to the phenomenological method of analysis developed by Giorgi (1985b).

The study's findings were as follows. The artist assumes an artistic perspective towards certain aspects of his 'life-world'.[9] This gives rise to a sense of lack, which engages his artistic desire to produce an artwork that will fulfil or 'speak to' this felt lack. The artist has a vague, intuitive sense of the artistic object and the direction in which he should project his artist pursuit in order to fulfil the sense of lack. Within this tension between desire based on a felt lack and an intuited artistic object, the artist engages in a process of exploration – he engages in repeated trials and variations in order to come closer to the intuited artistic object. This exploratory process also clarifies the artist's implicit guiding idea. The artist actively manipulates his artistic material as a means of exploring its expressive possibilities with regards to his global intuition of the artistic object he wishes to create. The exploratory search is informed by what Reinders (1992) termed the 'demands of the artistic object'. In this exploratory process the artist 'recognises' artistic constellations or 'units' that bring the work closer to realising the intuited intentional object. The spontaneous discovery of fulfilling artistic structures is felt to be beyond the artist's control.

The exploratory process is characterised by a number of seemingly paradoxical attitudes. Firstly, the artist adopts an attitude of 'purposive-playfulness', which refers to the active manipulation of his artistic materials in a highly playful, probing manner in order to realise his intentional object. The attitude of 'circumscribed indeterminacy' is also assumed. This refers to holding at bay the knowledge derived from previous artistic experiences and trusting that his artistic intuition and artistic perception will recognise emerging artistic configurations that speak to the intentional object. The artist is being

[9] 'Life-world' (from the German 'Lebenswelt') is a term used by phenomenologists to refer to the world as it is lived by the person, what is given directly and pre-reflectively in

both active and receptive: active in the sense that his actions are informed by his artistic intuition of the intentional object and receptive in the sense of remaining sensitive to the emerging artistic configurations. Reinders (1992) writes: "…the artist lives his or her experience paradoxically as bringing forth and attending to the emergence of the artistic object" (p.6). Another paradox at work is 'distant-engagement' – that is, an alternation between immersion in the manipulation of material and distancing oneself, looking at the emerging artistic structures from the perspective of the audience, in order to clarify the overall structure or gestalt of the object.

As the artistic structures for the intentional object continue to develop and become more complex, the sense of recognition becomes stronger. This is experienced as "a global bodily felt sense of meaning" (p.67). A sense of completion is attained as the artist gradually forms the configuration of artistic tensions into "a balanced totality of artistic significance" (p.68). Again, the sense of completion is felt on a physical level. The completion also has a paradoxical element to it, because although the artist 'feels' the work to be completed, the meaning of the artistic object remains ambiguous and open to change. The temporality of the process is characterised by a non-linear but rhythmic progression. For example, phases of direct involvement with the artistic material may alternate with periods in which the artist's conscious attention is directed to some unrelated pursuit. An attitude of risk-taking characterises the overall process – in the bracketing of previous experiential knowledge, the maintenance of an open-ended attitude, and engaging in a process of exploration without knowing exactly what is being looked for.

Central to Reinders' (1992) account of the experience of artistic creativity are concepts of desire, exploration, discovery, intuitive recognition, and paradox. The sense of lack, exploration and the dialogue between the artist and her material apparent in Reinders' findings concur with Ó Cluanáin's (1979, 1981, 1987) series of non-empirical studies of the phenomenology of creating and appreciating art. After reviewing the writings of four phenomenological philosophers and two contemporary psychologists on the phenomenology of art and aesthetics, Ó Cluanáin (1987) offers several general conclusions. Firstly, he writes of artists discovering a 'special world' in the immediate,

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human experience. The hyphenated use of the words "life" and "world" signals the phenomenological view of the total interrelatedness of the person and the world.

'given world': "This 'special world' has been present in the 'given world' as a potential of which we have had glimpses on occasion, but also of which we have perceived but little, on account of preoccupation with mundane things" (p.104). This discovery is achieved through utter respect for the 'otherness' of the medium. As in Reinders' (1992) findings, Ó Cluanáin sees the creative process as requiring a novel, exploratory encounter with the medium: "Presumption of familiarity with media is not allowed" (p.105). This encounter does not involve a sense of control over the medium, but rather an "accommodation to its character" (p.104). Ó Cluanáin observes that this aspect of the creative process, in addition to requiring humility, involves "…a decentration of one's subjectivity, which is an edification of one's subjectivity" (p.104). Although different in nature, this dynamic relating to the artist's subjectivity echoes Reinders' (1992) emphasis on the paradoxical elements of the creative process. Another point of contact between the studies is the motivating force of desire borne of a sense of lack: while Reinders (1992) writes of "an artistic perspective which gives rise to the experience of a lack" (p.5), Ó Cluanáin (1987) writes of an "…unease in the artist, a yearning to resolve toward completeness the experienced fragment of a vision" (p.105).

A similar approach is adopted by Bindeman (1998). His analysis is guided by concepts from philosophical phenomenology, rather than the empirical methods developed by psychologists based on this philosophical background. Bindeman identifies common themes in the writings of historically prominent creators from a variety of fields, although he focuses on creative artists. These themes include unconscious reception and transfer of energy from an external source; conscious acts of purgation and destruction; and creation as catharsis or discharge of passions of the everyday world.

The themes which emerged in Reinders' (1992) and Ó Cluanáin's (1987) studies of not being 'in control', of discovery, and the role of intuition are also apparent in Giorgi's (1984) phenomenological study of the artistic process. This study was based around descriptions provided by two visual artists. The phenomenological structure that Giorgi found to be common to both artists was described as follows:

> In creating a work of art, a person must pursue the achievement of the artwork in an open-ended way that constantly risks failure. The risk of failure is defined by the constraints of the task demands which are simultaneously precise, yet incomplete, and understood by the artist

> initially primarily through their excesses (e.g., literalness or surrealism). As the work progresses, specific positive guidelines also emerge, but still final closure is held off until the last possible moment. Conscious and unconscious processes intertwine constantly as do personal and artistic perspectives. In general, what the artist is aware of are the general aim and demands, and what he or she is least aware of, it at all, are the specific achievements that are accomplished. The obscurities in the process are due largely to the fact that artists are guided by feelings rather than knowledge, and to the fact that artworks are as much the result of spontaneous actions of the artist body as planned activities (p.26).

Conrad (1990) takes a somewhat different tack in her phenomenological analysis of artistic creativity. In accordance with the position of the current research and Reinders' (1992) study, Conrad regards the phenomenological approach as offering a way beyond the conceptual and methodological limitations of mainstream creativity research. Rather than approaching the phenomenon through accounts provided by artists, Conrad's investigation is based on her own account of the experience of artistic activity (specifically, fiction writing), in the tradition of philosophical phenomenology. Conrad justifies this introspective approach by drawing on Husserl's (1913/1931) notion that the logic of any human experience is, in principle, available to any human subject. While it is true that this is Husserl's position, it would seem that the richest account of a particular phenomenon could be provided by those who have had most experience of, and are therefore most familiar with, this phenomenon. Indeed, this is the approach that most psychological phenomenological research has adopted. Admittedly, Conrad is only attempting to present "a starting point" (p.110) toward a more comprehensive phenomenological analysis of artistic activity.

Conrad's (1990) description of the fiction-writing process starts with a sense that engaging in the production of the artwork is not 'optional' – that there is an imperative driving the artist. This imperative is the result of the artist sensing that the artwork "already exists" (p.111). Indeed, the process is characterised by trying to *discover* the nature and character of the artwork. This is achieved by navigating a dynamic between recognition, which is associated with a sense of excitement, and sensing that the artistic production has strayed from what it 'should' be. The 'discovery' of the artwork occurs through interaction with the medium, as opposed to being a pre-formulated image that the artist is trying to capture through manipulation of the medium: "The writer has to find

out what the story is by writing it" (p.112). The language of intuition rather than critical mental processes is used to describe this process: "The writer feels toward it, knowing quite clearly what isn't it, yet still unable to see what is" (p.112). In fact, conscious, critical processes (referred to as "the voice of invention, of conscious creation" (p.112)) are presented as interfering with the intuitive grasping of the artwork. In this sense, the artist is not so much in control of the creation as coaxing it along, letting it emerge: "If I push too hard, the thing evaporates" (p.113). When the artist emerges from the trance-like state of 'discovering' the artwork, she can be exhausted and disoriented, and experience a sense of detachment from her surroundings. The process of looking over the work is characterised by a twofold reaction: surprised certainty that this is as the artwork *should* be, that 'it' has been captured, and rejection of elements of the piece on the basis that they do not accurately capture the character of the artwork ("(they) are wrong, not it, bits that shatter the re-unfolding dream or flatten and muddy it" (p.113).)

The writer's twofold reaction is paralleled by the double reaction of the reader – the reader "…responds to a story with either shocked recognition – 'Yes. That's it, exactly' – or with scorn – 'That's a lie, that's not it at all'" (p.113). For Conrad (1990), this 'double' recognition on both the part of the artist and the audience is testament to the fact that artwork is concerned with revealing meanings that are hidden, but common, to all human experience, rather than merely reflecting the idiosyncrasies of the creator. Drawing on tenets of philosophical phenomenology, she writes: "Because the logic or meaning of experience is invariant across time and culture, and directly available to any subject independently of theoretical constructs, the reader, no less than the writer, can see places where the story, the text, departs from the necessary logic of the human experience it presents…The present analysis sees the *sine qua non* of art as truth, not novelty, that of artistic activity composition, rather than creation" (p.115). This is reminiscent of a statement attributed by Merleau-Ponty (1964) to the artist Paul Klee: "Art does not produce the visible. It renders visible." The emphasis on artwork as revealing 'truth' rather than being concerned with innovation or the artist's individual psychology is of interest with regards to cross-cultural perspectives on creativity. Ironically, considering Conrad is writing from the decidedly Western perspective of Continental phenomenology, her account of experiential aspects of the creative process is consistent with central elements of Lubart's (1999) summary of Eastern views on creativity – particularly the notion of creativity as a process of repeating or rehearsing a

'known' truth through skilled composition rather than inspired novelty, which is more characteristic of Western views on the construct.[10]

Clearly, Conrad's (1990) account displays significant overlap with the other phenomenological accounts of creativity outlined above, particularly with Reinders' (1992) and Giorgi's (1984) sense of the artist responding to the 'demands' of the artwork (Conrad in fact adopts this term at one point: "The artwork, the meaning grasped, makes its own demands, suggests its own proper or optimal instantiation…" (p.115)). The sense of the artist not being in 'control' of the process, the prominent role of intuitive, emotional processes, and the sense of discovery through interaction with the medium are also points of contact with the other phenomenological accounts. Particularly prominent in Conrad's account, compared to the other phenomenological accounts, is the interfering role of conscious, critical mental processes.

Nardone (1996) applied a phenomenological analysis to the experience of improvisation in music. She conducted open-ended interviews with three jazz musicians recognised as proficient in performing and teaching musical improvisation. Her analysis yielded two phenomenological structures: one emphasising the psychological experience of improvisation and the other the musical context in which improvisation takes place. The first of these structures was composed of eight constituents: ensuring spontaneity while yielding to it; being present and not present to musical processes; exploring familiar and unfamiliar musical terrain; drawing from a corporeal and incorporeal source of musical inspirations; attending moment to moment to temporality; having trust and confidence in oneself and musical others in musical risk taking; being sustaining of and sustained by the musical other; and extending toward the listening other in musical risk-taking. The second structure was composed of three constituents: perceiving temporality as altered; identifying the narrative context as grounding and providing a structure for concretisation of musical expression; and recognising the existing sociocultural context as liberating

[10] It is also of note that Conrad's (1990) account of artistic activity as revealing universal truths, and indeed Husserlian phenomenology as a whole, is at odds with most postmodern accounts of artwork. Derridian deconstruction, for instance, emphasises the artwork as a 'text' whose meaning is certainly not universal but situated within possibly endless contexts. However, common ground between Conrad's account and postmodern critical theory is the decentering of the creative subject – the focus is on the 'meaning' of the artwork rather than the significance of the artwork in terms of the artist's psychological make-up (as is the case in traditional psychoanalytic criticism).

and transforming. Dialectical paradoxes play a prominent role, as in Reinders' (1992) findings, particularly in the structure relating to the psychological experience of improvisation. As with the other studies, "non-rational intelligence" (p.4) is also seen as primary in the creative process, although Nardone emphasises the role of the body in these non-rational processes.

Although Melrose (1989) situates her study of the creative personality and the creative process within a phenomenological framework, the study does not sufficiently emphasise pre-reflective experience to be considered strictly phenomenological (see section 3.2). Instead, Melrose draws in an ill-defined manner from various methodologies that fall under the rubric of descriptive, generative research, producing the sort of qualitative work that Kvale (1994) describes as a "boring empiricist collection of interview quotes, rather than a well-told convincing story" (p.171). The study is based on semi-structured interviews with 11 prominent individuals in a variety of artistic and non-artistic fields. With regards to the experience of the creative process, Melrose's findings emphasise dedicated work and deemphasise insight and inspiration. However, her participants described the inspirational aspect of the process as being accompanied by a strong affective component, characterised by a sense of excitement and joy, sometimes felt on a bodily level. They portrayed the creative process as something that could not be wilfully generated, but which they facilitated by constructing the context for it to occur (e.g., being willing to experiment with different approaches, adopting a playful attitude, and so on). The work generally unfolded through processes of spontaneity and serendipity. Melrose reports that the affective components of the creative process are its prime motivating force, rather than the drive to complete a creative product: "The felt experience of creativity is the satisfaction that keeps the creative individual rewarded and fulfilled and is the bait for continuing creative output. Each of the respondents reported creativity as a satisfying, fulfilling, or exciting phenomenon" (p.418). This notion also appears in Csikszentmihalyi's (1996, 1997) theory of 'flow', which is discussed below.

Similar methodological limitations are apparent in Owen's (1983) inquiry into the creative process in visual art, based around semi-structured interviews with 10 well-established visual artists. Rather than engaging in a thorough analysis of the meaning of her participants' statements, as provided in a phenomenological or other rigorous qualitative

research method, Owen (1983) limits herself to summarising and critiquing her data. As with Melrose's (1989) analysis, the reader is left with an impression of, but not a penetrating descriptive account of, experiential aspects of the creative process. However, the perspective offered on the creative process is of interest in light of the findings of other, more rigorous studies. Owen states:

> The artists' first task in the primary medium is to establish a rudimentary composition which the inceptive image foreshadows. When communication among the parts of the incipient whole develop, they offer suggestions for the development of the part(s). Phenomenally, direction comes from the maturing work. The addition of the development of the part transforms the whole; the whole, in turn, anticipates the additional development of the parts. The arena of the work shifts from whole to part and back continuously. Sustained concentrated work takes place, usually, on the part; the work on the whole is largely reflection and evaluation (Owen, quoted in Reinders, 1992, p.23).

The emphasis on the Gestalt of the various constituent elements and the direction and 'meaning' of the work evolving through engagement with the material is present in the findings of most of the studies outlined above.

The 'loose' understanding of phenomenological investigation is also apparent in Noel's (1981) study of the artistic process in women. She conducted interviews with two female artists, in which she asked her interviewees to describe "as completely as possible the experience of their creative process and their perception of the implications of this phenomenon for themselves and for others around them" (p.99). The framing of this interview question is not sufficiently rooted in pre-reflective experience to yield rich experiential data for a strictly phenomenological analysis, a point also noted by Reinders (1992). This is reflected in Noel's qualitative findings, which relate as much to identity-related issues as to experiential aspects of creativity. The findings indicated that the participants' creativity is influenced by internally and externally imposed sex-role constraints, that it provides more fulfilment than other roles, is motivated by the desire to feel important and have impact on the world, and that it often lacks environmental support and encouragement.

Of interest to the current research is Noel's (1981) attempt to use her qualitative findings in a subsequent experimental study. She constructed a questionnaire based on her interview findings, which was administered to 60 practicing artists. The purpose of this

was to examine the relationship between, and the interactive effect of, gender, sex-role orientation, and the experience of the creative process, which parallels the current research's attempt to examine the relationship between personality, psychopathological features, and the experience of the creative process. The findings indicated that the characteristics of the creative process described by the two female artists were equally endorsed by the sample of 60 artists, irrespective of gender and sex-role orientation.

Other descriptive studies of the creative process

There have been a string of descriptive, qualitative studies of the creative process of a non-phenomenological variety. While these studies represent a broad concern with the creative process as it exists in its 'real life' setting, they also reflect the increasing focus on affective components of creativity. Studies by Henderson (2004) and Doyle (1976, 1998) are of particular relevance to the current research.

Although Henderson's (2004) study of the creative process of product inventors is not directly related to the current research's focus on artistic creativity, the research question it poses and the study design are similar to those of the current study. Both investigate whether themes that emerge from a qualitative analysis are related to personality features. Henderson is particularly concerned with affective components of the creative process. Although all of the dimensions of Russ' (1993, 1999) model of affect and creativity are evident in the findings, Henderson emphasises the role of affective pleasure in the creative process of her inventor sample. The findings indicate that affective pleasure is characteristic of the process itself, rather than covaring with personality features.

Doyle (1976) provides a critical reflection on the artistic creative process, rather than an empirical study. She draws attention to the variety – and the contradictory and sometimes paradoxical nature – of statements made by creators and theorists about creativity. Doyle outlines the temporal unfolding of the creative process and uses this dimension of time to contrast differing views on creativity. According to Doyle's account, the beginning of the creative process is marked by a sudden trigger or a vague intuition that something is available to work on – either way, it begins with a sense of direction. However, the final image of the artwork is not clear, it is not yet articulated. Rather, the artist needs to "*think(s) through* his medium" (p.115; italics in original). These concepts

of a sense of direction and the artwork evolving through interaction with the medium are reminiscent of the phenomenological accounts provided above. In the adoption of the medium as a means of 'thinking', certain "so-called logical distinctions disappear, for example, the distinction between intellect and emotion" (p.116). In order to be able to adopt the medium as a means of thinking, the artist needs to have developed a certain degree of skill or control over her craft. The development and clarification of the original germ by thinking in the medium does not occur instantly – rather, the artist experiments until she experiences a sense of recognition, a sense of having made manifest the original inspiration of the piece. Again, the sense of exploration and recognition resonates with some of the accounts provided above, particularly Conrad's (1990) analysis.

Rather than there being a single moment of discovery, a sudden insight or recognition that provides resolution, Doyle (1976) suggests that there are "…extended periods of work punctuated by surprises large and small" (p.119). Affective elements may vary according to this fitful unfolding of the process: despair and loneliness may accompany the periods of searching, whereas satisfaction and pleasure may be brought on by the sense of discovery. At some stage in this process, Doyle posits that a "period of total centration" (p.119) takes over. She describes this period as involving a sense that the work is 'creating itself' (e.g., the melodies flow without forcing, the characters seem to have a life of their own, and so on), the artist is totally absorbed in and directed towards the work, he is no longer self-conscious, and experiences a sense of freedom, spontaneity, and joy. The experience that Doyle is describing here is remarkably similar to the construct of 'flow', described below. Although creative episodes can reach a climactic conclusion in periods of centration, these periods typically come and go in waves.

The final stage of creative work is driven by attempting to capture the 'truth' that the artwork is dealing with as well as one can. This is often characterised by a sense of commitment and determination, which has helped the artist survive the awkward attempts at 'thinking through the medium' and the multiple cycles of centration and failure. The act of showing the work to an audience is an "affirmation of (the artist's) relatedness to human society" (p.123).

Doyle (1976) maintains that this experiential account of creativity as it unfolds through time helps resolve the paradoxes in various accounts of creativity. From this perspective, Doyle is able to assert:

> The creative process involves freedom and spontaneity. The creative process demands discipline and concentration, and a commitment to work. It involves the primitive and emotional, intelligence and thought; it calls upon fantasy and inventiveness, a willingness to deviate from what is; it demands honesty and a commitment to truth. It is an expression of self and it cannot take place without forgetting the self; it is a joy and a terror; it is its own reward; it requires encouragement and understanding from others (p.123).

These statements are not contradictory when the different experiential states associated with the temporal unfolding of the creative process are taken into account. Her non-linear model is a challenge to more traditional 'stage models' of the creative episode, such as Wallas' (1926) model of four stages (preparation, incubation, illumination, verification) unfolding sequentially over time. Doyle's (1976) analysis is supported to a large degree by a later empirical study (Doyle, 1988) with five recognised fiction writers.

Other constructs relevant to the experience of creativity

A number of constructs have been investigated which have some relevance to experiential aspects of the creative process, but which do not necessarily take creativity as their main focus. Examples of these include Csikszentmihalyi's (1975, 1990b, 1996) construct of 'flow' and the notion of peak experiences, most commonly associated with the work of Maslow (1968, 1971). The construct of 'flow' was developed through interviews with people such as chess players, rock climbers, dancers, and composers, who seemed to be engaged in activities that they enjoyed but for which they were not rewarded with money or fame. Csikszentmihalyi (1996) outlined the quality of experience that kept people motivated to pursue such activities. He suggests that this experience, referred to as 'flow', is composed of nine main elements: there are clear goals every step of the way; there is immediate feedback to one's actions; there is a balance between challenges and skills; action and awareness are merged; distractions are excluded from consciousness; there is no worry of failure; self-consciousness disappears; the sense of time becomes distorted; and the activity becomes autotelic.

Some of these elements of 'flow' are apparent in the accounts of the experience of artistic creativity outlined above. Csikszentmihalyi's (1996) own interview-based study of 91 individuals recognised for their creative achievements indicated that flow experiences play a prominent role in the creative process. He proposes that the pleasure or joy characteristic of flow-type experience is an intrinsic 'reward' for the creative process, thus motivating creative activity. Drawing on evolutionary principles, he suggests that human beings are 'programmed' for creativity through this mechanism.[11]

Perry (1998) used a qualitative methodology to examine flow experiences in 62 regularly publishing writers. She found that writers identified flow experiences as central to their work and that they often actively constructed conditions that facilitated entry into this state. Five key conditions were identified in entry into the flow state: personality factors, including emotional resilience, openness to experience, absorption as a trait, and looseness of boundaries in thinking; a combination of motivational factors; physiological and psychological relaxation; becoming engaged with and focusing on the work; and maintaining a balance between the opposites of willing/not willing, thinking/not thinking, and audience awareness/unawareness. However, it should be noted that this study's inferences regarding personality were not based on psychometric assessment and that the qualitative analysis did not follow a formal, rigorous methodology.

'Peak experiences' have been defined as "moments of highest happiness and fulfilment" (Maslow, 1962, p.69).[12] Maslow (1971) and Laski (1961) provided accounts of such experiences in religious and non-religious contexts, such as during childbirth or athletic events, and while enjoying music, nature, or dancing. It has been argued that heightened creativity is a characteristic of peak experiences (Laski, 1961; Paffard, 1970) and that creative work is a common trigger of peak experience (Laski, 1962). Maslow (1962) stated that peak experiences release a person "for greater creativity, spontaneity, expressiveness, idiosyncrasy" (p.101). Maslow (1971) also asserted that it is the power to evoke peak experiences that distinguishes great art from the inconsequential. May

Comment:

[11] Csikszentmihalyi (1996) suggests that this urge to create competes with the force of entropy, which refers to the pleasure felt "…when we are comfortable, when we relax, when we can get away with feeling good without expending energy" (p.109).
[12] There are clearly conceptual similarities between the constructs of peak experience and flow (see Privette (1983) for a comparative analysis).

(1959) stated that ecstasy, the central feature of peak experiences, describes a level of consciousness that occurs during the creative act.

However, despite these associations between peak experience and creative activity, the construct has generally been investigated in relation to aesthetic *appreciation* rather than creation (e.g., Panzarella, 1980; Privette, 1983; Yeagle, Privette, & Dunham, 1989). Panzarella (1980), for example, obtained descriptions of music and visual art-related peak experiences from 103 participants. Content and factor analyses indicated four factors to the experience: renewal, motor-sensory, withdrawal, and fusion-emotional experiences. Both music and visual art peak experiences displayed temporal stages, starting with cognitive responses and loss of self; climaxing with continued loss of self and motor responses; and subsiding with emotional responses, self-transformations, and stimulus-specific responses. The factors were also found to be differentially correlated with personality measures. For example, renewal factor scores were positively correlated with measures of sensation seeking and self-actualisation, and withdrawal factor scores with measures of sociability and differentiated self-perception. Panzarella suggested that this indicates a greater role for individual differences in aesthetic theories. This point informs the current research's investigation of personality correlates of different aspects of creative experience.

Moncrieff (1989) also examined aesthetic appreciation, referred to as 'aesthetic consciousness', but not with particular reference to peak experiences. Although Moncrieff's findings indicated a variety of features of aesthetic consciousness, involving personhood, creativeness, performance, appreciation, symbolisation, and expression, his discussion focused on 'oneness', which he found to be a central feature of aesthetic consciousness. The experience of 'oneness' involves a structural wholeness, in the sense that it involves the perception of a constant series of relations between the various elements of the experience, including the personhood of the individual having the experience. It also involves a loss of distinction between the experiencer and the experienced, between the inner and outer worlds; it can be experienced as a transitional moment; the particular experience can symbolise the more "general rhythms of life" (p.250); it can involve a sense of expansion of personal presence; there can be a flowing quality to the experience; and language can seem to be an inadequate means of describing the experience. A central feature of the experience is contact between the

individual ego or persona and the Self in the Jungian sense of the unifying and identity-making centre that subtends the ego (Jung, 1968). This can have the effect of leaving the individual feeling more deeply engaged with themselves and the world.[13]

These findings certainly overlap with some of the descriptions of creative experience described above. This introduces some interesting questions regarding the nature of the relationship between the experience of artistic creation and artistic appreciation or, to use Ó Cluanáin's (1987) distinction, between art and aesthetics. For instance, what are the distinguishing features between artistic creation and appreciation? Does artistic creativity necessarily involve aesthetic awareness? Does aesthetic awareness involve a form of creativity? Although there have been some phenomenological studies of artistic creation (the studies cited above) and artistic appreciation (e.g., Collier & Kuiken, 1977) as separate constructs, the experiential dimensions of the two constructs have not been systematically compared.

Summary

This section has reviewed three areas of literature related to experiential aspects of the creative process: phenomenological studies of artistic creativity; other descriptive studies of experiential aspects of the creative process; and studies of constructs which have some relevance to experiential aspects of the creative process, but which do not take creativity as their main focus. Although there is certainly divergence in these accounts, it is apparent that a number of themes emerge consistently. These themes include motivation to produce an artwork (based on factors such as a felt sense of lack, sense of importance of or desire for expression, and so on) within the context of having developed appropriate skills; 'exploration' of artistic possibilities, often including trials and variations, and the sense of recognition of emerging structures in the artwork; responding to the 'demands' of the artwork; the prominent role of intuition; interaction between the artist and the medium; lack of a sense of control over the unfolding process; and the role of affective pleasure and flow-type experiences. The constructs of peak experience and flow have been associated with both artistic creation and appreciation, although most studies have focused on artistic appreciation. Studies of aesthetic

[13] Although Moncrieff (1989) emphasises the positive features of the experience of 'oneness', others have argued that the dissolution of boundaries involved in this

awareness or consciousness have indicated that this construct can involve a transition in experience of the self-world relationship, particularly involving the dissolution of boundaries and the experience of 'oneness'. The relationship between the experience of artistic creation and aesthetic awareness is an area which psychological research needs to address in greater detail.

3.4 The Current State of Creativity Research

Previous sections have focused on substantive findings of creativity research. The current section is concerned with outlining structural aspects of creativity research and proposing a place for the current study within that structure. Firstly, some general commentaries on the state of this field of research are outlined. This is followed by drawing attention to recent calls for integrative models and research designs, more diverse research approaches, and greater specificity in the focus of research. Finally, it is noted that the combined phenomenological and psychometric approach of the current research is of value in addressing some of the concerns that have been expressed about the current state and direction of the field.

General comments: a degenerating research program?

A range of opinions have been expressed on the current state of creativity research. At the more extreme end of the spectrum, Glover et al. (1989) argued that the field of study was "a large-scale example of a 'degenerating' research program" (p.xi), drawing on Lakatos' (1978) term to characterise a theoretical system that fails to produce new insights and findings and which preoccupies itself with accounting for failures. While other commentators' misgivings have been less pronounced, there has certainly been a trend away from the early excitement about researching Guilford's (1950) notion of creativity as 'divergent thinking', towards attempts to re-assess the assumptions underlying the very construct of creativity, the major research approaches, and the measurement of the construct (e.g., Brown, 1989; Russ, 1993; Sass, 2000-2001b, 2000-2001c; Sternberg, 1999). In other words, the field has become increasingly self-reflective. Russ (1993), for example, suggests that traditional research approaches

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experience can have disturbing features. For example, see Schuldberg's (1994) discussion of 'giddiness and horror' in the creative process.

have proven to be inadequate in the area of creativity and calls for a reassessment of appropriate research methods – indeed, for a creative application of research methods.

The increasing self-reflexivity of the field has been valuable in introducing greater complexity and subtlety to theoretical models and empirical research (and has surely also introduced greater challenges for researchers!). One important result has been the emphasis on creativity as a multifaceted, multidimensional construct. In reviewing creativity research, Sternberg and Lubart (1996, 1999) maintain that most approaches have been unidimensional, focusing on one aspect of creativity and neglecting others. These particular aspects are represented to a large degree by the research approaches and specific research paradigms summarised in Table 2.1. Sternberg and Lubart argue that one effect of the focus on single dimensions has been to create a distorted picture of the overall construct of creativity. Specifically, a single feature (for example, cognitive processes) is taken to be the whole of creativity, while other equally important features (for example, motivation or cultural context) are ignored. They, along with a number of other writers (e.g., Csikszentmihalyi, 1990a, 1999; Feldhusen & Goh, 1995; Feldman, 1990, 1999; Gardner, 1993; Simonton, 1988b), argue that a multidimensional theoretical and empirical approach to creativity offers greater fidelity to the complexity of the construct. This involves *combining* the approaches that have traditionally been pursued separately (e.g., personality and cognitive approaches) into single models and research designs (see Khandwalla (1993) and Reiter-Palmon, Mumford, Boes, and Runco (1997) for examples of multimethod designs in studies of creative thought.)

The multidimensional view may call for research that goes beyond the confines of a single discipline and which requires a collaborative, multidisciplinary approach. As Medawar (1969) wrote more than thirty years ago:

> We have come to recognise, then, that the study of creativity and its development is one of the broadest and largest topics for research: The analysis of creativity in all its forms is beyond the competence of any one accepted discipline. It requires a consortium of talents: Psychologists, biologists, philosophers, computer scientists, artists, and poets would all expect to have their say. (p.46)

Wehner, Csikszentmihalyi, and Magyari-Beck's (1991) analysis of 100 doctoral dissertations on creativity from different disciplines found a "parochial isolation" of the

various studies. In line with Sternberg and Lubart's (1996, 1999) concern with unidimensional approaches giving rise to a distorted picture of creativity, Wehner et al. draw on the fable of the blind men and the elephant to illustrate the situation: "We touch different parts of the same beast and derive distorted pictures of the whole from what we know: 'The elephant is like a snake,' says the one who only holds its tail; 'The elephant is like a wall,' says the one who touches its flanks" (p.270).

Calls for integrative models and diverse research approaches

Sitting hand-in-hand with the view of creativity as a multidimensional construct have been calls for diverse research approaches and the need for integrative models – that is, for both an *expansion* of research approaches and attempts to relate and 'bring together' existing lines of research. Indeed, the general flavour of the comprehensive *Handbook of Creativity* (Sternberg, 1999), which has been described as a "progress report" (Mayer, 1999, p.449) on creativity research, is the need for models that 'piece together' the findings of diverse research approaches and which encourage further 'confluence approaches' to research, and the desirability of generating new approaches and theoretical conceptualisations. Csikszentmihalyi (1990a) lamented the fragmentation of research effort into different sub-fields and called for the integration of different disciplines and approaches. Russ (1993) expressed similar sentiments, arguing that different specialty areas needed to find ways to translate their concepts and language in order to pool their knowledge and work towards integrated constructs and approaches.

In contrast with Glover et al.'s (1989) rather bleak assessment 14 years earlier, Mumford (2003a, 2003b) and Russ (2003) paint a picture of creativity research as a field which lacks a comprehensive theory yet which has made significant progress in individual areas and which carries a certain vitality and momentum. In a review of the current state of creativity research based around two recent handbooks, Mumford (2003a) welcomes the introduction of new, or alternative, methods for studying creativity. These have included, for example, the case study approach (Gruber & Wallace, 1999; Policastro & Gardner, 1999), the systems model (Csikszentmihalyi, 1990a, 1999), the neuroscience approach (Katz, 1997; Martindale, 1999), and the cognitive and computer modelling approaches (Boden, 1999; Finke, 1997; Ward et al., 1999; Weisberg, 1999). Mumford illustrates how the new methodological applications have led to "a richer, more comprehensive understanding of the creative act" (p.108). A similar point is made by

Richards (2000-2001) with regards to creativity-psychopathology research. She regards the diversity of theoretical approaches in the area as reflecting a "useful opening up, a healthy broadening of possibilities…" (p.123).

In line with the general self-reflexivity of the area, Mayer (1999) regards creativity research as needing to develop clearer definitions and to employ creative combinations of current research methodologies. With regards to the latter point, he claims that the psychometric and experimental approaches are often too 'hard', with their emphasis on precise measurements of creativity in contrived settings, and that the biographical approach is often too 'soft', by only using qualitative descriptions of a few highly selected cases in authentic settings. A new methodology, according to Mayer, needs "to combine the scientific respectability of the psychometric and experimental approaches with the authenticity of the biographical approach" (p.459). The current research attempts to answer this call by combining the 'hardness' of the psychometric approach, based on quantitative data, with the 'softness' of the phenomenological approach, based on qualitative data.

Calls for specificity of research

The multidimensional models of creativity and new research paradigms have facilitated greater specificity of research questions and findings. Russ (2003) observes that researchers are now asking very specific questions about cognitive and affective processes, problem type, domain, stage of the problem, setting, and other variables, and are more aware of the complexities of the interactions among these variables.

There have been various calls to further develop this specificity of research. Rather than viewing creativity as a single homogenous entity, these commentators encourage the development of a variety of creativity 'profiles' (Richards, 1993b, 2000-2001; Russ, 2003). These profiles can be built around the different dimensions that have been identified as important in creativity, such as personality, affective, and cognitive processes. Russ (2003) argues that different profiles should be predictive of different domains of creativity and different types of tasks within those domains. For example, a profile of high affective ideation, openness to affect states, divergent thinking, risk taking, unconventionality, and self-confidence, but relatively low insight ability might be predictive of creativity in the arts. In contrast, a profile of low openness to affect states,

high affective ideation, high divergent thinking ability, high critical thinking ability, low risk taking and unconventionality, and high self-confidence might be predictive of creativity in sciences such as chemistry. The possibility of developing these specific profiles has been introduced by recent research in its better differentiation of the abilities and dimensions important in creativity and in its potential for better measurement of these dimensions (Russ, 2003). While Russ' (1993, 1999) model of the relationship between personality, affective, and cognitive aspects of creativity is an attempt at an integration of findings, it is also a model of possible specific relationships between these variables.

Calls for greater specificity have been made in a number of areas of creativity research. For example, in the creativity-psychopathology literature, Richards (2000-2001) proposes an analogous notion of different profiles between bipolar and schizophrenia-spectrum individuals (see also Schuldberg, 1997). She speculates that the hypomanic state might involve an outward-directed gaze, with the individual "buzzing with ideas, affects, and associations" (p.128), whereas the schizotypal state might involve a turning inward and detachment from cultural constructions, with awareness consisting of isolated "snapshots". In other words, Richards is proposing characteristic and possibly quite distinct patterns of cognition, affect, and – of most relevance to the current research – *experience* associated with creativity in bipolar and schizophrenia-spectrum individuals. These different profiles may give rise to creative products with different forms and characteristic features, even within the same domain, such as the creative arts (see Sass (1992, 2000-2001b) and Storr (1972) for discussion of differences in the nature of creative products as a result of personality and psychopathological features).

Greater specificity has also been called for in the area of motivation (e.g., Gedo, 1997; Mumford, 2003a). An impressive body of evidence has accumulated that suggets that intrinsic motivation derived from task-focused, internally based rewards is characteristic of the creative process (see Collins & Amabile, 1999). However, Mumford (2003a) maintains that intrinsic motivation may not be a simple unitary process and may in fact be based on a variety of factors, including curiosity, the need to extend feelings of mastery, the potential for self-expression, resolution of incongruities, and contribution to others. Gedo (1997) and Mumford (2003a) advocate studies that look at effects of different aspects of intrinsic motivation on people's creative efforts. Similar comments have been made with regards to creativity-personality research (e.g., Feist, 1999;

Mumford, 2003a). While a number of personality characteristics have reliably been found to be associated with creativity and appear to be specific to certain creative domains, there is a need for studies which delineate exactly how different dispositional characteristics influence, or are related to, different creative activities. The specific relationships may be based, for example, on functional work requirements or the kind of creative thinking required (Mumford, 2003a).

On a more general level, Mumford (2003a) maintains that early researchers over-emphasised the notion of a simple, all-encompassing mechanism to account for creative thought, which he refers to as the "magic bullet" approach. Examples include the concepts of blind variation (Campbell, 1960), divergent thinking (Torrance, 1972), and motivation (Kris, 1952). He maintains that, based on the complex, multidimensional view of creativity described above, different theoretical models may be needed to account for different aspects of the creative process, such as the operation of multiple influences in the movement from initial idea generation to delivery of an innovative new product.

The position of the current research

The preceding overview of the current state of creativity research stresses that, although significant progress has been made in individual research approaches, commentators have: expressed frustration with the 'splintering' of research endeavours; called for integrative models and cross-fertilisation of research approaches both on the theoretical and methodological levels; welcomed and called for further implementation of new research approaches; and called for greater specificity of research. The rationale for the current studies is partly a response to these views on the future of creativity research. The combination of phenomenological and psychometric approaches, which forms the basis of the current research, is of value in contributing to the evolution of theoretical and methodological approaches to creativity, as will be argued below.

Mumford (2003a) credits new research approaches as having introduced a "richer, more comprehensive understanding of the creative act" (p.108). The phenomenological outlook of the current research can further contribute to this understanding. Indeed, the phenomenological approach is founded on principles of understanding and description, as opposed to the principles of explanation and prediction that characterise the more

mainstream research approaches that have dominated creativity research (see Chapter 2). While considerable advances have been made in understanding various facets of creativity (e.g., personality, cognitive, and motivational facets) an understanding of the phenomenon *as experienced* has not been thoroughly developed. The phenomenological perspective maintains that a detailed grasp of the experience and lived meaning of the construct of interest is imperative to psychological research. In fact, it is difficult to imagine that a comprehensive model of creativity can be satisfactorily developed without a detailed understanding of the manner in which the phenomenon is experienced by the individual.

An understanding of the experience of a phenomenon can provide a useful groundwork for the development of other research questions and approaches. An outline of the experience and lived meaning of a phenomenon generates a plethora of questions regarding other features of the phenomenon – including cognitive, motivational, affective, developmental, and dispositional features. Examples of this include Giorgi's (1975) and Colaizzi's (1973) studies on the "experience of learning", which had implications for conventional pedagogical strategies used in schools; Aanstoos' (1983) phenomenological research on thinking, which had implications for information processing theories; and Wertz's (1982) study of perception, which had implications for visual theories. As Conrad (1990) writes: "The phenomenologist's analysis precedes, rather than substitutes for, the traditional empirical study…" (p.117). As "traditional empirical" research develops, it may occasionally look back at the phenomenological groundwork to illuminate its findings, generate further research questions, or even seek to re-evaluate some elements of the phenomenological picture.[14]

Instead of following this trajectory, creativity research seems to have embraced these other, important, research questions and approaches (e.g., cognitive, personality, and biographical approaches) before having established a thorough understanding of

[14] This is a somewhat idealised and linear picture of the progress of research approaches in particular fields of research. The progress of research approaches may be strongly influenced by contemporary metaphors and models (e.g., the information-processing model). As indicated here, although the phenomenological level of description may provide a useful groundwork for other research approaches, it is rarely static or fixed. The shifting understanding of the phenomenology of various clinical syndromes is a case in point (e.g., see Rulf (2003) for a discussion of the phenomenology of schizophrenia).

phenomenological aspects of the construct. One might even argue that the lack of a well-developed phenomenological approach in the early stages of creativity research has narrowed the research questions of the other major approaches and prevented greater advancement of and integration between these approaches. Indeed, some commentators from outside the phenomenological tradition have bemoaned the lack of descriptive, phenomenological-type research and called for such research projects in order to further advance particular streams of creativity research (e.g., Koch, 1999; Mace & Ward, 2002; Richards, 2000-2001; Sass, 2000-2001a). For instance, in the context of discussing the creativity-psychopathology literature, Sass (2000-2001a) argues for the need for more critical, speculative, historical, and phenomenologically descriptive work, for studies that would help researchers to criticise current concepts and to develop new ones that may be more adequate to the phenomena they seek to understand. He remarks: "…(I)n the absence of such studies, there is a sense in which we literally do not know what we are talking about (or looking at, or counting up in our research studies) when we speak of creativity, creative psychological processes, or certain types of psychopathology" (p.42). Sass expresses concern that, without such studies, the relevant operationalised variables can be reified and taken for granted. He proposes ongoing exchange between the current dominant approaches and phenomenological studies: "Operationalized variables are obviously a requirement for gathering statistically sound, nomothetic evidence. However, such research will need to develop in dialectical interchange with phenomenologically oriented studies of a more ideographic sort" (p.43).

Richards (2000-2001) makes a similar point. In discussing recent research on the relationship between creativity and the schizophrenia spectrum, she speculates on how psychotic-type features might contribute to creative ability and draws attention to the psychological role that creative agency might play for the individual. She writes: "…the very presence of the creating self and the experience of creation become concerns to address" (p.125). Richards suggests the utility of phenomenological studies in exploring these possibilities. These remarks are a call for a greater understanding of the experience of the creative process and the meaning it holds for the individual. Mace and Ward (2002) likewise argue for the importance of descriptive modelling of real-life creative production, as opposed to studies that rely on laboratory paradigms. Koch (1992, 1993, 1999; see Franklin, 2001) searched for an alternative to the aims and

methodologies of mainstream approaches to creativity research and pioneered fine-grained experiential analysis with eminent artists, which he regarded as the prime path to genuine understanding of creative processes.

One area in which the phenomenological approach has potential to contribute to a more comprehensive understanding of creativity is the issue of causality mentioned in Chapter 1 and in the discussion of the creativity-mood disorder literature (see section 2.4). Much creativity research focuses on the identification of causes of creativity (such as cognitive style, motives, personality characteristics, and so on), and tends to ignore the issue of the impact of creativity on the individual, people around him or her, and the broader social system. As Mumford (2003a) notes, this lack of interest in the effects *of* creativity might be traced to an assumption that creativity is a universal good: if we assume that creativity is a completely positive process or quality, then it follows that research should focus on variables that contribute to its manifestation rather than examine its repercussions. However, Mumford (2003a) cites two review articles that mention possible negative consequences of creative work. Policastro and Gardner (1999) summarise evidence which suggests that creative work, by virtue of its intensity, may lead to a disrupted, rather shallow family life. Runco and Charles (1997) note that creativity, as a result of the associated frustration and ambiguity, may cause alcohol abuse rather than vice verse. In a similar vein, Rothenberg's (1990) case study of the writer John Cheever suggests that he used alcohol partly as a means of modulating anxiety associated with unearthing unconscious material and the cognitive strain of creative thought processes.

The possible negative effects of creativity identified by these authors point to the significance of examining creativity *as* cause, as well as examining causes *of* creativity. Even the assumed positive effects of creativity for the individual, others around him or her, and the broader social system should receive more rigorous research attention. Although it forms an assumption guiding much creativity research, a thorough understanding of the beneficial effects of creativity on these multiple levels is still lacking. Addressing both causal 'sides' of creativity (i.e., causes *and* effects of creativity) will contribute to a more comprehensive model of the construct. The possible interactive effect of these causal dimensions also needs to be considered. For example, factors that might contribute to the emergence of creativity (e.g. certain personality traits, such

as openness to experience) might be strengthened by prolonged engagement in creative activities, leading to a self-reinforcing model of the relevant causal factors.

A consideration of the experience and lived meaning of creativity would seem crucial to an understanding of the possible causal effects of creativity. If we develop an understanding of how the creative process is *experienced*, then we might have a view into its effects. For example, if the creative process is characterised by an experience of anxiety, tension, and a sense of struggle, then one might expect regular creative work to lead to deleterious outcomes, such as intense or variable affect, substance abuse, or interpersonal difficulties. Alternatively, if the creative process is characterised by a sense of dissolution of personal boundaries and transcendental awareness, then one might expect a positive influence on spiritual beliefs. At the least, such an analysis would generate hypotheses regarding the causal influences of creativity. The phenomenological approach contributes to this issue of causality through its focus on experience and meaning. The value of the current research with regards to the causal effect of creativity is directed at the individual level, as opposed to the interpersonal or social levels, due to its focus on the individual experience of creative artists.

As discussed in the creativity-psychopathology section, the notions of causality and phenomenological similarity are foci of debate in the creativity-bipolarity literature. The notion that bipolarity has a causal influence on creativity has been the dominant assumption (e.g., Jamison, 1993). However, much evidence for this position is correlational and subject to alternative interpretations. Indeed, studies attempting to directly test implications of the view that hypomanic mood states facilitate creativity have yielded equivocal results (Weisberg, 1994; Ramey & Weisberg, 2004). To be sure, this area of research requires further direct tests of the view that bipolarity causally influences creativity, which might well be achieved through carefully designed experimental paradigms. However, detailed analysis and understanding of subjective states during the creative process would be useful for progress on this issue: does the experience mimic bipolar experience? Is there a change in affective experience during the course of the creative process – for example, does hypomanic-type experience become more prominent as the process progresses? The phenomenological approach is well-suited to providing this understanding of experiential aspects of creativity and of thereby shedding light on these specific issues of causality.

The current research also has something to offer the aforementioned calls for integration and specificity. Indeed, the design of the research project is directed towards integrating two traditionally distinct research approaches and exploring the possibility of specific relationships between these levels of inquiry. Specifically, the research combines the phenomenological and psychometric approaches to creativity research. This is achieved by transforming qualitative phenomenological findings (Study 1) into a quantifiable form and relating the quantitative measure thus produced to established measures of personality and psychopathology (Study 2).

It is the position of the current research that a comprehensive, integrated model of creativity must take the experiential dimension of creativity into account. With regards to specificity, a fine-grained analysis of experiential aspects of the creative process is in itself a move towards a more detailed, specific view of creativity. It is precisely the detailed analysis involved in phenomenological work that the calls for phenomenologically-oriented studies emphasise. This is captured by the notion of 'depth' in qualitative research: rather than attending to operationalised variables across a large sample size, which is characteristic of quantitative research, qualitative research generally attempts to engage in a thorough analysis of the phenomenon of interest in a limited number of cases (e.g., see Smith, 2003a).

Apart from this aspect of the specificity afforded by the phenomenological approach, the current research also responds to the calls for creativity 'profiles' mentioned above. Such profiles refer to a network of relationships between different dimensions of creativity (e.g., personality, affective, and cognitive factors). The current research contributes to this attempt to develop creativity profiles by examining how experiential aspects of creativity relate to personality and psychopathological features. This particular aim of the current research is illustrated in Figure 3.1. In this figure, a proposed experiential dimension is added to Russ' (1993) integrative model of the personality, affective, and cognitive processes involved in creativity, with lines connecting elements of this dimension to personality traits. Study 1 aims to delineate

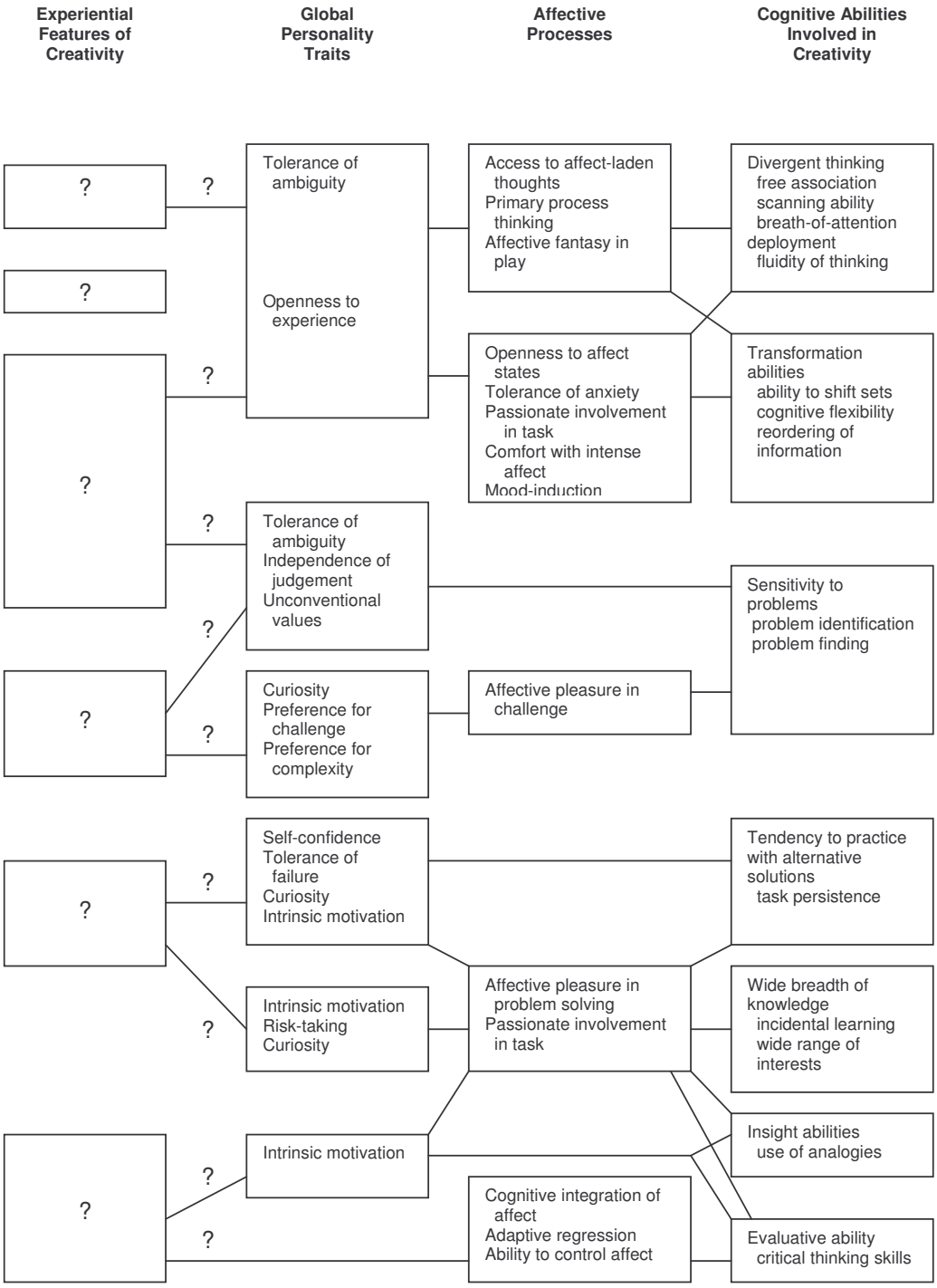

Figure 3.1 Russ' (1993) model of personality traits, affective processes, and cognitive abilities involved in creativity, with a proposed 'experiential' dimension added by the current researcher.

the ‘boxes’ of the experiential dimension through a phenomenological analysis of the creative process. Study 2 aims to investigate the possible relationships, represented by the lines in the figure, between the different elements of the experiential dimension and existing personality correlates of creativity. While a ‘psychopathological dimension’ is not included in the figure, the same principles apply.

Such creativity profiles linking the experiential with the personality and psychopathological dimensions would allow statements such as “People who rate high on creativity measures tend to possess the following traits (e.g., ‘openness to experience’, ‘tolerance of ambiguity’, ‘sensation seeking’, and so on)” to be transformed into statements such as “People who rate high on the following trait (e.g., ‘openness to experience’) tend to experience the creative process this way (X), whereas people who rate high on this trait (e.g., ‘schizotypy’) tend to experience the creative process this way (Y).” The current research, through inclusion of schizotypy and affective disturbance measures, can explore possible experiential differences between the schizophrenia and bipolar spectrums. This is germane to the suggestion in the creativity-psychopathology literature of different creativity profiles existing between these spectrums (see Richards, 2000-2001). The current thesis refers to “personality and psychopathological features” due to its concern with normal features and features at the interface with psychopathology – specifically, schizotypy and affective disturbance. However, it should be noted that the issue of whether these features belong more within the frame of ‘normality’ or ‘pathology’ is an area of debate. For example, some writers conceptualise schizotypy in terms of the dimensional view of normal personality, while others (for example, those in the Meehl tradition) regard the construct as more related to pathology (Claridge, 1997). This point will receive further attention when discussing the specific measures employed in Study 2.

It is possible that the sorts of findings described above might elucidate the psychological ‘function’ or ‘role’ that creativity, at least in the artistic domain, might play in relation to an individual’s personality structure and psychopathological tendencies (see Storr, 1972). For example, if individuals with bipolar tendencies tend to experience the creative process as a consolidating, ordering process characterised by a sense of quiescence, then creative expression might be thought of as a stabilising force for such people. With its focus on phenomenological description and psychometric correlation the current

study cannot produce any firm statements with regards to the 'psychological function' of artistic creativity. However, the findings may suggest numerous starting points for this line of inquiry. Frantom and Sherman (1999) assert that "…despite a perpetual fascination with what commonly has been called the artistic temperament, a clear understanding of the mechanisms underlying the drive to create…eludes scientific inquiry" (p.15). By furthering our understanding of the experience of artistic creativity and how this relates to aspects of personality and psychopathology, the current research is an attempt to open new perspectives on these mechanisms underlying the 'drive to create'.

A phenomenological analysis has implications for a range of other schools of creativity research, perhaps particularly the personality, affective, and motivational approaches. The areas of affect and motivation are playing an increasingly important role in creativity research and are very much open for further development (Mumford, 2003b). For example, the mood-creativity research is moving towards more complex models than the traditional positive-mood-promotes-creativity model (see Montgomery et al., 2004). Kaufmann (2003) points to research which suggests that creative thinking may be more affect sensitive than other cognitive processes, such as analytical thinking (e.g., Kaufmann & Vosburg, 1997), which gives creativity research an important place in the debate regarding the relationship between affect and cognition. It is therefore timely that researchers engage in a thorough phenomenological analysis of creativity. The points of intersection between the phenomenological approach and these other approaches will be of value in building more complex theoretical models to account for existing findings and assist in generating more specific, refined research questions. Although the current research focuses on the relationship between experiential aspects of creativity and the personality and psychopathological dimensions, the findings may have implications for these other dimensions also.

As the phenomenological approach might be classed as one of the 'new' approaches in creativity research, it is important to consider reservations expressed about these new, alternative methods. Mumford (2003a) expressed concern about methodological isolation, method equating, and inadequate depth of methodological development. The current research program attempts to avoid the problem of methodological isolation, or the tendency to apply and advocate one approach to the exclusion of others, by linking a

new, less developed, approach to creativity research, the phenomenological approach, to a more established approach, the psychometric approach to personality assessment, as described above. This approach embraces the multimethod perspective that has been encouraged in creativity research.

The other two concerns, method equating, or the tendency to regard all methods as being of equal value, and inadequate depth of methodological development, remain somewhat open due to the novelty of the phenomenological approach in creativity research. The latter concern will be addressed first. While there have been some attempts at phenomenological studies of creativity, as described above, the approach has not yet been widely enough applied in this area to have been refined and adjusted, as has been the case with a number of other research approaches. However, the phenomenological method has been explored and developed in a number of other research areas. These developments will be incorporated into the current application of the research method. Building on existing phenomenological work in the area, the current study will function as a further exploration of the utility of the method in creativity research. This 'testing out' of the method will lead to suggestions for adjustments of the method in future applications.

A similar point applies to method equating. It is difficult to gauge the real value of the phenomenological approach in the area of creativity until it has been further applied and developed. Whether the phenomenological approach can generate concepts that are more 'adequate', to use Sass' (2000-2001a) terminology, to this area of research, in contrast with the 'inadequacies' perceived by some commentators of traditional research methods, remains to be demonstrated. However, there are several reasons why the phenomenological approach, with its emphasis on experience and meaning, is of particular value to creativity research.

Firstly, as argued above, the descriptive level of inquiry has not been given the same degree of attention as the more explanatory and predictive levels of inquiry. The descriptive approach, by its very nature, tends to focus on experience and meaning, whereas explanatory and predictive approaches tend to focus on correlates and causal factors. This imbalance in the emphasis of research seems to be one element of the frustration expressed with creativity research. Secondly, one aspect of the 'creative

personality' that has been suggested in the creativity-personality literature is that of the intense commitment to and passion for creative work and the highly significant role the work takes on in the lives of creative people (e.g., see Dudek, 1991; Policastro & Gardner, 1999; Shaw, 1989, 1994; Torrance, 1988). In other words, creative activity becomes very meaningful in the context of the person's life. Given phenomenological psychology's concern with lived meaning, this presents another reason for the suitability of this approach. Finally, one might argue that there is a broad similarity between the phenomenological approach and many understandings of the purpose of artistic creativity: both are particularly concerned with representing and comprehending subjective human experience and lived meaning; both are concerned with bringing basic, often presupposed, characteristics of intending consciousness to awareness. In other words, there is a 'match' between the philosophical attitude of the methodology and the subject matter itself (see Conrad (1990) for further discussion of this issue).

This section has attempted to outline the current state of creativity research and to locate the current study within this framework. The following section presents a more formal statement of the research questions guiding the current research.

3.5 Research Questions

The current research is guided by four principal aims:

1. The first aim is to capture through phenomenological interviews how artists experience the creative process. Through phenomenological analysis of their descriptions, the aim is to explicate the psychological predicates and meanings of the phenomenon as it is lived in its 'everydayness'. The research question guiding this aspect of the research is: 'How is the creative process experienced by artists?' In terms of the taxonomy of research paradigms outlined in section 2.2, this aspect of the current research belongs in the paradigm of 'describing the nature of creativity'. The research attempts to build further on existing descriptive studies of creativity, particularly those with a phenomenological emphasis. This aim is represented by the phenomenological study described in Study 1. There are no specific hypotheses for this study due to its descriptive and exploratory nature.

2. The second aim is to develop a questionnaire for measuring experiential aspects of artistic creativity based on the phenomenological findings of Study 1. It is intended that the questionnaire would be of a type which could be used in future psychometric investigations concerned with experiential features of creativity. This aim is represented by Experiment 1 in Study 2. Again, no specific hypotheses are appropriate.

3. The third aim is to investigate whether the experience of artistic creativity varies in relation to personality and psychopathological features. The research question guiding this aspect of the research is: 'Is the creative process experienced differently as a function of personality and psychopathological features and, if so, how?' Again using the taxonomy outlined in section 2.2, this aspect of the research belongs in the paradigm of 'relating factors to creativity', because it involves relating the experiential aspects of creativity that emerge from Study 1 to personality and psychopathological features. This aim is represented by Experiment 2 in Study 2. The experiment will by no means attempt a comprehensive investigation of the relationship between the experience of artistic creativity and personality and psychopathology. Rather, it will investigate possible connections between experiential aspects of creativity and selected features of personality and psychopathology. In so doing, it will explore the possibility of more comprehensive investigations of the relationship between experiential aspects of creativity, personality, and psychopathology. Hypotheses regarding this experiment are presented once the questionnaire has been developed, as they are based on the experiential aspects of artistic creativity that emerge in Study 1 (see section 6.3.1).

4. Finally, the current research aims to explore methodological possibilities, particularly the possibility of combining qualitative and quantitative methodologies. These research approaches have traditionally not been combined in studies of creativity. As argued above, developing multimethod designs may allow for greater flexibility in research questions and may offer greater fidelity to the complexity of the construct of creativity.

3.6 Summary

This chapter outlined the main principles of phenomenology as it emerged in its philosophical form and was translated into psychological practice. These principles

include intentionality, the phenomenological reduction, description, and the search for essences. Phenomenological psychology can be seen as part of a more general trend towards reconceptualising psychology using the model of human sciences, rather than the model of natural sciences. Existing phenomenological studies of creativity were reviewed. The current state of creativity research was assessed, focusing particularly on the rationale for the combined phenomenological and psychometric approach of the current thesis. Finally, the research questions of the thesis were listed. The following chapter moves from theory to practice in presenting an empirical phenomenological study of artistic creativity.

Chapter 4

Study 1 – An Empirical Phenomenological Study of Artistic Creativity

4.0 Overview

The previous chapter outlined the philosophical background of phenomenological psychology and its main theoretical principles. This chapter presents the first of two studies - an empirical phenomenological study of the artistic creative process. The chapter begins by laying out methodological details, including the approach taken to participant selection, the development of interview questions through a pilot study, and the particular form of phenomenological analysis used. The findings of the study are then presented.

4.1 Research Question

The specific aim of Study 1 is to capture through phenomenological interviews how artists experience the creative process. Through phenomenological analysis of their descriptions, the aim is to explicate the psychological predicates and meanings of this phenomenon as it is lived in its 'everydayness'. Therefore, the research question guiding this study is: 'How is the creative process experienced by artists?' The research aims to build on existing descriptive studies of creativity, particularly those with a phenomenological emphasis. There are no specific hypotheses for this study due to its descriptive and exploratory nature.

4.2 Participant Selection

As the concern of this study was with the experience of artistic creativity itself rather than with group characteristics of creative people, the critical aspect in participant selection was whether the individual experiences and can describe the artistic creative process,

rather than whether the individual rates highly on psychometric measures of creativity (i.e. a high trait creativity group). The concern was with gathering rich phenomenological accounts of the artistic creative process, rather than with analysing characteristics of creative people. Therefore, individuals regularly involved in artistic creative production were the most appropriate candidates. People who rate highly on measures of creativity might not necessarily be involved in creative pursuits and therefore will not have many experiences on which to draw when asked to describe the creative process.

Apart from this phenomenological concern, the decision to use artists was also grounded in recent arguments in support of focusing on creative production rather than creative potential (see Mumford, 2003b). Mumford (2003b) makes the case that a focus on creative performance or outcomes automatically takes into account the domain effects, situational influences, and population characteristics commonly discounted as influences on creative activity when creative potential is the sole concern. So apart from using artists as a means of accessing the *experience* of creativity, the use of this sample also incorporates these other variables (domain effects, situational influences, population characteristics) in approaching the construct of creativity.[15]

Professional artists were used as participants. A total of 11 artists participated in the research interviews. A range of types of artists were represented in the sample, including 5 musicians, 2 writers, 2 visual artists, 1 writer/visual artist, and 1 playwright/theatre director. Details of participants are summarised in Table 4.1. Interestingly, all of the participants who declined to specify their style were writers, which suggests that writers cannot identify their work as easily as other artist groups as belonging to a particular style. Further details regarding each participant are provided in Appendix D. In addition, three participants were used in a pilot study (see section 4.3). Participants were recruited by advertising the study at two schools of art, a music school, in a newsletter for writers, and through contacts and acquaintances of the researcher (see Appendix E for the advertisement). They were informed of the purpose of the

[15] The argument might be made that a focus on creative performance might be sharpened by studying eminent artists, in the sense that this sample's artwork could be considered particularly creative. However, this approach was not taken in the current research because the most central criterion for participant selection was the ability to access and describe creative experience. Professional artists, it was assumed, would

research and that the results of the research would be made available to them (see Appendices F and G).

Table 4.1 *Study 1 Participant Details*

Participant	*Age*	*Gender*	*Medium*	*Style*
1. Chris	43	Male	Music: Piano	Classical/jazz / improvisation
2. Pierre	26	Male	Music: Electronic	Ambient/trance
3. Nico	40	Male	Music: Drummer/ Composer	Free jazz/composes for various groups, including symphony orchestras
4. Stephen	39	Male	Music: Electric bass/ double bass	Popular music
5. Tim	34	Male	Music: Hammond organ/ saxophone	Jazz/rock/popular
6. Stella	36	Female	Writing: fiction/film scripts /some non-fiction	a
7. Nic	25	Male	Playwright/theatre director	a
8. Anthea	45	Female	Writing: fiction/poetry/ non-fiction	a
9. Jeanne	40	Female	Visual art: painting/ drawing	Naturalism/realism
10. Dominique	41	Female	Writing: fiction/poetry/ drama Visual art: painting	Painting: Abstract with narrative content
11. Peter	34	Male	Visual art: painting	Abstraction

Note. a = declined to specify style.

Artists from a range of disciplines were included in the study as the subject of the study was the experience of the artistic creative process generally, rather than the experience of a particular discipline of artistic creativity (e.g., the experience of fiction writing). It

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be as likely as eminent artists to be able to fulfill this criterion. In addition, using eminent

was reasoned that sampling artists from a range of disciplines would allow for these more general conclusions to be drawn, as it would allow for an analysis of elements that remained invariant across different artistic disciplines. A second purpose of drawing participants from a range of artistic disciplines was to maintain a consistency of participant group between the two studies. It was a practical necessity to draw from a range of artistic disciplines in order to gain the higher participant numbers required for the psychometrically-based Study 2.

A principle of redundancy, as described in Appendix C, was applied to participant selection: it was decided that enough data had been gathered when subsequent interviews did not contribute further to the explication of the lived meaning of the artistic creative process. The number of participants included in this study was slightly higher than the number usually required in phenomenological studies before this 'saturation' point is reached (see Appendix C). This was due to the range of artistic disciplines being sampled. Interviews continued to be conducted until the researcher was confident that the meanings being explicated from the descriptions were not limited to features of a particular artistic discipline (e.g., that described experiential features were not simply characteristic of live music performance, but reflected the artistic creative process generally).

4.3 Pilot Study

Following Colaizzi's (1978) suggestion for phenomenological research, interviews were initially conducted with three professional musicians in the manner of a pilot study. The purpose of this was to 'test out' the most useful wording and focus of questions in order to elicit pre-reflective accounts of experiences of the creative process. These interviews were not included in the final data analysis.

Participants in the pilot study were recruited using the same method described above. They were informed that they were participating in a pilot study for a qualitative study and that results of both the pilot study and final qualitative study would be made available to them. Details of participants are summarised in Table 4.2.

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creators introduces greater practical difficulties in conducting research.

Table 4.2 *Pilot Study Participant Details*

Participant	*Age*	*Gender*	*Medium*	*Style*
1. Amira	22	Female	Music: guitar/voice	Folk
2. Michael	35	Male	Music: Violin/viola/guitar	Rock
3. Charles	34	Male	Music: trumpet	Jazz - traditional

Although results of the pilot study interviews were not systematically analysed according to the method described below, they indicated that participants were able to identify the artistic creative process as a distinct 'experience'. That is, participants identified the creative process as involving certain 'states' of experience readily distinguishable from other experiences and with features that could be identified and described. The participants tended to identify the creative process as a removal from everyday perception and as not easily attainable through other means. These outcomes of the pilot study gave the researcher confidence that the creative process is easily identifiable by an artist sample and is regarded as a distinct experiential phenomenon, and therefore amenable to phenomenological research.

The pilot study interviews also suggested a change in the main interview question in order to more effectively elicit lived, pre-reflective accounts of experiences of the creative process. The initial question asked of participants was:

"I'm interested in artists' experiences of creativity. Could you please describe for me in as much detail as possible your experience of creative production? How do you feel when you are engaged in X (painting, performing music, writing…)?"

This question evolved to:

"Can you think of a particular occasion when you were pleased or satisfied with how you were X (painting, performing music, writing…)? This could either be one specific occasion (e.g. one evening…) or over a more extended period of time (e.g. while writing this short story…). Do you have one in mind? Can you describe for me in as much detail as possible everything that happened, what it felt like, almost as if you're living it again. What sort of feelings or thoughts did you have?"

This latter question, or set of questions, focused participants on their experience of a particular creative episode and minimised the tendency to relate beliefs or theories about creativity in more general terms. See section 4.4 for the final list of interview questions.

Finally, as a result of the pilot interviews, it was also decided to include a question about the *personal meaning* of the artistic creative process – what does it mean to the individual? Why does the individual stay engaged in artistic activity? (See section 4.4). This is referred to in the current thesis as the existential dimension (as opposed to the experiential dimension) of the creative process, due to its concern with issues of meaning associated with creativity.

The nature of this 'existential' enquiry is antithetical to the phenomenological emphasis on pre-reflective experience, because it invites the participant to *reflect* on their experiences of creativity. However, although not strictly phenomenological in nature, it is a topic which emerged prominently in the pilot interviews; there was, as it were, a pressure on the part of participants to discuss this topic, partly because of its close connection with describing the *experience* itself. The 'pressure' to talk about the existential dimension of creativity did not strike the interviewer as a failure to focus on pre-reflective experience, because this was adequately described in the interviews. Rather, it seemed due to the intimate connection between the experiential and existential dimensions of creativity in the individual's life; it emerged as a natural extension of an experiential description, providing context and added richness to this description. Therefore, in the spirit of phenomenological research's emphasis on researching the phenomenon as it presents itself and of its encouragement of a creative and flexible application of method (see Brooke, 1995; Richer, 1995, cited in McIntosh, 1997), this existential dimension was included as an interview question and in data analysis. However, interviews did not concentrate on this issue as much as the experiential dimension of creativity. Therefore, the enquiry into the existential dimension of the creative process in the current research is regarded more as a preliminary investigation of the topic, in contrast to the more rigorous investigation of the experiential dimension. The experiential and existential dimensions were clearly differentiated both in the research interviews and in data analysis.

4.4 The Interview Questions

The interviews were based around three broad, open-ended questions. The first question asked the participant to describe a particular experience of artistic creativity. The question proceeded:

1. "Firstly, can you think of a particular occasion when you were pleased or satisfied with how you were X (painting, performing music, writing…)? This could either be one specific occasion (e.g. one evening…) or over a more extended period of time (e.g. while writing this short story…). Do you have one in mind? Can you describe for me in as much detail as possible everything that happened, what it felt like, almost as if you're living it again. What sort of feeling or thoughts did you have?"

The intention behind asking the participant to describe an experience when they were "pleased" or "satisfied" with their artistic activity was to encourage the participant to choose a highly creative episode, as opposed to any episode, of artistic activity. The assumption here is that an artist will be more pleased or satisfied with work that they consider to be more creative. While the very activity of artistic production might be considered creative, a particular focus on more creative episodes of this activity is consistent with phenomenology's emphasis on pursuing essential features of a phenomenon. An alternative phrasing of the question would have been to ask participants to describe a particular occasion that they considered to be "highly creative". However, as Conrad (1990) asserts, the term 'creativity' is theoretically loaded and may in fact have introduced greater bias into the participants' choice of experience to describe (e.g., choosing an experience that seems to 'fit' dominant theoretical models of creativity). This would have resulted in accounts less grounded in participants' actual experiences of creativity.

Doyle (1998) found in her interviews with fiction writers that questions regarding the creative process stimulated accounts of a complete creative episode over time – that is, how a work developed from first awareness through to its finished form. The pilot study interviews were consistent with this finding. Therefore, a question was included regarding the temporal unfolding of the creative process. This question was:

2. “Can you further describe how the experience unfolded over time – from before the X (writing, music performance, painting) through to its completion? Were there any changes in how you experienced this?”

A third question was posed to participants in order to elicit descriptions of the existential dimension of the creative process, as described in reference to the pilot study (section 4.3). As noted above, participants were naturally inclined to discuss this issue of the personal meaning of the creative process. However, the inclusion of a direct question regarding this issue formalised the discussion and separated it from the experiential descriptions elicited by the preceding questions. The question was:

3. “Can you describe why the process of X (writing, performing music, painting) is important to you, why it has particular meaning for you?”

4.5 The Phenomenological Interview Process

Data were collected through face-to-face, semi-structured interviews. In semi-structured interviews, the participant shares more closely in the direction that the interview takes than in structured interviews and can introduce topics or themes that may not have been anticipated by the interviewer (J.A. Smith, 1995). J.A. Smith (1995) notes the key features of semi-structured interviewing:

1. there is an attempt to establish rapport with the respondent;
2. the ordering of questions is less important;
3. the interviewer is freer than in structured interviews to probe interesting areas that arise;
4. the interview can follow the respondent’s interests or concerns.

The interviews were designed to direct the participant towards their experience of the creative process without predefining the content of interaction. While the three interview questions listed above provided the structure of the interview, other questions were also posed in order to encourage further depth in responses or to help the respondent re-

focus on the topic. Participants occasionally displayed difficulty in making the differentiation between experiential and existential aspects of the creative process and occasionally had to be directed away from one area and onto the other. The interviewing technique developed through the experience of the pilot study interviews and was informed by the interviewer's clinical psychology training.

The interviews were audio-taped and transcribed for analysis. While they varied in richness of description, all were considered to contribute to the understanding of core features of the phenomenon. Therefore, all interviews were retained for analysis.

4.5.1 Self-reflection

Phenomenological research emphasises approaching the topic afresh without preconceived notions about what one will find in the investigation (Polkinghorne, 1989). Therefore, following Fischer and Wertz (1979), prior to conducting interviews, the researcher engaged in an initial self-reflective process regarding personal experiences of the creative process and theoretical knowledge of creativity. These reflections were recorded for reference during data analysis. This self-reflective process, referred to by Colaizzi (1973) as the individual phenomenological reflection (IPR), assisted in sensitising the researcher to experiential aspects of the creative process. It also assisted the researcher to become more aware of and to 'bracket out' his presuppositions and assumptions relating to the phenomenon (see Chapter 3). If this 'bracketing out' was not fully achieved, the self-reflective process at least increased the researcher's sensitivity to the imposition of his biases during data analysis, which led to attempts to minimise this imposition (a process referred to by Dahlberg, Drew, & Nystrom (2002) as a "bridling" of one's biases). Briefly, if a similarity was noted between aspects of the researcher's own experience or theoretical knowledge of the creative process and the material arising from analysis, the interview material was re-examined. The question the researcher asked himself at this point was: Is this meaning arising from the interview material itself or am I imposing it on the material? Such self-questioning was conducted in a circular, repeated fashion throughout the qualitative analysis.

4.6 Phenomenological Analyses

The current section details the models of individual and general qualitative analysis used to arrive at the study's findings. While Chapter 3 outlined the general principles guiding phenomenological analysis, the current section details the specific form of analysis used.

As discussed in Chapter 3, there is not a uniform phenomenological method of analysis that is imposed indiscriminately in every case. Rather, phenomenological psychology advocates processes of analysis that evolve in contact with the unique phenomena in question (Wertz, 1983). The method of analysis used in this study is based on McIntosh's (1997) combination of Giorgi's (1975) classic technique of phenomenological analysis with the sensitivity of Wertz's (1983) process. It also draws on Polkinghorne's (1989) account of phenomenological analysis.

The purpose of the analysis is to derive from the collection of protocols, with their naïve descriptions of specific examples of the experience under consideration, a description of the essential features or 'logic' of that experience (Polkinghorne, 1989). This is achieved by unravelling for each interview the constituents of the experience and the interrelationship of these constituents, resulting in a description known as an 'Individual Structure'. This is an idiographic analysis. A similar analysis is then conducted across individual cases, looking for that which is essential or invariant, resulting in the 'General Structure'. This is a nomothetic analysis.

A separate analysis was conducted of the experiential and existential dimensions of the protocols, as defined above. This resulted in two Individual Structures for each participant and two General Structures, the first relating to the experiential dimension and the second to the existential dimension of the artistic creative process. However, as described in section 4.3, the enquiry into the existential dimension in the current research is regarded as a preliminary investigation of the topic, in contrast to the more rigorous investigation of the experiential dimension.

The analysis used to arrive at Individual and General Structures will be addressed in turn.

4.6.1 The Analysis Leading to Individual Structures

The starting point for psychological reflection was the Individual Phenomenal Description, the naïve description of the phenomenon provided by participants. The 'technical' model for analysis of these individual protocols is presented in Table 4.3. After reading the protocol several times to get a sense of the whole, the text was broken down into 'meaning units'. This involved recording each time a transition in meaning was perceived - for instance, a change in subject matter or a change in activities being described (Giorgi, 1975). This process requires the researcher's judgement. Although the researcher reads the text from the perspective of his discipline (in this case, psychology), care must be taken to treat the text in its own right. As Polkinghorne (1989) writes: "The divisions are to be those that naturally cohere in the text rather than those imposed by the expectations of a researcher's theoretical position" (p.54).

The next step was the transformation of these 'natural meaning units' into the researcher's language. Transformed meaning units are concise, third person statements that try to make explicit the implicit psychological aspects of the natural meaning unit while retaining the situated character of the protocol. Transformed meaning units might be thought of as 'psychological equivalents' of the natural meaning units. Two thought processes are employed in the transformation process: reflection and imaginative variation (Polkinghorne, 1989). Reflection refers to a careful and sensitive reading of an expression to answer the questions, "What is truly being described in the meaning unit?" and "What is absolutely essential to understand the psychological dynamic operating here?" Answers to these questions are then tested using imaginative variation. The process of imaginative variation, as described in Appendix B, refers to a type of mental experimentation in which the researcher intentionally alters, through imagination, various aspects of the experience as captured in the proposed transformation. The aim of this is "to imaginatively stretch the proposed transformation to the edges until it no longer describes the experience underlying the participants' naïve description" (Polkinghorne, 1989, p.55), thereby sharpening the accuracy of the transformation in capturing the experience described in the natural meaning unit. These transformations were 'tested' by working backwards from the transformed meaning unit to the original natural meaning

unit and asking whether the natural meaning unit was an accurate 'real world' reflection of the psychological meaning presented in the transformed meaning unit.

The next step involved extracting themes from the protocol by interrogating the natural and transformed meaning units in terms of the topic of the study. This was undertaken following Wertz's (1983) approach of: a) empathic immersion in the world of the description; b) slowing down and dwelling; c) magnification and amplification of the situation (noting all details, but transcending the mundaneity of the participant's situation); d) suspension of belief and employment of intense interest (moving from immersion to reflecting carefully on the situation); and e) the turn from the objects to their meanings (how the situation appears to the participant, the meanings rather than the facts of the situation, how the participant participates in the meanings).

A sense of the themes emerged naturally from the process of meaning unit transformation. These themes were further elaborated around ontological concerns typical to phenomenological research, such as experience of self, other, world, temporality, and spatiality (Polkinghorne, 1989). All themes reflect an aspect of meaning within the experience which is not immediately available, but obtained through a sustained engagement with the material and a rigorous process of reflection (McIntosh, 1997). This process was cyclical throughout, in the sense that individual protocols were returned to repeatedly and new themes emerged for consideration. Instances of each theme were sought in the original protocols. This process was repeated until the researcher felt satisfied that the themes reflected in as much detail as possible the nature of the participant's experience. This was formulated in a written account of the psychological meanings of the experience, based on a synthesis of the themes (the Individual Structure). As suggested by the use of the term 'structure', the Individual Structure is not simply an adding or listing of elements (i.e., the themes emerging from analysis), but a description of the relationship between these elements. The Individual Structure remains contextualised in the specific situation described by the participant.

Table 4.3 *Steps in the Analysis of Individual Protocols*
Adapted from McIntosh (1997).

1. INDIVIDUAL TRANSCRIPT DIVIDED INTO MEANING UNITS:

"MU1: So I just looked for those sounds and worked on my plan, basically like climbing a mountain or something. So there's this stage, then there's that stage. That was the focus. /MU2: What I noticed was that I was not always in this super-deep meditative state, I came and went. /MU3: But I didn't label that movement, I just observed it. I wasn't worried when my mental state moved to one of more "O.K. So I'm aware of the audience now." I wasn't worried about that and then I would refocus on the music, then I would lose myself...."

2. TRANSFORMATION:

NATURAL MEANING UNITS	TRANSFORMED MEANING UNITS
So I just looked for those sounds and worked on my plan, basically like climbing a mountain or something. So there's this stage, then there's that stage. That was the focus.	→ The S focused on searching musically for the sounds he enjoyed hearing within the guiding structure of the plan for the performance.
What I noticed was that I was not always in this super-deep meditative state, I came and went.	→ The S observed himself moving in and out of a highly focused, absorbed state.
But I didn't label that movement, I just observed it. I wasn't worried when my mental state moved to one of more "O.K. So I'm aware of the audience now." I wasn't worried about that and then I would refocus on the music...	→ The S observed himself without reflecting on his movement in and out of being absorbed in playing music. The lack of significance attached to the movement out of the absorbed state facilitated re-entry into this state.

3. THE EXPLICATION OF THEMES AND THEIR MEANINGS:

TRANSFORMED MEANING UNITS

Ontological and specific themes emerging from the descriptions, e.g.:

Affective Experience | Experience of Self | Experience of Other | Experience of World | Temporal, spatial experience | Experience of the Interpersonal

ESSENCE, MEANING AND RELATIONSHIP OF THEMES

4. SYNTHESIS OF MEANINGS ACROSS THEMES INTO INDIVIDUAL STRUCTURE

4.6.2 The Analysis Leading to General Structures

Analysis was then conducted across cases in order to arrive at the General Structure. The process of analysis is summarised in Table 4.4.[16] The aim of developing a General Structure is to 'see past' the specific, situated context of the Individual Structures in order to provide a detailed description of essential psychological constituents across situations in which the phenomenon has been manifest.

The process of analysis used to arrive at the General Structure was similar to the analysis used to arrive at the Individual Structures. The analysis proceeded along the four stages proposed by Wertz (1983) for nomothetic analysis. As with the analysis for the Individual Structures, the stages overlapped with each other rather than remaining clearly distinct. The stages included:

1. Seeing general insights in individual structures: This phase aims to determine which features of the Individual Structures manifest a general truth about the phenomenon and which do not. This involved reflecting on constituents of the Individual Structures and considering whether these constituents refer only to the particular case or whether they refer to all of the available cases.

2. Comparison of individual descriptions: This involves looking for evidence of each of the constituents in all of the individual cases, thus establishing convergences and divergences between the descriptions. The convergences provide the basis for a general statement about the phenomenon. Rather than this process simply consisting of a cross checking for correspondences of actual statements as in a content analysis, it involves using each Individual Structure as a means of reflecting on other Individual Structures in order to bring out common features that are sometimes highly implicit. This process consists of a recursive movement between each Individual Structure and the original phenomenal descriptions. It enabled the researcher to arrive at higher-order themes that united different themes from the Individual Structures.

[16] The numbered points in the table do not correspond exactly with the numbered points in the text.

Table 4.4 *Steps in the Analysis for the General Structure*
Adapted from McIntosh (1997).

1. Gathering all themes across protocols.

2. Looking for instances of each theme in each protocol, in all layers of implicitness.

For example:

	S1	S2	S3	S4	S5	S6
Confidence in artistic activity	**Y**	**Y**	**N**	**N**	**Y**	**N**
Lack of awareness of technical aspects	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**
Effortless of artistic activity	**Y**	**N**	**Y**	**N**	**N**	**N**
Dominance of intuitive mental processes	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**

3. Explicating the common themes further in a circular process of deepening enquiry, moving between original narratives and transformations within and across cases.

For example:

Confidence in artistic activity -	**about?** **with whom?** **for whom?** **temporal aspect?**
Dominance of intuitive mental processes -	**experience of?** **degree of implicitness?** **etc.**

4. Synthesising the constituents of the experience common to all cases, in all degrees of implicitness.

5. General Structures for the phenomena of the experiential and existential dimensions of the artistic creative process.

3. Imaginative variation: As in the individual analyses, imaginative variation is employed to achieve the desired generality. In this case, rather than the parameters of variation being limited to varying details in imagining one participant's living of the phenomenon, the researcher imagines any and all possible variations to see what is consistently necessary for it to qualify as an instance of the phenomenon under study. Imaginative variation at this general level also assists the researcher in clarifying the limits of the implications of the General Structure – that is, if the findings are considered to reflect universality or a specified realm of generality. In the present study, the general

statements regarding the experience of the creative process were arrived at through interviews with artists. Aspects of the general structure that may pertain to the creative process more generally (i.e., beyond the realm of artistic activity) and to other areas of human experience are considered in the discussion of the findings.

4. Explicit formulation of generality: This refers to the necessary and sufficient conditions, constituents, and structural relations that comprise the phenomenon in all instances under the researcher's consideration. Questions are asked of individual constituents such as, "Can we have the phenomenon without this?" and "If we have just this, do we have the whole phenomenon?"

The resulting description, the General Structure, is usually lengthy and organised around constituents of the overall structure of the phenomenon under consideration. There is no bound placed on the language used: it may be poetic or derive from theory, but it remains grounded in *describing* the phenomenon rather than providing explanatory insights (McIntosh, 1997).

4.7 Inter-Rater Reliability and Member Check

Although generally not included in qualitative methodologies, an inter-rater reliability procedure and a 'member check' were included in the data analysis phase of the current study in order to further 'test' the validity and reliability of the findings. Refer to section 3.2 and Appendix C for discussion of issues of validity in qualitative research.

Inter-rater reliability

The comment is sometimes made of qualitative methodologies that there is little provision for an 'inter-rater' reliability statement about the data (McIntosh, 1997). Following Brooke (1983) and McIntosh (1997), inter-rater reliability was incorporated into the methodology of the current study by having a second, independent researcher review the protocols and data analysis. This second researcher was a PhD candidate using a similar empirical phenomenological method in her own research, and was therefore familiar with this research method. The specific process was adapted from McIntosh's (1997) use of this procedure. The steps included:

1. The second researcher was provided with the interview protocol judged by the primary researcher to be the richest and most complex of all of the interviews. The second researcher was also provided with a list of the natural and transformed meaning units and with the Individual Structures relating to this interview.
2. The second researcher read the interview protocol and studied each meaning unit, its transformation and the Individual Structures. Any objections or variations to the primary researcher's transformations or formulation of the Individual Structures were noted.
3. These variations were discussed between the researchers until both arrived at a similar conclusion and the transformation or Individual Structure was changed or maintained accordingly.
4. Three other interviews were read by the second researcher and then the General Structures were studied and discussed between the researchers.

This process allowed for the consideration of both a particular case, in the form of the transformed meaning units and the Individual Structures, and general findings, in the form of the General Structures.

For the most part, the second researcher substantiated what the primary researcher found at each step of working with the text. There were points of variation in the transformation of 9 meaning units of the 61 meaning units in the protocol reviewed. The process of discussion regarding these transformations resulted in the alteration of 4 of the 9 transformed meaning units. The discrepancies related to emphasis in the transformation, rather than the overall meaning of the transformation. The second researcher agreed with the formulation presented in the Individual and General Structures, apart from making suggestions regarding language use. Therefore, only points of expression, rather than content, were changed in the Individual and General Structures as a result of this process.

Member check

Some qualitative researchers have suggested that a strong justification for the findings of qualitative research is provided by asking participants whether they agree that the findings are an accurate or a possible account of the subject of interest (Guba & Lincoln,

1994; Harré & Secord, 1972; Harré, 1978).[17] Guba and Lincoln (1994) refer to this as a 'member check'.

Following this suggestion, participants were provided with the Individual Structures based on their interview and with the General Structures. Participants were asked whether, upon reflection, the Individual Structures were an accurate account of psychological aspects of the experience they described. Participants were also asked whether they could identify their own experience in the General Structures and whether these Structures were an accurate account of experiential and existential dimensions of artistic creativity – not necessarily as a description of their particular experience, but as a *possible* generalised statement.

Of the 11 participants, 5 provided feedback to this member check. All of the 5 responses consisted of positive feedback, albeit to varying degrees. That is, they all agreed that the Individual Structures accurately captured their descriptions and that the General Structures were possible generalised accounts of experiential and existential aspects of artistic creativity in which they could identify their own experience.

Conclusion

The process of inter-rater reliability or "inter-rater facilitation", as McIntosh (1997) refers to its application in the phenomenological research context, and the member check were not viewed as essential means of determining the validity of the current study's findings. Rather, they were intended as a useful adjunct to the standards outlined in Appendix C for approaching the issue of validity in qualitative research. The results of these procedures provide confidence in the validity of the findings, both on the individual and the general levels, due to the minimal divergence in judgment between the primary and the secondary researchers in the inter-rater reliability process and the positive feedback provided in the member check. The reasonably low number of participants who provided feedback (5 out of 11) raises the question of whether the other participants disagreed with or were critical of the findings. However, 4 of the remaining 6 participants responded that they were too busy to provide feedback, which indicates that the majority

[17] See Ashworth (1993) for a discussion of difficulties with using participant agreement in the justification of qualitative findings.

of participants who did not provide feedback did so for reasons other than disagreeing with the findings.

4.8 Findings

This section presents the findings from the phenomenological analyses of the interviews. Due to the number of interviews conducted, and resulting space considerations, the Individual Structures are not presented here. The Individual Structures of the first participant, Chris, are presented in Appendix H, while the remaining Individual Structures are available from the researcher.[18] The General Structures are presented below. Both the Individual and General Structures consist of two sections – the experiential and the existential dimensions. As described in section 4.3, the experiential dimension refers to pre-reflective experience of a particular artistic creative process; the existential dimension refers to the personal meaning that is attached to the artistic creative process in general terms.

4.8.1 General Structure of the Artistic Creative Process: The Experiential Dimension

Before describing invariant features of the phenomenon, it should be noted that these features are tightly interlinked and overlapping in the experience itself rather than existing as discrete entities. They are distinguished for the purposes of description, rather than because they are experienced as distinct features. The use of single terms such as "flow'" and "the zone" were frequently used by participants to encompass an array of features of the experience. The essential constituents of the experience of the creative process in artwork that emerged from the interviews are listed below. This is followed by a description of each constituent and the structural relationship between them.

List of constituents:

General context

1. Commitment to artistic activity.
2. Routine to artistic activity.

[18] The full interview transcripts and meaning unit transformations are also available from the researcher upon request.

Specific context

3. Being 'settled' in preparation for the process of doing the artwork.

The production itself

4. Narrowing of focus and deep absorption in the artwork.
5. A sense of a new synthesis of elements.
6. Confidence in artistic activity.
7. Lack of awareness of technical aspects of artistic activity.
8. Effortlessness of artistic activity.
9. Dominance of intuitive mental processes.
10. Unity in sense of self.
11. Sense of joy.
12. Sense of freedom.
13. Sense of purity.
14. An attitude of exploration and discovery.
15. Self-generating momentum.
16. Change in sense of control over self and/or the artwork.
17. Movement between intuitive and analytical mental processes.
18. Movement in and out of self-awareness.

The after-effects

19. Intensely felt emotional reaction to completing the artwork.

Commitment and routine to artistic activity (constituents 1 and 2)[19]

The background to the experience of the artistic creative process is a general commitment to the artistic activity. This may be a commitment to producing finished pieces of work (creative products) or be more experiential in focus – specifically, a commitment to attaining the quality of experience that the artist associates with the creative process. The commitment leads to ongoing practice of the art form and a routine to doing the work, represented in this sample by the artistic activity being a vocation. A particular experience of *creativity* emerges within this context of ongoing artistic activity – for instance, performing music regularly, exploring a particular style of painting over a series of paintings, writing short stories regularly, and so on. The commitment to artistic activity might influence how the artist structures her life. This may

[19] The sub-headings do not correspond exactly to the constituents numbered above. The constituents covered in each section are noted after the headings.

take the form of leading a simple, balanced lifestyle, reducing involvement in unrelated activities, or building a daily routine around the artistic activity. This deliberate structuring of daily life is experienced as allowing the artist to dedicate herself as fully as possible to her artwork and making her more receptive to creative ideas.

Preparatory activity: becoming 'settled' (constituent 3)

The commitment to artwork leads to various forms of preparatory activity. This is experienced as part of the normal routine of artistic activity rather than as a change that 'signals' particularly creative work. The preparation is generally mental rather than technical in nature and is aimed at 'settling' the artist, allowing him to feel 'ready' to become immersed in the artistic activity. This may involve a longer-term practicing of an experiential state associated with the creative process – for instance, cultivating an internal emotional 'stillness' through meditation or by distancing oneself from other forms of stimulation – which may be integrated into daily life. In other cases, the artist tries, to use one participant's words, to "*feel comfortable*" about the process in both an emotional and physical sense – for instance, he makes sure equipment or materials are located in the correct place, that he won't be disturbed while writing, that instruments can be heard clearly, that he is playing with other good musicians, and so on. These preparatory activities are aimed at ensuring that the conditions, both internal and external, will allow the artistic activity to reach its highest potential. Even technical rehearsal (e.g. practicing a musical instrument) is experienced more as a form of reassurance that technical skills are adequate or 'ready' for the creative process itself, rather than as a means of improving or extending these skills. Maintaining a routine to artistic activity can itself be experienced as a form of preparation for the work being particularly creative, as though the familiarity with the medium and habit of producing artwork encourages creative ideas to emerge.

Focus and absorption (constituent 4)

These preparatory activities belong to a general process of the artist narrowing her focus of attention to the artistic activity. The artist becomes progressively more engaged with her piece of work, even if this is only in the form of vague thoughts about the tone or atmosphere of what she would like to achieve in the piece. In the process, she becomes more detached from aspects of the life-world unrelated to the work, reducing awareness of immediate surroundings, physical state, and the passing of time. This is instrumental

in the development of a sense of unity to self, described below. The 'settled' state deepens, allowing greater immersion in the artistic activity.

The 'direction' of the emerging singular focus of attention is influenced both by characteristics of the medium and by the artist's interests or intentions for the piece. For instance, a musician may be guided by his current preoccupation with musical forms to become deeply absorbed in listening to and searching for musical 'shapes' in his playing. This concentrated direction of attention is associated with a heightened sensitivity to elements of the medium and the particularities of the piece on which the artist is working: musicians feel a closer 'presence' with the tonal quality of the music; musicians playing in group settings become acutely aware of other group members' playing; a writer feels a stronger emotional 'connection' with characters she is developing; and a visual artist feels a heightened awareness of the character of the object he is depicting. The fact that attention is fully concentrated on the artistic activity gives rise to a sense of 'being in the moment'. That is, attention being directed exclusively towards the artwork rather than being divided between multiple objects produces a sense of being fully present to immediate experience.

The time frame of this deepening focus on the artwork and detachment from other aspects of the life-world can vary. Some artists experience it developing over several weeks as ideas accumulate and are 'played' with; others experience a more limited withdrawal and absorption in the artwork, occurring over the course of the day or merely several hours before being directly involved in the artistic activity. While the former scenario occurs more frequently with larger-scale projects, such as writing a novel or doing a series of paintings, and the latter with more time-limited events, such as a musical performance, this is not exclusively the case. The time-period involved is mediated by the artist's intentions and the degree of importance he attributes to the particular artwork. By way of illustration, a musician described weeks of preparation for a single performance by regularly entering a meditative frame of mind, a process informed by his longer-term exploration of the effect of this still, focused state of mind on musical performance.

A synthesis of elements (constituent 5)

A mutually reinforcing relationship exists between the narrowing of focus on the artistic activity and a sense of various elements coming together, 'meshing' and producing the possibility of a synthesis of these elements in the artwork. These 'elements' can be entirely internal to the artwork. For example, a musician in a group might feel that each group member's playing is a different element and that these elements are combining to create a new and interesting whole in the form of the overall sound of the group; a writer might feel that disparate ideas for a novel are intersecting and joining up in a manner that she had not intended or anticipated. Alternatively, the synthesis might involve a combination of elements internal and external to the artwork. Aspects of the artist's experience might inform and combine with existing elements of the artwork. In the interviews, a writer described a coalescing between a song she was listening to, her emotional state at the time of writing, and her existing ideas for a short story; a painter described his engagement in an unrelated task as combining with and stimulating visual and conceptual ideas for a series of paintings. This sense of a new gestalt or combination of elements triggers a deepening interest and involvement in the work, encouraging the narrowing of attention described above.

The new synthesis of ideas is often experienced as providing coherence to previously loose elements of the artwork – they are now felt to be where they 'belong', where they 'should' be. There is an excitement associated with this, based on a sense that the artist has experienced a creative breakthrough. The engagement and excitement can be intensely felt, with the artist attaching a heightened significance or meaning to many aspects of her experience. She can at times feel somewhat overwhelmed with possibilities and feel an urgency to capture these possibilities in artistic form: *"…that opened up sort of like a Pandora's Box, a whole bunch of things started to open up."* The artist may also experience some anxiety due to viewing the new synthesis of ideas and the possibilities it presents as a challenge that she may not be able to live up to. This sense of a new synthesis is experienced not only at the beginning of the artwork as a form of inspiration that triggers the artist into action, but at various points throughout the process.

'The zone': Effortlessness, confidence, and non-awareness of technique (constituents 6, 7, and 8)

A prominent constituent of the experience is the sense of ease to artistic activity, often referred to with the terms "flow" or "the zone". This effortlessness emerges as a natural extension of feeling a heightened sensitivity to elements of the artwork and from the sense of having discovered where these elements 'belong', of the relationship between them. Rather than the artist *forcing* himself through the artwork, ideas for the piece emerge fluently and consistently, seemingly of their own accord. There is a sense of clarity about the direction in which the artwork should proceed, which facilitates this sense of ease. For some artists, this can result in feeling that they have 'connected' with a source outside immediate awareness – whether internal (for example, the unconscious) or external (for example, 'nature' or God) - and that they are 'receiving' the ideas from this source.

The sense of ease is intimately linked with two other features of the experience – a sense of confidence about the artistic activity and a lack of awareness of technical aspects of doing the artwork. The artist is not questioning or judging her work, but is instead trusting in its quality. This is sometimes experienced as a belief in the importance of the work – in either a personal sense (for example, as revealing what has been 'hidden' from conscious awareness) or in a more general sense (for example, as contributing to the artistic field). While in the 'flowing' state or 'the zone' of artistic activity, the artist is absorbed in realising the ideas that are appearing to him naturally, in following his instincts, and is not aware of the technical skills allowing him to do so. These technical aspects are 'assumed' in the artist's activity, fading into the background of awareness. There is a sense that the ideas or impulses appearing to the artist bring out or 'demand' certain technical skills to be used, but without the artist making conscious effort to do so. However, there may be instances, generally prompted by awareness that the artwork is progressing well, of a sense of awe at the high level of technical skills being used.

Dominance of intuition (constituent 9)

As implied by much of the description above, the artist experiences the creative process as being dominated by intuitive mental processes. Rather than being in a critical, analytical frame of mind, the artist is guided by what 'feels right' in her artistic activity, by

the elements that naturally seem to 'belong' in the piece. In the initial period of producing the work, the artist does not analyse or judge why these elements seem to 'belong' where they do or why the 'flow' of ideas is progressing in a certain direction. This intuitive, non-analytical attitude can be experienced as a state of 'openness', in the sense of being receptive to and trusting the instincts that emerge in the course of artistic activity. The artist can experience moments of recognition that he is in this 'open', intuitive state and remain in this state by attempting not to 'think about' the activity, by not letting analytical mental processes grow in prominence and direct the progress of the work. The relationship between the intuitive and analytical mental state is elaborated on below. The dominance of intuition can also be experienced as direct, unmediated expression of the artist's emotions and flow of ideas while involved in the artistic activity. Intuition plays a prominent role in the sense of whether the artwork is finished. The sense that no further development of the piece is required, that all elements of the piece 'fit together' in a complete form, is intuitively grasped, even if the artist has revisited the piece with a more critical, analytical approach (making technical improvements, editing, and so on).

Unity in sense of self (constituent 10)

The immersion in the artistic activity and the dominance of intuition give rise to a unity in sense of self. There is a suspension of self-awareness associated with the artist being absorbed in the world of their artwork and being in a non-analytical, intuitive state of mind. The divisions inherent to self-conscious experience - referred to by one participant as "*decision-makings*", "*worryings*" and "*deliberations*" - seem to break down. In fact, this unity to self can be experienced as a lack of self, as illustrated by one participant's description of a "*bracketing of the self*". A sense of self as 'pure action' emerges – that is, a lack of distinction between thoughts and the act of expression in the art form; the artist does not contemplate the work and then proceed, but uses the medium in an immediate, automatic flow. This experiential state involves a lack of awareness of the physical body and of the passing of time. The artist will often have previously structured his working environment to ensure that this state is maintained for as long as possible – for example, by making sure that he will not be interrupted, by working between set times, and so on.

Affective components: joy, freedom, purity (constituents 11, 12, and 13)

Multiple affective states are stimulated by the deep absorption in the artistic activity and the unity to the sense of self, including a sense of joy, freedom, and purity. A high mood exists during the immersed state of artistic activity, referred to as either a sense of pleasure, joy, or excitement. This affective state is often felt to be propelling the activity forward, because it is central to maintaining the artist's engagement with the work. The precise nature of this high mood is experienced in multiple ways – as a 'celebration' of existence (felt particularly when the artistic activity is taking place in front of an audience, e.g. by performing musicians), as a strong sense of fulfillment or satisfaction, as a sense of connection with something beyond the self, or even paradoxically as a sense of tranquility. The highness of mood can be experienced not only as propelling the artistic activity forward, but as guiding the direction of the work: it can 'signal' to the artist that her artwork is progressing well, prompting her to attempt to continue in a manner which maintains this mood. Similarly, losing the highness of mood and experiencing a vague discomfort can indicate that the work is not progressing in the direction that the artist would like it to, prompting an attempt to re-direct the approach in a manner that re-inspires the high mood.

A sense of freedom emerges from the ease of the artistic activity and the artist's total immersion in the immediacy of her experience. The freedom is often expressed as a sense of release or relief. The deep engagement with the work provides an escape from analytical cognitive processes and from the standard experience of self-awareness. The sense of freedom can also emerge from a sense of dissolution of personal boundaries and sense of 'connection' with something beyond the self. Closely related to this sense of freedom is a sense of purity, which exists either with regards to the artist's sense of self or to the experience more broadly. The sense of self as an undivided whole, as described above, can provide the artist with the sense that a 'purer' form of being is being revealed to him in the creative process. The intensity of the artist's focus, coupled with a certain simplicity associated with being fully focused on a single activity, contributes to this sense of purity. The sense of purity can manifest itself in a number of ways, including the sense of growing a 'higher' awareness, a 'raising of consciousness', either on an individual or on a collective level, and also in the sense of being 'in touch with oneself', of being personally centred.

An attitude of exploration and discovery (constituent 14)

The artist maintains an attitude of exploration and discovery of elements that emerge in the course of the creative process, as implied in the description of the synthesis of elements and the dominance of intuition. The artist is experimental or playful in her approach, experiencing a sense of curiosity about including a discovered element in the piece or a sense of recognition that a certain development 'belongs' in the piece. This is often experienced as a chance or accidental development. The artist intuitively 'follows' these emerging ideas, a process referred to by one writer as discovering and following the 'rhythm' of the piece. This process can be experienced as recognising how the piece 'should' be – that it already 'exists' in some sense and that he is discovering its character and structure.

This process of discovering and 'following' ideas occurs within a known structure. For example, the novelist may have decided on various 'plot points' and have a vague image of main characters; the musician may be working within a certain style or be using particular chord patterns; the painter may have adopted a particular style and have a sense of the composition he wants for the piece. The artist maintains a balance between realising his original ideas for the piece and remaining receptive to newly emerging ideas. It is often in fact through attempting to realise and further explore his original ideas for the piece that the artist encounters new ideas. There is an ongoing dialogue between the original intentions for the piece and the ideas encountered throughout the process, which shapes the emerging form and nature of the artwork. Apart from the structure of the original ideas for the artwork, the artist also tends to work within the structure of a routine (in terms of place, period of time working, preparatory rituals, and so on). This can at times be quite rigorously self-enforced. The routine is often experienced as providing a 'holding' structure that allows the artist to be more spontaneous and exploratory in his approach.

Self-generating momentum (constituent 15)

A constituent of the experience that relates to the sense of discovery is the sense of momentum. The artistic activity is felt to be propelling itself forward, as having a self-generating momentum. This is often experienced as having quite a driven, compulsive quality, described variously as a sense of being hypnotised, of having a 'rush' of ideas, and of the creation 'building up force'. The experience of momentum arises from a

number of factors. The sense of pleasure and satisfaction keeps the artist engaged in the process, motivating him to continue, and thus propelling the creation forward. As described above, the artist becomes excited by the artwork in progress, recognising its creativity, which stimulates deeper engagement with the work. There is a sense of fascination and strong importance attached to the content of the artwork. The high level of engagement stimulates further ideas to emerge (*"You do something, you like it, and then that feeds you to do more."*) Apart from this cyclical quality to inspiration for the piece, the sense of ideas 'meshing' and creating a new synthesis also contributes to the sense of momentum: ideas for the piece keep emerging and coalescing, pushing the creation forward. As the artist continues with the process, newly introduced elements form relationships with other elements of the piece, transforming its overall gestalt. This can stimulate further ideas for the piece due to aesthetic considerations such as balance and form and the need for overall coherence, which also contributes to the sense of momentum.

Change in sense of control (constituent 16)

The deep absorption and the sense of momentum prompts a change in the artist's sense of control over self and the artwork. This is experienced either as a heightened or a diminished sense of control. The sense of heightened control emerges from the immediate sense of clarity about the direction in which the artwork should evolve, based on the greater 'connection' felt with the work, and the confidence that she is able to achieve this. The 'flowing' ease of the artistic activity contributes to this sense of heightened control.

However, some artists experience the 'flowing' ease to the activity as a diminished sense of control. This is due to the impression described above of ideas for the artwork coming 'through' the artist, of not being the origin but the 'receiver' of these ideas. The sense of discovering ideas in the process of doing the artwork and the artwork being carried in directions that the artist had not intended contributes to a sense that she is not responsible for determining the direction of the work, and therefore of not being in control of it. The sense of a loss of control over self also arises from the dominance of intuition and the recession of analytical, critical mental processes, which is experienced as entering into a less familiar mode of being. The sense of diminished control over self and the artwork is associated with various affective states, including mild anxiety, a

sense of beauty, the sense of 'purity' described above, and with awe and mystery. It is managed and counterbalanced by the structure of routine in the artist's approach to the work. The sense of diminished control is reflected in the sense of surprise some artists experience upon looking back at the artwork, either in finished form or while still in progress, as though they had participated in a process rather than having been responsible for it.

Movement between intuitive and analytical modes (constituent 17)

The artist does not remain in the intuitive mode, with associated aspects of the experience, for the whole creative process. Rather, there is a 'movement' between this intuitive mode and a more critical, analytical approach to the work. The precise nature of the movement between these two modes is dependent on the nature of the artistic medium, the general approach of the artist, and the stage of the artwork.

The movement between these two modes occurs for a number of reasons. The artist may be prompted to become more analytical in his approach when he senses that the artwork is not 'flowing' as easily and therefore loses confidence in his approach to the work; when there is a sense of elements of the artwork not 'fitting together' as well as they were earlier in the process (e.g. the experience of coming up against a 'block' in the process); when he encounters a technical challenge, making him contemplate how he will technically be able to convey certain ideas; or when the focus of attention moves from the artwork to another mental object (e.g. thinking about the experience of another musician in a group setting). At these points, there is a sense of the state of immersion in the work being 'broken' and a fear that the less intuitive, more analytical approach will interfere with the process of creation. Indeed, the artist can feel a certain fragility to his experience of being in the deeply immersed, intuitive state. The artist will often attempt to use a variety of techniques in order to escape the emergence of analytical thought and return to the more intuitive mode. These include accepting the emergence of analytical thoughts and letting them fade, a process similar to meditative practice; actively refocusing on the basic aesthetic qualities of the medium (e.g., the tone of the sounds, the texture of the paint, the feeling of the words); or returning to the last point in the artwork at which a sense of ease had been felt to the activity. Alternatively, the artist attempts to *use* the analytical mode in some way, either by engaging in some more

technical aspects of the artwork (e.g., editing work) or by engaging in a different project requiring a more analytical approach (e.g., essay writing).

The demands of the process of completing the artwork will itself prompt the artist to become more analytical in her approach at various points in the process. For example, as part of the drafting process, the writer may work through the initial body of text with a critical, analytical approach (e.g., improving language, checking for consistencies, and so forth); musicians working in a studio may start analysing the interplay of musical elements and consider whether original ideas for the piece have been successfully conveyed. The process of engaging with the artwork in this way will often prompt the artist to become deeply absorbed in the work again, leading to another period dominated by intuitive mental processes. Although the role of the analytical approach becomes more prominent towards the later stages of the process, it is also active at earlier stages. For example, near the start of a novel-writing process the writer might consider how her characters would respond to an array of situations; the painter might consider exactly what sort of ideas he would like to convey in his art pieces. These occasions are not experienced so much as a 'break' or as interfering with the intuitive approach, leading to attempts to escape this emerging analytical state of mind, but as integrated into the process of completing the artwork. For example, a writer described a daily analysis of what she had written while in an intuitive, automatic state of writing in order to clarify which direction she would like the novel to go in; this analysis informed and guided her intuition while writing the following day. The exception to this is the performance situation, in which revision of the artwork, by its very nature, is not possible. In such situations, the artist attempts to remain in the 'flowing', intuitive state for as much of the artwork (i.e., the performance) as possible, drawing on the techniques mentioned above.

Movement in and out of self-awareness (constituent 18)

The movement from the intuitive to the analytical mode involves loss of the sense of pleasure, momentum and ease in the artistic activity, and is therefore experienced as a move towards a more draining state. The analytical mode also characteristically involves greater awareness of the personal meaning of the artwork – that is, an awareness of how the artwork relates to the artist's life. There is also a sense of losing touch with 'the world' of the artwork: the artist feels less closely connected with the work, with a diminished sense of the direction that the work 'should' go in. This is often

referred to in terms of moving from 'inside' to 'outside' the work, as though the artist is now approaching it from a distance. The movement is also experienced as a movement between a unity and division in sense of self. As described above, in the intuitive mode the artist experiences an absolute focus on the artwork and dissolution of self-awareness. As she becomes more analytical in her approach to the artistic activity, her attention is divided – for example, between the context (e.g., the audience, the surroundings) and the activity itself, or between the artistic activity itself and her *experience* of the activity. In the process, she regains awareness of aspects of experience which had dissolved in the process of becoming absorbed in the artwork, such as awareness of her physical body and the passing of time. In this sense, the movement between the intuitive and the analytical modes of approaching the artwork is experienced as a movement in and out of self-awareness.

Emotional reaction to completing the artwork (constituent 19)

The artist experiences a strongly felt emotional reaction to completing the artwork. This involves a positive affective state, experienced variously as euphoria, an ecstatic release, a sense of satisfaction, or a sense of success at having captured the original ideas for the artwork. There is also characteristically a sense of fulfilment or satisfaction, based on an awareness that this particular creative experience fulfilled the individual's ongoing commitment to his art form, his reasons for being an artist. This positive affective state can produce an eagerness to re-experience what was felt during the creation of the artwork.

A sense of vulnerability can precede or follow the positive affective state. The precise nature of how this is experienced varies. The artist can feel drained due to having invested a lot of mental energy in the process, or experience an emotional fragility or sensitivity, even becoming mildly anxious. Alternatively, it may be characterised by a sense of disorientation and feeling withdrawn from the environment, based on the disparity between the artist's own experiential state and her impression of her surroundings (e.g., between her own heightened mood and sense of the surroundings as bleak and depressing). The vulnerability is experienced as emerging from the sensitivity, the receptivity to ideas, and the loss of sense of control over self felt during the process.

A strongly felt emotional reaction to completing the artwork might also emerge from a sense that the process has had a transformative effect on how the artist approaches his work or his thinking about self or world. For example, the artist might start to analyse the factors that contributed to the work progressing so well and attempt to recreate these factors in future artworks. The work's content might 'reveal' something of personal significance to the artist and thereby prompt reflection or the nature of the experience itself (e.g., a breakdown of boundaries between self and environment) might prompt thought about self and world in a more general sense.

4.8.2 General Structure of the Artistic Creative Process: The Existential Dimension

The essential constituents of the personal meaning of artistic activity (the existential dimension) that emerged from the interviews are listed below. This is followed by a description of the constituents and the structural relationship between them.

List of constituents:

1. The personal importance of artistic activity is *assumed* in the artist's life.
2. Artistic activity as having central significance in the artist's life.
3. Artwork as a means of deepening engagement with self and world.
4. Fascination with the meaning or implications of the creative process.
5. Intrinsic motivation to engage in the creative process.
6. The experience of the creative process as 'special'.
7. The need to engage in artistic activity.
8. Commitment to the art form.

The importance of artistic activity is assumed in the artist's life

The importance of doing artistic activity is integrated into the artist's life to the extent that it is assumed or taken for granted. It forms a backdrop to experience that is rarely brought to awareness or questioned. This was reflected in the difficulty many artists experienced in the interviews in discussing the precise nature of the meaning that being engaged in artistic activity has for them. The artist becomes aware of the important role artwork plays in his life only upon reflection (such as during the interviews), and not while engaged in the artistic activity itself.

The artistic activity as having central significance in the artist's life

The artistic creative process constitutes a central meaning in the artist's life. It is a basic form of engagement with life that influences many other aspects of the artist's life-world. This is apparent in a number of ways. For instance, for the purposes of increasing her receptivity to ideas for the artwork and engagement with the work, the artist is often led to structuring her life around the artistic activity. As presented in the General Structure of the experiential dimension, this might consist of the routine of artistic activity or of consciously 'rehearsing' particular experiential states, such as a meditative 'stillness'. One participant described deliberately distancing herself from others and leading a narrow social life due to wanting to invest a lot of time and energy into her writing.

The strong affective dimension to the creative process also reflects the central importance of artwork in the artist's life. Apart from the sense of elation and fulfilment felt upon completing a piece and the 'driven' nature of the activity, the artist can often feel distressed, depressed, or experience a deterioration in well-being in response to difficulties in or the absence of artistic activity. This absence might exist when the artist is unable to engage in artwork (due to lack of inspiration or the interference of other commitments) or when a piece has been completed – in both instances, there is a sense of being deprived of a major purpose or source of meaning.

There are also a number of ways in which artistic activity is central to the artist's life by functioning as a powerful 'ego-reinforcing' activity. In engaging in artistic activity, the artist can feel that he is fulfilling a major personal potential, that he is realising his main talents or abilities. Some participants described the self-expression involved in artistic activity as providing a form of self-validation – that is, as increasing the sense of value and importance in their sense of self. The artwork can also be important to the artist's self-identification, in the sense that thinking of herself and presenting herself socially as a 'writer', 'painter', 'musician', and so on is important to her general sense of identity. Within these general medium-based categories there are more subtle forms of self-identification, such as regarding one's work as being on the frontier of a particular medium or as identifying with a particular sub-culture.

Deepening engagement with self and world

The artwork is not only of central importance to the artist's identity, but it also functions as a means of deepening engagement with self and world. This is reflected in the artist regarding his work as a means of 'making sense' or finding meaning. The artistic activity is often regarded as a means of further exploring or attempting to understand self or human nature. Indeed, some artists suggested that a desire for self-knowledge is the main motivation for their work. For example, a playwright presented his creation of characters as a means of representing and exploring aspects of himself and human nature. The artist is certainly not always aware of their artistic activity as a process of exploration; rather, it might be quite automatic in nature. Apart from exploration of the individual self of the artist, the artistic activity might also function as a means of experiencing or 'coming in contact' with a larger entity. As the general structure of the experiential dimension illustrates, the creative process can involve a sense of dissolution of the individual self and a sense of commonality or connection with a larger whole. This is often regarded by the artist as reflecting the potential of the creative process to elicit a spiritual awareness.

Rather than the artistic activity just being a means for the *artist* to engage with and explore aspects of self and human nature, she recognises it as a means for *others* to do so also. This is implicit in some descriptions. To follow the example provided above, the playwright's description suggested that his characters not only functioned as externalisations of his own personality, but also allowed the audience to identify themselves and engage in self-reflection based on this. In other cases, there is a more explicit formulation of the artwork as existing 'for' others, to the point of this being the major purpose of the artwork. The artwork is sometimes regarded as fulfilling a social role: for example, as a means of challenging or rebelling against certain social norms; as raising awareness of a particular domain, such as the natural world, and thereby encouraging a different relationship with this domain; or as a means of 'raising a common spirit' and thereby eliciting the spiritual awareness described above. The means by which the artist regards the artwork as serving a role for others might also be more subtle, such as the artistic activity simply modelling a confidence in one's own perspective and expression. A communicative aspect to the artistic activity is always present, although the degree to which this is formulated as central to the purpose of the activity varies.

Apart from the content of the artwork, the artist often regards the *experience of the process* of artistic activity as providing a deeper engagement with self and world. While involved in the process, the artist encounters human potentials and 'ways of being'. The particular features of the experience which allow a deeper engagement with self and world can vary: the intuitive and free-flowing quality to the experience can allow the individual to overcome a form of 'self-censorship' or avoidance of certain ideas; the experience can 'teach' a focused awareness on immediate experience; it can encourage an acceptance of uncertainty and lack of control; it can encourage trust in intuitive over rational mental processes and raise awareness of the interplay between such mental processes; and the sense of dissolution of personal boundaries and connection with a force beyond the individual self can encourage a spiritual awareness. So both the 'making sense' of experience through the content of the work and the experiential states entered during the process of creation allow for a deeper engagement with and therefore a greater richness to the experience of self and world. In this sense, artistic activity can be a form of existential choice, involving a commitment to discovery and a search for meaning and authenticity.

Fascination with the creative process

The ability of artwork to deepen engagement with self and world and the intensity of the experience of the creative process endows the creative process with a certain power in the artist's mind. There is a commonly felt sense of fascination with this power and its implications for other aspects of the individual's life-world. The precise object of this fascination varies according to the aspects of the experience most prominent for the individual and the personal meaning associated with artistic activity: it might include a fascination with states of consciousness and the nature of self, based on the experienced movement from a 'divided' to 'unified' self in the creative process; a sense of awe at the 'healing' function of the creative process or its protective function against mental distress; a fascination with why the artist responds to the creative process by becoming more anxious; a fascination with the strength of intuitive mental processes; and so on.

Intrinsic motivation

The artist regards the quality of the *experience* of the creative process as more of a motivating force for the activity than the *meaning* generated by reflection on the creative process or other factors external to the experience itself. In other words, there is an intrinsic motivation to the creative process, rather than the experience simply being a tool or a side-effect. The aspect(s) of the creative process that provide this intrinsic motivation varies between artists. Certainly, the strong sense of joy or pleasure is a prominent motivating factor. Other characteristic elements of the experience that contribute to its intrinsic motivation include the sense of escape or release from self-conscious, analytical mental processes into a simpler, more intuitive mode and the strong sense of drive or purpose felt while involved in the activity.

The crucial role of intrinsic motivation is reflected in the greater emphasis placed on the satisfaction of the artistic activity and entering the associated experiential states, rather than on producing a final creative product. However, there are exceptions to this: some artists 'use' being in this state for the sake of the final product, rather than regarding it as an end in itself. In such cases, although the artist enjoys the experiential state, he might have an ambivalent relationship with it due to also having formed negative associations with it, such as an expectation of a subsequent increase in anxiety.

The experience of the creative process as 'special'

Another basis for the importance the artist finds in artistic creativity is the sense of the experience as 'special', as a blessing or as an enchanted way of being. This is sometimes expressed as a sense of gratitude. There is a sense that the experience provides a removal and freedom from quotidian life, as though the artist is coming in contact with an important human potential that transcends his individual existence. The artist has a sense that his own existence achieves greater significance through this contact. Also contributing to the sense of the experience as 'special' is its intensity and the difficulty attaining a similar quality of experience through other means. This construal of the creative process leads to it being a highly valued aspect of the individual's life.

The need to engage in artistic activity

The sense of artistic activity as a need or necessity reflects its significance in the artist's life. As illustrated in the general structure of the experiential dimension, the activity can have an addictive, compulsive quality; the artist can be highly driven to commence or continue a piece of work. This need is sometimes felt as a form of discharge, in the sense of the artistic activity being an expression of a build-up of ideas and impressions. The artist can feel that she is relying on the artistic activity as a form of coping strategy or for the sake of maintaining mental balance. The sense of need can also introduce a certain threatening quality to the artistic activity: feeling unable to engage in the activity or that the artwork is not particularly interesting or creative can lead to frustration or depression.

Commitment to the art form

The artist also feels a sense of commitment to the art form, which relates to the social context of the artwork. This sense of commitment manifests itself in several ways. The artist might identify his work as 'belonging' within a certain tradition of artwork. This produces a desire, sometimes even referred to as a 'duty', to contribute to the tradition – either through presenting the art form to its fullest potential or by attempting to advance the art form in some way. The commitment to the art form might also exist in a more experiential sense: that is, a commitment to stimulating in others the experiential state felt while engaged in its production. The artist hopes to achieve this either through her work encouraging others to engage in their own artwork, and thereby enter a similar experiential state, or simply through the aesthetic encounter of others apprehending and appreciating the work. The drive to stimulate the experience of the creative process in others reflects the sense of importance and value the artist attaches to this experience.

4.9 Summary

This chapter outlined the method and analytic techniques used in an empirical phenomenological study of artistic creativity. The nomothetic findings (General Structures) were presented according to the experiential and existential dimension of the artistic creative process. The following chapter discusses these findings.

Chapter 5

Discussion of Study 1 Findings

5.0 Overview

The current chapter discusses the findings of Study 1, a phenomenological study of artistic creativity. The main dynamics operating within the two General Structures are considered, followed by a discussion of these findings with regard to previous literature, particularly previous qualitative research. Finally, suggestions are made for future research.

5.1 Consideration of the General Structures

The current section aims to conceptualise the descriptive findings reported in Chapter 4 in more abstract terms.[20] This interpretation will proceed by considering the main dynamics that seem to be operating within the constituents of the General Structures. The constituents of the experiential General Structure are arranged around a number of themes, including experience of self, of others, of surroundings, of time, and cognitive and affective components, all of which are interlinked. There are three major dynamics operating within these themes:

1. an intuition-analysis dynamic;
2. a unity-division dynamic; and
3. a freedom-constraint dynamic.

In this context, the term 'dynamic' is being used to refer to a psychological force that underlies and gives rise to the particular themes. The experience of the artistic creative process is based on movement within these dynamics, rather than consisting simply of one 'pole' of the dynamic. These dynamics will be addressed in turn.

As we have seen, a central part of the artistic creative process is a movement towards intuitive mental processes. These intuitive processes group together with other factors, such as the sense of effortlessness, confidence, non-awareness of technique, the physical body or passing of time, to constitute an aspect of the experience frequently referred to by participants as 'the zone' or 'flow'. It is through intuition that the artist grasps what seems to 'belong' in the piece and its overall configuration or gestalt. However, intuition alone does not characterise the whole process. There is a movement between intuition and more critical, analytical mental processes. This may occur frequently in the course of the overall process or only several times. The artist might regard this movement as an integral part of the process (e.g., in the critical consideration of a piece of writing) or it might be resisted (e.g., the musical performer trying to stay immersed in the musical activity). This relates to the issue of variations between different mediums (see below). Nevertheless, there is a common operation of this dynamic within the artistic creative process.

Similarly, the dynamic between unity and division in sense of self, intimately connected with the intuition–analysis dynamic, is a common feature of the process. As detailed in the General Structure, the dominance of intuition and the immersion in the artistic activity give rise to a unity in sense of self, a lack of self-awareness. There is, at this point, no distinction between the artist and the medium. However, corresponding with the movement towards the more analytical mode, division reappears in the artist's experience in the form of awareness of a variety of mental objects, including the sense of self. As with the intuition–analysis dynamic, the movement between unity and division might be frequent or only occur on several occasions throughout the process.

Also present in the General Structure, and again closely related to the other two dynamics, is the freedom-constraint dynamic. In the deep absorption in the creative process, with the associated dominance of intuition and unity to sense of self, the artist experiences a sense of freedom. This is particularly associated with the experiential phases of the process referred to as 'the zone' or 'flow'. Implicit here is that the previous experiential state – the state prior to entering 'the zone' or 'flow' – involves a degree of constraint. As detailed in the General Structure, the sense of freedom is intimately linked to the loss of self-awareness or self-consciousness. There is movement within

[20] Refer to section 7.1.1 for a summary of the qualitative findings.

this dynamic throughout the creative process, as with the other two dynamics, the precise nature of which varies depending on the individual and the nature of the artistic situation. The constraint pole of the dynamic manifests itself in the sense of vulnerability that can be experienced, along with more positive affective states, upon completing the artwork. This vulnerability might even be thought of as a 'rebound effect' of the freedom, with the associated sensitivity, receptivity to ideas, and change in sense of control, felt during many points in the creative process.

While three dynamics have been associated with the experiential dimension, the main dynamic operating in the existential General Structure is meaning-meaninglessness. The creative process is a prominent means by which the artist finds meaning in existence and is thereby a means of deepening engagement with self and world. This meaning-providing function of creativity emerges from either or both the experience that the artist associates with creativity and the content of the artwork itself. In the creative process, the artist feels that he is coming in contact with an important human potential that transcends his individual existence. This can be associated with a form of spirituality attached to the experience. The other pole of the dynamic, the potential for meaninglessness, is felt when the artist is not engaged in artistic creativity or in imagining an existence without artistic creativity. This potential can present itself when the artist is unable to engage in artistic activity or when a piece has been completed. The sense of creativity as providing meaning leads to the fascination with the creative process, the sense of engaging with it as a need or necessity, and the commitment to the art form. While this sense of commitment to one's vocation might be expected in any professional group, the commitment in the case of artistic creativity is particularly marked. This seems to be due to the quality of experience associated with artistic activity being felt as 'special' or as a form of blessing and due to the fact that the activity provides the creator with fundamental, existential meaning rather than with more superficial or contextual meaning.

Differences between mediums

The General Structures provide an account of the common features underlying different artistic mediums. While the focus of the current analysis has been on these common features, differences in emphasis between the different mediums were also apparent. The most prominent difference was between experiential elements of artistic situations

involving a focused, delineated time-period, such as live performance, and situations in which the time-period is extended, such as writing, visual art, or recording music. In both cases, there are elements of composition involved – the live music performer, for instance, is still drawing on compositional skills, especially if the music is open for interpretation and elaboration, as in an improvisational approach. However, live performance is a more *concentrated* version of the whole creative episode, because of the way that the activity is structured in time: the artwork as a whole is created in the duration of the performance (e.g., in the hour on stage), rather than returned to repeatedly and developed over a longer period. Both situations, the live performance and the more extended process, involve movement in and out of an immersed state ('the zone' or 'flow'). However, the live situation is characterised by trying to remain in this 'zone' or 'flow' state for as long as possible and minimising the critical or analytical approach to the artistic activity. The live situation is weighted, as it were, towards the 'zone' or 'flow' state, with all of its associated features. This is probably due to the analytical mode being less *useful* in the live situation, in the sense that it is more time-consuming and involves a detachment from the expressive activity itself. Interestingly, Coleman (1998) maintains that "the fleeting performing arts" mimic spiritual experiences more than "the enduring plastic arts" in their impermanence and evanescence. Indeed, the General Structure associates spiritual elements most strongly with 'the zone' or 'flow' state. This leads to the speculation that live perfomers in particular may associate a spiritual quality with the creative process.

The 'concentrated' character of the live performance situation is also reflected in the affective components of the experience. There was, on the whole, a greater intensity to the various affective features of the experience in live performance compared to the more extended creative episodes. For instance, the constituent of the strongly felt emotional reaction to completing the work, particularly in the form of vulnerability and experiencing a period of 're-adjustment', was particularly present in descriptions of live performance. This might be related to the generally concentrated, and therefore more intense, nature of live performance: the various experiential elements are 'compressed' into a shorter period of time, leading to associated emotions being felt more intensely. It might also be related to live performance involving an immediate relationship with others, either with fellow performers (musicians in a group, for instance) or with the gaze of the audience. This immediacy of interaction with the other is not present, or is at least

more distant and belonging to an imaginary realm (e.g., see Individual Structure 6), in non-performance situations.

However, despite these differences in emphasis, the degree of overlap or commonality in the experiential and existential dimensions of the different mediums sampled is noteworthy. This suggests that there are core features to the phenomenon of artistic creativity as it appears in its different forms. However, specific differences between mediums along the experiential and existential dimensions need to be studied in greater depth.

5.2 Discussion of Findings with Regard to the Literature

This section discusses the phenomenological findings with regard to previous research, particularly previous qualitative studies of the creative process. The discussion will address the experiential dimension and the existential dimension of the findings in turn. The discussion of the experiential dimension is structured according to the following categories - a comparison with previous phenomenogical studies, creativity and spirituality, movement between intuition and analysis, the creative synthesis, affective components, and flow.

5.2.1 The Experiential Dimension of the Artistic Creative Process

Previous phenomenological findings

There is considerable overlap between the findings of the current study and previous phenomenological studies of the creative process. As described in the literature review (see section 3.3), Reinders' (1992) phenomenological study of the artistic creative process, using three artists sampled from different fields, is the closest in nature to the current study. One major point of similarity between the findings of these two studies is the emphasis on artistic creativity as involving the emergence of the artistic object through an interactive process, rather than as the representation of a preconceived concept. The latter notion is represented, for instance, in Gombrich's (1950) account of the artistic process. Gombrich presents the artistic process as beginning with a concept, which he refers to as a "schema", conceived of before the artistic activity itself. In this depiction, the artistic process is merely a reproduction of the preconceived schema. In

contrast, Reinders' (1992) findings suggest that the artistic creative process proceeds through the artist's engagement with the artistic materials (e.g., paint, body movement, and so forth) and that the artistic object emerges from this dialogue. While the current findings do not emphasise the view that the process unfolds through dialogue with the artistic materials alone (although this is certainly present in the General Structure), they do highlight an attitude of exploration, the sense in which the 'destination' is not predetermined but discovered through engagement with the process (as represented in the constituent of an attitude of exploration and discovery). Curiosity and the recognition of a certain development 'belonging' in the piece are central features of this attitude of exploration. Rather than being set and delineated, as suggested in Gombrich's (1950) account, the artist's approach tends to be experimental and playful.

Indeed, in the interviews, artists noted that an overly predetermined approach to the artistic process introduced difficulties to the creative process. This approach was identified as not being a particularly *creative* form of artistic activity, an attitude summarised by one participant's description of it as "completing an agenda" (see Individual Structure 6). Similarly, difficulties were introduced into the creative process when a guiding structure was absent and it consisted only of seeing what emerged in the course of the artistic activity. Rather, the creative process was characterised in the current findings by a complex dialogue between pre-existing ideas and emergent ideas: the initial ideas (which may simply take the form of a single image or an atmosphere) provide a structure that initially guides the artistic activity, yet the activity remains decidedly open and uncertain; the emergent ideas guide the artwork's trajectory and transform the original ideas. This is represented in the constituents of an attitude of exploration and discovery and in a new synthesis of elements, which is experienced repeatedly throughout the process. This notion is echoed in Reinders' (1992) formulation that "the artistic idiom emerges through a process of exploration, that is, repeated trials and variations, a process which at the same time clarifies the artist's implicit guiding idea" (p. 63).

This particular aspect of the findings is consistent with Rothenberg's (1990) finding from a series of studies that artists identify the form and meaning of their work as it progresses, rather than these aspects of the work being clearly present from the outset. For instance, poets in Rothenberg's studies reported seldom knowing what a poem was

"really saying" (p.41) until they were either well into the writing, until they had actually finished it or, in some cases, until months or years later. The sense of finding out what the poem was "really saying" was associated with a sense of illumination, discovery, and relief.

As in the current findings, Reinders (1992) finds the exploratory artistic process to be playful and experimental in nature. This is integral to one of the paradoxes that she identifies in artistic activity – purposive-playfulness, which refers to the active manipulation of artistic materials in a highly playful, probing manner in order to realise the artistic object. The current study found that in this playful approach the artist discovers elements that he is curious about including or recognises as 'belonging' in the piece (the constituent of an attitude of exploration and discovery). This is often experienced as a chance or an accidental development. This finding speaks to Giorgi's (1984) phenomenological finding that "artworks are as much the result of spontaneous actions of the artist body as planned activities" (p.26).

The other two paradoxes identified by Reinders (1992) include 'circumscribed indeterminacy' and 'distant-engagement'. The former refers to holding at bay the knowledge derived from previous artistic experiences and trusting that artistic intuition and perception will recognise emerging artistic configurations that contribute to the intentional object. The latter refers to an alternation between immersion in the manipulation of material and distancing oneself, looking at the emerging artistic structures from the perspective of the audience. Circumscribed indeterminacy was not present in the current findings. Certainly, a trust in artistic intuition and perception is implicit in the dominance of intuitive mental processes present in the findings. However, the interviews did not indicate that the artistic process involves holding at bay knowledge from previous artistic experiences, despite the attitude of 'openess' and exploration. Indeed, one might even suggest that knowledge from previous experiences informed the artist's intuitive processes. The second of Reinders' paradoxes, distant-engagement, is certainly present in the current findings, paralleled in the constituent of movement between intuitive and analytical modes. However, the specification in Reinders' description of the movement out of immersion in the manipulation of the artistic material towards a more distanced approach as involving the adoption of the *audience's* perspective is not reflected in the current findings. The adoption of the more critical,

analytical mode serves the function, in most cases, of developing greater coherence to the piece. While the sense of the audience – that is, of the artwork as *communication* – might be regarded as implicit in this attempt at coherence, the present findings do not indicate that the imagined or real audience is central to the artist's experience of this.

Both Reinders' (1992) and the current experiential General Structure accentuate the dominant role of intuition and change in sense of control. In both cases, the artistic object is not consciously or rationally grasped, but is pursued through intuition. The current study's finding of a change in sense of control (either heightened or diminished) can be found in Reinders' formulation of the artist being both active and passive. The artist is active in the sense of her actions being informed by artistic intuition of the intentional object and receptive in the sense of remaining sensitive to emerging artistic configurations. This would seem to correspond to a heightened and diminished sense of control respectively. The parallel is apparent in Reinders' statement that "…the artist lives his or her experiences paradoxically as bringing forth and attending to the emergence of the artistic object" (p.6). "Bringing forth" suggests a heightened control, whereas "attending to the emergence" suggests a diminished sense of control.

Similarly, a point of contact between the two General Structures expressed in different ways is apparent in the account of the inception of the artistic creative process. While Reinders (1992) describes the adoption of an artistic perspective towards certain aspects of the life-world, giving rise to a sense of lack and desire to produce an artwork, the current study locates the background to the process as being a commitment and routine to artistic activity (constituents 1 and 2). A general commitment to artistic activity and the adoption of an artistic perspective would seem to imply each other: a commitment to artistic activity, with the associated routine to the activity, assumes the adoption of an artistic perspective, and the adoption of an artistic perspective presupposes a commitment, or at least some form of allegiance, to the activity associated with this perspective. In this sense, there is a conceptual similarity to this aspect of the respective studies. However, the sense of lack identified by Reinders is not reflected in the present experiential General Structure. Rather, it appears in the existential General Structure as artistic activity being a central meaning-generating activity without which a sense of lack would be experienced (the constituents of artistic activity having central significance in the artist's life and the need to engage in artistic

activity). Rather than a sense of lack being a triggering event, the current findings suggest that a distinctly creative process, as opposed to artistic activity *per se*, is experienced as being 'triggered' by the sense of a new synthesis of elements within the context of ongoing artistic activity.

Although there is a substantial degree of overlap in the findings of these two studies, there are some areas of divergence. The 'zone' or 'flow' state that appeared prominently in the current findings do not find an equivalent in Reinders' (1992) findings. Although she describes immersion in the activity in relation to the distant-engagement paradox, the full implications of this immersion as elaborated in the current findings (distorted sense of time, unity in sense of self, effortlessness, and so on) are not present. In a related area, the prominent affective component of the current findings are absent from Reinders' account, apart from the playful attitude and the sense of drive prompted by the desire to fulfil the perceived lack.

Both Reinders' (1992) and the current findings identify an important element of the artistic creative process as discovering and recognising what seems to 'belong' in the artistic piece. Both Reinders (1992) and Giorgi (1984) refer to this as responding to the "demands" of the artistic object. This element of the process is central to Conrad's (1990) description of the fiction-writing process. Her findings describe the artwork as "already exist(ing)" (p.111) and the creative process as involving its discovery and recognition. Again, intuitive rather than conscious, critical processes are portrayed as guiding this process. While this process is certainly present in the current findings, it is not as dominant as in Conrad's account. The General Structure's constituent of an attitude of exploration and discovery includes the sense of recognition that a certain development in the artistic activity 'belongs' in the piece. However, the inclusion of certain elements is also guided by a sense of curiosity. That is to say, the process does not only consist of including elements that are recognised as 'belonging' in the piece, and through this route 'discovering' the artwork, but also of pursuing elements which capture the artist's interest or curiosity. Therefore, the current findings lead to an understanding of the experience of the creative process both as a form of recognition, of uncovering the logic or character of an artwork, and also as following one's curiosity or

interest.[21] In this sense, the process consists of both certainty and uncertainty, of clarity and mystery.

Creativity and spirituality

The General Structure's prominent feature of a unity in sense of self, and associated elements, finds common ground with Coleman's (1998) philosophical analysis of the relationship between creativity and spirituality. Coleman (1998) asserts that a fundamental common denominator between art and religion is a quest for union, unity or oneness, which is basically a pursuit of harmony. This quest, according to Coleman, exists in three forms: as self-integration, as a union found in one's object of attention, and the union of relationship. Each of these are present in the current findings. The General Structure outlines how the immersion in the artistic activity and the dominance of intuition give rise to a unity in sense of self. The divisions inherent to self-conscious experience (i.e. between the self as perceiver and the self as perceived) break down, leading to the experience of self as united or even to the sense of a lack of self. This is a reflection of Coleman's category of self-integration.

A union found in one's object of attention, the second of Coleman's (1998) categories, is apparent in the General Structure's portrayal of the artist seeking coherence in the evolving artwork through the more critical, analytical approach to the work. Coleman describes the union of relationship as "…an intimacy in which subject-object distinctions diminish or disappear" (p.xviii). He outlines the prominent place this concept has played in thinking about art, religion, and love. The current findings describe a sense of dissolution of personal boundaries and sense of 'connection' with something beyond the self, which can give rise to a sense of purity to self or to the experience more broadly. For instance, Individual Structure 9 described a painter losing a sense of the distinction between herself and the object she was depicting. The general findings also describe the merging of action and awareness – that is, of the emergence of a lack of distinction between thoughts and the act of expression in the art form. These findings parallel

[21] It is of interest that that the sense of the creative process as uncovering the logic or character of an artwork, present in the current findings and in other phenomenological studies, displays similarities with the phenomenological method's goal of uncovering the logic or lived meaning of human experience, as described in Chapter 3. This extends on the sense of the 'match' between artistic creativity and the phenomenological approach noted in section 3.4.

Coleman's description of the union of relationship in creativity and spirituality (also see Ehrenzweig (1970)).

This fusion or loss of boundaries aspect of creative experience was generally identified in the General Structure as a positive, even joyous, experience (see the sense of joy, freedom, and purity constituents). This is also the manner of Coleman's (1998) portrayal – of the sense of unity being a human ideal towards which the artist and religious person aspires. Ehrenzweig (1970) connects this "dedifferentiation" with a manic quality to experience. Certainly, the current findings do suggest that an excited, driven affective state is associated with the unity to sense of self, via the sense of a new synthesis of elements. However, the findings also suggest that a sense of vulnerability or emotional fragility can be associated with the creative process, emerging out of the sensitivity and loss of sense of control over self felt during the process. The findings indicate that this sense of vulnerability is most keenly felt in association with, indeed can be prompted by, the completion of the artwork (see the constituent of an intensely felt emotional reaction to completing the art work). One might speculate that the loss of personal boundaries, and associated ego defences, exposes the individual to psychological conflicts or, to draw on psychoanalytic terminology, disturbing primary-process material. This possibility relates to Doyle's (1976) assertion that the "centration" involved in the creative process requires a radical openness and that no aspect of psychic structure be forbidden territory. This finding reinforces Schuldberg's (1994) argument that the creative process contains disturbing, as well as pleasurable or exalting, elements. It is also consistent with studies cited in section 3.4 that creative work, by virtue of its intensity, may lead to a disrupted, shallow family life (Policastro & Gardner, 1999) and that it may cause alcohol abuse (Runco & Charles, 1997).

The General Structure describes the sense of a 'purer' form of being as being revealed to the artist in the creative process (the constituent of a sense of purity). This sense of purity can manifest itself as the sense of growing a 'higher' awareness, a 'raising of consciousness', or the sense of being 'in touch with oneself'. This aspect of the findings again finds a compelling parallel in Coleman's (1998) discussion of bonds between creativity and spirituality. Coleman highlights the distinction that many religious and philosophical traditions make between the limited, empirical self or ego and the "true character, self, soul, *atman*, or Buddha nature" (p.71), which has a universal quality. He

asserts that the quest for the realisation of this deeper self is a major common denominator between religion and art. This recalls Moncrieff's (1989) study of aesthetic consciousness, outlined in section 3.3., which found that a central feature of this experience was contact between the individual ego or persona and this deeper self. Certainly, the notion of this deeper self as being the root of creativity has a strong tradition. Buechner (1991), for instance, writes: "I think that among other things all real art comes from that deepest self – painting, writing music, and dance, all of it that in some way nourishes the spirit and enriches the understanding" (pp. 44-5). Similarly, Ó Cluanáin (1987) observes that the creative process, through accommodation to the character of the medium, requires a decentring of the artist's subjectivity. The transformative effect that the creative process can have on the artist's thinking about self or world, as detailed in the General Structure, also relates to this dynamic between the ego and the deeper self: in the creative process, the artist has 'moved beyond' his provincial ego and thus his relationship with self and world has changed.

However, although this loss or decentring of the surface ego is present in the General Structure, the findings also suggest that the process is an ego-fulfilling activity. The positive affective state experienced upon completion of the artwork can be based partly on a sense of satisfaction that this particular creative process fulfilled the artist's ongoing commitment to the art form, her reasons for being an artist. In this sense, the experience suggests an ego-reinforcing component, especially towards the final stages of the process. Therefore, there is a paradoxical atrophying and reinforcement of the ego in the creative process. Indeed, these components might stand in causal relationship with each other: the suppression of the ego and contact with a universal self allows for more creative artistic activity, which has a 'rebound' effect of reinforcing the ego.

A connection has also been made between creativity and spirituality in the absorption in the present moment and the associated non-awareness of time. For instance, the theologian Gilkey (1989) writes:

> When an event that we label art thus stops the heedless flow of time in an enhanced moment, a moment of new awareness or understanding, a moment of intense seeing and participation in what is seen, then (as the Zen tradition has taught us) the transcendent appears through art, and art and religion

approach one another. (p.189)

Gilkey is referring here to an experience that both the creator (i.e. the artist) and the 'receiver' of the artwork (i.e., the audience, the viewer, the reader, and so on) can encounter through engagement with artwork. Certainly, the non-awareness of time and physical surroundings is present in the current findings (see the narrowing of focus and deep absorption in the art work constituent). Other empirical studies also provide evidence for a link between creative and religious experience (Barron, 1972; Clarke, 2004).

Movement between intuition and analysis

The current findings indicate both a dominance of intuition during 'the zone' or 'flow' state of artistic activity and a movement back and forth between intuitive and analytical mental processes. This movement between modes is analogous to Maslow's (1963) distinction between "primary creativeness", which refers to the "inspirational phase of creativeness", and "secondary creativeness", which refers to "the working out and development of that inspiration". The notion of going beyond analytical, critical thought in artistic creativity has been well-accepted in modern creativity research and in earlier thinking about creativity (see Chapter 2). Ehrenzweig (1970), for instance, observes that "up to a point any truly creative work involves casting aside sharply crystallized modes of rational thought and image making. To this extent creativity involves self-destruction" (p.15). The "self-destruction" referred to here is not necessarily of the provincial ego discussed above but of "rational surface sensibilities" (p.15). The movement between intuitive and analytical mental processes in the current findings is also referred to in Giorgi's (1984) phenomenological findings of a constant intertwining between conscious and unconscious processes in the artistic process.

The notion of moving from rational to intuitive processes is present in various psychoanalytic accounts of creativity, perhaps particularly prominently in Kris' (1952) regression in the service of the ego. Carlsson (2002) writes: "A creative person is particularly apt to be liberated to a certain degree from rational (secondary) thought processes and to activate a more associative or primary process-colored way of thinking…As formulated by Carlsson (1992), this gives an opportunity for subjective imagination to surface into consciousness…" (p.342). In Koestler's (1964) notion of

bisociative thinking, creative activity involves simultaneous use of rational processes and regression to an earlier self. The combination of intuitive and rational processes, corresponding with the absorption in and the more distanced approach to the activity and with the unity and division in sense of self, are present in the current findings. However, rather than the simultaneity suggested by Koestler, the current findings indicate that these two modes are cyclical, at least on an experiential level. As elaborated in the General Structure, the movement experienced between these modes is based on the nature of the artistic medium, the general approach of the artist, and the stage of the artwork.

Rather than this movement beyond the 'rational self' being a deliberate act, as suggested, for instance, in Rimbaud's description of a "systematic derangement of the senses" (see section 2.4) and in the concept of regression in the service of the ego, the current findings indicate that engagement in the creative process itself stimulates the move towards a more intuitive mode. The experience 'brings forth' the move away from the rational self, rather than this being an intentional act. Again, the notion of the 'demands' of the creative process is appropriate here. However, the artist *prepares* for the change in the nature of experience towards a more intuitive mode by cultivating a 'still', receptive, and focused approach to the artistic activity. This occurs within the context of familiarity with the process. In this sense, although the cultivation of the context for the shift in experience is deliberate, the shift itself cannot be forced; it is always experienced as overcoming the artist, rather than the artist imposing himself on it.

The creative synthesis

The ability to synthesise a wide range of concepts (concepts which might previously have even been thought of as unconnected) has played a central role in many theories of creativity, as discussed in Chapter 2 (e.g. Koestler, 1964; Mednick, 1962; Rothenberg, 1990). The experiential equivalent of these cognitively-focused theories is apparent in the constituent of the General Structure of the sense of a new synthesis of elements, either internal or external to the artwork. This synthesis is a trigger for a sense of excitement and deeper engagement in the artistic activity. Indeed, this constituent might be thought of as corresponding to the role of inspiration in many models of creativity. However, the findings indicate that rather than the synthesis being a single event within

a linear stage-model of creativity, it is experienced at various points throughout the process. This cyclical aspect of the process is consistent with the models of the creative process based on qualitative data developed by Doyle (1988) and Mace and Ward (2002).

Some writers (e.g., Abra, 1995; Rothenberg, 1990; Sass, 2000-2001b) have drawn attention to the emphasis on inspiration, and associated romanticist notions, in many models of creativity. Rothenberg (1990) argues, contrary to prominent models of creativity and statements by eminent artists themselves, that inspiration is neither the invariant starting point of the creative process, nor is it its most critical aspect. There tend to be, according to Rothenberg, no dramatic effects or intense excitement. The current findings are consistent with the view that inspiration is not the starting point of the creative process (it occurs within a context of commitment and routine, preparatory activity, and a narrowing of focus on the activity) and that inspirational components of the activity need to be balanced with recognition of the conscious, deliberate nature of the process, which is consistent with many experimental findings (see Mumford, Baughman, & Sager, 2003). However, the findings do indicate that an important element of the creative process is the experience of a synthesis of elements, akin to inspiration, and a shift in consciousness towards a state of effortlessness and relative automatism. Indeed, this can be experienced as having a dramatic quality, leading to an energised, absorbed state of activity, and can be accompanied by a sense of breakthrough or discovery. May (1975) writes of this issue: "The essential point is not the presence or absence of voluntary effort, but the degree of absorption, the degree of intensity…there must be a specific quality of *engagement*" (p.40). The current findings point to voluntary effort being present in the form of commitment and routine to artistic activity and the narrowing of focus on the activity. The findings concur with May's emphasis on a certain quality of engagement being central to the experience of creative activity, an engagement that involves the decentring of the ego and the forms of union described above. However, this form of engagement does not characterise the whole creative process. The process unfolds in a dynamic between such states and a more conscious, critical, or analytical approach (see the discussion of the intuition-analysis and unity-division dynamics).

Affective components

Affective components certainly hold a prominent place in the General Structure. As discussed above, the sense of a synthesis of various elements can be energising and prompt a sense of excitement, against the backdrop of habitual artistic activity. This contrasts with Jamison's (1989) findings of her artists and writers reporting excitement and a general increase in mood, and a smaller percentage an increase in psychological discomfort, just *prior* to starting an intensely creative period. However, the centrality of intense mood states to the experience of creative activity is consistent with Jamison's finding that intense moods were necessary for the development and execution of her participants' work.

This contrast between Jamison's (1989) findings and the current findings is of relevance to the issue of whether there is a causal relationship between mood swings and creativity, and if so, in which direction, or whether there is an independence but phenomenological similarity between mood swings and creativity (see section 2.4). The current findings point towards the effect of creative activity on mood states: specifically, of creative activity prompting a sense of excitement during the periods of synthesis; of joy, freedom, and purity during 'the zone' or 'flow' periods; and an intensely felt reaction to the artwork's completion in the form of a positive affective state or a sense of vulnerability. However, this statement must be balanced by recognising that participants were not asked directly about their mood states prior to artistic activity or the general effect of their mood states on the creative process. The focus in interviews on the experience of the creative process might have weighted participants' accounts towards the effect of the creative process on affective states rather than vice versa. Nevertheless, the findings do provide evidence for the creative process being able to powerfully induce a variety of affective states.

The prominent position of joy and pleasure in the experience of artistic creativity (see the sense of joy constituent) is consistent with Henderson's (2004) study of product inventors. As detailed in section 3.3, she found that various types of affective pleasure play a central role in the creative experience of product inventors. While challenge, problem solving, and technical perspective taking were not associated with affective pleasure in the current study, as they were in Henderson's findings, affective pleasure in

focus, in creating, and in self-expression were common to both studies. Affective pleasure in focus was represented in the current findings in the joy experienced while the artist is fully immersed in creative activity during 'the zone' or 'flow' state. Affective pleasure in creating, which refers to enjoyment in creating value, bringing something new into existence, or coming to a new understanding, was present in the synthesis of new elements. The completion of the work was also characterised by this form of affective pleasure, as well as affective pleasure in self-expression, as represented by the sense of satisfaction and fulfilment described by participants. This overlap with Henderson's (2004) findings suggests that the prominent place of affective pleasure in the current findings is not particular to the experience of artistic creativity, but is present in other domains also. Affective pleasure, as well as the excited, driven quality present in the current study, is also present in Shaw's (1994) model of scientific creativity. The areas of divergence with particular aspects of Henderson's (2004) findings (affective pleasure in challenge, problem solving, and technical perspective-taking) suggests that, while the *type* of emotion experienced might be similar between domains, the source of this emotion may vary.

Flow

The prominent place of affective pleasure in the current findings is also a point of connection with the 'flow' literature. Csikszentmihalyi's (1975, 1990b, 1996) concept of flow, the central feature of which is its enjoyable nature, is certainly present in the General Structure. Indeed, the term 'flow' or 'the zone' was frequently used by participants to describe a central part of the creative process. The elements of flow present in the findings include clear goals every step of the way, immediate feedback to one's actions, action and awareness being merged, distractions excluded from consciousness, no worry of failure, self-consciousness disappearing, a distorted sense of time, and the activity becoming autotelic. Csikszentmihalyi (1996) reports that the lack of worry of failure is described by some people as a feeling of total control. While this was also reported in the current study, some participants reported a diminished sense of control, although a sense of confidence about the artistic activity remained. This latter finding, combined with the sense of purity discussed above, contributes to the spiritual or transpersonal aspect of the experience, which is present, but not emphasised as strongly, in the construct of flow (see Csikszentmihalyi, 1996). In this sense, the current findings indicate that creative experience overlaps with both the constructs of

flow and peak experience, as described in section 3.3. The other feature of flow, the balance between challenges and skills, is not an explicit feature of the General Structure. However, it would seem to be implicit in the combination of the sense of confidence described by participants and in the fact that the progress of the work can seem to bring out or demand certain technical skills to be used (see the constituent of the lack of awareness of technical aspects of artistic activity).

However, while the current findings reinforce Csikszentmihalyi's (1996) argument that an integral part of creativity is entry into the 'flow' state, they also suggest that this construct does not fully capture all elements of the experience or accurately reflect the process as a whole. The constituents of an attitude of exploration and sense of discovery, the self-generating momentum, and the movement between intuitive and analytical mental processes, which are not captured in the construct of flow, were also found to be integral to the process. The description of the temporal unfolding of the process indicates that creativity as flow is too narrow a conception, ignoring the important early (commitment, routine, being 'settled') and late (pronounced emotional reaction) experiential features, as well as the ongoing dynamic between the more intuitive, 'flowing' mode and the more analytical, distanced mode. However, an important area of overlap between the current findings and the construct of flow is the shared emphasis on the *quality* of the experience, specifically its enjoyable nature, as a prime motivator of artistic activity rather than factors external to these experiential factors. This is consistent with Melrose's (1989) study of the creative personality and the creative process.

Summary

Overall, a large degree of overlap is apparent between the current study's findings and the findings of other phenomenological studies, as well as other descriptive studies of the artistic creative process. The points of divergence are generally issues of emphasis or the scope of the constituents discovered in the creative process, rather than fundamental differences of kind. Prominent themes common to these studies include:

- motivation to engage in artistic activity within the context of having developed appropriate skills;
- the sense of recognition of emerging structures in the artwork;

- responding to the 'demands' of the artwork and the interaction between the artist and the material;
- the prominent role of intuition;
- the cyclical movement between an immersed flow-type experience and a more distanced, analytical mode;
- strong affective components, particularly affective pleasure.

The current findings emphasise the shift in sense of self associated with creative experience and the energising effect of a sense of synthesis of disparate elements. A number of points of contact between creative experience, as revealed in the current findings, and literature relating to spiritual experience were noted, particularly relating to sense of self: in both experiences, there is a unity to sense of self and the sense of contact with a deeper, more universal self.

5.2.2 The Existential Dimension of the Artistic Creative Process

As described above, the existential dimension of the artistic creative process was not investigated as fully in the current study as the experiential dimension. Nevertheless, it is of value to compare the constituents of the General Structure that emerged in the analysis to previous literature. While there have not been many directly existential studies of creativity in the psychological literature, a number of writings have considerable relevance to existential aspects of creativity. Indeed, creativity holds a prominent role in much 'third-force' psychology, which has roots in existential thinking. The discussion of the existential dimension is structured according to the following categories – the central significance of artistic activity, the deepening engagement with the life-world, and the romantic model of creativity.

Central significance of artistic activity

One constituent of the General Structure was the central significance of artistic activity in the artist's life. It influences many other areas of the artist's life and leads her to structure aspects of her life around the activity. Again, this aspect of creativity has been coupled with religious experience: "Like love, great art and religion both require a complete commitment, a total personal response of the whole individual, an unstinting investment of one's heart, mind, and will" (Coleman, 1998, p.40). The artist is fascinated with the creative process, partly because the quality of the experience attached to the

process is regarded as a removal from quotidian life and felt to represent an important human potential. This removal and the sense of the experience as 'special' is recognised in Otto's (1969) remark regarding aesthetic and spiritual experience: "Musical feeling is rather (like numinous feeling) something 'wholly other,' which, while it affords analogies here and there will run parallel to the ordinary emotions of life, cannot be made to coincide with them by a detailed point-to-point correspondence" (p.49).

As with the affective components of the experiential dimension, this centrality and intense commitment to artistic work has relevance to the creativity-mood literature. The profound personal investment in the work results in mood changes in accordance with the vicissitudes of the work. This is apparent in the positive affect and state of satisfaction felt while the work is progressing well and the negative affect (distress, depression, deterioration in well-being) in response to difficulties or the absence of artistic activity. With the faltering or the absence of artistic activity, the artist experiences a poverty of meaning. So while the intense personal investment in artistic activity propels the activity, it also has a notable effect on the artist's mood state, of both positive and negative valence. This is clearly of relevance to the creativity-bipolar argument (see section 2.4), particularly with regard to the effect of creative work on mood state. The implications of the findings for the other causal direction (i.e., the influence of mood on creativity) are less clear. However, the constituent of artistic activity as a need or necessity bears on this issue. This constituent was composed of viewing artistic activity as a form of discharge or release (recalling Picasso's view of creativity as catharsis) and of artistic activity as a coping strategy or as a means of maintaining mental balance. These aspects of creativity as a 'need' suggest either intensified mood states or the use of artistic activity as a vital form of mood-management. In this vein, the painter Lucian Freud remarked, "the process of creation becomes necessary to the painter perhaps more than is the picture" (quoted in Leader, 2002, p.120).

The sense of artistic activity as a need is also present in Gallan's (2001) phenomenological study of creativity. In fact, her findings supported the existence of a separate phenomenon in the process of creativity which she referred to as a "need to create". Her participants spoke of this need as possibly lying dormant for a period of time but always re-surfacing with a feeling of demand that it be expressed in some new form. Consistent with the current findings, Gallan found that her participants made major

decisions based upon the need to create and experienced a devastating sense of loss when the opportunity to express the need to create was removed.

Deepening engagement with the life-world

The notion of artistic creativity as a means of deepening engagement with self and world, and therefore as a form of self-knowledge, is prominent in the General Structure. This view of creativity is present in Rothenberg's (1990) account of artistic creation as facilitating self-creation: "…good artists use their art to help them define themselves and achieve better understanding of their own feelings and thoughts" (p.75). Rothenberg regards creativity as a gradual unearthing of unconscious material, which can lead to discovery and knowing oneself in a fundamental way. This recalls Maslow's (1968) view of increased creativity and intensified involvement with the life-world as characteristic of 'self-actualising' people, although he does not draw on the concept of the unconscious as the source of this self-actualisation. In a similar vein, Ó Cluanáin (1979, 1987) maintains that both artistic creation and appreciation involve bringing hidden or obscured meanings to the surface of perception (the individual is "(returned) to a *Lebenswelt* that is now perceptually experienced as illuminated with significances formerly inapparent or obscure" (Ó Cluanáin, 1979, p. 245)). This "return", argues Ó Cluanáin, motivates the person toward more authentic living. The commitment to authenticity is formulated in the General Structure as artistic activity being an existential choice.

In her study of flow in writers, Perry (1998) reports that the flow state consists of a sense of feeling 'like oneself'. Certainly, the current findings also suggest this, with the immersed state of artistic activity being associated with feeling 'in touch with oneself' or being personally centred, contributing to the sense of purity described in the experiential General Structure. Similarly, Csikszentmihalyi (1996) writes that when we are involved in creativity "we feel that we are living more fully than during the rest of life" (p.2). The findings also suggest, consistent with Rothenberg's (1990) view of the creative process as uncovering unconscious material, that this greater connectedness with self can result from the creative process allowing the artist to overcome a form of 'self-censorship' or avoidance of certain psychological material. The anxiety or strain that Rothenberg (1990) associates with uncovering unconscious material is reflected in the sense of vulnerability and fragility that can be associated with creative experience, as discussed above.

However, the deeper engagement with the life-world does not only apply to the individual self of the artist. Rather, as discussed with regards to the experiential General Structure, the creative process involves contact with a larger whole of which the artist is a part – the Jungian Self, as opposed to the individual ego.[22] The artist regards the process as deepening their own and the audience's engagement with this deeper self. In this sense, the artistic activity is not regarded merely as a form of individual self-expression, but as an engagement with and expression of more universal aspects of human nature. Indeed, it has been argued that the quest for self-realisation, in the sense of this deeper self, is the fundamental ground of artistic activity and forms the major common denominator between art and religion (Coleman, 1998). A number of authors maintain that this quest, in its necessary recession of the provincial ego, requires a certain humility on the part of the artist (Coleman, 1998; Ó Cluanáin, 1987).

Coleman (1998) argues that the true purpose of artwork is to effect 'harmony', either within the artist or between people. This might be achieved either through the cathartic potential of creativity, through restoring the artist's and the audience's emotional balance, or through communicating and inspiring the sense of union and commonality described above. Certainly, as discussed, both of these pathways to harmony are present in the General Structure of the existential dimension of creativity.

The understanding of artwork as a means of deepening engagement with the life-world, and having an associated transformative effect for not only the artist but also the audience, illustrates the communicative or social meaning that the artist finds in artistic creativity. As Coleman (1998) writes, aesthetic experiences can be profound by "reconstituting the self" (p.75) - for example, by expanding one's world-view. The sense in the current study's sample of artists of the social function of their artwork is at odds with the social disconnection and alienation thought to be experienced by many contemporary artists (e.g., see Wilkins, 1993).

[22] Although used in several different senses in Jung's writings, the term 'the Self' is used to refer to a primary cosmic unity analogous to concepts of the unity of oneself and all other creatures and things (see Redfearn, 1977, 1983).

The romantic model of creativity

As discussed with regard to the experiential General Structure, there are elements of the romantic model of creativity in the current findings. The constituent of creativity as a need or necessity, the spiritual awareness associated with the creative process by some participants, and the intrinsic motivation attached to creativity are also consistent with the romantic model. This leads one to consider whether there are elements of the romantic model that might be an accurate reflection of creative activity, when balanced with elements from other models, such as the role of critical, evaluative thinking (see Mumford, 2003b).

However, it also leads to the consideration of whether the cultural discourse of romanticism that surrounds creativity, particularly artistic creativity, might have influenced data collection. In other words, were participants motivated to describe experiential and existential aspects of creativity in accordance with this dominant cultural discourse? There are a number of reasons why this should not have unduly been the case. One might speculate about demand effects: possibly, the emphasis on occasions when the participant was "pleased" or "satisfied" with their artistic activity elicited responses consistent with the romantic model due to an expectation that this is what was expected by the researcher. However, the fact that different qualitative studies of the experience of artistic creativity based around different interview questions yielded a large degree of similarity in their findings, as described above, argues against this possibility. Of course, it is possible that demand effects apply to this whole range of studies, with participants tending to provide an account of the creative process in romantic terms. The stereotypically romantic view of creative experience was often acknowledged by participants in the interviews and used as a point of contrast for their own experience. This suggests that participants did not have a strong allegiance to the romantic model that they wanted to portray in their accounts. Finally, although there are elements of the romantic model in the findings, this model does not characterise the entirety of the findings. If participants were motivated to portray the romantic model, one would expect it to infuse the whole account.

This issue of the possible influence of cultural discourse on participants' accounts relates to the more general issue in phenomenological method of the relationship between

experience and discourse. As outlined in Chapter 3, phenomenology traditionally seeks essential features of phenomena within or behind various discourses; indeed, Husserl (1913/1931) maintained that these discourses can obscure grasping the phenomenon itself. In contrast, some varieties of discourse analysis, for example, maintain that language and discourses *form* experience (see Harré, 1995; Potter & Wetherell, 1995). There have been varying degrees of emphasis in phenomenological psychology placed on the notion of getting at essences of experience. The Heideggerian perspective of investigating 'lived experience' and 'being-in-the-world' acknowledges the situatedness of experience and the cultural, social, and discursive processes that contribute to experience. This perspective informs the approach of interpretive phenomenological analysis (IPA), which emphasises the investigation of mediated experience over the 'essence' of experience.

The current study acknowledges the possible role of various discourses in forming participants' accounts of the experiential and existential dimensions of artistic creativity. However, rather than engaging with the precise nature of these discourses and their impact on the accounts provided, which would require a different form of analysis, the current study focuses on the experience and the meaning themselves, as presented by the participants. It would be profitable to continue to examine the merit of the romantic model through cognitive experimental research (e.g., see Mumford et al., 2003). If this sort of research suggests that the romantic model does not accurately capture the cognitive processes involved in the creative process (indeed, recent studies suggest that the model is inadequate in this regard; see Mumford, 2003b), it would be of interest if future studies find this model to dominate experiential and existential aspects of creativity. Such a discrepancy would suggest that, while romantic notions do not accurately capture the cognitive processes involved in the creative process, the model still has currency with regards to experiential and existential features of creativity. This would indeed affirm the powerful position of the romantic model of creativity as a cultural discourse.

Summary

In summary, the current findings reinforce the notions recognised in previous writings of the central significance of artistic activity in the artist's life and the sense of the experience of the creative process as 'special', as a removal from quotidian life. As with

elements of the experiential General Structure, these constituents display similarities with spiritual experience. Several aspects of the findings are consistent with the creativity-bipolar link: the profound personal investment in artistic activity has a notable effect on mood state, of both positive and negative valence, and the sense of artistic activity as a need is based partly on viewing artistic activity as a coping strategy or as a means of maintaining mental balance. The constituent of artistic creativity as a means of deepening engagement with the life-world has a strong basis in previous literature. The current findings emphasise that artistic creativity encourages this deeper engagement in the audience as well as the artist. Finally, the current findings suggest an integration of elements of the romantic model of creativity with cognitively-derived models of creativity.

5.3 Directions for Future Research

A number of suggestions for future research emerge from this phenomenological study. Firstly, as discussed in section 2.1, the very definition of creativity is protean, which can introduce uncertainty as to whether a study has successfully accessed the construct of creativity. Therefore, it would be of value to conduct studies that approach the phenomenology of creativity through alternative means, while maintaining the focus on the qualitative explication of lived experience, and comparing the results of these investigations to the current findings. For instance, interviews might be conducted while or shortly after the artist is engaged in the artistic process (e.g., after coming off stage or finishing a piece of writing, while at the easel, and so on). This approach might be beneficial in further achieving the phenomenological research goal of gathering pre-reflective accounts of experience. Another option would be to adopt the contextual approach to creativity, which argues that creativity needs to be understood not purely with reference to the individual but in the relationship between individual and context (see section 2.2). Drawing on Csikszentmihalyi's (1988b, 1990a, 1999) systems model of creativity, artists could describe the experiential features of producing particular artistic products judged to be creative within the field, using prizes or the judgment of others within the field as a criterion. This approach would take into account the contextual understanding of creativity, rather than limit the definition of creativity to particular experiences identified by creators themselves.

Another avenue for future research is to examine differences in the phenomenology of different artistic mediums. While the current findings indicate substantial commonality between the phenomenology of different mediums, they also suggest some differences. Most notably, performance situations were characterised by a greater desire to maintain the 'flow' state for as long as possible. These experiential differences might be further explored in future research. Although there have been descriptive studies of particular mediums (for instance, see Nardone's (1996) and Sawyer's (1992) studies of improvisational music performance, Perry's (1998) study of writers, and Nemiro's (1997) study of interpretive artists), a systematic study of differences in experiential features of different mediums is lacking.

The study of the existential dimension of artistic creativity in the current study was regarded as a preliminary investigation, as described in section 4.3. A future investigation needs to take the existential dimension of artistic creativity as its main focus, with a view to seeing whether the constituents that emerged in the current study can be consolidated through replication and be developed further. The relationship between the experience of artistic creation and artistic appreciation (or between art and aesthetics) also needs to be addressed. Certainly, as previously discussed, the current findings indicate a significant degree of overlap with the experiential features of artistic appreciation identified in previous studies. The discussion focused particularly on the sense of unity or oneness and the deeper engagement with the life-world. Such comparative work needs to be done in order to establish whether it is accurate to propose a phenomenon that subsumes both artistic creation and appreciation or whether they are overlapping but inherently distinct phenomena.

Apart from addressing the issue of differences between artistic mediums, future research also needs to address differences in experiential features of creativity between domains. Such an analysis will have bearing on the domain generality versus specificity debate in creativity research (see section 3.4). It was indicated above that there are similarities between the current findings and Shaw's (1994) investigation of scientific creativity with regards to affective components of the experience. In order to establish convergences and divergences between experiential, and indeed existential, features of these different domains of creativity, more comprehensive phenomenological research needs to be

conducted in domains other than the creative arts. The different skill sets, and associated cognitive processes, required in these different domains may correspond to overlapping yet distinctive experiences of creativity. Given the heterogeneity of the construct of creativity, it is theoretically circumspect not to assume experiential convergence between these domains before the accumulation of relevant empirical evidence (see Baer, 1998).

Finally, the phenomenology of creativity might be examined in cross-cultural contexts. Interestingly, the current study's findings are consistent with Lubart's (1999) presentation of Eastern conceptions of creativity as being less focused on innovative products than on states of personal fulfilment. This is consistent with Sundararajan's (2004) conclusion that the Chinese prototype of creativity consists of most of the essential ingredients of the creative personality as identified in the research literature, with some important variations. Sundararajn notes that Chinese aesthetics emphasises the concern for the wholeness of beauty and the cultivation of the self. As illustrated in the above discussion, both of these features are present in the current General Structures. It is possible that experiential features of creativity might be similar cross-culturally and that cultural discourse surrounding creativity is the greater point of variation.

5.4 Summary

This chapter considered the findings of Study 1, a phenomenological investigation of the experiential and existential dimensions of artistic creativity. The findings were discussed with regard to existing literature, particularly previous qualitative studies of the creative process. This discussion revealed that the current findings consolidate and extend existing findings regarding the phenomenology of artistic creativity. Suggestions were offered for future research. The following chapter presents Study 2, a psychometric investigation of the relationship between the phenomenology of artistic creativity and personality and psychopathological features.

Chapter 6

Study 2 - A Psychometric Investigation of the Relationship Between the Phenomenology of Artistic Creativity, Personality Characteristics, and Psychopathology

6.0 Overview

The current chapter presents Study 2, which consists of two experiments. Experiment 1 outlines the development of a questionnaire, the Experience of Creativity Questionnaire (ECQ), which measures the different experiential and existential aspects of creativity that emerged in Study 1. Experiment 2 is a psychometric investigation of the relationship between the phenomenology of artistic creativity, as measured by the ECQ, and personality and psychopathological features. The chapter starts by presenting a background to the personality and psychopathological constructs measured in the current study, with particular reference to their relationship with creativity. This background draws on material presented in the general introduction (Chapter 2). Hypotheses are presented, based on this background and the development of the ECQ in Experiment 1. The methodology and results of the experiments are presented. The findings of the study as a whole are discussed in relation to the hypotheses and previous literature. Finally, methodological limitations are considered and suggestions are made for future research.

6.1 Introduction

The current study has two main purposes. The first is to use the qualitative results of Study 1 to develop a questionnaire that measures the experiential and existential dimensions of the artistic creative process identified in this study (Experiment 1). Apart from being used to address the current research questions, this questionnaire might also be used for the purposes of future research. The second purpose is to investigate how the experiential and existential dimensions of the creative process, as measured by the

questionnaire, relate to a range of personality and psychopathological characteristics (Experiment 2). Experiment 2 is also concerned with investigating empirically the relationship between experiential and existential aspects of artistic creativity, a concern that emerges out of Study 1's finding of an intimate relationship between these two dimensions.

The study asks whether the experiential and existential features of artistic creativity identified in Study 1 vary in relation to individual differences in certain aspects of personality and psychopathological characteristics. While the focus of phenomenological analysis on invariant features of experience leads to the expectation that these features are present in all instances of artistic creativity, it is likely that the features vary in prominence or weight in accordance with individual differences in such areas as personality and psychopathology. The questionnaire used in the current study was developed using the whole range of themes identified in Study 1. Therefore, both the individual, or variable, and the general, or invariant, features of the creative process were included (see section 6.2.3). This increased the likelihood of identifying variability in relation to personality and psychopathology.

As discussed in Chapter 2, a range of personality and psychopathological constructs have been identified as relating to creativity on both theoretical and empirical grounds. Clearly, not all of these constructs can be examined in the current research. The choice of which personality and psychopathological constructs to measure was based on a number of considerations. These considerations included: previous empirical support for a connection between the construct and high creativity; a conceptual connection between the construct and the experiential and/or existential features of the creative process that emerged in Study 1; and, in the exploratory spirit of the research, a desire to investigate the relationship between the experiential and existential dimensions of artistic creativity and a moderately wide range, rather than a narrowly defined set, of constructs. Based on the notion of psychopathological constructs existing on a continuum ranging from the normal to the pathological (see Chapter 2), the study focused particularly on types of psychopathology which appear in minor form within normal populations.

Along with a measure of the 'Big Five' model of personality, established measures of mental boundaries, schizotypy, and affective disturbance (both unipolar and bipolar) were included in the study. A questionnaire was constructed based on the Study 1 findings for the purpose of measuring experiential and existential dimensions of the artistic creative process (Experiment 1). Responses to this questionnaire were analysed for underlying factors and scales were developed on the basis of these factors. These scales were then related to the other measures (Experiment 2). In the inclusion of both schizotypy and affective disturbance measures, both the schizophrenia spectrum and mood disorder branches of creativity-psychopathology research are represented (see section 2.4).

The personality and psychopathological constructs measured in the current study and their relationship with creativity was discussed in Chapter 2. However, the connection between these constructs and creativity will briefly be restated before presenting the two experiments.

Costa and McCrae's five-factor model

McCrae and Costa's (1987) five-factor model (FFM) is one of the most popular and robust contemporary models of personality. The five broad bipolar dimensions that constitute this model include Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness, each of which is composed of six facets, or lower-level traits. The domain that has been related to creativity most consistently, both in theoretical and empirical work, has been Openness to Experience. McCrae and Costa (1997) conceptualise Openness as a mode of processing experience that can be thought of in both structural and motivational terms. Specifically, Openness involves interest in a variety of experiences for their own sake in the areas of fantasy, aesthetics, feelings, actions, ideas, and values. A defining feature of this personality domain is the recurrent need to enlarge and examine experience. This conceptualisation of Openness displays similarities with the Study 1 findings, particularly the existential constituents of intrinsic motivation and deepening engagement with the life-world.

Although the questionnaire used in the current study is derived from the lexically-based Big Five tradition, rather than McCrae and Costa's (1987) FFM, the current discussion will focus on the FFM, as the Openness domain of the FFM model has been a prominent

focus of creativity-personality research. Empirical evidence for the relationship between Openness and creativity has been found in studies examining both trait creativity (Dollinger et al., 2004; McCrae, 1987; Rawlings et al., 1998) and 'real life' creativity (Caraca et al., 2000). Refer to section 2.3 for details of these studies. McCrae and Costa (1997) in fact use the creative behaviour of artists as the prime example of individuals high in this domain. Personality characteristics which correlate with Openness include: unconventional, perceptive, empathic, flexible, high need for change, variability in mood, wide range of interests, variety of mood states, tolerance of ambiguity, preference for complexity, and sensation seeking (McCrae & Costa, 1997), many of which have been reported in studies of creativity. Openness has also been found to correlate with schizotypy measures (e.g., Rawlings & Freeman, 1997). Although most of the studies examining the relationship between creativity and the FFM have examined artistic creativity, Openness has also been found to be associated with scientific creativity (Caraca et al., 2000).

A number of explanations have been offered for the relationship between Openness and creativity (McCrae, 1987), as outlined in section 2.3. Pertinent to the Study 1 findings is the argument that individuals high in Openness have more access to thoughts, feelings, and impulses than individuals low in Openness (McCrae & Costa, 1997). McCrae and Costa (1997) maintain that this greater access is facilitated by two processes: open individuals have a greater tolerance of ambiguity, enabling a variety of thoughts and feelings to be experienced simultaneously, and they have greater access to 'primary process' thinking. As discussed in section 5.2, the Study 1 findings indicate a sense of vulnerability associated with the creative process, which may be based on a psychological openness or a recession of ego defences. This displays similarities with McCrae and Costa's reasons for why open individuals have greater access to thoughts, feelings, and impulses.

Although McCrae (1987) argues that Openness to Experience is uniquely related to creativity, findings have been reported that indicate relationships, albeit to a lesser degree, between each of the other four domains and creativity (see section 2.3). The relationship between creativity and neuroticism, generally defined, has been of particular research interest. A number of studies have indicated that features associated with neuroticism, such as anxiety, emotionality, and sensitivity, correlate with creativity (e.g.,

Barron, 1972; Bakker, 1991; Marchant-Haycox & Wilson, 1992), particularly artistic creativity (Bamber et al., 1983; Russ, 1993; Sheldon, 1994).

Schizotypy

As discussed in section 2.4, the notion of a dimensional rather than categorical view of psychotic-like traits has received considerable support in recent years. The term 'schizophrenia spectrum' has been used to refer to this dimensional view of psychotic-like traits (Schuldberg & Sass, 1999). 'Schizotypy' is one construct that has emerged in the literature to represent sub-clinical, psychotic-like characteristics or an underlying vulnerability to psychotic symptoms.

Early conceptions of schizotypy tended to be unidimensional – for example, in the construct of 'psychoticism' (Eysenck & Eysenck, 1976) and as measured by the Schizotypal Personality Scale (STA; Claridge & Broks, 1984). Factor analyses of scales developed to measure schizotypy have shown that it is a multi-dimensional construct (e.g., Bentall et al., 1989; Muntaner et al., 1988; Raine & Allbutt, 1989). Although the exact number and nature of these factors depends on the details of the scales included in the analysis, most recent analyses have tended to yield 3 - 4 factors. Bentall et al.'s (1989) analysis of several measures of schizotypy suggested a four-factor structure of schizotypy, a model later confirmed using both exploratory and confirmatory procedures with a large sample (Claridge et al., 1996; Mason, 1995). The four factors identified in these studies included: a 'positive schizotypy' factor associated with classic schizotypic traits such as unusual perceptual experiences and magical beliefs; a factor associated with cognitive disorganisation and social anxiety; a 'negative schizotypy' factor identified with physical and social anhedonia and introversion; and a factor associated with impulsive, aggressive, and non-conforming aspects of behaviour. Similarly, Chapman and Chapman's (1985) construct of 'psychosis-proneness', which was not derived from factor analysis but from identification of separate symptoms, consists of multiple components, rather than being unidimensional in nature.

As reviewed in section 2.4, the schizophrenia spectrum has tended to display an inverted-U relationship with creativity. That is, the presence of some schizotypal features are associated with heightened creativity, whereas further along the schizophrenia spectrum, towards frank schizophrenia, the relationship is attenuated.

Positive schizotypal traits have been found to be of particular significance in this association. This model has developed through a combination of studies using creators (both eminent and non-eminent), psychiatric patients and their biological relatives, and 'normal' populations. There have also been suggestions that the presence or absence of particular constituents of the underlying process, such as schizotypy, are associated with different types of creativity – negative traits, for instance, may be associated with mathematical creativity (Nettle, 2004), whereas positive traits tend to be associated with artistic creativity (O'Reilly et al., 2001). A variety of mechanisms have been suggested to account for this relationship, including access to primary process material (Arieti, 1976; Fodor, 1995), a common over-inclusive thinking style (Dykes & McGhie, 1976), unconventional associative processes (Mednick, 1962; Andreasen & Powers, 1974), variability in arousal levels (see Stavridou & Furnham, 1996), and motivational factors (O'Reilly et al., 2001).

A measure of positive-trait schizotypy (the Unusual Experiences scale; Mason et al., 1995) was included in the current study due to its association with creativity, particularly artistic creativity, in previous research. This measure was also included due to the fact that there was an 'unusual experiences' aspect to the account of creative experience in the Study 1 findings, in the sense of dissolution of boundaries, connection with a larger force, change in sense of control, and heightening of perception. Note that where the word 'schizotypy' is subsequently employed, it is this particular aspect of 'positive' schizotypy which is being referred to. (Consideration was also given to inclusion of Eysenck's P scale, owing to its consistent correlations with creativity measures, but this scale has been heavily criticised from a variety of perspectives, as noted in Chapter 2. It was therefore not used in the present study.)

Mental boundaries

Hartmann (1991) conceptualises mental boundaries as a broad construct, based on his understanding of the construct having relevance to a wide variety of domains. Based on his studies of nightmare sufferers, the concept of 'thin' or permeable boundaries was intended to capture a grouping of personality characteristics that include traits such as open, sensitive, vulnerable, artistic, trusting, defenceless, and fluid. Individuals with thin boundaries are presumed to have relative difficulty distinguishing sleeping from waking experience; to report 'unusual experiences' in a range of situations; to have difficulty

differentiating thought from feeling; to be close to their childhood feelings; to frequently get 'too close' in personal relationships; to be sensitive to the feelings of others; place no importance on neatness and precision; prefer living areas with flexible spaces; and believe a good teacher or parent should remain in part a child. In addition, such individuals dislike clear and specific roles in organisations; believe that there are no sharp distinctions between the sexes or between people from different ethnic or religious groups; and believe that there is no clear line between right and wrong. Hartmann and his colleagues developed the Boundary Questionnaire (BQ; Hartmann et al., 1987) in order to assess these twelve domains and provide an overall measure of mental boundaries. A shortened version of this questionnaire was employed in the current study (see section 6.3.2.1).

In terms of the relationship with creativity, Hartmann (1991) notes that people with thin boundaries are more likely to find employment in the arts, while people with thick boundaries are frequently employed in areas requiring less creativity, such as business, engineering, or the military. Consistent with this is Hartmann et al.'s (1987) observation that participants in their study of chronic nightmare sufferers were generally artists or students. This connection received partial support from a study by Levin et al. (1991) of the relationship between nightmares, creativity, and access to, and adaptive use of, primary process material. A further source of support for the relationship between mental boundaries and creativity are findings that indicate a positive relationship between thin boundaries and the Openness to Experience domain of the Five Factor Model (McCrae, 1994; McCrae & Costa, 1999; Van Hiel & Mervielde, 2004).

A measure of mental boundaries was included in the current study due to this association with creativity, particularly artistic creativity. This construct was also measured due to the prominent place of the concept of boundaries in the Study 1 findings. This included a sense of personal boundaries breaking down, a sense of connection with a larger force, and the other 'unusual experiences' aspects of the findings described above. Indeed, the three dynamics found to underlie experiential aspects of artistic creativity all implicate a sense of crossing mental boundaries (see section 5.1).

Affective disturbance

As discussed in section 2.4, affective disturbance has played a prominent role in creativity-psychopathology research, particularly with regards to artistic creativity. Evidence for the association has been gathered from biographical studies of historically eminent creative individuals (Jamison, 1993; Ludwig, 1995; Post, 1994, 1996; Wills, 2003); living creators (Andreasen, 1987; Andreasen & Canter, 1974; Jamison, 1989, 1993); clinical samples (Akiskal & Akiskal, 1988; Ghadirian et al., 2000-2001; Richards & Kinney, 1990); and 'normal' samples (Schuldberg, 2000-2001a). As with the schizophrenia spectrum, the evidence has tended to support an inverted-U relationship between severity of affective disturbance, when approached as a continuum ranging from normal to pathological, and creative ability. Although some research suggests a positive association between depressive symptoms and creativity, the strongest evidence is for a connection between bipolar tendencies and creativity (Jamison, 1989, 1990, 1993; Richards & Kinney, 1990; Richards et al., 1988). Hypomanic traits have displayed a particularly strong relationship with creativity (Richards & Kinney, 1989, 1990; Kinney et al., 1989; Richards et al., 1992).

A number of explanations have been advanced to account for the association between hypomanic features and creativity (see Bowden, 1994; Richards, 1981, 1994; Jamison et al., 1980; Schuldberg, 1990, 1994). These include the cognitive features of a hypomanic state, such as increased range and speed of associations (see Solovay et al., 1987), which are thought to facilitate originality through over-inclusion and an increased ability to relate and combine information (e.g., Jamison, 1993; Nettle, 2001; Richards, 1994). Motivational factors (Bowden, 1994; Nettle, 2001), including increased energy levels and over-confidence, and heightened emotional awareness (Bowden, 1994; Jamison et al., 1980; Richards, 1981, 1994) have also been posited as facilitating creativity. It has also been suggested that mood swings play a role in creativity via ‘carryover’ effects of learned patterns and sensitivities from one mood state into another, affective integration, and motivation for creative risk-taking (Richards, 1994). The effect of depressed affect on creativity has been of secondary research concern. While some authors have maintained that it serves no creative function (e.g., Abele, 1992; Nettle, 2001), others have argued that it may be of creative benefit by facilitating introspection and assisting with editorial aspects of the creative process (Haynal, 1985; Jamison, 1993).

However, as outlined in section 2.4, other commentators are not convinced of the mood disorder-creativity link. Criticisms have been directed at the major studies supporting the bipolarity-creativity link on both methodological and theoretical grounds (see Rothenberg, 1990; Sass, 2000-2001b, c), and some counter-evidence has been presented (see Csikszentmihalyi, 1996; Rothenberg, 1990). The questions of causality and phenomenological similarity have been raised as possible alternative interpretations of the positive association between creativity and mood disorder (see section 2.4). As discussed in Chapter 5, the Study 1 findings support the notion of a phenomenological similarity between artistic creativity and aspects of both hypomanic and depressed affect.

A measure of affective disturbance, both unipolar and bipolar, was included in the current study due to its association with creativity, particularly artistic creativity, in previous research. The measure was also included due to the prominent affective components, including both elevated and depressive features, of the Study 1 findings. These included an energised, driven state in association with the synthesis of various artistic elements, depressive features to the absolute focus on the artistic activity and withdrawal from other areas of life, and an elevated mood and sense of vulnerability experienced near the completion of the artwork.

Specificity and causality

Examining the relationship between experiential/existential aspects of the creative process and personality and psychopathological constructs is in accordance with the research aim of generating greater specificity in the understanding of creativity. It is possible that there are features of creative experience that are particularly pertinent to these constructs, rather than thinking of these constructs purely as general correlates of creativity.

This point also has bearing on the issue of causality mentioned above. While the correlational form of analysis employed in the current study cannot yield firm conclusions regarding causality, it may generate hypotheses regarding such causal processes. For instance, researchers have suggested that, while particular experiential and existential features of the creative process may be influenced by affective disturbance, particular features of creative experience might also influence artists' mood states – the deep

absorption and inspiration might trigger hypomanic-type states and the personal investment and possible rejection of the work can make the individual vulnerable to intense affective states (Rothenberg, 1990; Shapiro & Weisberg, 1999). This possible causal impact *of* the creative process is also suggested by the Study 1 findings, which indicated a strong impact of creative experience on affective state and on sense of ego boundaries.

Particular hypotheses regarding the personality and psychopathology measures are presented in section 6.3.2, based on the scales of the Experience of Creativity Questionnaire developed in Experiment 1.

6.2 Experiment 1 – The Development of the Experience of Creativity Questionnaire (ECQ)

The purpose of Experiment 1 was to develop a questionnaire that measures different ways in which the artistic creative process is experienced (the experiential dimension) and the meaning artists find in being engaged in artistic activity (the existential dimension), as explicated in Study 1.

6.2.1 Method

Experiments 1 and 2 were conducted as a single study using the same group of participants on a single occasion, with a single questionnaire pack. Participant and recruitment details are provided below. The ECQ is detailed below, while the other questionnaires presented to participants are described in Experiment 2.

6.2.1.1 Participants

100 participants (43 males, 57 females) took part in the study. Their age ranged from 19 to 69, with a mean age of 34.69 years (*SD* = 11.20 years). Participants were recruited through contacts of the researcher and through advertisements placed in various locations, including art schools and studios, a music school, a writer's centre, and a writer's newsletter. The criteria for inclusion in the study were that the individual had been regularly involved in an area of the creative arts for at least the previous 2 years

and that he/she was over 18 years of age. It was not necessary for participants to be professional artists. The regularity of involvement was judged informally by the researcher, with the general guideline of at least weekly involvement. This criterion was used to ensure participants had a reasonable degree of familiarity with the creative process and commitment to their artistic activity. No Study 1 participants were included as participants in Study 2. In total, 141 questionnaire packs were distributed; 41 individuals did not return the questionnaire packs. Further participant details are provided in the Results section of Experiment 2 (section 6.3.4).

6.2.1.2 Recruitment

The advertisement used for recruitment of participants read as follows: "I am conducting a research project into the experience of artistic creativity and how this relates to aspects of personality. The current study involves completing questionnaires concerning the creative process and your attitudes, feelings and experiences. The questionnaires take approximately 2 hours to complete and can be arranged at your convenience. So if you are a musician, painter, performer, sculptor or an artist of any other kind, have been practicing this art for over 2 years, and are interested in this research, please contact me – I will provide you with more information…"

It has been noted that research into the creativity-psychopathology link must be careful not to attract a biased sample, especially given cultural stereotypes concerning the relationship between these two domains. Rothenberg (1990), for instance, criticises the participant selection procedure of several major studies in this area for creating a bias towards inflated rates of psychopathology (see section 2.4). In an attempt not to attract a biased sample, the wording of the advertisement did not make an explicit link between creativity and psychopathology, referring simply to "aspects of personality", "feelings", "attitudes", and "experiences". If the advertisement had made a connection between creativity and psychopathology, artists with strong opinions about the relationship between creativity and psychopathology, artists suffering from psychopathology, or artists intrigued by their mental health status, for example, might have been overly represented in the sample.

6.2.1.3 Experience of Creativity Questionnaire (ECQ)

The ECQ is divided into three sections: Part A (56 items) measures the experiential dimension of the creative process; Part B (27 items) measures the existential dimension of the creative process; Part C is a qualitative section, inviting participants to describe elements of the creative process that they felt were neglected by the questionnaire or on which they would like to place particular emphasis.

Part A requests participants to think about and record a particular occasion on which they were engaged in artwork and felt that they were producing "good, creative work". As with the interviews in Study 1, the purpose of this introduction is to focus participants on the experience of the *creative* process, rather than the experience of artistic activity *per se*. Participants are asked to rate how well a series of statements made by artists describes the experience that they have recalled. Ratings are made on a 5-point Likert scale ranging from 1 ('definitely not my experience') to 5 ('very much my experience'). Part B asks participants to rate the relevance of a series of statements made by artists to the "meaning or personal significance" they find in being engaged in artistic activity. In this section, participants are asked to think of their artistic activity generally, rather than the particular occasion on which they reflected in Part A. Ratings are made on a 5-point Likert scale ranging from 1 ('definitely not relevant') to 5 ('highly relevant').

The questionnaire items were derived from statements made by participants in the Study 1 interviews. Specifically, they were taken from Step 1 in the analysis for the General Structure, when all themes were gathered across protocols (refer to Table 4.4). A direct statement was taken from the interviews to represent each theme. Statements were used from this level of the qualitative analysis – i.e., the constituents of the Individual Structures rather than the General Structures – in order to produce the variance in responses necessary for a measure of individual differences. Naturally, some of these themes from the Individual Structures were also common themes across interviews, forming the constituents of the General Structures. All common themes were represented in the themes that formed the basis of the ECQ. For these reasons, the questionnaire measures both variable and common themes in experiential and existential aspects of creativity. If items had been derived only from the constituents of the General Structures, then it would have been unlikely that the questionnaire would generate great variation in responses. In the interests of shortening the questionnaire

and of reducing repetitiveness, the researcher removed or collapsed together items if their content was judged to be very similar in nature (e.g., 'While creating, I experienced a state of rapture, which was almost like being in a trance' and 'The entire creative process was characterised by being in a deeply absorbed, flowing state.')

A pilot study was conducted on this shortened list of items. Three artists, none of whom were included in the final sample, completed the questionnaire independently and were then asked the following questions in written form:

1. In what ways do you think this questionnaire might be changed?
2. Did you have difficulty understanding any of the items?
3. Is there enough range and variety in the questions?
4. Do you feel that your experience of and the meaning you find in being engaged in artwork were represented in these items?

Feedback from these questions resulted in substantial changes to the wording of items in order to increase their clarity. Two participants had difficulty responding to some items due to multiple ideas being expressed in single items: they agreed with one aspect of the item, yet disagreed with the other. Rather than changing the item itself, which might have transformed the specific meaning of the theme that the item represented, the following sentence was added to the introduction of the questionnaire: "You might relate to some aspects of the statement but not others – just use the number that comes closest to your experience (there is an opportunity to elaborate on your experience below)." The pilot study participants agreed that their experience of and the meaning they found in artistic activity were represented in the questionnaire items. Statistical results from the pilot study showed variation in item response, which further indicated the utility of the ECQ as a measuring instrument. Refer to Appendix J for the preliminary version of the ECQ used in the current experiment. Refer to Appendix O for the revised or final version of the ECQ based on a factor analysis (see section 6.2.2.2).

6.2.1.4 Procedure

The participants were mailed the ECQ, along with the other questionnaires used in Experiment 2. Participants were asked to complete the questionnaires at their convenience and to mail them back in a reply-paid envelope within 2 weeks of receipt.

6.2.2 Results

The analysis of the ECQ consisted of an initial factor analysis of the ECQ in order to determine its factor structure and then, following exclusion of several items based on this analysis, a second factor analysis in order to produce sub-scales of the ECQ. Scores on these sub-scales were used for the purpose of relating the ECQ to the other measures in Experiment 2. Results of the factor analyses are described below.

6.2.2.1 Factor Analysis of the Experience of Creativity Questionnaire (ECQ)

Separate factor analyses were performed on Part A and Part B of the ECQ. There were no missing data on the ECQ. Items 20 and 45 of Part A were reverse scored owing to their negative weighting.

Part A

Assumptions of normality and linearity were satisfied. Twenty-six univariate outliers were identified. In order to reduce their influence on analysis, these outliers were assigned a raw score one unit larger or smaller than their initial value (e.g., a value of 1 was replaced with a value of 2). This method was preferable to deleting cases due to the small sample size (see Coakes & Steed, 2003). No multivariate outliers were identified. The Bartlett test of sphericity was significant and the Kaiser-Meyer-Olkin measure of sampling adequacy was greater than .6, which indicated the appropriateness of proceeding with factor analysis. Most measures of sampling adequacy (anti-image correlations) were above the acceptable level of .5, providing further evidence for the factorability of the items. However, it should be noted that the sample size was small for factor analysis.

The 56 items of Part A (ECQ-A) were first factor-analysed using the Maximum-Likelihood (ML) method of factor extraction. Horn's (1965) parallel analysis method was used to determine the number of factors to be rotated. This method generates a large number of random correlation matrices with the same number of variables and sample size as the actual matrix, and then compares eigenvalues in the observed matrix with mean eigenvalues in the random matrices. Simulation studies have found this method to be the most consistently accurate of the various rules for deciding on the proper number of factors (Finch & West, 1997; Zwick & Velicer, 1986). In addition to parallel

analysis, the scree-plot of eigenvalues was also examined. The meaningfulness of the various alternative factor structures was also to be used as a criterion in determining the number of factors. The first 10 eigenvalues in the analysis of the scale were: 9.54, 5.20, 2.82, 2.64, 2.48, 2.25, 1.87, 1.78, 1.65, 1.57. A scree-plot of these items suggested a 6-factor solution (see Figure 6.1), with a clear 'gap' appearing between factors 6 and 7. This was supported by parallel analysis, which indicated a critical eigenvalue of 2.04.

Oblique rotation was carried out because of the theoretical relatedness of the factors. Six factors were rotated using the Promax method, which has advantages over other oblique methods in terms of the general robustness of the solution it provides (Loehlin, 1998). The loadings on each of the factors are presented in Appendix K, with loadings of less than .3 removed. The six factors, interpreted using the highest loading items, are briefly summarised below.

1. The first factor involved items that portrayed the creative process as distinct from everyday experience. This 'change' from everyday experience had a variety of aspects to it, including a loss of self-awareness, a breakdown of boundaries, a sense of contact with a force beyond the individual self, and a confidence and effortlessness about the artistic activity. While the items generally indicated a greater affective intensity, the 'change' in experience also existed as a stabilisation of emotional state. The items suggested a sense of heightened awareness and heightened technical and expressive abilities. This factor was called 'Distinct Experience'.

2. This factor included items that indicated being deeply absorbed in the artistic activity and experiencing a state of inspiration. A sense of freedom and close connection with the work and with self was present. The factor included a sense of discovery and being receptive to the artwork, rather than having a clearly defined sense of the direction of the work. The items also suggested a 'movement' between deep absorption and a more critical, self-conscious state. This factor was called 'Absorption'.

3. This factor included items that related to a sense of anxiety and vulnerability to the experience of the creative process. While this seemed to refer particularly to the emotional state after the process, the factor also included items which suggested a sense of vulnerability *during* the process and anxiety before and at the start of the process. This factor was called 'Anxiety'.

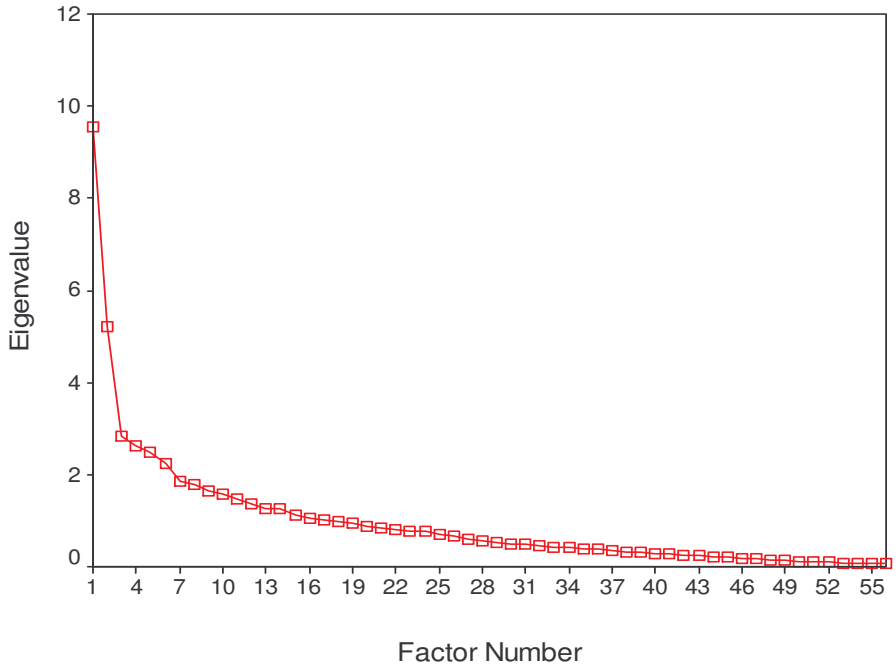


Figure 6.1. Scree plot for Maximum Likelihood analysis of ECQ-A scores.

4. The major themes of this factor were a sense of control, power, and pleasure during the creative process. Several items also reflected the role of analytical mental processes. This factor was called 'Power/Pleasure'.
5. The items in this factor concerned a certainty and clarity about the direction in which the artistic activity should proceed. This sense of certainty and clarity encompassed the meaning of the piece of the work. The factor was called 'Clarity'.
6. The major theme of the final factor was spirituality. The items concerned the creative process as a form of celebration, an expression of gratitude, and of there being a sense of purity to the experience and to sense of self. Two items also concerned a calmness and sense of comfort attached to the experience. This factor was called 'Spirituality'.

These six factors explained 44.53 per cent of variance in ECQ-A scores. The percent of variance accounted for by each factor is presented in Table 6.1. The matrix of factor-intercorrelations indicated moderate correlations between factors 1 and 2 (r = .39), factors 1 and 4 (r = .30), and factors 2 and 4 (r = .40). There were small correlations

between factors 1 and 3 (r = .20), factors 2 and 5 (r = .21), and factors 4 and 5 (r = .21). All other inter-correlations were less than .20. Refer to Appendix L for the correlation matrix between all factors.

Table 6.1 *Percent of Variance Accounted For by Each of the Six ECQ-A Factors*

Factor	*1*	*2*	*3*	*4*	*5*	*6*
% Variance accounted for	17.04	9.29	5.04	4.71	4.43	4.02

Part B

Assumptions of normality and linearity were satisfied. Twenty-two univariate outliers were identified. The same method of dealing with outliers was used in Part B as in Part A. No multivariate outliers were identified. The Bartlett test of sphericity was significant and the Kaiser-Meyer-Olkin measure of sampling adequacy was greater than .6, which indicated the appropriateness of proceeding with factor analysis. Measures of sampling adequacy (anti-image correlations) were above the acceptable level of .5, providing further evidence for the factorability of the items.

The 27 items of Part B (ECQ-B) were factor-analysed using the Maximum-Likelihood (ML) method of factor extraction. The first 10 eigenvalues in the analysis were: 7.72, 2.17, 2.05, 1.55, 1.40, 1.13, 1.03, 1.01, .92, .88. A scree-plot of these items suggested a 3-factor solution (see Figure 6.2), with a clear 'gap' appearing between factors 3 and 4. This was supported by parallel analysis, which indicated a critical eigenvalue of 1.70.

As with Part A, oblique rotation was carried out, with three factors rotated using the Promax method. The loadings on each of the factors are presented in Appendix M, with loadings of less than .3 removed. The three factors, interpreted using the highest loading items, are summarised below.

1. The dominant theme of this factor was of a need to engage in artistic activity and of the centrality of artistic activity in the individual's life. The factor included a sense that the creative process provides a quality of experience and sense of satisfaction not present in other areas of the individual's life. It included items concerned with artwork as

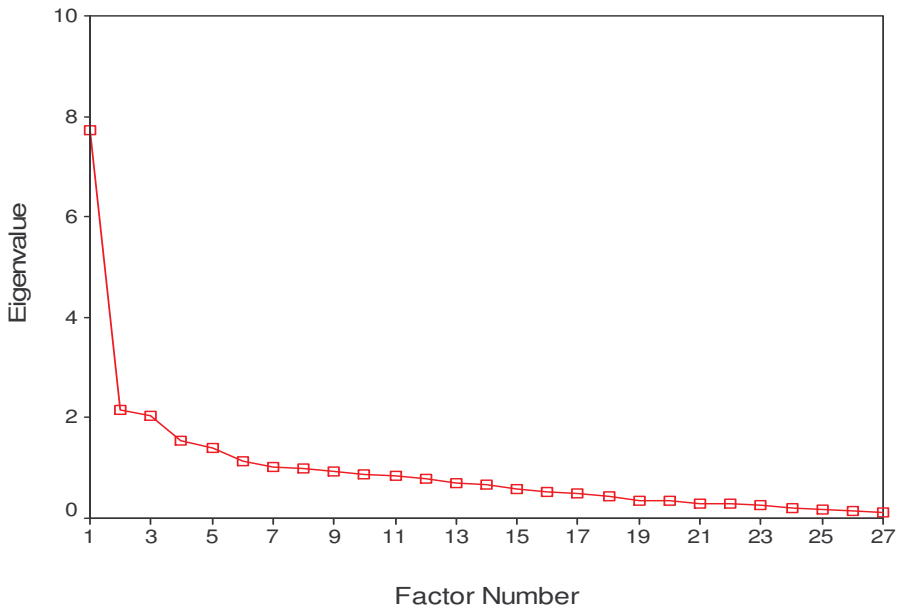


Figure 6.2. Scree plot for Maximum Likelihood analysis of ECQ-B scores.

providing the individual with meaning and purpose, with the individual becoming anxious when not engaged in artwork, and of the addictive quality to the experience of the creative process. Other items referred to a spiritual dimension and 'healing' quality to the creative process, to joy as a primary motivation for the creative process, and to self-discovery associated with the creative process. This factor was called 'Centrality'.

2. A major theme of this factor was of the potential of the creative process to inspire and educate, both through the experiential state associated with the creative process and the content of the work itself. The ability of the creative process to inspire and educate applied both to self (i.e., the producer of the artwork) and others (i.e., the audience of the artwork). Items concerned the ability of creative work to widen experience, provide confidence, and as a means of deepening engagement with life. One item also related to creative work as a powerful means of communicating with others. This factor was labelled 'Inspiration/Education'.

3. The dominant theme of this factor was of an allegiance to an artistic or cultural tradition. Items referred to a sense of belonging to and contributing to a tradition and of exploring artistic rather than purely personal possibilities. This factor was called 'Tradition'.

These three factors explained 44.19 per cent of variance in ECQ-B scores. The factors explained 28.59 per cent, 8.02 per cent, and 7.58 per cent of variance respectively. The matrix of factor-intercorrelations indicated moderate correlations between all three factors: r = .45 between factors 1 and 2, r = .46 between factors 1 and 3, and r = .45 between factors 2 and 3.

Factor analyses were also performed across all of the ECQ items and on the combined 9 factors of the ECQ-A and ECQ-B in order to investigate the possible existence of higher order factors. However, neither of these factor analyses were conceptually meaningful and are therefore not reported here.

Part C

Part C of the ECQ allowed for an open-ended written response from participants. 47 of the full sample of 100 participants responded to this section of the questionnaire. However, these responses were not formally analysed due to the fact that they were, on the whole, fairly cursory and offered points of clarification, elaboration, or emphasis rather than introducing elements that had not been covered in the questionnaire items. The overall impression from these responses was that participants were able to identify their experience of artistic creativity in the questionnaire items. This is further indication of the ECQ being a useful instrument for assessing experiential and existential dimensions of artistic creativity.

6.2.2.2 Development of the Final Experience of Creativity Questionnaire (ECQ)

A revised version of the ECQ was developed on the basis of the factor analysis reported above for the purpose of relating scores on the ECQ to other variables and for use in future research. In the development of the final version of the ECQ, the pattern matrices of the two factor rotations (ECQ-Part A and ECQ-Part B) reported in the factor analysis were taken as a starting point. ECQ-Part A consisted of a 6-factor rotation. Items were removed which had low loadings, had cross-loadings greater than .30, or had cross-loadings almost as high as the target loadings. Sub-scales were produced based on this approach, and reliability analyses conducted on these sub-scales. This resulted in a small number of additional items being removed. Two items (items 8 and 25) were also removed due to a lack of variance in responses on these items. The criterion used for

judging lack of variance was if less than 10% of responses were in the disagree/disagree strongly or agree/agree strongly categories. Both of these items belonged in the initial Absorption factor. The aspects of creative experience represented in the Absorption factor were a prominent feature of the General Structure in Study 1's findings. It is therefore not surprising that these items did not produce much variance in responses.

A new factor analysis was carried out on the remaining 48 items, using the same methods as in the initial factor analysis. The first ten eigenvalues obtained for this analysis were: 8.64, 4.51, 2.62, 2.52, 2.33, 2.02, 1.71, 1.49, 1.38, 1.37. The parallel analysis method now specified a critical value of 2.24, suggesting five factors. This, combined with examination of the (somewhat ambiguous) scree-plot of eigenvalues (see Figure 6.3) and the low reliability of factor six after item removal (alpha = .60), led to the extraction of five factors. The loadings on each of the five factors are presented in Table 6.2, with loadings of less than .3 removed. There were several moderate correlations between the five factors, as represented in Table 6.3. Together, these 5 factors explained 42.94 per cent of variance in ECQ-A scores.

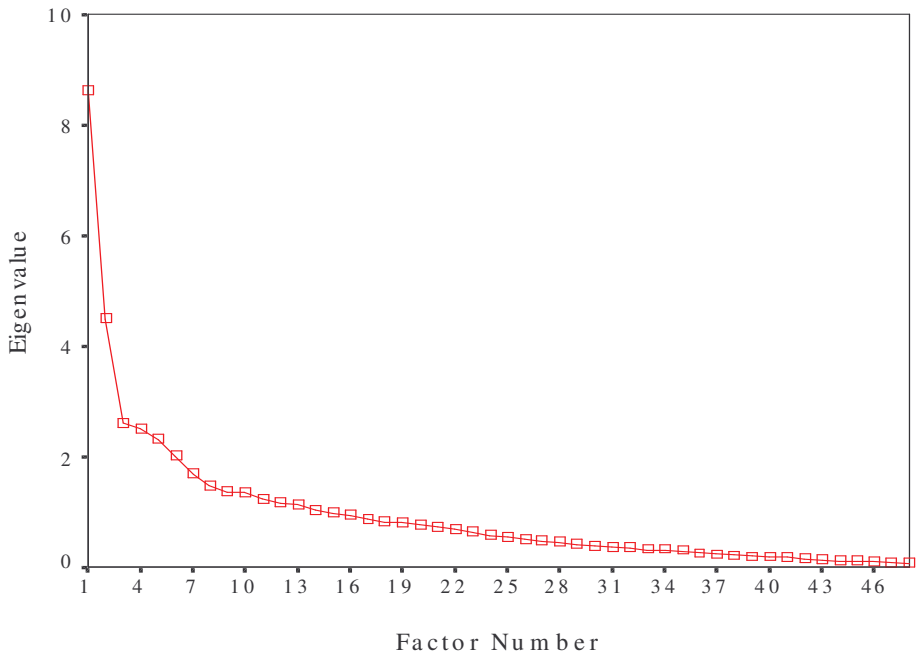


Figure 6.3. Scree plot for Maximum Likelihood analysis of final ECQ-A scores.

Table 6.2 *Pattern Matrix Following Maximum Likelihood Extraction and Promax Rotation of Items in the Final ECQ-Part A*

Item	*F1*	*F2*	*F3*	*F4*	*F5*
17	.727				
21	.703				
19	.667				
49	.501				
15	.498	.356			
12	.490				
28	.454				-.356
11	.432				
43	.397				
2	.380	.340			
23					
36					
50		.712			
51		.702			
40		.694			
39		.589			
37		.474	.381		
46		.445			
30	.351	-.374			
1		.349			
35			.716		
32			.708		
38			.654		
34			.641		
26			.550		
48	.301		.540	-.300	
31			.499		.316
33			.477		
27	-.303		.457	.404	
29	.388		.404		
13		-.301		.629	
42				.564	
55				.564	
41				.547	.388
20	.402			-.518	
22	.409			.497	
7		.409		.490	
18				.454	
45				-.453	
53				.408	
10	.301			.407	
14				.393	
54		.308		.386	-.322
24					
9					.853
44					.510
5					.461
3					.321

Note. Cross-loadings of .30 and above have been retained. Item numbers are as in the initial ECQ.

Table 6.3 *Correlations Between the Five ECQ-Part A Factors*

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Factor 1	-				
Factor 2	.28	-			
Factor 3	.51	<.1	-		
Factor 4	.51	<.1	.57	-	
Factor 5	.14	<.1	.36	.40	-

The five factors in the final version of the ECQ-Part A are largely unchanged from the first five factors in the initial factor analysis. It is therefore appropriate to maintain the initial factor names, apart from the change to the Clarity factor described below. The Absorption and the Anxiety factors reversed positions in this factor analysis, with Absorption now appearing as the third factor and Anxiety as the second factor. Several items (items 10, 53, and 54) moved from Factor 1 to Factor 4, which is consistent with the Power/Pleasure theme of this latter factor. The spiritual dimension of the Study 1 findings, originally represented in Factor 6, is now most strongly represented in Factor 1. Four of the six items that composed the original Factor 6, Spirituality, were lost in the factor analysis. With the addition of item 3 to Factor 5, the sense of preparation for the creative process is emphasised in this factor. Specifically, Factor 5 (in items 5 and 3) encompasses a sense of cultivating an appropriate mood for the creative process, in addition to the sense of clarity about the creative process represented in the original factor. Therefore, it has been re-named Clarity/Preparation. Despite its brevity (4 items), this factor was preserved as a separate sub-scale due to its reasonable (though somewhat low) reliability and the fact that it is conceptually meaningful and represents an element of creative experience not covered by the other factors. Three items were deleted from the pool of items due to low loadings and 1 item was deleted due to cross-loadings, resulting in a scale of 44 items in total.

The items in these five factors make up the five sub-scales of Part A of the final version of the ECQ. Appendix N provides the items in each of the five sub-scales according to their relative weighting in the factor (highest to lowest). Although items 20 and 45 were originally reverse scored, responses indicated that this is unnecessary, with positive

responses on these items contributing to the meaning of the factor (Power/Pleasure) in which they belong. However, item 30 displayed a negative weighting in the Anxiety factor. Therefore, scores on this item should be reversed when scoring this sub-scale. Table 6.4 presents the means, standard deviations, and Guttman model reliability coefficients for the ECQ Part A sub-scales. No significant differences were found between means based on gender.

The same process was applied to ECQ-Part B. Five items were removed from the ECQ-Part B items based on the procedures mentioned above. Two of these items were Hayward cases. This resulted in 22 items being included in the factor analysis. A factor analysis was conducted on these items, using the same methods as in the intitial factor analysis. The first ten eigenvalues obtained for this analysis were: 6.62, 1.82,

Table 6.4 *Means, Standard Deviations, and Guttman Reliability Coefficients for the Experience of Creativity Questionnaire (ECQ) Part A Sub-Scales*

	Distinct Experience	Anxiety	Absorption	Power/ Pleasure	Clarity/ Preparation
Males					
(*N* = 43)					
Mean	31.33	22.26	39.74	41.60	13.60
SD	7.56	6.77	7.25	8.43	3.39
Females					
(*N* = 57)					
Mean	29.16	20.12	39.28	39.95	13.42
SD	8.30	6.00	6.46	7.50	3.36
Total Sample					
Mean	30.09	21.04	39.48	40.66	13.50
SD	8.02	6.40	6.78	7.92	3.35
Guttman reliability coefficient	.81	.79	.82	.80	.60

1.65, 1.41, 1.11, 1.04, 1.00, .92, .83, .79. The parallel analysis method now specified a critical value of 1.73, though the scree plot was somewhat ambiguous (see Figure 6.4) and the residual correlation matrix indicated the presence of a third factor. Following exploratory analyses using both two and three factors, it was decided to extract three factors. The loadings on each of the three factors are presented in Table 6.5, with loadings of less than .3 removed. The factors showed moderate inter-correlations. The strongest correlation was between Factors 1 and 2 (r = .56), followed by Factors 1 and 3 (r = .44) and Factors 2 and 3 (r = .41).

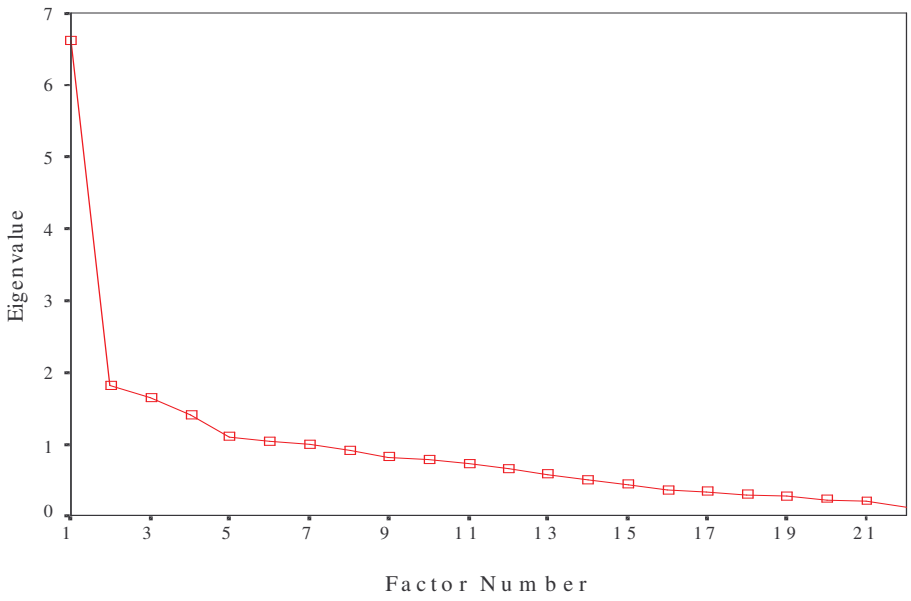


Figure 6.4. Scree plot for Maximum Likelihood analysis of final ECQ-B scores.

The three factors in the revised version of the ECQ-Part B are similar to the three factors that emerged in the initial factor analysis, but with some changes to the emphasis of these factors. The order of factors has also changed slightly. Factor 1 refers to the transformative effect of artistic creativity, particularly due to the nature of the experience associated with the creative process. This transformation can occur through artistic

Table 6.5 *Pattern Matrix Following Maximum Likelihood Extraction and Promax Rotation of Items in the Final ECQ-Part B*

Item	*F1*	*F2*	*F3*
11	.833		
18	.636		
5	.575		
13	.474		.311
16	.460		
14	.424		
9	.351		
23			
25		.736	
3		.724	
2		.495	
7		.478	
6		.446	
26		.441	.355
10		.418	
19		.352	
20		.310	
1			
27			1.096
12			.433
24			.393
17			.372

Note. Cross-loadings of .30 and above have been retained. Item numbers are as in the initial ECQ.

creativity's ability to broaden experience, provide confidence in one's own subjective experience, and through its 'healing' quality. The factor emphasises creativity as a powerful force in the individual's life that enables a deeper engagement with self and world. Some of the highest loading items in Factor 1 have moved from Factor 2, Inspiration/Education, in the initial factor analysis. This factor has been named Transformation. Factor 2 closely resembles Factor 1, Centrality, in the initial factor analysis. This name has been retained for this factor. Factor 3 emphasises the meaning associated with aspects of artistic activity of a less personal nature. It includes items that reflect a concern with the context of artwork, such as interpersonal elements of artwork (e.g., communication and rebellion), and exploration of artistic possibilities. It is similar to Factor 3, Tradition, in the initial factor analysis, but with less emphasis on meaning derived from artistic tradition. This factor is named Beyond the Personal. This factor was subsumed into Factor 2 when a 2-factor rotation was explored but, as noted,

a 3-factor rotation was finally accepted. Three items were deleted from the pool of items due to low loadings, resulting in a scale of 19 items in total.

The items in the three factors make up the three sub-scales of Part B of the ECQ. Appendix N provides the items in each of the three sub-scales according to their relative weighting in the factor (highest to lowest). Factor 3 was preserved as a separate sub-scale because it was found to have acceptable reliability, to be conceptually meaningful, and represent aspects of the construct not covered by the other factors. The low reliability of this scale (Guttman = .60) needs to be addressed in future research. Table 6.6 presents the means, standard deviations, and Guttman model reliability coefficients for the ECQ Part B sub-scales. No significant differences were found between means based on gender.

Table 6.6 *Means, Standard Deviations, and Guttman Reliability Coefficients for the Experience of Creativity Questionnaire (ECQ) Part B Sub-Scales*

	Transformation	Centrality	Beyond the Personal
Males			
(*N* = 43)			
Mean	25.51	34.42	11.88
SD	6.45	6.31	2.89
Females			
(*N* = 57)			
Mean	26.91	32.54	10.89
SD	5.27	6.91	2.76
Total Sample			
Mean	26.31	33.35	11.32
SD	5.81	6.69	2.84
Guttman reliability coefficient	.78	.81	.60

A number of significant correlations were found between the ECQ scales themselves, as summarised in Table 6.7. With regards to the Part A scales, Distinct Experience, Absorption, and Power/Pleasure each displayed small-moderate correlations with other Part A scales, while the Anxiety and Clarity/Preparation scales displayed negligible correlations with other Part A scales. This suggested two groupings of factors in ECQ-Part A. A rotated factor analysis of the five Part A scales supported this interpretation. In this factor analysis, Absorption (loading following rotation = .54) and Power/Pleasure (.83) loaded on the first factor, with Anxiety (.82) loading on the second factor. Distinct Experience displayed a similar loading on both factors (.41 and .45 respectively), while Clarity/Preparation displayed a low loading (<.3) on both factors. The two factors displayed a moderate correlation (r = .46). However, in subsequent analyses sub-scales based on the primary factors (rather than the second-order factors) were used because this permitted richer interpretation of the data.

Table 6.7 *Correlations Between the ECQ Scales*

	A1 DE	A2 Anx	A3 Abs	A4 P/P	A5 C/P	B1 Trans	B2 Cent	B3 BP
A1 DE	-							
A2 Anx	.42***	-						
A3 Abs	.42***	.21*	-					
A4 P/P	.41***	.06	.45***	-				
A5 C/P	.15	.01	.13	.21*	-			
B1 Trans	.40***	.19	.62***	.38***	.32**	-		
B2 Cent	.50***	.31**	.61***	.55***	.30**	.57***	-	
B3 BP	.28**	.13	.66***	.63***	.15	.57***	.61***	-

Notes. A1–A5 = ECQ-A Scales 1-5; B1-B3 = ECQ-B Scales 1-3; DE = Distinct Experience; Anx = Anxiety; Abs = Absorption; P/P = Power/Pleasure; C/P = Clarity/Preparation; Trans = Transformation; Cent = Centrality; BP = Beyond the Personal; * p <.05; ** p < .01; *** p < .001.

The final ECQ with a randomised order of items and scoring details is presented in Appendix O. The final ECQ scale scores were used in the analyses reported in Experiment 2. We note that the various analyses to be described in Experiment 2 were also conducted using factor scores derived from the original ECQ factors, with insubstantial variation in results.

6.3 Experiment 2 – The Relationship Between the ECQ and Personality and Psychopathology Measures

The purpose of Experiment 2 was to investigate the relationship between experiential and existential aspects of artistic creativity, as measured by the ECQ, and various measures of personality and psychopathology. The determination of the factor structure and the development of the ECQ scales allows for a number of hypotheses to be stated regarding this relationship. These hypotheses emerge from the background material presented above (section 6.1) and in Chapter 2.

6.3.1 Hypotheses

The hypotheses relate to three areas of theoretical interest: ratings on the personality and psychopathology measures themselves, regardless of the relationship with ECQ scales; the relationship between the personality and psychopathology measures and the ECQ scales; and the relationship between the experiential (ECQ-A) and existential (ECQ-B) dimensions of the ECQ scales. However, due to the lack of prior research in this area, the study remains primarily exploratory in nature and this exploratory approach will guide the statement and interpretation of results.

Personality and psychopathology measures

Based on prior research, it was expected that the current sample of artists would exhibit significantly higher scores, compared to norm data, on:

1. The FFM domains of Openness to Experience and Neuroticism;
2. Schizotypy;
3. Thin boundaries;
4. Depression and bipolar affective disturbance.

These hypotheses are based on comparisons with norm data due to the lack of a comparison group in the current study. It is noted that the composition of the norm groups was not always ideal with regards to such factors as gender ratios, age distributions, and educational levels, in the sense that they did not always ‘match’ the current artist sample on these demographic variables. This issue will be further addressed in the discussion of the results.

Shapiro and Weisberg (1999) identified a subset of GBI items (six items in total) that were stronger predictors of creativity than the remaining GBI items. They noted that this subset of items, which mainly related to hypomanic symptoms, reflect behaviours and traits that previous research has associated with creativity and which may be aetiologically distinct from affective pathology (see section 2.4). This is evidence for the argument of phenomenological similarity but lack of causal connection between creativity and affective disturbance. A limitation of Shapiro and Weisberg's (1999) study, as noted by the authors, was that they used a single, very general self-report creativity measure that assesses traits associated with creativity and which does not directly assess creative activity or accomplishment. It would be of interest to investigate whether their finding of a particular subset of GBI items being associated with creativity is replicated in the current study, particularly given that the current sample has been selected for high creativity. Therefore, it was hypothesised that:

5. Ratings on Shapiro and Weisberg's (1999) subset of GBI items would be significantly higher than ratings on the remaining GBI items.

The relationship between personality and psychopathology measures and the ECQ scales

Highly specific hypotheses regarding experiential and existential aspects of creativity and the relationship of these aspects to personality and psychopathology cannot be made, owing to the lack of prior research in this area. For similar reasons, hypotheses relating to each of the ECQ scales were not generated. However, the nature of the scales and prior research into the personality and psychopathological constructs being measured in the current study do permit a number of hypotheses.

The Distinct Experience scale of ECQ-A consists of elements of the creative process being experienced as a distinct *shift* in experience, including a loss of self-awareness, a breakdown of boundaries, and a sense of contact with a force beyond the individual self. Given that the central defining features of the FFM domain of Openness to Experience are an interest in a variety of experiences for their own sake and the recurrent need to enlarge and examine experience, it was expected that:

6. Openness to Experience would be positively correlated with the Distinct Experience scale.

Additionally, due to the fact that a shift in experience is inherent to the unusual experiences dimension of schizotypy and that a permeability of boundaries is a central feature of thin mental boundaries, along with other points of contact between these constructs and the Distinct Experience scale, it was also expected that:

7. Schizotypy would be positively correlated with the Distinct Experience scale.
8. Thin mental boundaries would be positively correlated with the Distinct Experience scale.

The association between the Distinct Experience scale and schizotypy is also suggested by the fact that this scale contains elements that relate to spiritual-like experiences during the creative process. While spiritual-like experiences were most strongly represented in the Spirituality factor in the original factor analysis of the ECQ, in the final version of the ECQ, spiritual-like aspects of creative experience were most strongly represented in the Distinct Experience scale. Prior research has found similarities between spiritual and psychotic experience, particularly positive psychotic characteristics of the type measured by our schizotypy scale (Jackson, 1991; Jackson & Fulford, 1997).

The Anxiety scale of ECQ-A relates to a sense of anxiety and vulnerability to the experience of the creative process. Given the centrality of anxiety within the constructs of Neuroticism and affective disturbance, it was expected that the Anxiety scale would be positively correlated with:

9. The FFM domain of Neuroticism, and
10. Affective disturbance, particularly unipolar depression.

The Absorption scale of ECQ-A includes being deeply absorbed in the artistic activity and experiencing a sense of freedom. Based on the association noted in the Study 1 findings between these aspects of the experience of the creative process and a breakdown of boundaries relating to self, it was expected that:

11. Thin mental boundaries would be positively correlated with the Absorption scale.

The Absorption scale also includes a sense of not having a clearly defined sense of the direction of the artwork. As the FFM domain of Conscientiousness includes traits that suggest a need for control (e.g., in the facets of order and self-discipline), it was expected that:

12. Low Conscientiousness would be positively correlated with the Absorption scale.

A major theme of the Transformation scale of ECQ-B was of the potential of the creative process to widen experience and deepen engagement with self and world. Therefore, based on the central features of the FFM domain Openness to Experience described above, it was expected that:

13. Openness to Experience would be positively correlated with the Transformation scale.

An aspect of the Beyond the Personal scale of ECQ-B was an orientation towards the broader context of artwork and an allegiance to an artistic or cultural tradition. Due to the FFM domain of Conscientiousness including a sense of duty (as represented in the facet of dutifulness), it was expected that:

14. Conscientiousness would be positively correlated with the Beyond the Personal scale.

The Centrality scale of ECQ-B refers to a need to engage in artistic activity and the centrality of artistic activity in the individual's life. It has been argued that creative activity may serve as a defence against depressive and schizoid states (Storr, 1972). As noted by Storr (1972), this defensive function of creativity may contribute to the driven, addictive quality to creative activity. This quality, along with a sense of anxiety when not engaged in artwork, was represented in the Centrality scale. It has also been argued that artistic activity can function as a stabilisation of emotional state (e.g., Jamison, 1993); the Study 1 findings, particularly the constituent of the existential dimension of

creativity as a need or necessity, were consistent with this account (see section 5.2). These arguments led to the expectation that:

15. Affective disturbance would be positively correlated with the Centrality scale.

This hypothesis also emerged from the discussion of the possible influence of the creative process on affective disturbance (see section 2.4). Previous commentators have suggested that the heavy personal investment in and commitment to artistic activity may result in pronounced affective responses to the vicissitudes of the activity, which may promote or mimic affective pathology. The Study 1 findings are consistent with this account. The Centrality scale includes items relating to deep involvement in and commitment to artistic activity. Therefore, according to this account of the affective disturbance-creativity relationship, the Centrality scale will be correlated with affective disturbance.

As noted above, Shapiro and Weisberg (1999) identified six items of the GBI that predicted creativity scores. The behaviours and traits represented in these items (high energy, sensation seeking and risk taking, cognitive change, intense task absorption, ideational fluency, and accelerated processing speed) overlap with elements of the Distinct Experience and Absorption scales. Therefore, it was hypothesised that:

16: Ratings on Shapiro and Weisberg's (1999) subset of GBI items would be positively correlated with the Distinct Experience and Absorption scales.

The relationship between experiential (ECQ-A) and existential (ECQ-B) dimensions of the ECQ

In the discussion of the Study 1 findings, it was noted that a powerful source of the intrinsic motivation artists find in the creative process is the pleasure derived from artistic activity. The sense of pleasure is represented in the experiential Power/Pleasure scale and intrinsic motivation for the artistic activity is represented in the existential Centrality scale. Therefore, it was expected that:

17. The Power/Pleasure scale would be positively correlated with the Centrality scale.

The Study 1 discussion also indicated that the *change* in experience associated with the creative process can have a transformative effect on the artist's sense of self and world. The former concept is represented in the experiential Distinct Experience scale and the latter concept is represented in the existential Transformation scale. Therefore, it was expected that:

18. The Distinct Experience scale would be positively correlated with the Transformation scale.

6.3.2 Method

The same participant and recruitment details applied to Experiment 2 as Experiment 1, as described above. Questionnaire and procedure details are provided below.

6.3.2.1 Questionnaires

Participants completed a battery of questionnaires that included the ECQ, the Big Five Inventory (BFI; John, Donahue, & Kentle, 1991), the Unusual Experiences Questionnaire (UnuExp; Mason et al., 1995), the Boundary Questionnaire – Shortened Version (BQ-Sh; Rawlings, 2001-2002), and the General Behavior Inventory (GBI; Depue, Krauss, Spoont, & Arbisi, 1989). These questionnaires are described below, apart from the ECQ, which was described in Experiment 1.

Plain language statement

This statement provided a brief description of Study 1 without detailing the findings of the study. It described the purpose of the current study, the time it would take to complete the questionnaires, and the confidentiality of participation. It also offered referral to a clinical psychologist if there were any personal matters raised by the questions that the participant would like to discuss with a clinical psychologist. Refer to Appendix I for a copy of this statement.

Demographic information sheet

Participants were asked the following details: age; gender; main creative medium (e.g., prose writing, visual art, etc.); style in this medium (e.g., improvisational, classical, etc.); length of time involved in the creative arts; current level of involvement; whether artwork

was their main source of income; and whether they had ever received mental health treatment and, if so, for what problems.

Big Five Inventory (BFI; John et al., 1991)

This questionnaire uses short phrases to assess the most prototypical traits associated with each of the Big Five personality domains. The trait adjectives (e.g., "thorough") that form the core of each of the 44 BFI items (e.g., "does a thorough job") have been shown in previous studies to be univocal, prototypical markers of the Big Five domains (John, 1989, 1990). Participants rate each BFI item according to the degree to which they feel that the statement describes them. Ratings are made on a 5-point scale ranging from 0 ('disagree strongly') to 4 ('agree strongly'). Scale scores are computed as the participant's mean item response on that scale. In US and Canadian samples, the alpha reliabilities of the BFI scales typically range from .75 to .90 and average above .80; 3-month test-retest reliabilities range from .80 to .90, with a mean of .85 (Benet-Martinez & John, 1998). The BFI has been used in a wide variety of studies, including Clark (1992), Neuberg and Newsom (1993), Watson, Clark, and Harkness (1994), Cialdini, Trost, and Newson (1995), Gross and John (1995), and Johnson and Wolfe (1995) and has previously been used in a study of personality characteristics of creative artists (Kangas, 2002).

Unusual Experiences Questionnaire (UnuExp; Mason et al., 1995)

This questionnaire is a scale from the Oxford-Liverpool Inventory of Feelings and Experiences (O-LIFE; Mason et al., 1995), which consists of four scales in total: Unusual Experiences (UnuExp), Cognitive Disorganization (CogDis), Introvertive Anhedonia (IntAnh), and Impulsive Nonconformity (ImpNon). The O-LIFE was devised as a measure of the four factors various studies have found to underlie the construct of schizotypy (Bentall et al., 1989; Claridge et al., 1996; Mason, 1995), as described in section 6.1. The UnuExp scale was devised to measure classic schizotypic traits of a 'positive' kind, such as unusual perceptual experiences and magical beliefs. It consists of 30 items with dichotomous (Yes/No) response options. The UnuExp score is computed as the sum of the 'Yes' responses.

Based on a sample of 508 participants consisting mainly of undergraduate and postgraduate students (mean age = 32.4 years, *SD* = 14.8 years), Mason et al. (1995)

report high internal consistency for the UnuExp scale (alpha = .89). Factor loadings of items in the O-LIFE questionnaire also indicate the factorial validity of each scale (Mason et al., 1995).

Boundary Questionnaire - Shortened version (BQ-Sh; Rawlings, 2001-2002)

Rawlings (2001-2002) developed a short measure of the 145-item Boundary Questionnaire (BQ; Hartmann, 1991) for researchers who wish to measure the construct of 'boundaries' along with other personality measures in a limited time. The BQ-Sh is a 46-item questionnaire with a 5-point (0–4) self-rating Likert response scale. The questionnaire consists of six sub-scales: Unusual Experiences (UE); Need for Order (NFO); Childlikeness (Ch); Perceived Competence (PC); Trust (Tr); and Sensitivity (Se). UE concerns unusual sensory or cognitive experiences, often involving sleep, dreaming or fantasy; items frequently refer to the inability to distinguish imaginary from real experience. NFO concerns the importance of discipline, and the need for order, clarity, and precision in a wide range of situations. Ch refers to a belief that parents, teachers, and artists should remain childlike. PC refers to perceived personal competence in such areas as general neatness, cleanliness, and punctuality; several items also concern the ability to understand or empathise with others. Tr is concerned with the tendency of people to be relatively trusting, unguarded, and 'open' in their interpersonal relationships. Se is concerned with sensitivity, the tendency to be easily hurt, or the feeling that one is 'falling apart'. The NFO and PC sub-scales measure 'thick' boundaries. As the full BQ-Sh is a measure of 'thin' boundaries, these sub-scales are scored in such a way as to contribute towards an overall measure of 'thin' boundaries. The Tr score does not contribute to the overall BQ-Sh score; that is, BQ-Sh is simply the sum of the other five sub-scales.

Rawlings (2001-2002) found that the BQ-Sh correlated strongly with the full Boundary Questionnaire (r = .88), suggesting that it is a valid substitute for the full scale, and that the reliability of the full BQ-Sh was satisfactory (alpha = .74). The alpha levels of the sub-scales were also found to be satisfactory, ranging from .65 to .80 with an average of .72.

General Behaviour Inventory (GBI; Depue et ai., 1989)

This measure was developed for the purpose of identifying individuals with probable affective disorder or at risk of developing affective disorder. It is a trait-based measure of these conditions and thus is not designed to measure current clinical severity. The GBI is not diagnostic in itself. It is a 73-item, self-report inventory. The items cover mood, motivational, cognitive, and somatic changes specific to affective disorders. There are 45 depression items (e.g., "Have there been periods of time when you lost almost all interest in the things that you usually like to do (such as hobbies, school, work, entertainment)?") and 28 hypomania/mania and biphasic items. The hypomania/mania items describe known behavioural manifestations of mania (e.g., "Have there been times of several days or more when you felt you *must* have lots of excitement and actually did a lot of new and different things?"). The biphasic items describe cyclicity or fluctuations between depressive and hypomanic behaviours (e.g., "Has your mood or energy shifted rapidly back and forth from happy to sad or high to low?").

Items are rated on a 4-point Likert scale according to frequency of occurrence ("never" or "hardly ever" to "very often" or "almost constantly"). Items are scored dichotomously (1 or 2 vs. 3 or 4). The GBI uses a two-dimensional scoring system and, therefore, yields two scores: 1) a depression score, derived by summing all depression items that were rated "3" or "4"; and 2) a hypomania/mania + biphasic score, derived by summing all hypomanic/manic and biphasic items that were rated "3" or "4". Cut-off scores are used to identify 'cases' from 'non-cases' in four conditions: unipolar affective condition; bipolar affective condition; nonaffective condition; and hyperthymia. Depue et al. (1989) refer to 'hyperthymia' as a condition within the normal range relating to extremely extraverted persons. The 'cases' may include a range of affective conditions within the unipolar spectrum (e.g., dysthymia, major depression) and bipolar spectrum (e.g., cyclothymia, bipolar I, bipolar II) respectively.

In addition to differentiating 'cases' from 'non-cases', the GBI can also be used to quantify depressive-like and bipolar-like behavioural fluctuations. This is based on the understanding of affective disturbance as a dimensional variable that extends through the normal to the pathological. It is achieved by scoring the GBI in a Likert fashion by summing the score of items (weighted "0, 1, 2, 3"), yielding continuous scores of 'affective disturbance or dysregulation' on the depression and hypomania/mania +

biphasic items (Depue & Klein, 1988). The continuous score can then be related to other variables. Depue et al. (1989) note that using the GBI in this way has not been validated, but that there is good reason based on their previous studies to believe that the continuous scoring method is a valid and reliable measure of affective disturbance. The continuous score was the primary method in which the GBI was used in the current study. This was because the continuous score allows for analysis of how *degree* of affective disturbance relates to other variables, including in individuals who are sub-threshold for clinical 'caseness'.

The GBI has been used in a variety of studies with both clinical (Saxon & Calsyn, 1995; Findling et al., 2002; Goldstein, Miklowitz, & Richards, 2002; Danielson, 2003) and non-clinical populations (Allen, Chapman, & Chapman, 1987; Depue et al., 1989; Wold, 1990; Martin, 2000). Eleven validation studies have been conducted on the GBI in both clinical and non-clinical populations, the results of which suggest that the measure has excellent specificity and moderate sensitivity (Depue & Klein, 1988). Depue et al. (1989), for instance, compared the GBI to clinician ratings based on structured diagnostic interviews using criteria more stringent than either Research Diagnostic Criteria (RDC) or *DSM-III* (APA, 1980) criteria. They found that the GBI demonstrated high positive (.94) and negative (.99) predictive power, moderate sensitivity (.78), and high sensitivity (.99) for affective disorders.

Debriefing statement

This statement provided participants with information about the theoretical background and rationale of Studies 1 and 2. It also offered participants a statement of the major findings of the research project at its completion. Refer to Appendix G for a copy of the Study 2 debriefing statement.

6.3.2.2 Procedure

Participants were mailed the questionnaires described above, along with the ECQ. The questionnaire pack started with the ECQ and was followed by the questionnaires in the sequence in which they were described above: the BFI; the UnuExp; the BQ-Sh; and the GBI. Participants were asked to complete the questionnaires at their convenience and to mail them back in a reply-paid envelope within 2 weeks of receipt.

6.3.3 Results

Descriptive statistics relating to the range of measures are presented first. This is followed by presentation of interpretive statistics, including both correlational and regression analyses.

6.3.3.1 Descriptive Statistics

Participant demographics

Of the 100 participants, 27 identified themselves as musicians (including 2 composers), 18 as visual artists, 18 as using a variety of mediums, 17 as writers (poetry and prose), and the remaining 20 used an assortment of other mediums (theatre, photography, sculpture, etc.). With regards to the main style of their artwork, 33 participants did not specify their style, 14 identified their style as eclectic, 11 as contemporary, 5 as classical, 5 as improvisational, 4 as abstract, 4 as experimental, and the remaining 24 as an assortment of other styles.

For the purpose of those analyses requiring differentiation by medium, type of medium was recategorised into broader, more inclusive categories. For example, sculptors and graphic designers were included in the category of visual artists, dancers and choreographers were included in the category of musicians, and so on. Participants who identified themselves as working in a variety of mediums were categorised according to their dominant medium, if this information was available. If this information was not available, the participant was categorised according to the artistic experience they rated in the ECQ. This resulted in the following distribution of participant numbers across medium: 37 visual artists, 31 musicians, 23 writers, 1 as using various mediums, and 8 as an assortment of other mediums. Table 6.8 summarises the original and adjusted categorisation of participants by medium.

Participants reported having been engaged in their artwork for an average of 18.94 years (*SD* = 9.49 years), with a range of 3 to 50 years. Artwork was the main source of income for 31 participants, while this was not the case for the remaining 69 participants. 66 participants reported never having received mental health treatment. 15 participants reported having received mental health treatment for depression, 4 for both depression and anxiety, 4 for bipolar disorder, 1 for drug-induced psychosis and 1 for an eating

Table 6.8 *Original Categorisation and Adjusted Categorisation of Participants by Medium*

Medium	Original categorisation	Adjusted categorisation
Musicians	27	31
Visual artists	18	37
Writers	17	23
Various mediums	18	1
Other mediums	20	8

Note. N = 100.

disorder. 5 participants reported having received mental health treatment but did not specify the reasons for this and 4 participants did not answer this question.

Big Five Inventory (BFI)

Data relating to the five scales of the BFI are summarised in Table 6.9. There were no missing data.

Table 6.9 *BFI Scale Scores and One-Sample t-Test Comparisons with an Australian University Student Sample*

BFI Scale	*M*	*SD*	*Min*	*Max*	*Skewness*	*Kurtosis*	*Norm data mean*	*t*	*p*
E	19.34	6.47	3	32	-.31	-.23	19.62	-.42	.68
A	25.38	5.82	7	36	-.74	.64	25.56	-.31	.76
C	23.85	6.61	3	36	-.53	.22	22.55	1.97	.05
N	17.16	7.01	1	31	-.07	-.75	15.61	2.21	.03*
O	34.26	3.98	21	40	-.98	.76	26.18	20.28	<.001***

Notes. E = Extraversion; A = Agreeableness; C = Conscientiousness; N = Neuroticism; O = Openness to Experience; Min = minumum value; Max = maximum value; *df* = 99 in *t*-tests; * < .05; ** < .01; *** < .001.

The Openness scale displayed mild negative skewness, as indicated by the ratio of skewness to standard error of skewness (-4.06). However, as the other personality variables were within reasonable limits, the BFI scales were left untransformed. The BFI scale scores were compared with norm data from a large sample of Australian

undergraduate psychology students (Rawlings, 2001). The study included 342 participants (males = 59; females = 283); the mean age was 20.69 years (*SD* = 3.31). Table 6.9 also summarises the means and one-sample *t*-test comparisons between the current sample and the norm data on the BFI scales. As indicated in the table, both Neuroticism and Openness were found to be significantly greater in the current sample, with Openness displaying a particularly strong effect.

Unusual Experiences (UnuExp)

The mean of the UnuExp questionnaire was 13.11 (*SD* = 7.00). Scores ranged from 0 to 30. There were no missing data. The mean value was compared with norm data from the English sample of 508 participants used by Mason et al. (1995) to assess the psychometric properties of the O-LIFE, the larger questionnaire of which the UnuExp scale is a component. This norm data consisted of 219 males and 289 females; the mean age was 32.4 years (*SD* = 14.8). The mean of the current sample's UnuExp score was found to be significantly greater than the norm data mean of 9.70 (*SD* = 6.70): t (99) = 4.87, $p < .001$. It is noted that later studies have found a slightly lower UnuExp mean in much larger samples (see Mason & Claridge, 2005).

Boundary Questionnaire – shortened version (BQ-Sh)

Data relating to the BQ-Sh and its six sub-scales are presented in Table 6.10. All of these scales are scored in the direction of 'thin' boundaries. There were no missing data. The full BQ-Sh score was normally distributed. All BQ-Sh sub-scales were normally distributed, apart from BQ-Ch and BQ-Se, which both displayed some mild negative skewness: the ratio of skewness to standard error of skewness was -3.17 for BQ-Ch and -3.47 for BQ-Se. However, as the other variables were within reasonable limits, the BQ-Sh scales were left untransformed. Comparable analyses were performed with transformed variables using these sub-scales with similar results. The BQ-Sh scores were compared with norm data from a large study (n = 300) with an Australian undergraduate psychology sample (Rawlings, 2001-2002). The norm data consisted of 79 males and 221 females with a mean age of 18.95 (*SD* = 3.74). Table 6.10 summarises the means and one-sample *t*-test comparisons between the current sample and the norm data on the BQ-Sh scales. As indicated in the table, the full BQ-Sh score and the Need for Order and Childlikeness sub-scales were found to be significantly greater at the $p < .001$ level in the current sample.

Table 6.10 *BQ-Sh and BQ-Sh Sub-Scale Scores and One-Sample t-Test Comparisons with an Australian University Student Sample*

	M	*SD*	*Min*	*Max*	*Skew*	*Kurt*	*Norm data mean*	*t*	*p*
BQ-Sh	89.02	15.66	57	134	.52	.14	78.50	6.72	<.001***
BQ-UE	18.01	10.55	0	44	.36	-.67	17.09	.87	.39
BQ-NFO	33.08	7.52	15	46	-.37	-.60	26.19	9.17	<.001***
BQ-Tr	12.65	4.18	4	23	.20	-.08	13.15	-1.20	.23
BQ-PC	17.79	5.55	7	32	.22	-.41	16.98	1.46	.15
BQ-Ch	14.55	3.98	3	20	-.76	.31	12.71	4.63	<.001***
BQ-Se	5.59	2.10	0	8	-.84	.02	5.54	.24	.81

Notes. BQ-Sh: full BQ-Sh; BQ-UE: Unusual experiences sub-scale; BQ-NFO: Need for order sub-scale; BQ-Tr: Trust sub-scale; BQ-PC: Perceived competence sub-scale; BQ-Ch: Childlikeness sub-scale; BQ-Se: Sensitivity sub-scale; Min = minumum value; Max = maximum value; Skew = skewness; Kurt = kurtosis; *df* = 99 in *t*-tests; * < .05; ** < .01; *** < .001.

General Behaviour Inventory (GBI) scores

The mean of the dichotomous depression score was 11.06 (*SD* = 11.57). The scores ranged in 41 points (from 0 to 41). The mean of the dichotomous hypomania/mania + biphasic score was 6.32 (*SD* = 5.88). The scores ranged in 25 points (from 0 to 25). There were no missing data. Note that, owing to the number of different measures derivable from the GBI, comparisons with GBI norms will be given in somewhat more detail than the other comparisons.

No Australian data were available, so the dichotomous score means were compared with non-clinical norm data from 6,490 white American undergraduate students with a modal age of 18 years and a gender breakdown of 52% females (*n* = 3378) and 48% males (*n* = 3112) (Chmielewski, Fernandes, Yee, & Miller, 1995). The current sample's depression score (*M* = 11.06) was found to be significantly greater than the norm data depression score (*M* = 6.96): *t* (99) = 3.54, *p* = .001. The current sample's hypomania/mania + biphasic score (*M* = 6.32) was similar to the norm data hypomania/mania + biphasic score (*M* = 5.86), with no significant difference between them: *t* (99) = .78, *p* = .44.

Depue and Klein (1988) present cut-off scores to determine probable affective cases based on two large pilot studies. The cut-off scores are based on the dichotomous scoring method. Two cutting scores – 22 on depression and 11 on hypomania/mania + biphasic – identify the unipolar and bipolar conditions of greatest clinical relevance. Two other affective conditions are demarcated by using two additional cutting scores (11 on depression and 13 on hypomania/mania + biphasic): (i) predominantly hypomanic cyclothymic disorder (on or above the 11 depression cut-off)), which is a much milder form of cyclothymia as a result of the shorter, less frequent depressive periods; and (ii) hyperthymia (below the 11 depression cut-off). Using these cut-off scores, 7 participants were in the unipolar condition; 18 participants were in the total bipolar condition, of which 7 were in the predominantly hypomanic cyclothymic condition; and 0 were in the hyperthymia condition. Scores according to this two-dimensional scoring system are represented in Figure 6.5, along with lines representing the cut-off scores for cases.

Table 6.11 contrasts the number of affective cases identified with results from two other studies. These studies used the GBI in non-clinical undergraduate populations that were not selected for high creativity. It should be noted that the Shapiro and Weisberg (1999) study used considerably more inclusive cut-off scores for the unipolar group (at or above 11 on the depression score and below 9 on the hypomania/mania + biphasic score). Despite this, the current study yielded the highest percentage of unipolar cases across the three studies (7% compared to 2.06% and 5.77%). The percentage of bipolar cases was also substantially higher in the current study than the other two studies (18% compared to 8.15% and 11.54%). The percentage of hyperthymia cases was low across all three studies (0%, 2.06%, and 1.92%).

Affective cases were examined by medium. The 7 unipolar affective cases consisted of 3 writers, 2 musicians and 2 visual artists. The 18 bipolar cases consisted of 7 visual artists, 5 writers, 3 theatre directors, 2 musicians, and 1 conceptual artist. When the general bipolar condition was separated into the two groups suggested by the cut-off scores of assorted bipolar cases and predominantly hypomanic cyclothymic cases, the breakdown was as follows: 4 writers, 3 visual artists, 2 theatre directors and 2 musician

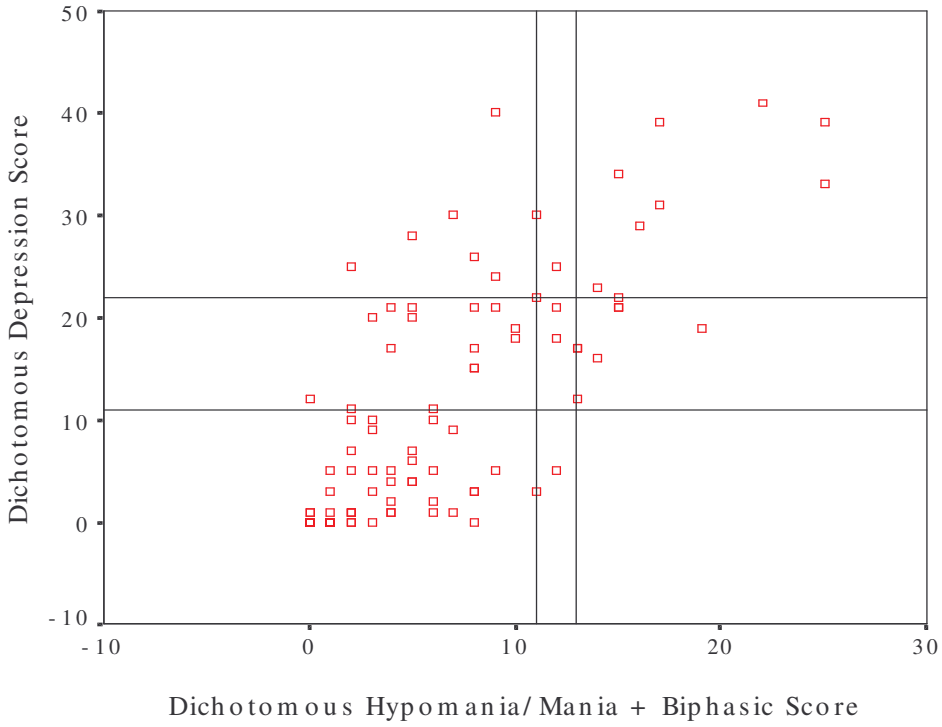


Figure 6.5. Plot of scores as a joint function of dichotomous depression and hypomania/mania + biphasic GBI scores.

Table 6.11 *Comparison of GBI-Defined Affective Conditions Between the Current Sample and Two Studies using Non-Clinical Populations Not Selected for High Creativity*

GBI-defined condition	*Current sample* n = *100*	*Depue and Klein (1988)* n = *1,068*	*Shapiro and Weisberg (1999)* n = *52*
Nonaffective	75 (75%)	937 (87.73%)	34 (65.38%)
Unipolar	7 (7%)	22 (2.06%)	3 (5.77%)
Bipolar	18 (18%)	87 (8.15%)	6 (11.54%)
Hyperthymia	0 (0%)	22 (2.06%)	1 (1.92%)

Note. GBI = General Behavior Inventory.

in the assorted bipolar group; 4 visual artists, 1 writer, 1 theatre director and 1 conceptual artist in the predominantly hypomanic cyclothymic group. This breakdown indicates that writers were more prevalent in bipolar conditions in which depression plays a stronger role. Writers were particularly strongly represented in these two affective conditions, particularly in the bipolar group, considering the smaller sample size of writers (n = 23) compared to visual artists (n = 37) and musicians (n = 31). In percentage terms, 34.78% of writers, 24.32% of visual artists, and 12.90% of musicians were represented in either of these two affective conditions. However, a chi-square test indicated that this difference in rates of affective condition between the three groups was not significant: χ^2 (2, N = 91) = 3.62, p = .16.

Descriptive data of the continuous GBI scores are summarised in Table 6.12. Norm data for continuous scores on the GBI is unavailable. However, the current study's continuous GBI scores were compared using one-sample t-tests with continuous GBI scores reported by Frantom and Sherman (1999) in a sample of 50 visual artists. As indicated in the table, there were no significant differences between the current data and Frantom and Sherman's data.

Table 6.12 *Descriptive Statistics for Continuous Scores on the General Behavior Inventory (GBI) and One-Sample t-Test Comparisons with Frantom and Sherman's (1999) data*

Scale	*M*	*SD*	Min	Max	Skew	Kurt	F & S's (1999) mean	*t*	*p*
Overall GBI	65.07	40.56	0	193	.68	.25	64.44	.16	.89
Depression	41.28	27.13	0	120	.67	.08	40.14	.42	.68
Hypomania /mania + Biphasic	23.79	15.39	0	75	.76	.60	24.92	-.73	.46

Note. GBI = General Behavior Inventory; Min = minumum value; Max = maximum value; Skew = skewness; Kurt = kurtosis; F & S (1999) = Frantom & Sherman (1999); *df* = 99 in *t*-tests; * < .05; ** < .01; *** < .001.

6.3.3.2 Interpretive Statistics

Correlational analysis

Correlational analysis was performed in order to investigate relationships between variables. A number of significant correlations were found between the personality and psychopathology measures, as presented in Table 6.13 (overleaf). Of particular note were the moderate correlations between the UnuExp, BQ-Sh (particularly UE), and GBI measures.

The correlations between the ECQ scales and the BFI scales are summarised in Table 6.14. The Anxiety scale was dominant in this analysis, although several other weak correlations were also apparent.

Table 6.14 *Correlations Between the ECQ Scales and the BFI*

	A1 DE	A2 Anx	A3 Abs	A4 P/P	A5 C/P	B1 Trans	B2 Cent	B3 BP
Extraversion	-.17	-.20*	-.22*	.01	.03	-.09	-.16	-.03
Agreeableness	-.17	-.26*	.13	-.02	.17	.16	.05	.06
Conscientiousness	-.07	-.26**	.04	.12	.15	-.04	.12	.03
Neuroticism	.11	.30**	.13	.10	-.07	.25*	.11	.13
Openness	.06	.10	.12	.21*	.12	.04	.14	.20*

Notes. A1–A5 = ECQ-A Scales 1-5; B1-B3 = ECQ-B Scales 1-3; DE = Distinct Experience; Anx = Anxiety; Abs = Absorption; P/P = Power/Pleasure; C/P = Clarity/Preparation; Trans = Transformation; Cent = Centrality; BP = Beyond the Personal; * p <.05; ** p < .01; *** p < .001.

A number of significant correlations emerged between the ECQ scales and the UnuExp, BQ-Sh, and GBI scales. These are summarised in Table 6.15.

Table 6.13 *Correlations Between the Personality and Psychopathology Measures*

	E	A	C	N	O	UnuExp	BQ-Sh	Tr	Ch	Se	NO	PC	UE	Dep	Bip
E	-	.13	.36***	-.32**	.16	-.11	-.21*	.34***	-.09	-.22*	-.03	-.24*	-.08	-.28**	-.05
A		-	.26**	-.33**	-.02	-.23*	-.06	.30**	.15	-.19	.20	-.04	-.23*	-.33**	-.31**
C			-	-.34**	-.04	-.24*	-.49***	-.19	-.21*	-.22*	-.14	-.45***	-.26**	-.26*	-.27**
N				-	.03	.25*	.33**	.08	.23*	.58***	-.11	.20*	.26**	.54***	.30**
O					-	.09	.16	.06	.19	.10	.06	.20*	-.002	.05	.18
UnuExp						-	.61***	-.09	.31**	.21*	-.12	.17	.73***	.56***	.63***
BQ-Sh							-	.05	.33**	.23*	.40***	.60***	.72***	.42***	.48***
Tr								-	.20*	.05	.13	.09	-.15	-.21*	-.04
Ch									-	.36***	-.11	-.04	.14	.23*	.25*
Se										-	-.25*	-.01	.19	.27*	.18
NO											-	.27**	-.17	-.24*	-.22*
PC												-	.18	.14	.14
UE													-	.58***	.66***
Dep														-	.81***
Bip															-

Notes. E = Extraversion; A = Agreeableness; C = Conscientiousness; N = Neuroticism; O = Openness to Experience; Dep = GBI depression scale; Bip= GBI hypomania/mania + biphasic scale; * p <.05; ** p < .01; *** p < .001.

Table 6.15 *Correlations Between UnuExp, BQ-Sh, GBI, and the ECQ Scales*

	A1 DE	A2 Anx	A3 Abs	A4 P/P	A5 C/P	B1 Trans	B2 Cent	B3 BP
UnuExp	.48***	.37***	.26**	.39***	.12	.32**	.37***	.25*
BQ-Sh	.26**	.30**	.23*	.14	-.02	.28**	.21*	.18
GBI-depression	.29**	.34***	.16	.22*	.02	.21*	.31**	.25*
GBI-biphasic + hypomania	.32**	.33**	.08	.26**	.10	.14	.30**	.27**

Notes. A1–A5 = ECQ-A Scales 1-5; B1-B3 = ECQ-B Scales 1-3; DE = Distinct Experience; Anx = Anxiety; Abs = Absorption; P/P = Power/Pleasure; C/P = Clarity/Preparation; Trans = Transformation; Cent = Centrality; BP = Beyond the Personal; * p <.05; ** p < .01; *** p < .001.

The correlations between the BQ-Sh sub-scales and the ECQ scales were also examined. These correlations are summarised in Table 6.16. As indicated in the table, the Unusual Experiences sub-scale featured prominently in these correlations, correlating significantly with four of the experiential scales and all of the existential scales.

Table 6.16 *Correlations Between the BQ-Sh Sub-Scales and the ECQ Scales*

	A1 DE	A2 Anx	A3 Abs	A4 P/P	A5 C/P	B1 Trans	B2 Cent	B3 BP
BQ-Sh sub-scales								
Trust	-.20*	-.20	-.06	-.04	-.03	.14	-.19	.05
Childlikeness	.21*	.19	.10	.29**	.27*	.30**	.20*	.15
Sensitivity	.21*	.25*	.08	.21*	.05	.16	.16	.09
Need for Order	-.13	-.06	.004	-.22*	-.23*	.06	-.16	-.07
Perceived Competence	-.08	.13	.10	-.18	-.12	.03	-.06	-.06
Unusual Experiences	.40***	.29**	.23*	.31**	.09	.21*	.35***	.28**

Notes. A1–A5 = ECQ-A Scales 1-5; B1-B3 = ECQ-B Scales 1-3; DE = Distinct Experience; Anx = Anxiety; Abs = Absorption; P/P = Power/Pleasure; C/P = Clarity/Preparation; Trans = Transformation; Cent = Centrality; BP = Beyond the Personal; * p <.05; ** p < .01; *** p < .001.

Analysis by gender and age

The ECQ scales and the personality and psychopathology measures were examined by gender using independent samples *t*-tests. *T*-test assumptions were satisfied for each variable. The results of these analyses, including effect sizes (Cohen, 1992), are presented in Table 6.17. The only significant differences were found on the

Table 6.17 *Results of Independent Samples t-Tests Comparing the ECQ, BFI, UnuExp, BQ-Sh, and GBI Scores by Gender (*DF *= 98;* N *= 43 (males), 57 (females) for all cells)*

Scale	Gender	*M*	*SD*	*t*-value	*p*	95% CIs		d
ECQ								
Distinct Experience	Male	31.33	7.56	1.34	.18	-1.04	5.37	2.17
	Female	29.16	8.30					
Anxiety	Male	22.26	6.77	1.67	.10	-.41	4.68	2.13
	Female	20.12	6.00					
Absorption	Male	39.74	7.25	.34	.74	-2.27	3.19	.46
	Female	39.28	6.46					
Power/Pleasure	Male	41.60	8.43	1.04	.30	-1.51	4.83	1.66
	Female	39.95	7.50					
Clarity/Preparation	Male	13.60	3.39	.27	.79	-1.17	1.54	.18
	Female	13.42	3.36					
Transformation	Male	25.51	6.45	-1.19	.24	-3.73	.93	-1.40
	Female	26.91	5.27					
Centrality	Male	34.42	6.31	1.39	.17	-.79	4.54	1.87
	Female	32.54	6.91					
Beyond the Personal	Male	11.88	2.89	1.74	.09	-.14	2.12	.99
	Female	10.89	2.76					
BFI								
Extraversion	Male	18.26	6.25	-1.46	.15	-4.48	.68	-1.90
	Female	20.16	6.58					
Agreeableness	Male	24.98	6.15	-.60	.55	-3.05	1.63	-.71
	Female	25.68	5.59					
Conscientiousness	Male	22.09	7.24	-2.36	.02	-5.67	-.49	-3.08
	Female	25.18	5.81					
Neuroticism	Male	16.53	6.32	-.77	.44	-3.91	1.72	-1.10
	Female	17.63	7.51					
Openness	Male	35.05	3.64	1.73	.09	-.20	2.96	1.38
	Female	33.67	4.16					
UnuExp	Male	13.53	7.35	.53	.60	-2.07	3.56	.75
	Female	12.79	6.78					
BQ-Sh	Male	89.58	17.46	.31	.76	-5.32	7.29	.98
	Female	88.60	14.30					
GBI								
Depression	Male	44.67	23.47	1.09	.28	-4.91	16.82	5.96
	Female	38.72	29.53					
Hypomania/mania + biphasic	Male	27.49	14.19	2.12	.04	.43	12.55	6.49
	Female	21.00	15.78					

Conscientiousness scale, with females rating higher than males, and on the hypomania/mania + biphasic scale, with males rating higher than females.

The relationship between age and the other variables was examined using Pearson correlations. The correlations between age and the ECQ scales are presented in Table 6.18 and the correlations between age and the personality and psychopathology measures are presented in Table 6.19. There were no significant correlations in this analysis.

Table 6.18 *Pearson Correlations Between Age and the ECQ Scales*

	A1 DE	A2 Anx	A3 Abs	A4 P/P	A5 C/P	B1 Trans	B2 Cent	B3 BP
Age	-.02	-.004	.16	.05	-.10	.06	.05	.11

Notes. A1–A5 = ECQ-A Scales 1-5; B1-B3 = ECQ-B Scales 1-3; DE = Distinct Experience; Anx = Anxiety; Abs = Absorption; P/P = Power/Pleasure; C/P = Clarity/Preparation; Trans = Transformation; Cent = Centrality; BP = Beyond the Personal; * p <.05; ** p < .01; *** p < .001.

Table 6.19 *Pearson Correlations Between Age and the BFI, UnuExp, BQ-Sh, and the GBI*

	E	A	C	N	O	UnuExp	BQ-Sh	Dep	Biphasic
Age	.04	.13	.08	-.08	.07	-.08	-.12	-.12	-.14

Notes. E = Extraversion; A = Agreeableness; C = Conscientiousness; N = Neuroticism; O = Openness; Dep = GBI depression scale; Biphasic = GBI hypomania/mania + biphasic scale; * p <.05; ** p < .01; *** p < .001.

Analysis by years of experience

The ECQ scales were examined by years of experience in the arts using Pearson correlations. As summarised in Table 6.20, there were no significant associations between the ECQ scales and years of experience in the arts.

Table 6.20 *Pearson Correlations Between Years of Experience and the ECQ Scales*

	A1 DE	A2 Anx	A3 Abs	A4 P/P	A5 C/P	B1 Trans	B2 Cent	B3 BP
Years of Experience	-.06	.005	.04	-.06	-.10	-.04	-.13	-.06

Notes. A1–A5 = ECQ-A Scales 1-5; B1-B3 = ECQ-B Scales 1-3; DE = Distinct Experience; Anx = Anxiety; Abs = Absorption; P/P = Power/Pleasure; C/P = Clarity/Preparation; Trans = Transformation; Cent = Centrality; BP = Beyond the Personal; * p <.05; ** p < .01; *** p < .001.

Pearson correlations were also examined between years of experience and the BFI, UnuExp, BQ-Sh, and the GBI measures, as summarised in Table 6.21. The only significant correlation in this analysis was a weak negative correlation between years of experience and the depression measure: r = -.20, p = .04. It was decided that there was no need to take account of age or years of experience in considering the data.

Table 6.21 *Pearson Correlations Between Years of Experience and the BFI, UnuExp, BQ-Sh, and the GBI*

	E	A	C	N	O	UnuExp	BQ-Sh	Dep	Biphasic
Years of Experience	.04	.16	.05	-.11	.01	-.13	-.12	-.20*	-.19

Notes. E = Extraversion; A = Agreeableness; C = Conscientiousness; N = Neuroticism; O = Openness; Dep = GBI depression scale; Biphasic = GBI hypomania/mania + biphasic scale; * p <.05; ** p < .01; *** p < .001.

Analysis by medium

Variables were examined according to participants' artistic medium. The adjusted categorisation of medium described above was used for these analyses: a total of 91 participants categorised according to groupings of musicians (n = 31), visual artists (n = 37), and writers (n = 23). The ECQ scales were examined by medium using one-way ANOVAs. The distribution of the visual artists group in the Absorption scale displayed mild negative skewness (skewness = -1.44; standard error = .39). This variable was not

Table 6.22 *Means and One-Way ANOVA Results of the ECQ Scales by Medium (DF = 2, 88 for all cells)*

ECQ Scales	Medium	*M*	*SD*	*F*	*p*
ECQ-A					
Distinct Experience	Writers	29.74	8.44	.18	.84
	Musicians	29.13	7.96		
	Visual artists	30.32	8.24		
Anxiety	Writers	21.35	7.08	.55	.58
	Musicians	20.03	5.49		
	Visual artists	21.62	6.86		
Absorption	Writers	39.52	6.79	.04	.96
	Musicians	39.00	6.13		
	Visual artists	39.24	7.58		
Power/Pleasure	Writers	42.09	5.98	1.02	.37
	Musicians	39.00	8.28		
	Visual artists	39.89	8.79		
Clarity/Preparation	Writers	12.74	3.58	1.19	.31
	Musicians	13.06	2.46		
	Visual artists	14.00	3.81		
ECQ-B					
Transformation	Writers	27.57	4.81	1.46	.24
	Musicians	24.84	5.65		
	Visual artists	25.73	6.56		
Centrality	Writers	33.65	5.87	.58	.56
	Musicians	31.97	6.75		
	Visual artists	33.57	7.50		
Beyond the Personal	Writers	11.70	1.92	1.05	.35
	Musicians	11.23	3.06		
	Visual artists	10.62	3.14		

Notes. * p <.05; ** p < .01; *** p < .001.

transformed due to it being the only variable affected. The homogeneity of variance assumption was not satisfied for the Power/Pleasure and the Beyond the Personal scales. The means of the ECQ scales for each group and ANOVA statistics are presented in Table 6.22. ANOVAs revealed no significant main effects for the ECQ scales by medium.

Table 6.23 *Means and One-Way ANOVA Results of the BFI, UnuExp, and GBI Scales by Medium (DF = 2, 88 for all cells)*

BFI Scales	Medium	*M*	*SD*	*F*	*p*
Extraversion	Writers	19.74	6.08	.33	.72
	Musicians	19.52	7.46		
	Visual artists	18.51	5.74		
Agreeableness	Writers	24.78	4.91	.86	.43
	Musicians	26.13	6.34		
	Visual artists	24.27	6.13		
Conscientiousness	Writers	23.96	6.37	.47	.63
	Musicians	24.68	6.54		
	Visual artists	23.11	6.92		
Neuroticism	Writers	18.00	7.20	3.00	.06
	Musicians	14.58	7.12		
	Visual artists	18.59	6.90		
Openness	Writers	34.39	4.02	.36	.70
	Musicians	33.61	3.97		
	Visual artists	34.38	4.23		
UnuExp	Writers	14.87	7.17	3.09	.05
	Musicians	10.32	6.43		
	Visual artists	13.03	6.87		
Depression	Writers	51.09	35.03	4.17	.02*
	Musicians	30.39	23.69		
	Visual artists	41.81	22.03		
Hypomania/mania +	Writers	29.17	17.53	4.95	.009**
biphasic	Musicians	17.19	11.27		
	Visual artists	24.27	13.97		

Notes. * p <.05; ** p < .01; *** p < .001.

The personality and psychopathology measures were also examined by medium using one-way ANOVAs. The distribution of the musicians group in the BFI Conscientiousness scale (skewness = -1.37, standard error = .42; kurtosis = 3.32, standard error = .82) and the writers group in the BQ-Sh Childlikeness sub-scale (skewness = -2.07, standard error = .48; kurtosis = 6.61, standard error = .94) displayed mild negative skewness and kurtosis. Due to the small number of groups affected, variables were not transformed.

The means and ANOVA results of the BFI, UnuExp, and GBI scales by medium are summarised in Table 6.23. There was a general similarity between group means on each BFI scale. For this questionnaire, the largest difference in means was on the

Neuroticism scale, with musicians (M = 14.58) rating lower than the writers (M = 18.00) and visual artists (M = 18.50), though none of the main effects were significant.

As indicated in the table, there was a trend on the UnuExp scale towards a difference between the groups, with writers rating the highest, then musicians, and then visual artists. Due to this trend, UnuExp scores were compared by medium to norm data presented by Mason et al. (1995). The statistical power of these analyses was found to be acceptable at an alpha level of .05 for the writers group (p = .91) and the visual artists group (p = .89). However, it was poor for the musicians group (p = .13). Both the writers (t (22) = 3.46, p = .002, 95% CIs = -1.73, 2.98) and visual artists (t (36) = 2.95, p = .006, 95% CIs = 1.04, 5.62) were found to have significantly elevated schizotypy scores compared to norm data (M = 9.70). However, this was not found to be the case for musicians: t (30) = .54, p = .59, 95% CIs = -1.73, 2.98.

As indicated in Table 6.23, there was a significant main effect on the continuous depression measure. Tukey HSD tests indicated that this effect was due to writers rating significantly higher (p = .02) than musicians. However, the homogeneity of variance assumption was not satisfied for the depression measure (p = .01), so these findings must be interpreted with caution. The same pattern of results appeared on the hypomania/mania + biphasic measure, with writers rating the highest, followed by visual artists, and then musicians. Tukey HSD tests indicated that the significant difference between the groups was due to writers rating significantly higher (p = .008) than musicians.

The dichotomous depression and hypomania/mania + biphasic scores were compared by medium to norm data presented by Chmielewski et al. (1995). Power analyses revealed that statistical power for the depression analysis was adequate at an alpha level of .05 for the writers group (p = .79) and the visual artists group (p = .81), but was poor for the musicians group (p = .06). Of the three groupings, writers (M = 15.00, SD = 15.28) and visual artists (M = 11.08, SD = 9.78) displayed significantly greater mean depression scores than the norm data (M = 6.96): t (22) = 2.52, p = .02, 95% CIs = 1.43, 14.65 (writers); t (36) = 2.56, p = .02, 95% CIs = .86, 7.38 (visual artists). This was not found to be the case for the musicians (M = 7.06, SD = 9.46): t (30) = .06, p = .95, 95%

Table 6.24 *Means and One-Way ANOVA results of BQ-Sh Scales by Medium (DF = 2, 88 for all cells)*

BQ-Sh Scales	Medium	*M*	*SD*	*F*	*p*
BQ-Sh	Writers	95.78	14.38	4.61	.01*
	Musicians	83.00	18.31		
	Visual artists	88.30	12.89		
BQ-UnuExp	Writers	23.09	11.75	5.53	.005**
	Musicians	13.97	9.64		
	Visual artists	17.08	9.15		
BQ-Tr	Writers	12.96	4.49	.74	.48
	Musicians	12.81	4.35		
	Visual artists	11.78	3.90		
BQ-Ch	Writers	16.17	3.71	5.92	.004**
	Musicians	12.61	4.27		
	Visual artists	14.57	3.44		
BQ-Se	Writers	5.17	2.55	1.49	.23
	Musicians	5.19	2.17		
	Visual artists	5.97	1.82		
BQ-NFO	Writers	33.09	7.72	.28	.75
	Musicians	34.10	7.70		
	Visual artists	32.78	6.80		
BQ-PC	Writers	18.26	5.11	.29	.75
	Musicians	17.13	5.99		
	Visual artists	17.89	5.76		

Notes. BQ-UnuExp = BQ-Sh Unusual Experiences sub-scale; BQ-Tr = BQ-Sh Trust sub-scale; BQ-Ch = BQ-Sh Childlikeness sub-scale; BQ-Se = BQ-Sh Sensitivity sub-scale; BQ-NFO = BQ-Sh Need for Order sub-scale; BQ-PC = Perceived Competence sub-scale; * $p < .05$; ** $p < .01$; *** $p < .001$.

CIs = -3.36, 3.57. Power analyses revealed that statistical power for the hypomania/mania + biphasic scores was adequate at an alpha level of .05 for the musicians group (p = .86), moderate for the writers group (p = .49), and poor for the visual artists group (p = .18). The musicians displayed a mean hypomania/mania + biphasic score (M = 3.74, SD = 3.76) significantly lower than the norm data value of 5.86: t (30) = -3.14, p = .004, 95% CIs = -3.50, -.74. The writers' (M = 8.30, SD = 7.00) and visual artists' (M = 6.51, SD = 5.37) hypomania/mania + biphasic scores were not significantly different from the norm data: t (22) = 1.67, p = .19, 95% CIs = -.58, 5.47 (writers); t (36) = .74, p = .46, 95% CIs = -1.14, 2.44 (visual artists).

Table 6.24 summarises the means and one-way ANOVA results on the BQ-Sh measure, including the BQ-Sh sub-scales. A significant main effect was found on BQ-Sh by medium. Tukey HSD tests revealed that this effect was due to writers rating higher on this measure than musicians, with a significant difference (p = .009) of 12.78. Scores on BQ-Sh were compared by medium to norm data presented by Rawlings (2001-2002). The statistical power of these analyses was acceptable at an alpha level of .05 for the writers group (p = 1.00) and the visual artists group (p = .99). However, it was poor for the musicians group (p = .38). Again, both the writers (t (22) = 5.76, p .00, 95% CIs = 11.06, 23.50) and visual artists (t (36) = 4.62, p = .00, 95% CIs = 5.50, 14.10) were found to be significantly elevated on boundary scores compared to norm data (M = 78.50). This was not found to be the case for musicians: t (30) = 1.37, p = .18, 95% Cis = -2.22, 11.22. Significant main effects were found for the Unusual Experiences and Childlikeness sub-scales. Tukey HSD tests indicated that this effect was due in both cases to writers ratings significantly higher (p < .01) than musicians.

Personality and psychopathology measures as predictors of ECQ scales

Stepwise regression analyses were conducted in order to identify the best predictors of each of the ECQ scales amongst the personality and psychopathology measures. All of the personality and psychopathology measures were included as independent variables in each of the regression analyses. As BQ-Sh was not found to be a significant predictor in any of the regression analyses, the BQ-Sh sub-scales were not entered in the analyses. However, exploratory regression analyses employing these sub-scales indicated no substantial differences to reported analyses.

All assumptions were satisfied for regression analysis, apart from multicollinearity between the independent variables of depression and hypomania/mania + biphasic. In order to avoid violation of this assumption, separate analyses were conducted for each ECQ scale – the first time using depression as an independent variable, the second time using hypomania/mania + biphasic as an independent variable. There were no differences in results between these two sets of regression analyses, apart from in the regression model of the Beyond the Personal scale. The results of the regression analyses are summarised in Table 6.25, using the set of regression analyses that

included depression as an independent variable. Both regression models for the Beyond the Personal scale are reported.

Table 6.25 *Stepwise Regression Analyses Employing ECQ Scales as Dependent Variables with Personality and Psychopathology Measures as Independent Variables*

Model	Significant predictors	Beta	*t*
ECQ Part A			
Distinct Experience (Adjusted R *square = .22;* F *= 29.10***)*			
	Unusual Experiences	.48	5.40***
Anxiety (Adjusted R *square = .17;* F *= 10.79***)*			
	Unusual Experiences	.31	3.27**
	Neuroticism	.23	2.39*
Absorption (Adjusted R *square = .12; F = 5.62**)*			
	Unusual Experiences	.29	2.97**
	Agreeableness	.22	2.26*
	Extraversion	-.21	-2.24*
Power/Pleasure (*Adjusted* R *square = .22; F = 10.02***)*			
	Unusual Experiences	.44	4.72***
	Conscientiousness	.24	2.56*
	Openness	.18	2.06*
Clarity/Preparation – no significant predictors			
ECQ Part B			
Transformation (Adjusted R *square = .20; F = 9.13***)*			
	Unusual Experiences	.32	3.41**
	Agreeableness	.33	3.37**
	Neuroticism	.28	2.83**
Centrality (Adjusted R *square = .20; F = 9.21***)*			
	Unusual Experiences	.41	4.47***
	Conscientiousness	.30	3.07**
	Extraversion	-.23	-2.33*
Beyond the Personal (Adjusted R square = .05; F = 6.59) – with depression as IV*			
	Unusual Experiences	.25	2.57*
*Beyond the Personal (Adjusted R square = .06; F = 7.62**) – with hypomania/mania + biphasic as IV*			
	Hypomania/mania + biphasic	.27	2.76**

Note. * p < .05; ** p < .01; *** p < .001; IV = independent variable.

As indicated in Table 6.25, in the stepwise regression of the Clarity/Preparation scale, none of the independent variables met the criteria for inclusion in the regression model, suggesting weak prediction of this scale by these variables. Two simple regressions were performed to confirm this, the first including depression amongst the independent variables and the second including hypomania/mania + biphasic amongst the independent variables. The first simple regression confirmed that these variables were weak predictors, only explaining 9.6 per cent of variance in the scale: F (8, 91) = 1.21, p = .30. None of the independent variables individually predicted the scale. The second simple regression also resulted in a weak predictive model, explaining only 10.5 per cent of variance in the scale: F (8, 91) = 1.33, p = .24. None of the independent variables individually predicted the scale.

Analysis of sub-set of GBI items

As discussed in section 6.3.1, Shapiro & Weisberg (1999) identified 6 GBI items (items 7, 15, 30, 48, 57, and 64) as being related to trait creativity. The mean of continuous scores on these items (M = .85, SD = .61) was compared with the mean of continuous scores on the remaining 67 GBI items (M = .90, SD = .56) using a paired t-test. Statistical assumptions were met for this analysis, apart from mild positive skewness in the 6-item GBI variable. The difference in means was not found to be significant: t (99) = -1.18, p = .24, 95% CIs = -.12, .03.

Pearson correlations were performed to investigate whether ratings on these six GBI items correlated with ratings on the ECQ scales. Although there were no strong correlations between scores on these six GBI items and the ECQ scales, significant correlations were found with the Distinct Experience (r = .24, p = .02), Anxiety (r = .28, p = .005), Power/Pleasure (r = .21, p = .03), Centrality (r = .28, p = .005), and Beyond the Personal (r = .23, p = .02) scales.

Summary of interpretive statistics

Tables 6.26 and 6.27 summarise the major findings relating to the relationship between the ECQ scales and the personality and psychopathology measures, which was the primary concern of the current experiment. Table 6.26 summarises the Pearson correlations between the ECQ scales and the personality and psychopathology measures. Only significant and hypothesised correlations are reported in the table.

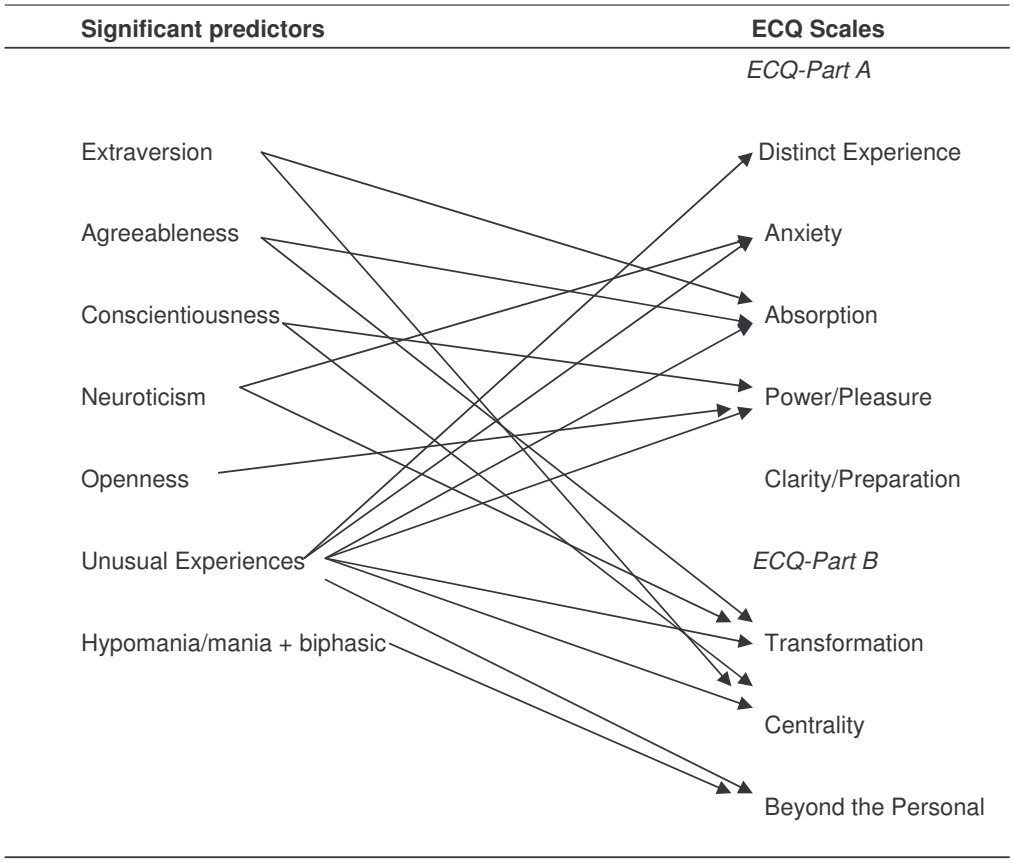
Hypothesised correlations found to be significant are underlined, while hypothesised correlations not found to be significant appear in parentheses. Table 6.27 summarises the regression models of the ECQ scales with the personality and psychopathology measures as independent variables. The arrows in this table represent a significant prediction. Both of these tables indicate the prominent relationship of the Unusual Experiences scale with a range of ECQ scales. This finding is reinforced by the significant correlation of the BQ-Sh Unusual Experiences sub-scale with a range of ECQ scales.

Table 6.26 *Pearson Correlations Between the ECQ Scales and the Personality and Psychopathology Measures*

	DE	*Anx*	*Abs*	*P/P*	*C/P*	*Trans*	*Cent*	*BP*
Extraversion		-.20*	-.22*					
Agreeableness		-.26*						
Conscientiousness		-.26**	(.04)					(.03)
Neuroticism		.30**				.25*		
Openness	(.06)			.21*		(.04)		.20*
UnuExp	.48***	.37***	.26**	.39***		.32**	.37***	.25*
BQ-Sh	.26**	.30**	.23*			.28**	.21*	
BQ-Tr	-.20*							
BQ-Ch	.21*			.29**	.27*	.30**	.20*	
BQ-Se	.21*	.25*		.21*				
BQ-NFO				-.22*	-.23*			
BQ-PC								
BQ-UnuExp	.40***	.29**	.23*	.31**		.21*	.35***	.28**
Depression	.29**	.34***		.22*		.21*	.31**	.25*
Biphasic	.32**	.33**		.26**			.30**	.27**

Notes. UnuExp = Unusual Experiences scale; BQ-Sh = Boundary Questionnaire – Shortened Version; BQ-Tr = BQ-Sh Trust sub-scale; BQ-Ch = BQ-Sh Childlikeness sub-scale; BQ-Se = BQ-Sh Sensitivity sub-scale; BQ-NFO = BQ-Sh Need for Order sub-scale; BQ-PC = Perceived Competence sub-scale; BQ-UnuExp = BQ-Sh Unusual Experiences sub-scale; Depression = GBI depression scale; Biphasic = GBI hypomania/mania + biphasic scale; _ = hypothesised correlations found to be significant; ( ) = hypothesised correlations not found to be significant; * p <.05; ** p < .01; *** p < .001.

Table 6.27 *Significant Predictors of ECQ Scales Amongst the Personality and Psychopathology Measures, as Indicated by Stepwise Regression Analyses*



6.4 Discussion

The discussion of Study 2 begins with a summary of the research findings in relation to the research hypotheses. Exploratory findings are then summarised. Findings are considered and discussed in relation to relevant literature. Finally, methodological issues are considered and suggestions are made for future research.

6.4.1 Hypotheses

The Study 2 hypotheses were presented according to three categories: personality and psychopathology measures; the relationship between personality and psychopathology measures and the ECQ scales; and the relationship between the experiential and existential dimensions of the ECQ. These categories will be addressed in turn.

It was hypothesised that the sample of artists would rate significantly higher than existing norm data on the FFM domains of Openness to Experience and Neuroticism, schizotypy, and thin boundaries (hypotheses 1-3). The findings supported all three of these hypotheses. None of the other domains of the FFM (Extraversion, Agreeableness, and Conscientiousness) were found to diverge significantly from norm data. It was also hypothesised that depression and bipolar affective disturbance, as rated by the GBI, would be significantly greater in the artist sample compared to non-clinical norm data (hypothesis 4). This was found to be the case for depression, but not for bipolar disturbance. These conclusions are based on the GBI ratings when scored in a dichotomous fashion. However, when the GBI was scored in a two-dimensional fashion, which allows the identification of probable affective disorder cases from non-cases, a high rate of both unipolar and bipolar cases were identified compared to studies using the GBI in non-clinical populations. Bipolar cases were particularly strongly represented in the current sample. This issue is returned to below.

Hypothesis 5 related to a particular sub-set of 6 GBI items that a previous study (Shapiro & Weisberg, 1999) found to be the strongest predictors of creativity. It was anticipated that ratings on these 6 items would be significantly greater than ratings on the remaining GBI items. This hypothesis was not supported.

In terms of the relationship between the personality and psychopathology measures and the ECQ scales, it was hypothesised that the FFM domain of Openness to Experience would be positively correlated with the Distinct Experience scale (hypothesis 6). This was not found to be the case. However, strong support was found for the hypothesis (hypothesis 7) that 'positive symptom' schizotypy would be positively correlated with this scale. A weak correlation was also found between this scale and thin mental boundaries, supporting hypothesis 8.

The Anxiety scale of the ECQ was expected to correlate positively with the FFM domain of Neuroticism and with affective disturbance (hypotheses 9 and 10). The results supported both of these hypotheses. Although unipolar depression was expected to be particularly prominent in this association, both unipolar and bipolar depression were found to correlate strongly with the Anxiety scale. Thin mental boundaries was found to correlate with the Absorption scale, which supported hypothesis 11. Contrary to expectations, an inverse relationship was not found between the FFM domain of Conscientiousness and the Absorption scale (hypothesis 12).

The Transformation scale of ECQ-Part B was expected to correlate positively with the FFM domain of Openness to Experience (hypothesis 13). This was not found to be the case. In fact, the Openness domain displayed negligible correlations with each of the ECQ scales, only reaching weak significance with two of the scales (Power/Pleasure and Beyond the Personal). However, it was found to be significant predictor of Power/Pleasure, as discussed below. This suggests that although this personality domain displays a general relationship with artistic creativity, its relationship to experiential and existential aspects of creativity is quite narrow, focused around aspects of experience represented in the Power/Pleasure scale. Although Conscientiousness was not found to be positively correlated with the Beyond the Personal scale, failing to support hypothesis 14, it was found to be a significant predictor of the Centrality scale.

Based on arguments that creativity may serve the function of stabilising emotional state or functioning as a defence against depressive states, it was hypothesised that affective disturbance would be positively correlated with the ECQ Centrality scale (hypothesis 15). This hypothesis was supported: both depressive and bipolar disturbance were positively correlated with this scale. However, the regression analyses indicated that neither of the affective disturbance measures were significant predictors of the Centrality scale. Rather, schizotypy, followed by Conscientiousness and Extraversion, were found to be the strongest predictors of the Centrality scale.

Due to the behaviours and traits represented in these items, the 6-item subset of GBI items identified by Shapiro and Weisberg (1999) were expected to correlate positively with the Distinct Experience and Absorption scales (hypothesis 16). Although a correlation was found between this subset of items and the Distinct Experience scale, no

correlation was found with the Absorption scale, providing only partial support for this hypothesis. However, correlations emerged between this subset of items and the Anxiety, Power/Pleasure, Centrality, and Beyond the Personal scales.

With regards to the relationship between the experiential and existential dimensions of the ECQ, it was hypothesised, based on the Study 1 findings, that the Power/Pleasure scale would be positively correlated with the Centrality scale (hypothesis 17). Indeed, these two scales were found to correlate positively. It is noteworthy that a number of other scales were also found to correlate with each of these scales. The association between these two scales was also supported by regression analyses, which found that Power/Pleasure was one of the strongest predictors of Centrality amongst the ECQ scales.

Finally, it was hypothesised that the Distinct Experience scale would be positively correlated with the Transformation scale (hypothesis 18). This hypothesis was supported, although the regression analyses indicated that Distinct Experience was not a significant predictor of the Transformation scale.

6.4.2 Exploratory Findings

The exploratory findings of the current study will be outlined following the same sequence as the hypotheses: the personality and psychopathology measures; the relationship between personality and psychopathology measures and the ECQ scales; and the relationship between the experiential and existential dimensions of the ECQ.

6.4.2.1 Personality and Psychopathology Measures

Although a hypothesis was stated regarding mental boundaries as a general construct, there were no stated expectations regarding particular dimensions of the construct of mental boundaries, as represented in the sub-scales of the BQ-Sh. Although the Unusual Experiences sub-scale mean was greater than norm data, this difference was not found to be significant. This is a somewhat surprising finding, given that the schizotypy measure, which displays considerable conceptual overlap with this boundaries sub-scale, was found to be significantly higher than norm data. It is also surprising that no significant difference was found on the Sensitivity sub-scale, given previous findings that indicate that sensitivity is characteristic of artists (e.g., Cattell &

Kline, 1977) and is thought to play a role in the link between neuroticism and artistic creativity (see section 2.3). However, although the Sensitivity sub-scale has adequate reliability, it is composed of only two items and may therefore not be a sufficiently robust measure of this personality trait. The other two boundary questionnaire sub-scales that were found to be significantly elevated in the current sample were the Need for Order and Childlikeness sub-scales, suggesting that artists are characterised by a decreased need for order, clarity, and precision, do not place much importance on discipline, and place value on maintaining childlike qualities.

Affective disturbance was examined by medium of artist. Although a statistical difference was not found between the groups, writers were particularly strongly represented in affective disorder 'cases' compared to visual artists and musicians. This was especially true for bipolar cases, particularly in bipolar cases in which depressive episodes play a stronger role. Continuous scores on the affective disorder measure (including both unipolar and bipolar ratings) were similar in the current sample of artists compared to a previous study using this measure in a sample of visual artists (Frantom & Sherman, 1999).

6.4.2.2 The Relationship Between Personality and Psychopathology Measures and the ECQ scales

A number of correlations emerged between the personality and psychopathology measures and the ECQ scales. The final version of the ECQ consisted of 8 scales, 5 of which represented the experiential dimension of the ECQ and 3 of which represented the existential dimension of the ECQ. Exploratory findings relating to each of these scales are summarised below.

ECQ-Experiential dimension scale one, Distinct Experience

The Distinct Experience scale was not found to correlate with any of the domains of the FFM of personality, but correlated significantly with thin mental boundaries, schizotypy, and both unipolar and bipolar affective disturbance. The correlation with schizotypy was particularly strong, as reflected by the fact that this measure was the only variable that predicted the Distinct Experience scale. The association between Distinct Experience and schizotypy is reinforced by the fact that the strongest correlation of this ECQ scale with the BQ-Sh sub-scales was with the Unusual Experiences sub-scale.

ECQ-Experiential dimension scale two, Anxiety

In addition to the hypothesised correlation between the Anxiety scale and Neuroticism, this scale was also found to correlate negatively with the FFM domains of Extraversion, Agreeableness, and Conscientiousness. The Anxiety scale displayed significant correlations with schizotypy, thin mental boundaries, the Sensitivity and Unusual Experiences sub-scales of the BQ-Sh, and both unipolar and bipolar affective disturbance. The strongest predictors of the Anxiety scale were schizotypy and Neuroticism.

ECQ-Experiential dimension scale three, Absorption

The Absorption scale correlated with Extraversion (in a negative direction), schizotypy, thin boundaries, and the Unusual Experiences sub-scale of the BQ-Sh. Schizotypy, Agreeableness, and Extraversion were found to be significant predictors of Absorption. The significant correlations involving this scale were somewhat lower than for several of the other ECQ scales.

ECQ-Experiential dimension scale four, Power/Pleasure

The Power/Pleasure scale displayed significant correlations with Openness, schizotypy, and both unipolar and bipolar affective disturbance. The scale also correlated significantly with a number of the BQ-Sh sub-scales, including Childlikeness, Sensitivity, Unusual Experiences, and Need for Order (in a negative direction, indicating high need for order). Schizotypy was the strongest predictor of this scale, followed by Conscientiousness and Openness.

ECQ-Experiential dimension scale five, Clarity/Preparation

Although the Clarity/Preparation scale displayed significant correlations with both the Childlikeness and Need for Order (in negative direction) BQ-Sh sub-scales, regression analyses indicated no significant predictors of this scale. The somewhat lower reliability of this scale may have contributed to the lack of predictive relationships with other variables.

ECQ-Existential dimension scale one, Transformation

The Transformation scale was found to correlate with Neuroticism, schizotypy, thin mental boundaries, and unipolar affective disturbance. This scale also correlated significantly with the Childlikeness and Unusual Experiences sub-scales of the BQ-Sh. Schizotypy, Agreeableness, and Neuroticism were all significant predictors of the Transformation scale.

ECQ-Existential dimension scale two, Centrality

The Centrality scale displayed a moderate correlation with schizotypy, and slightly weaker correlations with thin mental boundaries and unipolar and bipolar affective disturbance. The association between schizotypy and the Centrality scale was also represented in this scale's correlation with the BQ-Sh Unusual Experiences sub-scale. Centrality also correlated with the Childlikeness BQ-Sh sub-scale. The regression analyses indicated that schizotypy, Conscientiousness, and Extraversion (in a negative direction) were predictors of Centrality.

ECQ-Existential dimension scale three, Beyond the Personal

The Beyond the Personal scale displayed weak but significant correlations with Openness, schizotypy, the Unusual Experiences BQ-Sh sub-scale, and both unipolar and bipolar affective disturbance. Schizotypy and bipolar affective disturbance were found to be significant predictors of this scale. As with the Clarity/Preparation scale, the relatively weak relationships with this scale may have been influenced by the low reliability of the scale.

6.4.2.3 The Relationship Between Experiential and Existential Dimensions of the ECQ

The relationship between the experiential and existential scales of the ECQ was examined in order to investigate whether there is a relationship between the way in which the creative process is experienced and the meaning attached to the creative process. Although a number of significant correlations appeared within the experiential and existential scales themselves, the relationship *between* these sets of scales was of particular interest, due to the fact that the Study 1 interviews suggested that the meaning that the creative process holds for the individual is strongly related to the nature of the experience of the process, as described in section 4.3.

A number of significant relationships were discovered between the experiential and the existential scales. The Distinct Experience scale correlated with all three of the existential scales. The correlation was found to be particularly strong with the Centrality and Transformation scales. The Anxiety scale correlated with the Centrality scale, while the Absorption scale displayed strong correlations with all of the existential scales. The Power/Pleasure scale also correlated with all of the existential scales, but the correlation was strongest with the Beyond the Personal and the Centrality scales. The Clarity/Preparation scale displayed small correlations with the Transformation and Centrality scales.

6.4.3 Consideration of Findings and Discussion in Relation to Previous Literature

The current section is divided into three sections: a consideration of the overall ratings on personality and psychopathology measures; a consideration of ratings between different artistic mediums; and, finally, a consideration of the relationship between the personality and psychopathology measures and the experiential/existential dimensions of artistic creativity.

6.4.3.1 The Personality and Psychopathology Measures

Although not the central focus of the study, it is of interest to consider the ratings on the personality and psychopathology measures in the current artist sample.

The five-factor model of personality

The current findings are consistent with previous research reviewed in Chapter 2 concerning the relationship between 'normal' personality and creativity. Further evidence is provided that the Openness to Experience domain of the FFM is of particular relevance to artistic creativity. This domain was the most elevated of the five domains compared to norm data. This finding is particularly noteworthy, given that the questionnaire used to assess the FFM in the current study was based on the more narrowly defined Openness domain of the Big Five tradition, in contrast to McCrae and Costa's (1987) FFM. The finding of elevated Openness may have been even stronger if McCrae and Costa's (1987) scale had been used. A number of studies have also suggested that neuroticism as a general personality construct is related to creativity, particularly to artistic creativity (Barron, 1972; Bakker, 1991; Hammond & Edelmann,

1991; Jamison, 1993; Kemp, 1981; Marchant-Haycox & Wilson, 1992). The finding of elevated Neuroticism in the current sample provides further weight to this association.

The finding of elevated Openness and Neuroticism is reinforced by the fact that the current artist sample was substantially older than the norm sample. There is some evidence that ratings on these measures decline with age, particularly after the age of 30 (see Roberts, Robins, Caspi, & Trzesniewski, 2003; Srivastava, John, Gosling, & Potter, 2003). Therefore, it is possible that the finding might have been even stronger with a norm group matched for age. A similar point can be made with regards to gender. Openness and Neuroticism are both scales on which females generally score higher than males (e.g., see Srivastava et al., 2003). The norm group consisted of a substantially higher percentage of females (83%) than the current sample (57%). Therefore, the fact that the current sample scored significantly higher on these measures despite the gender imbalance between the two groups provides confidence in the finding of elevated Openness and Neuroticism in the current artist sample.

As reviewed in section 2.3, a number of studies have suggested a link between creativity and mild social deviance (e.g., Welsh, 1975; Garwood, 1964), as well as personality characteristics such as aloofness, unfriendliness, arrogance, and lack of warmth (e.g., Bachtold & Werner, 1972; Feist, 1993; Marchant-Haycox & Wilson, 1992). Based on these findings, one would expect the FFM domains of Conscientiousness and Agreeableness to be low in the current sample. This was not found to be the case, providing counter-evidence to the notion that creativity is associated with social deviance or hostility and related personality traits. However, the findings are not inconsistent with the possibility that these characteristics are in fact related to eminence rather than to creativity *per se* (see section 2.3) due to the fact that the sample was composed mainly of non-eminent artists.

Mental boundaries

The current findings reinforce previous research suggesting that artists are characterised by thin mental boundaries, as defined by Hartmann and colleagues (Hartmann, 1991; Hartman et al., 1987). This finding is strengthened by the fact that females were more highly represented in the comparison group (74%) compared to the current sample (57%), because there is evidence to suggest that females tend to display

thinner boundaries than males (see Hartmann, 1991; Rawlings, 2001-2002). That is, thin boundaries may already have been elevated in the comparison group due to the high composition of females in that group and therefore a significant difference between the groups indicates a strong finding. In addition, there is some preliminary evidence that boundaries become thicker with age (Hartmann, 1991). Therefore, the fact that the mean age of the comparison group (19 years) was lower than the mean age of the current sample (35 years) lends further support to the finding of thin boundaries in the current sample.

The particular aspects of the boundaries construct displayed in the current sample were a decreased need for order, clarity, and precision, not placing much importance on discipline, and placing value on childlike qualities. The decreased need for order, clarity, and precision is consistent with previous research indicating that creativity is associated with a high tolerance of ambiguity. Instead of a push towards closure, which would seem to be integral to a need for order, the creative person seems to be characterised by openness, in the most inclusive sense of the term. This is reflected in the Study 1 findings, which indicated that an important part of creative experience is remaining receptive to ideas for the artistic activity as it unfolds and to avoid 'forcing' or demanding its emergence. Indeed, the loss of sense of control that can characterise this aspect of the process is related precisely to remaining 'open' and not prematurely imposing order or form.

The value placed on childlike qualities displays conceptual similarities with the experiential aspects of the creative process of remaining receptive and of the central role of exploration and discovery, as described in Study 1. Although risking romanticising the connection with childlike qualities, there is a certain innocence, even naiveté, in the attitude adopted towards the artistic activity. In the common "yearning for harmony" (p.xix) in art and religion, Coleman (1998) sees a desire to return to the condition of the child, which he characterises as a state of relative harmony or tranquillity due to its inherent unity. The Study 1 findings were consistent with this view (see section 5.2.1). Artistic creativity seems to involve an attempt to escape the complex divisions inherent to adult, self-conscious psychological life – an escape which both commentators and artists themselves associate with childlike qualities.

Schizotypy

There is substantial empirical support for the notion that creativity, particularly artistic creativity, is associated with schizotypy (see section 2.4). The 'positive symptom' aspect of schizotypy has been found to be of particular relevance to this association. The current findings provide further support for this connection, with the Unusual Experiences scale of the O-LIFE (Mason et al., 1985) being considerably elevated compared to norm data. Possible reasons for the association between schizotypy and artistic creativity are considered below in relation to the association between schizotypy and experiential aspects of the creative process.

The current sample and the norm group were closely matched with regards to age and gender ratio. Mason et al. (1995) examined the norm data used in the current study according to age group. They found that scores on the Unusual Experiences scale were lower in an over-25 age group compared to a below-25 age group, a pattern that is also apparent in Mason and Claridge's (2005) findings. Therefore, given that the mean age of the current sample was 34.69 years, this reinforces the current finding of elevated positive schizotypy.

Affective disturbance

As reviewed in Chapter 2, strong evidence exists for a connection between affective disturbance, particularly bipolar disturbance, and artistic creativity. The measure of affective disturbance used in the current study, the GBI, can be scored in a number of different ways. Dichotomous scores on the measure indicated significantly elevated levels of depression in the current sample, consistent with previous studies. The dichotomous hypomania/mania + bipolar score was greater than norm data, but this difference did not reach statistical significance. Both sexes were equally represented in the norm data, while the current sample consisted of a slightly larger percentage of females (57%) than males (43%). Given the well-established finding of females being more prone to depression than males (e.g., Goldman & Ravid, 1980; Nolen-Hoeksema, 1987; Weissman, Leaf, Holzer, Myers, & Tischler, 1984), it is possible that the overall elevation of depression in the current sample may have been influenced by the gender ratio. However, the fact that males rated higher than females on both depression and hypomania/mania + bipolar scores argues against this interpetation of the findings. Although there was a considerable difference in age between the norm group (modal

age of 18 years) and the current sample (mean age of 35 years), epidemiological studies do not indicate a substantial difference in rates of depression between these age groups (e.g., see Bland, 1997; Horwath & Weissman, 1995; Keller, 1994).

When results were analysed according to the case-scoring method, which provides a trait-based index of probable affective disorder, a large number of both unipolar and bipolar affective cases were identified. In fact, bipolar cases were particularly strongly represented in this analysis. In a comparison with two other studies using the GBI in non-clinical samples not selected for high creativity (Depue & Klein, 1988; Shapiro & Weisberg, 1999; see Table 6.11), the current sample displayed a high percentage of both unipolar and bipolar cases. Using fairly inclusive diagnostic categories, Akiskal and Mallya (1987) estimate that 4-5% of the population may be at risk of developing a bipolar-spectrum disorder, while Myers et al. (1984) identify the general prevalence rate for bipolar disorder as being at about 1% of the population. Clearly, the 18% identified in the current study (which is also based on fairly inclusive categories) is considerably larger than these figures. Similarly, the 25% of the current sample identified as probable affective 'cases' is substantially greater than the 4.5% of the general population who self-reported suffering a mood disorder in a recent Australian national health survey (AIHW, 2004).

On this issue of prevalence of affective disturbance in the current sample, it is of interest to examine the numbers of participants who recorded having pursued mental health treatment. 19 of the 96 participants (19.79%) who answered this question reported having received treatment for affective disorders (15 for depression and 4 for bipolar disorder). This figure excludes the 4 who reported having received treatment for depression *and* anxiety and the 5 who reported having received treatment but did not report the reasons for this treatment. As it is generally accepted that prevalence rates exceed treatment rates, this figure is another indication of the high prevalence of affective disturbance in the current sample compared to the general population prevalence rates cited above. However, this statement needs to be balanced by the possibility that artists may be more willing to pursue psychotherapy due to factors such as being well-informed, being motivated to improve mental health, psychological-mindedness, sensitivity, and willingness to engage with emotional states (see Rothenberg, 1990). This latter point is of course based on the assumption that the

mental health treatment pursued by participants consisted wholly or in part of psychotherapy, as opposed to consisting entirely of medication.

The discrepancy between the indications of the dichotomous and the case-scoring method of the GBI (i.e., the former did not indicate a significantly elevated bipolar score, while the latter did indicate a considerable number of bipolar cases) leads to a consideration of the difference in these scoring methods. The case-scoring method is a two-dimensional scoring system that takes depression into account, rather than being based purely on items that reflect lability of affect or hypomanic/manic features, as in the dichotomous bipolar score. Therefore, the findings suggest that the occurrence of bipolar disturbance in this artist sample is composed of a considerable element of depressive symptoms – it is only when these symptoms are taken into account that the findings indicate an elevation of bipolar disturbance compared to norm data. This is consistent with the significant elevation of the dichotomous depression score.

Indeed, the argument that hypomania is particularly associated with creativity is not borne out in the current findings. The case-scoring method of the GBI identified no hyperthymica cases and ratings on the subset of mainly hypomanic GBI items identified by Shapiro and Weisberg (1999) as the strongest predictors of creative performance were not elevated compared to the other GBI items. The fact that the hypomania/mania + bipolar score was not significantly greater than norm data also indicates this. This finding is contrary to previous findings that emphasise the role of hypomanic features in creative activity (e.g. Schuldberg, 2000-2001a; Shapiro & Weisberg, 1999). It is also inconsistent with the proposition that behaviours or traits associated with creativity 'mask' as hypomanic symptoms, as suggested by Shapiro and Weisberg (1999). However, it should be noted that the measurement of hypomania/mania in the current study was limited to a single, slightly indirect, measure of the construct.

Overall, the current findings do not give particular emphasis to bipolar/hypomanic features, pointing instead to the significance of depressive features. This suggests that, while much previous research has focused on the role of hypomanic/manic states (see section 2.4), it would be apposite to further consider the role of depression in the relationship between creativity and affective disturbance. However, with regards to the focus of the current inquiry, depression and bipolar/hypomania did not display a

markedly different pattern of relationship with experiential and existential features of creativity, as discussed below.

It is noteworthy that many of the studies that point towards a particularly strong association between creativity and hypomania have used 'normal' samples (generally student populations) not selected for creativity (e.g., Schuldberg, 1990, 2000-2001a; Shapiro & Weisberg, 1999). It is possible that the association these studies find between hypomania and creativity is not specific to creativity. That is, hypomanic traits in a normal population might facilitate performance on a range of tasks, including creative performance, due to the sense of confidence and speed of cognitive processing associated with hypomania. This might be termed the 'bright-eyed, bushy-tailed' hypothesis – normal individuals who are highly energised and engaged with their environment (at a sub-clinical level) might display enhanced performance on a range of measures. Similarly, when the measure of creativity is a self-rated measure of creative personality (as in the Shapiro & Weisberg (1999) study and one of the stronger correlations in the Schuldberg (2000-2001a) study), an individual with hypomanic traits may rate higher than others due to the self-confidence and self-aggrandizement that can characterise hypomania/mania. As creativity is culturally endorsed as a positive, desirable characteristic, such individuals may either exaggerate, be more aware of or be more willing to acknowledge their creative traits, especially compared to individuals with some depressive traits. This line of argument leads to the suggestion that hypomania is more relevant to everyday creative ability, which might not necessarily find expression in the form of creative achievement or occupational role, than to culturally recognised creative activities. This raises the ongoing issues in creativity research of differences between trait and achievement creativity, the care that needs to be taken in how creativity is assessed, and cross-study conclusions based on divergent methods of assessing creativity.

Creativity-affective disturbance research has tended to suggest an inverted-U model of the relationship between creativity and bipolarity, as discussed in section 2.4. This model suggests that subclinical levels of bipolarity are most strongly related to creativity. How do the current findings relate to this model? This issue can only be addressed tentatively because the measure used in the current research is not sensitive enough to address it with confidence. However, according to the model, one would expect a

greater concentration of cyclothymic cases than more extreme bipolar cases in the current artist sample. This was not found to be the case, with 7 participants in the predominantly hypomanic cyclothymic condition and 11 in the more extreme bipolar condition. Additionally, the model would predict a build-up of cases around the cut-off points for cases of clinical relevance, because it predicts the greatest creativity to reside at subthreshold levels. However, as represented in Figure 6.5, this was not found to be the case. Therefore, although the current findings are consistent with the notion of creativity being associated with elevated unipolar and bipolar disturbance, the inverted-U model of this relationship is not apparent.

The combined effect of elevated Neuroticism and Openness in artist samples, as in the current sample, might lead to heightened sensitivity to stimuli. This sensitivity, combined with a willingness to engage with and express emotional states, might possibly inflate rates of affective disorder amongst artists. The notion of a relationship between heightened sensitivity and affective disturbance amongst artists is consistent with experimental research into attention and affect in creativity. Martindale (1999) and Runco and Sakamoto (1999) review research that indicates that creative people tend to be oversensitive to stimulation, have a broad attentional focus, habituate slowly, show greater variability in arousal, withdraw to reduce stimulation, and seek out controlled, task-focused stimulation to compensate for this withdrawal (see Mumford, 2003a). These personality features and characteristics relating to arousal levels may contribute to affective disturbance amongst artists.

In sum, the findings indicate that high affective disorder, both unipolar and bipolar, is present in this artist sample. However, they indicate that it is only when taking depressive symptoms into account that elevated bipolar disturbance is apparent. This is consistent with the fact that the findings do not support the emphasis that has been placed in the literature on the role of hypomania/mania in creativity.

General comments: the possible influence of 'role playing' and other factors

It is possible that factors other than the construct being measured influenced responses on the psychopathology measures used in the current study. For instance, it is possible that responses on both the schizotypy and affective disturbance measures may have been affected by responding to the items as if they related to creative-type experience

rather than to psychopathology, despite the clarity of the instructions provided. This may have been the case due to the questionnaires being presented in a single pack; the first questionnaire (the ECQ) being related to creative experience, and therefore having a priming-type effect on participants; or because participants were aware that creativity was the main focus of the study, particularly given the fact that they were participating on the basis of their status as artists.

A more plausible factor influencing participants might have been the temptation to 'role play'. The eccentric or 'mad' creator is such a pervasive cultural image, as discussed in Chapter 2, that it may influence how artists portray themselves, including in responses to questionnaires. It is possible that this may have instinctively motivated participants to rate themselves highly on measures of schizotypy and affective disturbance, both of which fit in with this cultural image. Indeed, high ratings on the personality domains of Openness and Neuroticism are also consistent with this image. The high correlations between the schizotypy and the affective disturbance measures are also consistent with this argument: it is possible that participants were trying to portray themselves as 'different from the norm' in whatever way possible (i.e., whether in the form of schizotypal characteristics or affective disturbance), a point which needs to be balanced by the fact that schizotypy and affective disturbance, particularly hypomania, also correlate in the normal population (e.g., see Bentall et al., 1989; Goren, 2002).

As with the possibility that participants responded to all questionnaires as if they related to creative experience, the possibility of 'role playing' may have been encouraged by the fact that they were participating on the basis of their status as artists. Although Schuldberg (2000-2001b) notes that role adherence may in fact be less operative in sub-eminent than eminent creative individuals, as in the current study, and that the phenomenon of role adherence may be inescapable in any behaviour or level of measurement, these points are not entirely reassuring. It is plausible that sub-eminent artists may in fact enthusiastically adopt prominent cultural images of 'the artist' as a means of attempting to communicate or reinforce a self-image. While it is true that role adherence and conformity are powerful factors in most behaviours, a notion reinforced by a substantial body of research in social psychology, as in Goffman's (1959, 1967) work, it is possible that this is particularly operative in the area of the creative arts, given the strength of the cultural image and the flamboyance of its manifestations. Schuldberg

(2000-2001b) suggests the potential usefulness of social desirability scales in order to pick up on whether participants are susceptible to role-playing. However, given that artistic roles are generally associated with rebelliousness and deviance and that social desirability scales are geared towards identifying social normative processes, it is unlikely that individuals depicting themselves in accordance with artistic roles (either deliberately or automatically) would be identified by such scales, apart from, possibly, in a negative direction. Therefore, the implications of Schuldberg's (2000-2001b) report of a lack of correlation between his own data relating to paper-and-pencil creativity measures and the Minnesota Multiphasic Personality Inventory-2 (Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989) version of Edwards' (1970) Social Desirability scale are limited.

The issue of role-playing is of course a highly complex one, as indicated by the above considerations. It possibly needs to be approached not merely as a factor that should be 'controlled for' in research, but as a factor that might in fact be fairly significant in research into the relationship between creativity, eccentricity, and psychopathology. The issue tends to be regarded as one of pretence or exaggeration, as described above. This is indeed implicit in the phrase 'role-playing'. However, the cultural image of the eccentric or mad creator detached in one way or another from the quotidian world may 'allow' the individual to experience and express aspects of himself or herself that might otherwise be avoided or defended against. In other words, this cultural image may offer a form of legitimisation of unusual states or experiences in the individual. This line of thinking leads to the hypothesis that the artist is not necessarily more deviant (along whatever dimension) than others, but adopts cultural *personas* that encourage him or her to experience and express various forms of deviance. Indeed, the exploration of human potential in its varied forms is a notion that is commonly attached to artistic endeavour. This notion is reflected in the Study 1 finding of deepening engagement with the life-world being a common characteristic of the existential dimension of artistic creativity. According to this approach to the issue, it is perhaps more accurate to replace the term 'deviance' in this context with 'potential'. To further complicate the picture, this legitimisation of the exploration of the varieties of human potential may encourage the emergence of genuinely pathological elements within the individual. Of course, a circular, self-reinforcing dynamic such as this might also apply to adaptive or healthy aspects of the individual.

To turn attention to another methodological aspect of the current study, it is possible that the recruitment advertisement attracted individuals who are inclined towards schizotypic experiences or emotional distress, thus leading to a selection bias. Although psychopathology or mental or emotional distress were not mentioned in the advertisement (which simply referred to 'aspects of personality', 'attitudes', 'feelings' and 'experiences'), it is possible that its mention of psychological and emotional states may have attracted such individuals, or at least a disproportionate number of individuals who are at least intrigued by their own psychological or emotional state. This is reminiscent of Rothenberg's (1990) concerns regarding several seminal studies relating artistic creativity to affective disturbance (see section 2.4). He speculates that participants might have been attracted to such studies because they subscribed to the notion of a connection between creativity and psychopathology or because they were seeking some sort of psychiatric evaluation.

As indicated above, a general issue in the measurement of traits and behaviours in an artist sample is whether such a population is more sensitive to and aware of subjective experiences, and therefore more likely to report these experiences. In other words, the elevation in ratings on such measures as schizotypy and affective disturbance may be related more to awareness of experience and willingness to report on such experiences than to substantially higher rates of such experience. At the least, such factors may have a compounding effect: that is, they may further elevate what may already be elevated levels of schizotypy and affective disturbance.

Despite these possibilities, the consistency of the findings of elevated positive symptom schizotypy and affective disturbance associated with artistic creativity across studies with different designs and samples is good reason to believe that the current findings reflect a true elevation of these constructs amongst artists. It would be unlikely that a factor such as 'role playing' pervades results from all of these studies, particularly those that have operationalised creativity by using methods other than occupational role (e.g., Schuldberg, 2000-2001a). The fact that both elevated schizotypy and affective disturbance were evident in the current sample suggests that artistic creativity may not be more specifically related to one of these dimensions than the other, but that it may be more appropriate to think of artistic creativity as associated with non-specific deviation.

This suggestion is consistent with Schuldberg's (2000-2001a) finding of creativity being associated with a variety of subclinical traits, including both positive schizotypal symptoms and hypomanic characteristics (although depression did not emerge as being positively correlated with creativity in his study). This conclusion supports not making any 'either-or' distinctions between the affective and schizophrenia spectrums in relation to creativity, as discussed in Chapter 2, but focusing instead on points of commonality and interaction between these spectrums.

6.4.3.2 Differences Between Artistic Mediums

As indicated in Chapters 2 and 3, previous studies have not only looked at artistic creativity as a general construct but have also examined the different artistic mediums. Therefore, although not a central concern of the current thesis, it is also of interest to examine these sub-discipline differences.

The artistic mediums examined in the current study included musicians, visual artists, and writers, with each of these broad categories composed of more specific sub-categories (refer to section 6.3.3.1 for details). The findings indicated that the ECQ scale scores did not vary significantly by artistic medium. This suggests a general similarity in the way that the creative process is experienced and the meaning found in the creative process between different types of artists.

The five-factor model of personality

There were no significant differences between mediums on the FFM of personality. This indicates a general similarity in these domains of personality amongst artists of different sorts, with high Openness and Neuroticism being characteristic of artists in general. However, there was a trend towards musicians being less neurotic than writers and visual artists. Similarly, although only a trend rather than a significant finding, musicians were found to rate lowest in schizotypy, followed by visual artists and then writers.

Comment: perhaps i should expand this to include other artists also...

Mental boundaries

The pattern of visual artists and writers rating above musicians reached significance on the personality dimension of mental boundaries. Specifically, writers were found to have thinner boundaries than musicians. On the particular dimensions of the mental boundaries construct, writers were found to rate significantly higher on both Unusual

Experiences and Childlikeness. The former finding is consistent with the trend noted on the schizotypy measure. The latter finding suggests that writers value the importance of remaining child-like more than musicians.

Comment:

Hartmann (1991) suggests that different types of arts and different artistic situations may require different mixes of thin and thick boundaries. He suggests that arts based around an inspirational moment, providing the example of a painter or lyric poet dashing off a piece after being inspired by a new vision, may be associated with thin boundaries, whereas arts that require a greater degree of composition and structural skill may be associated with thicker boundaries. The current findings do not support this particular correspondence between types of arts and thick or thin boundaries. Although one would expect writing to require a fair degree of organisation and structural skill, writers displayed the thinnest boundaries of the artist groups. Another point of divergence with Hartmann's (1991) suggestion involves considering the different artist groups in relation to the 'flow' state. One would expect the 'flow' or zone state described in the Study 1 findings to be associated with thin boundaries due to the fact that this state involves the dissolution of various types of boundaries, such as those between rational and intuitive processes and between sense of self and surroundings (see section 5.1). The association between the 'flow' state and thin boundaries is supported by the high childlikeness found in the writers group, who demonstrated the thinnest boundaries. As discussed in Chapter 5, there are many points of contact between the concept of childlikeness and the 'flow' state, particularly with regards to the loss of self-awareness and the dominance of intuition. Study 1 indicated that live performers try to maintain the 'flow' state for as long as possible compared to artists who construct their artwork over a longer time-period. When the artwork takes place in a highly focused, limited time-period, the concentrated immersion of the 'flow' state seems to be of greatest value to the artist. In the current study, live performers were most strongly represented in the musician group. Following this logic, one would expect that musicians would be elevated on thin boundaries compared to the other artist groups. However, this was not found to be the case.

Certainly, these observations indicate that there is no straightforward relationship between different artistic mediums and mental boundaries. The inspiration-thin boundaries, composition-thick boundaries model proposed by Hartmann (1991) is not

supported. One must be cautious not to overly simplify the processes involved in different artistic pursuits – for example, by making an easy equation between music performance or poetry and inspiration or between novel-writing and analytical, compositional work. There is a subtle combination of different processes involved in all of these art forms, as illustrated in the Study 1 findings.

In order to further investigate the relationship of mental boundaries to different types of artistic activity, it would be revealing to compare boundaries between more specific groupings than those used in the current analysis (for example, by comparing poets with novelists, and so on) and also to approach the issue not so much on the basis of medium but of different groupings of processes or skill-sets across mediums. For instance, improvisational artistic creativity might be compared with artistic activity that requires greater compositional work, a dimension that crosses the division of artistic medium. As discussed in relation to Study 1, the dimension of the time-period of artistic activity can be useful in this regard, because it seems to capture a number of experiential differences between artistic mediums (see section 5.1). As reported above, there is some preliminary evidence in the current findings that artistic activity conducted in a focused, limited time-period is not related to thin boundaries.

Affective disturbance

A similar trend was noted with regards to affective disturbance. On both the depression and hypomania/mania + bipolar continuous measures of the GBI, writers were found to rate significantly higher than musicians, with visual artists rating between these two groups. Although it did not reach statistical significance, a similar pattern was found on the case-identification method of the GBI. This method indicated that writers were particularly prominent in bipolar conditions in which depression plays a stronger role, as opposed to milder bipolar conditions with predominantly hypomanic features. The finding of writers suffering the highest level of affective, particularly bipolar, disturbance is consistent with a number of seminal studies relating artistic creativity to affective disturbance, which have mainly used writers as participants (e.g., Andreasen, 1987; Andreasen & Canter, 1974; Jamison, 1989, 1990). Consistent with this, Jamison (1993) notes that the poets in one of her studies regarded manic-type mood states to be more essential to their artwork than other groups of artists. Indeed, the artistic creativity-affective disturbance link has been founded on studies of writers, although elevated

affective disturbance has also been found in other artist groups (e.g., Ludwig, 1995; Wills, 2003).

It was suggested in Chapter 2 that the creativity-mood disorder hypothesis needs to be tested beyond the domain of literary creativity. An examination of the dichotomous depression scores by medium indicated that it was only the writers and visual artists groups, particularly the former, that were significantly elevated compared to non-clinical norm data. Musicians were in fact found to score significantly lower on the dichotomous bipolar measure than norm data. These findings indicate that the overall elevation of affective disturbance in the current sample is attributable to a large degree to the writers in the sample, with musicians displaying a decided lack of affective disturbance. This suggests that the strong relationship found in many previous studies between artistic creativity and affective disturbance may be partly due to the fact that these studies mainly used writers as participants. On the basis of the current findings, visual artists display only a mild elevation of affective disturbance, while significant affective disturbance is absent amongst musicians. This points in the direction of questioning the *general* association between artistic creativity and mood disorder made in the literature, or at least noting that it may be less marked than previous commentators have proposed, and further addressing the reasons for a particular association between literary creativity and affective disturbance. However, these comments need to be moderated by recognition of the reasonably small sample sizes representing each medium in the current study, and the consequent loss of statistical power in some analyses. Research using larger sample sizes representing each medium needs to be conducted in order to further investigate these theoretical issues. Qualitative research guided by the question of reasons for affective disturbance amongst writers would also be of value. Certainly, the isolative characteristics that tend to be associated with writing might be related to the prominent affective disturbance amongst this population. The question of whether affective disturbance, and the putative isolation associated with this, leads the individual towards writing or whether writing prompts affective disturbance, or whether there is a circular, self-reinforcing relationship between these variables, remains unclear.

General comments on group differences

Taken together, this pattern of results indicates that musicians rate lowest and writers, and also on some measures visual artists, rate highest on measures that suggest susceptibility to mental or emotional disturbance, including neuroticism, thin boundaries, schizotypy, and both unipolar and bipolar affective disturbance. In fact, although musicians do not display significant divergence from norm scores on these measures, the consistency of the pattern of musicians, visual artists, and then writers across all of these measures is striking. It leads to a consideration of whether there was a sampling bias towards greater disturbance or deviance of a generalised nature in the writers group compared to the other groups. However, artists of different mediums were gathered in similar fashion, with a similarity in age and status (professional versus non-professional) between the different mediums. Therefore, there is no persuasive reason to believe that the consistent difference between artists of different mediums was due to a sampling bias.

Compared to writers and visual artists, there is normally a greater differentiation in the area of music between those who compose a work and those who perform it. Most of the musicians in the current sample identified themselves as performers, which was not the case in the other categories. Pathology of most kinds, perhaps especially anxiety-related pathology, is likely to be anathema to various forms of public performance, whether it be in sport, public speaking, or musical performance. It is possible that the performance situation 'selects' individuals who are less susceptible to mental or emotional disturbance, which leads to the hypothesis that the elevated levels of disturbance noted amongst artists in general would also be evident in non-performing musicians. This could not be tested in the current sample due to the insufficient number of non-performing musicians. The suggestion of a negative association between performance and pathology is in need of further investigation.

6.4.3.3 The Relationship Between Personality and Psychopathological Features and Experiential and Existential Dimensions of Artistic Creativity

This section will proceed by firstly considering the personality and psychopathology measures that demonstrated the strongest relationship with experiential and existential dimensions of artistic creativity, as assessed by the ECQ scales. The section assumes, for the purpose of enabling discussion of explanatory processes, that the personality and

psychopathology measures were involved in producing, in some way, the experiential and existential dimensions. This comprises most of the section. It is followed by a consideration of the opposite direction of presumed causality – that is, the possible impact of the experiential and existential aspects of creativity on personality and psychopathology. Finally, the issue of the relationship between the experiential and the existential dimensions will be briefly considered, focusing particularly on the possible impact of the experiential dimension on the existential dimension.

a) Personality and psychopathology correlates and predictors of experiential and existential aspects of creativity

The experiential dimension

Distinct Experience

The first experiential scale, Distinct Experience, related to the experience of the creative process as being a decided *shift* in experience. This change in experience included such aspects as a loss of self-awareness, a breakdown of boundaries, a sense of contact with a force beyond the individual self, and a confidence and effortlessness about the artistic activity. There was generally a subjective heightening or intensification associated with this state – of affect, awareness, and technical and expressive abilities – but it was also associated with a stabilisation of emotional state. Clearly, this is quite a broad factor, which is reflected in the fact that it correlated with a variety of personality and psychopathology constructs. However, the strongest association (indeed, the only independently predictive relationship) was found with schizotypy.

There is certainly conceptual overlap between the unusual experiences dimension of schizotypy measured in the current study and the 'distinct experience' aspect of creative experience. The shift towards a 'heightened' state of experience that is characteristic of the Distinct Experience factor is present in the unusual experiences aspect of schizotypy. Indeed, both the unusual perceptual experiences and magical beliefs that constitute the unusual experiences dimension of schizotypy, particularly the former, presuppose a tendency for distinct shifts in experience – shifts away from cultural norms associated with perception and beliefs. The findings suggest that, for individuals high on this dimension, the creative process is included within this set of experiential shifts. That is, the artistic creative process may be experienced by artists within the schizophrenia

spectrum as a distinct shift in experience, akin to unusual perceptual or cognitive experiences.

As mentioned in section 2.4, most notably in relation to Sass' (1992, 2000-2001b) work, many aspects of psychotic-type experience can be identified in modern and postmodern art. These include an adversarial stance, perspectivism and relativism, a certain fragmentation and passivisation of the ego, loss of the "worldhood of the world", rejection or loss of the sense of temporal flow or narrative unity, forms of intense self-reference, and extreme and pervasive detachment or emotional distancing. Unfortunately, the small number of participants who categorised their particular style of artistic activity (i.e., romantic, modern, etc.) prohibited an analysis of whether schizotypal experience, and indeed affective disturbance, is associated with particular styles of creative expression. Therefore, although the current findings reinforce the notion that psychotic-type experience, particularly those aspects associated with positive symptoms, is associated with artistic creativity, they do not have bearing on the particular association drawn by Sass (1992, 2000-2001b) between psychotic-type experience and modern and postmodern art and the greater relevance of bipolar experience to romantic art.

Although the specificity of the relationship between schizotypy and the Distinct Experience aspects of creative experience is being emphasised here, it is important to note that there was a considerable degree of commonality in the constituents of the Individual Structures, which formed the basis of the construction of the ECQ (see section 5.1). Therefore, although the ECQ scales represent different aspects of creative experience, they are likely to be present in many instances of artistic creative experience. This is particularly the case for the stronger factors, such as Distinct Experience. Indeed, a number of the constituents of the General Structure, which provided an account of the common features of creative experience amongst the artists sampled in Study 1, signal the changes in experience represented in the Distinct Experience scale. The commonality of this scale is also represented in the significant correlations of a number of the measures (including schizotypy, thin boundaries, and unipolar and bipolar affective disturbance) with the Distinct Experience scale.

If indeed the elements represented by the Distinct Experience scale are reasonably common aspects of artistic creative experience, this leads one to consider whether schizotypal individuals are drawn towards and have a particular affinity with artistic creative experience. Such individuals may be highly suited to artistic creativity because of the similarity of major aspects of schizotypal and creative experience. This hypothesis is of course consistent with the theories outlined in Chapter 2 that draw parallels between psychotic and creative cognitive processes. It is also consistent with the notion that artists may cultivate schizotypal-type experience in order to facilitate the creative process, as indicated in Rimbaud's statement that poetry must proceed by a "systematic derangement of the senses". Such "derangement" may come naturally to the schizotypal individual.

Anxiety

The second experiential scale, Anxiety, related to a sense of anxiety and vulnerability to the experience of the creative process, particularly after the completion of the process. The strongest predictors of this scale were schizotypy and Neuroticism. However, unipolar and bipolar affective disturbance also displayed moderate correlations with this scale. The non-schizotypy related dimensions, particularly the 'big five' personality and affective disturbance dimensions, displayed their strongest correlations with this scale. The association of this scale with Neuroticism was anticipated due to the expectation that general neurotic characteristics would infuse the experience of the creative process.

The fact that schizotypy predicts anxious features associated with creative experience consolidates one aspect of the interpretation of the Study 1 findings. Study 1 found that the creative process can, in addition to an excited, driven affective state, be characterized by a sense of vulnerability or emotional fragility. This seems to emerge from the sensitivity and loss of sense of control over self felt during the process. It was proposed that the loss of personal boundaries, and associated ego defences, during the creative process may expose the individual to psychological conflicts or disturbing primary-process material. The loss of personal boundaries and sense of control are represented in the Distinct Experience and the Absorption scales, both of which were strongly associated with schizotypy. Therefore, the fact that schizotypy is associated with each of the Distinct Experience, Absorption, and Anxiety scales reinforces the link between anxious or vulnerable features of creative experience and the other aspects of

creative experience described above. This association is also supported by the significant correlations between these three scales. The schizotypal individual is prone to experience the creative process as a shift in experience and become deeply absorbed in the creative process, constructs that encompass the sense of unity and loss of personal boundaries and sense of control described in Study 1, and therefore experience the sense of anxiety or vulnerability that can accompany these aspects of creative experience.

The association between the Anxiety scale and affective disturbance suggests that individuals who experience affective disturbance of both a unipolar and bipolar variety experience the creative process as being marked by anxiety and a sense of vulnerability. This reflects the general association noted in clinical and non-clinical populations between mood disturbance and anxiety (e.g., see Craig, 1996; Maes, Meltzer, Cosyns, & Schotte, 1994). As reviewed in Chapter 2, several authors have suggested that depression, especially in its milder melancholic forms, may promote a cooler, editorial approach to the artistic activity, in contrast to the driven approach of the hypomanic state (Hershman & Lieb, 1988; Jamison, 1993). However, the association between depression and the Anxiety scale suggests that rather than "subdu(ing) and focus(ing) thought" (Jamison, 1993, p.118), depression is associated with an anxious, unsettled experience of artistic activity.

The opinion that negative affective states can stimulate creative work as a means of finding relief from such states was also noted in Chapter 2 (see Jamison, 1993; Storr, 1972). This 'relief' may be in the form of an escape from or cathartic release of pain; the artistic activity as providing structure to chaotic emotions and thoughts; or the artistic activity as numbing pain through abstraction and the rigours of disciplined thought. If this were the case, one would expect the sense of relief to be reflected in experiential aspects of artistic activity – for example, as the experience having a soothing, calming quality. In contrast, the pattern in the current findings of neuroticism and affective disturbance being associated with the Anxiety scale indicates that the experience of artistic activity is itself marked by negative affect, rather than the experience being an escape from or purging of such negative affective states. However, this should not be taken as a total discrediting of the notion of creativity as relief from negative affective states. It may be the case that this sense of relief is experienced more as a delayed

reaction to the artistic activity rather than as a feature of experience while engaged in the activity or shortly afterwards, which were the temporal dimensions measured in the ECQ. Indeed, an examination of the correlations with the ECQ item that reflects the notion of 'creativity as relief' most closely (Item 21: 'The creative process made me feel more secure, as though it was 'containing' my volatile emotional / mental state') indicated moderate to high correlations with depression (r = .79), bipolar (r = .62), and Neuroticism (r = .43). Although interpretation of single-item correlations must necessarily be limited, this finding suggests that artistic activity may be associated with both anxiety *and* relief from negative affective states. The item identified above does not specify time period, so the proposition that the creative process provides longer-term or delayed relief for affectively disturbed individuals, while the process itself is characterised by anxiety, requires further investigation.

Absorption

The third experiential scale, Absorption, relates to being deeply absorbed in the artistic activity and experiencing a state of inspiration. A sense of freedom and close connection with the work and with self is present. Rather than having a clearly defined sense of the direction of the artwork, the scale includes a sense of discovery and being receptive to the emergent nature of the artwork. The strongest predictors of this scale were schizotypy, Agreeableness, and Extraversion (in a negative direction). However, thin mental boundaries are also associated with this scale, as suggested by the positive correlation between these two variables.

It is of interest to consider the association between schizotypy and the Absorption scale in relation to theories of psychosis. Many aspects of the Absorption scale relate to a sense of closeness and full presence with self and the artistic activity (e.g., "There was a sense of a 'closeness' to what I was producing, a greater than normal emotional connection with it" and "I had a sense of being 'in touch' with myself".) This stands in contrast with the sense of hyperreflexivity, alienation, and fragmentation that has been viewed by some commentators as a phenomenological characteristic of schizophrenic symptoms (e.g., Blankenburg, 1971/1991; Sass, 1992, 2000-2001b; Sass & Parnas, 2003). Rather than this latter account of schizotypal experience, the current findings are more consistent with the view prominent in many schools of psychoanalysis that schizophrenia-spectrum experience, at least in the area of creativity, is marked by forms

of symbiotic union or 'merging' (famously captured in Virginia Woolf's novel *Mrs. Dalloway*), although the regressive nature of the 'merging' experience advanced by most of these theories is not necessarily implied by the findings. The concept of the primary process, as discussed in Chapter 2, has been central to such accounts. This interpretation is consistent with the association of thin boundaries with the Absorption scale. However, it would be inaccurate to fit the schizotypy-Absorption scale relationship neatly into the symbiotic union/primary process model of psychosis. There are elements of the hyperreflexivity/fragmentation model that are also evident in the relationship. For instance, one element of this latter model is the rejection or loss of the sense of temporal flow (Minkowski, 1927; Sass, 1992, 2000-2001b), which is also present in the Absorption scale. Additionally, the sense of merging and loss of self are associated in conventional psychoanalytic psychopathology with manic-depressive phenomena as well as psychosis (both are associated with Freud's 'oral' stage (see Storr, 1972)), although a correlation was not found in the current findings between bipolar disturbance and the Absorption scale. It should be noted that these observations are based on a brief measure of one aspect of schizotypy in relation to creative experience, rather than a consideration of the full picture of frank psychotic experience.

Interestingly, the personality construct of absorption, commonly thought of as the capacity for total attentional involvement in a variety of sensory and experimental domains (Roche & McConkey, 1990; Tellegen & Atkinson, 1974), and which has clear similarities with the current Absorption scale, displays empirical associations with unusual phenomenological experiences (e.g. paranormal and parapsychological phenomena such as out of body experiences (see Roche & McConkey (1990) for a review)). This personality construct also correlates with alterations in attention, awareness, and imagery, as well as with alterations in the subjective experience of time, perception, body image, and meaning (Pekala, Wenger, & Levine, 1985). These correlates of absorption are conceptually related to the construct of unusual experiences, which is a core feature of the 'positive symptom' dimension of schizotypy, thus providing support for the association between schizotypy and the Absorption scale in the current findings.

Apart from the specific association between the absorption personality construct and schizotypy, there is some evidence for a link between absorption and creativity in a

general sense (e.g., Manmiller, Kumar, & Pekala, 2005). There is also substantial indirect evidence for this link. This includes evidence for an association between absorption and openness to experience (Rawlings & Freeman, 1997), fantasy proneness (Wilson & Barber, 1981; Lynn & Rhue, 1986, 1987, 1988), and desire and readiness for affective engagement (Roche & McConkey, 1990). As pointed out by Roche and McConkey (1990), the very constructs of imaginative involvement, absorption, and openness to experience overlap considerably. Indeed, Tellegen and Atkinson's (1974) description of absorption as a readiness for experiences of deep involvement, a heightened sense of the reality of the attentional object, an imperviousness to normally distracting events, and an appraisal of information in unconventional and idiosyncratic ways displays remarkable similarity with prominent features of the creative process, as outlined in the Study 1 findings. One would expect, based on the links made above, that the Absorption scale is a prominent feature of the experience of the creative process of individuals high in the personality dimension of absorption, a contention that requires empirical investigation.

Storr (1972) asserts that the desire to 'lose oneself' and to merge with a larger whole is a primary motive force for art. This, to use psychoanalytic terminology, is an expression of the remnants of the 'oral' developmental phase, while the 'anal' and 'phallic' phases are associated with other aspects of creativity. While the desire to 'merge' may be a general motivating force for creative activity, the current findings indicate that the *experience* of such merging and loss of self is most marked for particular personality profiles, including individuals with thin boundaries and schizotypal tendencies (the notion of 'merging' was also present in the Distinct Experience scale, which displayed a strong association with schizotypy). There may, of course, be additional individual differences associated with this 'merging' aspect of creative experience that have not been assessed in the current study.

The fact that thin mental boundaries correlates with the Absorption scale fits with the understanding of thin boundaries as involving a sense of merging, lack of defensiveness, letting other people in, and having vivid imagery sometimes indistinguishable from reality (Hartmann, 1991). These qualities would allow an individual to become immersed in the artistic activity and be willing to pursue emergent ideas rather than have the progress of the artistic activity determined at the outset –

elements of the creative process captured in this scale. The predictive power of Agreeableness is curious and is difficult to interpret without assessment of the various facets of this personality domain. However, it is likely that the trust and compliance aspects of this domain would contribute to the willingness to become absorbed in the process as it unfolded.

The Absorption scale includes a sense of a deep immersion in the creative process and loss of contact with external surroundings. This suggests a sense of being engaged with the internal world, of what Kemp (1996) refers to as 'living inwards' and Storr (1988) describes as the artist's characteristic intense concentration and preoccupation with their own inner processes, even in the company of others. Therefore, the negative association of this scale with Extraversion is explicable, given that the extraverted personality is defined by an orientation towards external surroundings and other people. So although low Extraversion did not characterise the sample of artists as a whole, it was found to be related to this aspect of creative experience.

The relationship between the Distinct Experience and Absorption scales of the ECQ is a point of interest. There is, as indicated above, some degree of overlap in the experiences that they represent – the 'merging' experience is present to some degree in both scales, for instance. This overlap is represented in the moderate correlation between the scales. However, the relationship between the scales may also be due to the experiences that each scale represents having a facilitative effect on the other. The shift in experience represented by the Distinct Experience scale may encourage the artist to become more deeply immersed in the process, as represented by the Absorption scale. Similarly, the degree of absorption in the process may encourage the sense of a distinct shift in experience. This latter suggestion is supported by experimental research into the experience of music-listening that suggests that 'high involvers' in music feel that music has a very strong effect on them compared to 'low involvers', who consider music-listening as a 'normal' everyday experience (Nagy & Szabo, 2004). A reciprocal relationship between these elements of the experience of creativity is also supported by the Study 1 findings.

Power/Pleasure

The fourth experiential scale, Power/Pleasure, relates to a sense of control, power, and pleasure felt during the creative process. Several items also reflect the role of analytical mental processes in the creative process. Schizotypy, Conscientiousness, and Openness were found to be the strongest predictors of this scale. As discussed above, the sense of pleasure associated with the experience of the creative process that emerged in the current findings is a central feature of the construct of 'flow' (Csikszentmihalyi, 1975, 1996). While the various aspects of the construct of flow are represented in different ECQ scales, this finding indicates that this central feature of flow is more present for some personality profiles than others during creative experience. While previous findings suggest the prominence of flow in creative experience generally, as replicated in the Study 1 findings, the finding of particular aspects of flow being associated with particular personality profiles has not yet been presented in the literature and suggests an interesting path for further analysis. The possible reasons for the association between the pleasure aspect of flow and schizotypy are elaborated on below.

However, the other aspect of this scale, that of power and control, also needs to be considered. The finding that schizotypy is a strong predictor of this aspect of creative experience is consistent with Storr's (1972) psychoanalytically-informed analysis of motivating forces behind creative activity. This analysis includes consideration of the function that creativity serves for the schizoid, the manic-depressive, and the obsessional personalities. It is important to recognise that the schizoid character that Storr (1972) outlines is quite distinct from the 'positive' schizotypy discussed in the current thesis. Storr describes the schizoid character as an individual who is deeply detached from other people and the external world, preferring instead to be immersed in his own fantasy life. This personality structure is often based on a fundamental mistrust of other people, which invariably has its roots in early childhood experience. Such a personality structure may have more in common with the 'negative symptom' Introvertive Anhedonia factor of the schizotypy construct, as elaborated in the model of Bentall et al. (1989), than the Unusual Experiences factor measured in the current study (see section 6.1). Nevertheless, the schizoid personality belongs in the schizophrenia spectrum, along the same horizontal dimension as the schizotypal personality (see Schuldberg &

Sass, 1999). It is therefore appropriate to make comparisons with Storr's comments regarding the schizoid personality and creativity.

Storr (1972) outlines a number of reasons that the schizoid individual may be drawn towards creative activity: it allows for solitary activity; the schizoid fantasy of omnipotence can, at least in part, be retained; it reflects the greater importance the schizoid individual attributes to inner reality than to the external world; creative activity is a chance to impose sense and order on what is perceived to be a chaotic, unpredictable world; and creative activity can act as a defence against finding the world meaningless. He provides case studies of Franz Kafka and Albert Einstein in support of this contention. A number of these reasons suggest that the schizoid individual derives a sense of power and control from the creative process, which one would expect to be reflected in the actual experience of the creative process: control over interpersonal interaction, power derived from the sense of constructing one's own world, and the power of imposing order and creating meaning. Therefore, the finding that schizotypy is associated with the current Power/Pleasure scale, which includes items such as "I felt a heightened sense of control over my creative expression" and "I felt a sense of power, as though I was harnessing an energy", is consistent with Storr's (1972) argument. It demonstrates that the psychological function or motive driving creative activity for particular personality types may be apparent in experiential aspects of the activity.

The association between schizotypy and the 'pleasure' aspect of the Power/Pleasure scale is consistent with the understanding of schizotypy as having healthy or positive aspects, rather than purely being a construct that underlies pathology or represents sub-clinical symptomatology. For instance, the term 'happy schizotype' has been introduced to describe relatively well-adjusted individuals who are functional despite, and in some cases even because of, anomalous perceptual and other experiences, such as hallucinations (McCreery & Claridge, 1996) and out of body experiences (McCreery, 1993). Along similar lines, Jackson (1991, 1997) argues that spiritual experiences are a form of 'benign schizotypy', noting the similarity in nature of spiritual and psychotic experience, particularly positive psychotic symptoms.

The connection between Conscientiousness and Openness and the Power/Pleasure scale is further demonstration that particular personality profiles are associated with

particular ways of experiencing the creative process. Again, due to the lack of prior research into this particular issue and the lack of assessment of different facets of these personality domains, one must be cautious in interpreting this connection. However, it is likely that the connection with Conscientiousness is due to the 'power' side of this scale and its inclusion of the important role of analytical, critical mental processes. This is due to the fact that Conscientiousness is composed of personality traits such as a need for order, achievement striving, self-discipline, and deliberation. Individuals dominant in this personality style may be particularly geared towards experiencing the creative process as involving critical, analytical mental processes and as an assertion of a sense of control, elements that are represented in this scale.

It is likely that the relationship of Openness with the Power/Pleasure scale is based on the 'pleasure' aspect of the scale. As Openness represents a desire for a variety of experiences for their own sake and the recurrent need to enlarge and examine experience, the shift or change in the quality of experience associated with the creative process may satisfy this desire and thereby provide a sense of pleasure. In other words, the pleasure associated with the creative process may be particularly marked for open individuals due to the 'fit' between the creative process and the general inclinations of such individuals.

Clarity/Preparation

The fifth experiential scale, Clarity/Preparation, referred to a sense of certainty and clarity about the direction in which the artistic activity should proceed, including the meaning of the piece, and to cultivating an appropriate mood for the creative process. This scale was not found to relate strongly to any of the other measures. Its small correlation with the Need for Order sub-scale of the BQ-Sh is consistent with the notion of achieving certainty and clarity about the artistic activity. It seems that an individual's personality style of a high need for order shapes his or her experience of the creative process, encouraging an attitude of searching for certainty and clarity about the creative process, as opposed to the less determined, more open-ended attitude captured in the Distinct Experience and Absorption scales, towards which the schizotypal individual is more prone.

Models of creativity: the relevance of latent inhibition

From the above discussion, it is clear that schizotypy plays a prominent role in the current findings. Indeed, it would seem that a single factor that cuts through the personality and psychopathology variables and which relates most clearly to positive schizotypy is associated with most aspects of the ECQ. If we assume that the Clarity/Preparation and the Beyond the Personal scales are likely to obtain weaker correlations due to their lower reliability, and note the secondary finding that the Anxiety scale correlations are slightly stronger with the affective disturbance and the 'big five' measures than with the other variables, then the influence of a pervasive 'broad schizotypy' factor stands out.

As discussed in Chapter 2, a number of theoretical constructs have been proposed that address the relationship between schizotypy and creativity, including overinclusive thinking (Eysenck, 1993), cognitive disinhibition (Eysenck, 1995; Martindale, 1999), 'flat' associational gradient (Mednick, 1962), motivational factors (O'Reilly et al., 2001), and access to primary-process material. Although the overall prominence of schizotypy in the current sample may be construed as consistent with all of these models, the nature of the experiential ECQ scales related to schizotypy suggests the particular relevance of the concept of latent inhibition. Latent inhibition is a neurologically-based concept that describes the phenomenon of attenuated attention to stimuli upon repeated exposure. It is based on the notion of a gating mechanism that allows organisms with complex nervous systems to cease responding to stimuli with no apparent motivational or emotional value (Peterson, Smith, & Carson, 2002). Experimental studies have demonstrated that latent inhibition is operative in a number of mammalian species and its biological underpinnings have been extensively studied, with abnormalities in the dopaminergic system being identified as related to reductions in latent inhibition (see Cassaday (1997) for a review).

Reduced latent inhibition has been found to be characteristic of the schizophrenia spectrum, including both schizotypy (Allan et al., 1995; Baruch, Hemsley, & Gray, 1988a; Lubow, Ingberg-Sachs, Zalstein-Orda, & Gewirtz, 1992) and frank schizophrenia, particularly in its acute rather than chronic manifestations (Baruch et al., 1988b; Gray, Hemsley, & Gray, 1992). This suggests that individuals within this spectrum are marked by an openness to environmental stimuli irrespective of the past significance of the

stimuli; an attenuated 'screening out' of stimuli is operative. This has long been recognised as a feature of schizophrenia, with Bleuler (1911) observing that this condition is marked by a loss of the "selectivity which normal attention ordinarily exercises among the sensory impressions" (cited in Cassaday, 1997, p.124).[23] Interestingly, abnormalities in dopaminergic transmission have also played a central role in neurobiological theories of schizophrenia (e.g., Seeman, Guan, & Vol Tol, 1993; Swerdlow & Koob, 1987).

Latent inhibition has also been found to be reduced amongst creative individuals. Carson, Peterson, and Higgins (2003) report results of reduced latent inhibition being associated with a variety of indicators of creativity, including lifetime creative achievement, creative personality, and the originality facet of divergent thinking. The effect was particularly pronounced for eminent creative achievers. Reduced latent inhibition has also been found to correlate with the personality trait Openness to experience (Peterson et al., 2002), a strong indicator of creativity. It has been suggested that reduced latent inhibition may facilitate creativity by allowing access to a greater inventory of unfiltered stimuli during early processing, thereby increasing the possibility of combining this information in an original manner (Carson, 2001; Carson et al., 2003). This is consistent with Simonton's (1988a, 1999) argument that a central aspect of creative discovery is the increased number of available mental elements that can then be configured in an original manner and with theories of creativity based on overinclusive thinking and cognitive disinhibition (see Chapter 2).

The fact that both the schizophrenia spectrum and creativity demonstrate correlations with reduced latent inhibition has led researchers to advance the model of reduced latent inhibition being a shared vulnerability factor, based on a common neurological substrate, for psychosis and creativity, and therefore as being partly responsible for the connection between the two (Carson, 2001; Carson et al., 2003; Peterson et al., 2002). The question, as with the other factors that have been identified as common predisposing factors for creativity and psychopathology, is what makes this common factor lead to one outcome (i.e., creativity or psychopathology) rather than the other. In

[23] Although it has not yet been the focus of inquiry, it would also be of interest to investigate whether reduced latent inhibition is characteristic of mania, particularly given

the case of latent inhibition, what distinguishes a person who, to use Kierkegaard's phrase, "drowns in possibility" from the person who derives creative advantage from access to a broad range of possibilities produced by the attenuated filtering of information? That is, what factors are responsible for latent inhibition resulting in 'happy schizotypy' as opposed to a pathological state? Rather than it being an issue of extremity, as with, for example, the inverted-U models of the creativity-psychopathology relationship, some researchers have proposed and provided empirical support for intelligence and working memory functioning as protective moderating factors (Carson, 2001; Carson et al., 2003; Peterson et al., 2002). In a similar fashion to ego strength, these factors may enable an individual to make adaptive use of the broad range of information with which reduced latent inhibition provides them. In this manner, reduced latent inhibition may be another instance of Barron's (1993) notion of controllable oddness being a resource for creativity.

As noted above, the overall prominence of positive symptom schizotypy in the current creative sample suggests the possible relevance of latent inhibition as a mechanism to account for the connection. The nature of the ECQ scales with which schizotypy displays a strong connection lends support to this notion. As reduced latent inhibition involves failure to 'screen out' stimuli based on prior experience and failure to precategorise stimuli as irrelevant, it would result in immediate experience not being as formed or determined by preceding events. This suggests that the creative individual would experience situations with relative 'freshness', with 'new eyes', as it were. In some accounts of schizophrenia from the phenomemenological tradition (see Blankenburg, 1971/1991; Sass, 2000, 2001; Sass & Parnas, 2003), this 'freshness' can take the more disturbing form of a hyperreflexivity or an exaggerated self-awareness, coupled with a diminished self-presence, or weakened sense of existing as a vital and self-coinciding source of awareness and action. Sass and Parnas (2003), for instance, discuss how that which is tacit or 'taken for granted' is brought to the forefront of awareness in the psychotic state.

As identified in the Study 1 findings, it is precisely this *newness* of appreciation, and the sense of exploration and discovery associated with it, that stimulates the deep

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the hypersensitivity to environmental stimuli and the sensory flooding that can characterize this state.

immersion in the creative process, which itself may trigger a shift in quality of experience, generally in terms of an intensification or heightening of experience. These elements of the creative experience are represented in the Absorption and Distinct Experience scales of the ECQ, respectively. As noted above, a sense of anxiety or vulnerability (represented in the Anxiety scale) can be associated with the shift in experience and loss of personal boundaries associated with creative experience. Schizotypy was found to be a prominent predictor of all of these scales. The reduced latent inhibition of artists with schizotypal inclinations possibly produces an experience of creativity particularly marked by a sense of deep immersion, focus on present experience, and sense of a shift in experience. These elements are of course central features of flow, which Study 1 found to be a prominent aspect of artistic creative experience. The other defining feature of flow found in the current findings is the sense of pleasure or joy associated with this state. This was represented in the Power/Pleasure scale, of which schizotypy was also found to be the strongest predictor. Although seemingly contradictory, the association of both pleasure and a sense of vulnerability or anxiety with creative experience is common, as represented by the fact that both feature in the General Structure of Study 1.

The finding of schizotypy relating to this constellation of ECQ scales (Distinct Experience, Anxiety, Absorption, and Power/Pleasure) suggests a linkage between the constructs of schizotypy, latent inhibition, and flow. While reduced latent inhibition may facilitate creativity by increasing the breadth of information available to the individual, as suggested by the researchers cited above, it may exist on the experiential level of the creative process as flow-type experience. The construct of flow certainly captures the sense of immersion in present experience that is suggested by the lack of 'pre-categorisation' integral to reduced latent inhibition.

Apart from the role of schizotypy, the findings also support the notion of a general connection between creativity and reduced latent inhibition. The Study 1 findings of the prominence of flow-type experience, the focus on immediate experience, and the sense of remaining open and exploratory in one's approach all suggest a reduction in the scanning and categorising functions of latent inhibition. Although it did not appear in the current findings, a previous phenomenological study (Reinders, 1992) even found a central element of creative artistic experience to be a need to 'forget' about previous

engagement with artistic materials in order to engage fully in the new artistic process (see section 3.3), which is essentially the equivalent of reduced latent inhibition in the artistic domain. Apart from the high schizotypy in the current sample, the high Childlikeness sub-scale of the BQ–Sh is also consistent with the notion of reduced latent inhibition being associated with creativity. The value placed on child-like qualities captured in this sub-scale may reflect the notion of experiencing a phenomenon 'freshly', without significant recourse to existing categories. Self-actualisation and peak experience, constructs that have both, as discussed in section 3.3, been related to creativity, are associated with a freshness of appreciation. The self-actualised person, according to Maslow (1971), has the ability to see relatively well-known phenomena as if they were new. Again, although these constructs were not measured in the current study, the connection with reduced latent inhibition is apparent.[24]

The existential dimension

Transformation

Attention will now be turned to the existential scales of the ECQ. These consisted of three scales – Transformation, Centrality, and Beyond the Personal. The Transformation scale referred to the transformative effect of artistic creativity, particularly due to the nature of the experience associated with the creative process. This transformation can occur through a number of routes, including artistic creativity's ability to broaden experience, provide confidence in one's own subjective experience, and through its 'healing' quality. The scale includes a sense in which creativity enables a deeper engagement with self and world. The strongest predictors of this scale were schizotypy, Agreeableness, and Neuroticism. The Childlikeness sub-scale of the BQ-Sh was also associated with the scale.

The fact that schizotypy was found to be a significant predictor of the Transformation scale suggests that elements of creative experience associated with schizotypy may be

[24] It is of interest that the connection noted in Chapter 3 between the creative process and the phenomenological method is also apparent with regard to reduced latent inhibition. Specifically, there is a similarity between the phenomenological reduction – putting in abeyance personal biases or theoretical knowledge about a phenomenon and thereby attempting to gain a keener apprehension of this phenomenon as it appears to consciousness – and the notion of 'fresh' perception by virtue of attenuated categorisation of new stimuli according to previous experience implied by the concept of reduced latent inhibition.

regarded by schizotypal individuals as having a transformative quality. As discussed above, these elements include creative experience as a distinct shift in experience, flow-type experience, a sense of pleasure or control, and even a sense of vulnerability or anxiety. Each of these elements is fertile ground for stimulating change in oneself or one's manner of engagement with the world. Indeed, as Csikszentmihalyi (1996) has argued, the experience of flow can not only encourage an individual to return to the activity that stimulates this experience, but often also encourages the individual to approach other activities in a manner that stimulates flow. Additionally, the person who is in a flow state can inspire others towards similar activity. Implicit in this discussion is the positive value placed by the individual on the nature of experience associated with the creative process, an element that was clearly apparent in the Study 1 findings.

A study by Clarke (1987) also speaks to this association between schizotypy and the Transformation scale. She found a similarity of thematic content between creative and psychotic episodes in artists and psychiatric patients respectively, particularly with regards to themes of renewal. However, the patients in general showed less positive personality growth following psychotic episodes than the artists did following 'creative' episodes. While the unusual experiences dimension of schizotypy should certainly not be aligned with a psychotic episode, Clarke's (1987) finding does suggest that schizotypal individuals may be particularly concerned with themes of renewal and change. There is a clear similarity between this concept and the Transformation scale, particularly with regards to notions of novelty, change, and an 'opening up' of experience. Therefore, this pattern of findings provides evidence of an association between schizotypy and attributing a positive transformative potential to the creative process, which lends further support to the notion of 'happy schizotypy' discussed above.

Although items in the Transformation scale focus mainly on the transformative potential of the creative process for the *artist*, the Study 1 findings indicated that this is intimately linked with the view that the creative process can stimulate change in the audience. Agreeableness includes such personality traits as altruism, and possibly represents a general orientation towards the interpersonal and social. Therefore, it is possible that the association of Agreeableness with this scale is due to the fact that the creative

process has the potential to stimulate positive forms of change and growth in others. This contention is in need of further investigation.

As discussed in Chapter 2, some authors have argued that creativity has the potential to relieve or stabilise distressing affective states. The current findings suggest that this may particularly be the case for the neurotic personality style, although depression also displayed a weak correlation with the Transformation scale. There are elements of the Transformation scale that represent a validation of subjective experience, a sense of creativity assisting the individual to 'cope' with life, and of it having a 'healing' quality. It is likely that the association of Neuroticism with the Transformation scale is due to these aspects of the scale. In this sense, it is possible that for the neurotic individual, the transformative effect of creativity lies particularly with its ability to ease negative affective states and assist with an anxious relationship with self and world, rather than the more positive transformative value it holds for the schizotypal individual. The Study 1 findings indicated that the 'transformative' potential of the creative process is founded to a large degree on the experience of the creative process involving a shift of ego boundaries, particularly the sense of coming in contact with a larger force. This notion is captured in the Centrality scale. Although Neuroticism was not found to relate to the Centrality scale, the relationship of affective disturbance with that scale is consistent with the view that neurotic or affectively disturbed individuals may find transformative potential in this 'ego shifting' aspect of creative experience.

The association between the Transformation scale and Neuroticism supports the possibility suggested above that, although the *experience* of the creative process by neurotic or affectively disturbed individuals may be marked by anxiety, the creative process may serve a stabilising function or assist the individual to cope with negative affective states in a more general sense. So rather than the creative process being associated with an immediate cathartic release of anxiety or affective disturbance, it may stabilise, protect against, or assist in coping with such states over an extended period.

The association of the Transformation scale with Childlikeness suggests that individuals who value child-like qualities are particularly oriented towards the transformative qualities of the creative process. The child-like aspects of the creative process, as explicated in the current findings, have been discussed at various points above. They

include the yearning for harmony, the prominent use of intuition, the sense of exploration and discovery, the dissolution of self-consciousness, and the sense of a 'freshness' of perception. It is possible that these aspects of the creative process are regarded by artists as being the main contributors to the transformative potential of the creative process, a suggestion that is consistent with the point made above regarding the effect of the 'ego shifting' aspect of creative experience. If this is the case, individuals who place particular value on child-like qualities may be particularly attuned to and place high worth on the transformative qualities of the creative process.

Centrality

The Centrality scale referred to a need to engage in artistic activity and its centrality in the individual's life; of creative activity providing a fulfilment and sense of meaning that is not derived from others areas of life. Several items also referred to a spiritual dimension to the creative process. Schizotypy and the personality domains of Conscientiousness and Extraversion (in a negative direction) were the strongest predictors of this scale. The association of schizotypy with this scale was also represented by its correlation with the Unusual Experiences sub-scale of the BQ-Sh. The association of the scale with a variety of personality and psychopathology measures reflects its broad nature. It may be that the creative process is a 'need' for different personalities and dispositions for different reasons.

The connection discussed above between the Power/Pleasure scale and schizotypy may be of relevance to the relationship between schizotypy and the Centrality scale. It was noted that the argument has been made that creativity may provide the schizoid individual with a sense of power and control – control over interpersonal interaction, power derived from the sense of constructing one's own world, and the power of imposing order and creating meaning – that functions as a compensation for a perceived lack of control and gulf between the inner and outer worlds (see Storr, 1972). As Storr (1972) writes, "The new synthesis pursued with such intensity is as much an attempt to heal a split in the self as it is to comprehend the universe" (p.98). As remarked above, although these observations were directed at the schizoid individual, they may be of similar relevance to the schizotypal individual, due to the fact that they share a position in the 'horizontal' dimension of the schizophrenia spectrum. Indeed, one might imagine that the very experience of 'unusual experiences', the dimension of schizotypy

measured in the current study, may be disempowering and drive an individual towards attempts to reassert psychological control in various ways. If creative activity answers the individual's drive to develop a sense of control (or even, as Storr (1972) notes, to develop an all-embracing, explanatory scheme, in more extreme cases such as Newton and Einstein), then it would almost necessarily become a central element in the life of the schizotypal individual. The activity is reinforced, as it were, by relieving the anxiety of living in an arbitrary or contradictory world. This argument is supported by the fact that one aspect of the Centrality scale is of the individual becoming anxious when not enaged in artwork. It is worth noting that this connection between the Centrality aspect of the existential dimension of the creative process and schizotypy is quite different from the notion of a tolerance of ambiguity or openness to experience. In this account of the meaning ascribed to the creative process by the schizotypal individual, certainty is being pursued rather than ambiguity being tolerated. The connection between the desire for control and the Centrality scale is further indicated by the association between the Power/Pleasure scale and the Centrality scale, as discussed below.

The argument of schizotypy being related to the Centrality scale on the basis of a drive in the schizotypal individual towards developing a sense of control and meaning is consistent with experimental research that has found that schizotypy of the type measured in the present study is associated with an increased tendency to find meaning in relatively random events. For instance, individuals high on the Magical Ideation scale have been found to see more meaningful patterns in a visual display of random dots (Brugger et al., 1993) and to make more remote semantic associations (Brugger & Graves, 1998; Gianotii, Mohr, Pizzagalli, Lehmann, & Brugger, 2001; Mohr et al., 2001). The fact that these latter findings are consistent with Storr's (1972) interpretation of the schizoid individual even though they are based on the 'positive symptom' dimension of the schizotypy construct lends support to the connection made in the current discussion between Storr's interpretation of the schizoid individual and the current findings relating to the 'unusual experiences' aspect of schizotypy.

Artists characterised by personality traits in the Conscientiousness domain may feel a sense of duty and responsibility to their artistic activity, particularly if it is their vocation, as it was with many members of the current sample. The conscientious artist may also identify closely with his work. These factors may contribute to an individual regarding

artistic activity as a central element in his or her life, thus accounting for the relationship between Conscientiousness and the Centrality scale. The negative relationship of Extraversion with the Centrality scale may be based on the fact that, for more introverted artists, artistic activity may be their primary method of self-expression and communication with others. This would contribute to such individuals identifying their artistic activity as a central source of meaning in their lives.

Beyond the Personal

The final existential scale, Beyond the Personal, reflected a concern with the context of artwork beyond the personal domain, such as interpersonal elements of artwork (e.g., communication and rebellion), and exploration of artistic rather than purely personal possibilities. The strongest predictors of this scale were schizotypy and bipolar affective disturbance.

As argued above, the current data suggests that schizotypal individuals experience the creative process as having an 'unusual experiences' quality to it, akin to other unusual cognitive or perceptual experiences to which such individuals are prone. This quality contributes to a belief in the transformative potential of the creative process, both for self and for others. Such an experience of the creative process and a belief in its transformative potential would encourage a strong interest in and commitment to the art form itself and its various possibilities, ideas represented in the Beyond the Personal scale. This relationship is supported by the significant correlations between the Distinct Experience, Transformation, and Beyond the Personal scales and the fact that schizotypy is a prominent predictor of each scale. Experiencing the creative process as being a distinct shift in experience and as having an 'unusual experiences' quality to it may possibly lead to regarding it as a form of disruption of or rebellion against parochialism. This latter attitude is represented in the Beyond the Personal scale. This connection may also contribute to the association between schizotypy and the Beyond the Personal scale.

The fact that bipolar but not unipolar affective disturbance was found to predict Beyond the Personal suggests that there is something particular about hypomanic/manic states or mood swings that relates to this scale. This is supported by the fact that the six items of the GBI identified by Shapiro and Weisberg (1999) as strong predictors of creativity,

and which mainly represent hypomanic/manic tendencies, were significantly correlated with this scale. The scale, with its emphasis on one's art work as a powerful form of communication, as an exploration of the possibilities of the artistic medium, and as a revisionist, rebellious force, can be regarded as representing a rather elevated or self-important view of one's own artistic activity. The elevated self-confidence and self-worth, even grandiosity, that can characterise hypomanic/manic states may contribute to this view of one's work. In other words, the hypomanic/manic features of bipolar disturbance may encourage an artist to rate the importance of his output highly. Alternatively, rather than actually rating the importance of one's work highly, these features may simply encourage an orientation towards the broader milieu of one's work and the impact the work may have within this context.

Summary

The current findings indicate that schizotypy is associated with a wider variety of experiential and existential aspects of the creative process than affective disturbance, and is indeed the most powerful predictor of most aspects of creative experience. Specifically, schizotypy predicts aspects of creative experience represented in the Distinct Experience, Anxiety, Absorption, and Power/Pleasure scales and all three of the existential scales. The neurologically-based concept of reduced latent inhibition was proposed as a possible mechanism that gives rise to this particular pattern of features of creative experience amongst individuals with schizotypal inclinations. The findings are also consistent with Storr's (1972) suggestions regarding the function of creative work for individuals in the schizophrenia spectrum, including an assertion of a sense of control and an attempt to overcome a stark division between the inner world of mental life and outer world of reality.

The findings did not support the notion of the creative process as being experienced by affectively disturbed individuals as a discharge or release of anxiety or negative affect, as some commentators have suggested. Rather, affective disturbance (both unipolar and bipolar) and Neuroticism were associated with a sense of anxiety and vulnerability associated with the creative process (as represented in the Anxiety scale). However, it was suggested that although the sense of relief or discharge from negative mood may not be present in an immediate experiential sense, creative work might serve such a function for the affectively disturbed or neurotic individual in a more general sense. This

possibility was indicated by the fact that Neuroticism, and to a lesser degree depression, were both associated with the transformative potential of the creative process (as represented in the Transformation scale) and also by consideration of particular items of the Anxiety scale.

In accordance with expectations, thin mental boundaries were related to the sense of becoming deeply absorbed or immersed in the creative process (as represented in the Absorption scale), although it was not a significant independent predictor of this scale. All aspects of normal personality, as conceived in terms of the five-factor model of personality, were found to have some bearing on different experiential and existential aspects of creativity, although the main zero-order correlations involving the 'big five' were found with the Anxiety scale.

These findings confirm the belief that formed the basis of this study that the experience of the creative process and the meaning attached to this experience varies in relation to personality features and psychopathological constructs. This variation in experiential and existential aspects of creativity has been found to be meaningful in relation to core aspects of the personality and psychopathological dimensions measured. The general pattern of findings suggests that, while there may be certain core features of creative experience (as outlined in Study 1), these features may vary in weighting in relation to dimensions of personality and psychopathology. This indicates that it is necessary to approach creativity in a nuanced and specific manner, paying heed to individual differences amongst creators, rather than limit research to approaching creativity, even within particular domains such as the arts, as a homogenous construct or attempting to identify uniform sets of traits or inclinations amongst creators.

b) The impact of experiential and existential aspects of creativity on personality and psychopathology

The issue has been raised at various points in the current thesis that it is important to consider the effect of the creative process on various psychological domains, including personality and psychopathology, in addition to the effect of these domains on creativity. It was argued that an understanding of experiential aspects of creativity is relevant to this issue, because the *experience* of a particular phenomenon is central to the effect it may have on an individual. Of particular interest was the possible influence of creative

activity on such dimensions as schizotypy, boundaries, and affective disturbance. Aspects of 'normal' personality were not examined as the correlations with these in the present study were generally smaller and less consistent, and because it could be argued that these are relatively stable aspects of an individual and not as likely to be influenced by creative experience. While causal inferences are necessarily limited by correlational modes of analysis, the associations between variables can suggest theoretical models that can later be tested through other designs. This exploratory, model-building approach is appropriate at this stage given the limited research into the effect of creativity on other psychological domains.

The ECQ scales of Distinct Experience, Anxiety, and Power/Pleasure demonstrated the strongest relationship with schizotypy. This introduces the possibility that the shift in experience encountered in the creative process, which was found to be associated with schizotypy, may even promote schizotypal tendencies. The elements represented in the Power/Pleasure scale also fit in with this sense of a shift in experience associated with the creative process – through providing the individual either with a sense of pleasure or power. These may represent aspects of flow-type experience associated with creativity, as discussed above. The shift in experience associated with creativity may promote a more general openness to and belief in unusual experiences or magical beliefs, a core feature of schizotypy.

A sense of anxiety associated with creative experience, as represented in the Anxiety scale, is certainly consistent with the notion of the creative process being a strongly felt shift in experience. However, the role of anxiety suggests that the sense of a shift in experience that may contribute to schizotypal tendencies is broader than flow-type experience, because anxiety is generally not considered to be a feature of flow. However, as discussed in relation to the Study 1 findings, a sense of anxiety or vulnerability may be prompted by the deep focus that characterises flow-type aspects of creative experience. Following the explanatory framework of reduced latent inhibition offered above, it may be that the sense of 'newness' associated with creative experience for schizotypal individuals (and the concomitant sense of a shift in experience) may not only be a pleasurable, exhilarating experience but may also be marked by a sense of anxiety. This combination of exhilaration and anxiety can certainly at times characterise the more extreme experience of the psychotic episode and its prodrome, as indicated by

some phenomenological studies (see Rulf (2003) for a review). Although consistent with reports of a general relationship between neuroticism and schizotypy (e.g., see Ettinger et al., 2005; Eysenck & Barrett, 1993; Lipp, Arnold, & Siddle, 1994), which also appeared in the current study, the particular relationship of anxiety-related features of *creative experience* with schizotypy is in need of further investigation.

The ECQ scales of Anxiety and Transformation demonstrated the strongest relationship with thin boundaries. The Anxiety scale includes a sense of vulnerability and fragility associated with creative experience. As discussed with regards to the Study 1 findings, this can be understood as being due in part to a recession of an individual's ego defences. Regular experience of such vulnerability may encourage a sense of thin boundaries. One aspect of the Transformation scale is that the creative process can foster a deeper engagement with self and world. It is possible that individuals with thin boundaries find that the experience of the creative process consolidates their sense of self and world as being composed of 'thin boundaries', given that dissolution of boundaries of various sorts is a central aspect of creative experience. Indeed, this is represented in the significant relationship between thin boundaries and the Absorption scale discussed above. Therefore, it is possible that there is a self-reinforcing cycle in operation: individuals with thin boundaries are more likely to experience creativity as involving a dissolution of boundaries, which may function as further evidence of thin boundaries (represented in the 'deeper engagement' aspect of the Transformation scale), thus strengthening this sense of self and world.

The main ECQ scales that demonstrated a relationship with affective disturbance, both unipolar and bipolar, were Anxiety and Centrality. The Beyond the Personal scale also demonstrated a relationship with bipolar affective disturbance. It was hypothesised that the Centrality scale would be positively correlated with affective disturbance (hypothesis 15), based on previous suggestions that the deep involvement in and commitment to artistic activity can produce strongly felt affective responses to the vicissitudes of the activity (see Rothenberg, 1990; Shapiro & Weisberg, 1999). These results provide support for this notion. It is possible that the combination of the creative process being marked by anxiety and a sense of vulnerability (as represented in the Anxiety scale) with it being a central source of meaning, even a need, in the individual's life (as represented in the Centrality scale) may promote or maintain affective disturbance. That is, the

commitment to an activity (or, as Coleman (1998) puts it, the absolute investment of oneself in an activity) that stimulates a sense of anxiety and vulnerability may cause or maintain depressed affect.

The notion of strong commitment to artistic activity is also present in the Beyond the Personal scale, albeit in a more social or contextual sense. It was suggested above that the finding of bipolar affective disturbance predicting the Beyond the Personal scale may be due to a hypomanic state prompting an elevated or self-important view of one's artistic activity, which may be picked up by this scale. It is also possible that a particular orientation towards the broader context of one's artwork may encourage mood swings. For instance, when pleased with the artwork, the individual may feel that he has successfully mastered an aspect of his artistic medium or entered the pantheon of great artists in his field, which may prompt elevated mood and other hypomanic features; however, there may be a swing towards more negative mood states when a sense of discrepancy emerges between his own achievements and his view of others in the field, or when the high aspirations for a particular piece of work are not met with adulation by others in the field. These reactions may be particularly pronounced for individuals who invest their sense of self heavily in their artwork. Again, these considerations raise the possibility of the operation of a self-reinforcing cycle: affective disturbance may facilitate creative activity, and the nature of the experience and the meaning attributed to artistic activity may then maintain or exacerbate affective disturbance.

c) The relationship between experiential and existential domains of creativity

The current study also investigated the relationship between the experience of the creative process and the meaning attached to the creative process. The possible effect of experiential aspects (ECQ-Part A) on existential aspects (ECQ-Part B) of creativity was of particular interest.

The first existential scale, Transformation, demonstrated a positive relationship with all of the experiential scales apart from Anxiety, with Absorption being a particularly strong correlate. The strong relationship of Transformation with Absorption suggests that flow-type experience, a central feature of which is the deep absorption and immersion represented in the latter scale, may encourage the artist to view creativity as having transformative potential, along the lines discussed above. This is further indicated by

the relationship of Transformation with the Distinct Experience and Power/Pleasure scales, both of which contain elements of flow-type experience, as discussed above. The sense of deep focus being associated with the transformative potential of the creative process is consistent with elements of the Study 1 findings. These qualitative findings indicated that the experience of self and world associated with flow-type experience (e.g., dissolution of awareness of self and surroundings, merging of action and awareness, sense of connection with a larger force) can have a wider influence on perceptions of self and world, often in the direction of a deeper engagement with self and world. Although the current findings support the hypothesis that the change in experience that characterises the creative process (as represented by the Distinct Experience scale) would be associated with regarding creativity as having transformative potential, they indicate that it is not simply the *change* in experience, but particularly flow-type experience, that is associated with creativity's transformative potential.

It was hypothesised that the Power/Pleasure scale would be positively correlated with the Centrality scale (hypothesis 17), based on the Study 1 findings that the sense of pleasure or joy associated with creative experience contributes strongly to the value placed on creative activity, particularly the intrinsic motivation to engage in the activity. The findings indicate that, while this is true, the central importance of the creative process to the individual is based on a wider range of factors than just the pleasure associated with the process. The other scales that demonstrated a particularly strong relationship with Centrality were Distinct Experience and Absorption, which again suggests a general association between flow-type experience and the Centrality scale. The association between flow-type experience and the importance or centrality of the activity to the individual is consistent with Csikszentmihalyi's (1996) finding that the elements of flow can make an activity (in whatever domain) particularly valuable to an individual – indeed, that this type of experience often motivates an individual to return to the activity, even if conditions may seem to be discouraging (for example, in the absence of external reward).

The strongest correlates of the third existential scale, Beyond the Personal, were Absorption and Power/Pleasure. It is possible that deep absorption in the artistic activity involves coming in contact with the strong influence or power of the creative process,

because absorption involves, at least in part, the power or 'grip' of the creative process over the artist's experience, as explicated in Study 1. The recognition of the strong influence of the creative process may encourage identification with the medium, artistic tradition, and the social context of the artwork, ideas represented in the Beyond the Personal scale. This is a similar dynamic as the dynamic suggested above regarding the influence of absorption on ascribing transformative potential to the creative process. The fact that the Absorption scale was strongly associated with all of the existential scales indicates that deep focus and immersion is fundamental to the meaning that artists find in the creative process.

In terms of the impact of aspects of creative experience represented in the Power/Pleasure scale on the Beyond the Personal scale, it is likely that a sense of power and control associated with creative experience, and the heightened sense of self associated with this, may consolidate the individual's sense of self in an artistic role (as a musician, writer, painter, and so on). This may, in turn, contribute to identifying with the artistic tradition. Experiencing a sense of control over one's artistic activity may be due partly to developing greater familiarity with the possibilities of one's medium, which may also contribute to being oriented towards the broader context of one's artwork. A high sense of personal competence may contribute to both the Power/Pleasure and the Beyond the Personal scales: a belief in one's own ability might not only promote a sense of control over the artistic activity, but also encourage an orientation towards the broader context or influence of one's artwork.

6.4.4 Methodological Considerations

Several points regarding the current study's method need to be kept in mind when considering the findings. These will be listed below.

Firstly, although the general term 'schizotypy' has been used throughout, the measurement of the construct was limited. Only one aspect of the broad schizotypy construct, the 'positive symptom' component, was measured, partly due to the fact that this aspect of the construct has tended to display the greatest relevance to artistic creativity in past research. Additionally, only one measure of the 'positive symptom' dimension was used (the Unusual Experiences scale of the O-LIFE). Other well-known measures of 'positive symptoms' include the Perceptual Aberration-Magical Ideation

scale (Per-Mag scale; Chapman & Chapman, 1985) and some sub-scales of the Schizotypal Personality Questionnaire (SPQ; Raine, 1991). As outlined in section 6.1, the construct of schizotypy has been found to be multidimensional, with most analyses yielding three to four factors. Inferences based on the findings relating to schizotypy need to be limited to the 'positive schizotypy' dimension employed. Although this dimension includes the classic schizotypic traits of unusual perceptual experiences and magical beliefs, it does not represent the construct as a whole.

The possibility was raised that responses to the personality and psychopathology measures might have been influenced by the inclusion of the Experience of Creativity Questionnaire, in the sense that the personality and psychopathology questionnaires might have been completed as if they related to artistic activity rather than to their intended constructs. Such an approach would have 'contaminated' the measures of personality and psychopathology. An alternative method would be to distribute the questionnaires in separate packs (an initial set relating to creative experience, with a second pack relating to personality and psychopathology). However, as noted above, the possibility of this form of 'contamination' is slight, especially compared with the possible influence of role adherence. Even if participants received different questionnaires at separate points in time, they would still be aware that their inclusion in the study was due to their status as artists, thereby raising the spectre of role adherence. There is no clear method of controlling for this factor or assessing its impact on results. Possibilities include using artists as participants without informing them that they are being asked to participate due to their status as artists, thus possibly minimising role adherence; comparing findings relating to artistic creativity across different populations, some of whom may identify as artists and others who do not; and including a measure of attitudes towards or allegiance to artistic roles.

The single-sample design of the current study limited the interpretation of ratings on the various measures to comparisons with norm data. Although the norm data used were from large samples, and therefore provide fairly reliable indices, they are based on normal populations. These groups frequently had additional limitations, as noted earlier, such as gender ratios, age distributions and education levels, somewhat different to the artist group. Furthermore, it would have been of interest to compare ratings with other 'creative' groups, such as scientists, engineers, and so on. The use of such comparison

groups would have allowed further assessment of the issue of whether ratings of various constructs relate specifically to artistic creativity, or to particular groupings of creative domains, or to creativity in general. This point not only applies to the personality and psychopathology measures, but also to the Experience of Creativity questionnaire, as discussed in greater detail below.

A consideration of some importance concerns the limited number of individuals employed for a factor analysis. A wide range of answers has been given to the question of how many participants are required for a stable factor analysis. For example, Tabachnick and Fidell (1996) suggest that "*it is comforting to have at least 300 cases for factor analysis"* (p.640; italics in original), though such large numbers are not necessary if marker variables have high loadings. Clearly, our sample size was insufficient. While the factors provided meaningful concepts for interpretation, replication is required before we can be confident of the stability of the factor structure.

6.4.5 Suggestions Regarding Future Research

Several suggestions for future research are implied in the previous section. Additional suggestions are indicated below.

Interpretation of the relationship between the experiential/existential dimensions of creativity and personality and psychopathology, and also between the experiential and existential dimensions themselves, drew on previous research in other areas of creativity research. However, interpretation of these findings was fairly speculative due to the fact that this issue has not been addressed directly in previous research. Therefore, it would be valuable to attempt a replication of the findings, to further develop the interpretations conceptually, and to test the interpretations in an empirical manner. For example, reduced latent inhibition was proposed as a possible mechanism that underlies the relationship between schizotypy, creativity, and various aspects of flow-type experience identified as central to creative experience (shift in phenomenological experience, deep absorption, focus on present experience, sense of pleasure). Future studies might attempt to replicate the connection between reduced latent inhibition, schizotypy, and these aspects of flow and test out the ramifications of this model. Similarly, it was found that while the centrality of artwork in an individual's life (as represented in the Centrality scale) and a sense of anxiety and vulnerability associated with creative experience

characterised both unipolar and bipolar affective disturbance, an orientation towards the broader context of one's artwork (as represented in the Beyond the Personal scale) was more characteristic of bipolar affective disturbance. Would this pattern of relationship emerge in future research and with the use of alternative measures of the constructs involved?

The current findings relating to scores on personality and psychopathology variables in an artist sample were based on comparisons with normative data. It would be of value to replicate these findings using a recruited comparison group. The scope of the current study included only some personality and psychopathology constructs of relevance to creativity. There are a number of other constructs that have been found to relate to creativity, as reviewed in Chapter 2, and which were not addressed in this study. Future research may wish to examine how these other constructs (for example, tolerance of ambiguity, absorption, sensation seeking, transliminality, and so on) relate to experiential/existential dimensions of creativity. Personality disorder has been a neglected area in creativity-psychopathology research, although there are good reasons to consider its relevance (see Hendricks, 2005). It would be of interest to investigate whether different forms of personality disorder display a pattern of relationship with experiential/existential dimensions of creativity. Interpretation of the relationship of normal personality to experiential/existential dimensions of creativity would be further refined by using an instrument that measures the facets of the personality domains, such as the NEO-PI-R (Costa & McCrae, 1992).

The analysis of variation by medium was limited in the current study to the groupings of writers, musicians, and visual artists. While these groupings certainly revealed some interesting patterns with regards to personality and psychopathology measures (with writers again emerging as particularly elevated on psychopathology measures), no differences were found with regards to experiential/existential features of creativity. Future research may wish to address variations in these features of creativity based on alternative groupings of artists – for example, a compositional versus performance emphasis or the time-scale of producing the artwork. Certainly, the Study 1 findings indicated some variation in experiential aspects of the creative process based on the time-period of the artistic activity (see section 5.1). It is noted, however, that preliminary investigation of the current data suggested no significant differences in experiential or

existential aspects of creativity between compositional and performance-based artwork, which is consistent with the general finding of a similarity in experiential and existential dimensions of creativity between artistic mediums.

As discussed above, the measurement of schizotypy in the current study was limited to the Unusual Experiences scale of the O-LIFE (Mason et al., 1995). Future research needs to assess whether the findings relating to schizotypy hold for other dimensions of the broad schizotypy construct, or whether they are specific to this dimension of schizotypy, and whether the same pattern of findings emerges using alternative 'positive symptom' measures. Of relevance here is the interpretation made of the relationship between schizotypy and the Power/Pleasure and Centrality scales (see section 6.4.3.3). Storr's (1972) description of the schizoid personality was drawn upon to interpret this association, including the notion that the schizophrenia spectrum may be associated with creative work being a means of asserting a sense of control and an attempt to overcome a stark division between the inner world of mental life and outer world of reality. The Introvertive Anhedonia scale of the O-LIFE displays greater similarity with Storr's descption of the schizoid personality than the Unusual Experiences scale. It would therefore be of interest to assess whether this scale, along with more direct measures of schizoid personality, displays a similar association with the Power/Pleasure scale of the ECQ. This would consolidate the support provided in the current investigation for Storr's account of the motivating forces behind creative activity for the schizoid personality, and also support the notion proposed in the current discussion that creative work may serve a similar function for individuals of different personality styles (that is, both the schizoid and schizotypal styles) within the schizophrenia spectrum.

There are a number of inherent difficulties in researching the creativity-psychopathology relationship, as described above (e.g., role adherence, creative activity mimicking symptomatology). In order to counter these difficulties, it is important to collect wide-ranging and detailed data, possibly using multiple measures or means of assessment. For instance, the existence of psychopathology in the family background of creative individuals is also worth assessing, because this may inform current symptomatic presentation. As discussed in Chapter 2, Richards et al. (1992) present evidence that depressive participants with a bipolar family history displayed greater creativity than depressive participants without a bipolar family history, arguing that possible sub-clinical

effects of mood elevation during 'normal', non-depressed periods in the former group may facilitate greater creative ability in this group. Although both unipolar and bipolar disturbance were found to be elevated in the current sample, it is possible that the unipolar group had a bipolar family background, which would provide further weight to the view that bipolar disturbance is of particular relevance to creativity. Future studies should include assessment of a diverse range of factors relating to psychopathology in order to provide as full a picture as possible of the creativity-psychopathology relationship.

The point was made in section 6.4.3.1 that it is possible that the association suggested by various studies between hypomania and creativity, which did not receive particular support in the current findings, may be due to hypomanic features facilitating performance in a range of areas and may not be specific to creativity. This was referred to as the 'bright-eyed, bushy-tailed' hypothesis. In order to investigate this possibility, the performance of normal individuals with hypomanic traits could be investigated in a range of domains and compared with creative performance. The issue of different forms of psychopathology being related to different styles of creative expression, even within the domain of artistic creativity, has been raised at various points. For instance, Sass (1992, 2000-2001b) draws a parallel between features of the schizophrenia spectrum and modernism and postmodernism and between features of affective disturbance and romanticism. Assessment of this issue was prohibited in the current study by the fact that only a small number of participants rated the style or genre of their artistic activity. A future study could examine these hypothesised differences by including a full assessment of the style and genre of the artist's work.

The consideration of the relationship between the experiential and existential dimensions of artistic activity focused on the possible impact of the experiential dimension on the existential dimension. That is, how does the experience of the creative process influence the meaning ascribed to creative activity? Future research may wish to consider the impact of existential elements of creativity on experiential features of the creative process. In other words, does the meaning attached to creativity influence how the creative process is actually experienced?

The questionnaire that was developed in the current study, the Experience of Creativity Questionnaire, could be used in studies of creativity in other domains. For example, a sample not selected for creativity could complete the questionnaire by thinking about their most creative experience in any domain or in everyday life. Similarly, the questionnaire could be used in samples from other creative domains – for example, in a sample of creative scientists. These sorts of studies would ascertain whether the questionnaire items, developed on the basis of artistic creative experience, are relevant to experiential/existential dimensions of creativity in other domains and, if so, whether similar factors emerge in these other domains. This line of inquiry is of relevance to the specificity versus generality debate. The question has been asked as to whether cognitive skills and personality features vary between creative domains. A similar form of inquiry can be conducted into the convergence or divergence of the experience of the creative process and the meaning attributed to this process between creative domains. Finally, the questionnaire could also be used to investigate how the experiential and existential aspects of artistic creativity identified in the questionnaire relate to non-creative activities, such as sport, or to aesthetic appreciation, such as the experience of music-listening, or to domains related to creativity, such as spiritual experience, thus enabling more detailed comparison of these areas. This might be achieved by relating the questionnaire to existing measures of these other domains or by modifying the ECQ to make it applicable to these domains.

6.5 Summary

This chapter presented the second of two studies, a psychometric investigation of the relationship between experiential and existential aspects of artistic creativity and personality and psychopathological features. Experiment 1 outlined the development of a questionnaire based on the Study 1 findings. This questionnaire was designed to assess experiential and existential aspects of artistic creativity. Experiment 2 related these aspects of artistic creativity to personality and psychopathological features in a group of artists. The interpretation of findings focused on overall personality and psychopathology ratings compared to norm data and other studies of creative samples, differences on these measures between artistic mediums, the relationship between personality and psychopathological features and experiential/existential aspects of

creativity, and the relationship between the experiential and existential dimensions of creativity. Finally, methodological limitations were considered and suggestions were made for future research. The final chapter returns to the aims of the current thesis and presents a summary and integration of the findings.

Chapter Seven

General Discussion

7.0 Overview

The final chapter summarises and considers the findings of the current thesis. It returns to the main aims of the thesis and addresses how these aims have been explored through the integration of a phenomenological study of the artistic creative process (Study 1) and a psychometric study of the relationship of the phenomenology of artistic creativity to aspects of personality and psychopathology (Study 2). Issues of causality are addressed and a bidirectional, cyclical model of the causal relationship between experiential and existential aspects of creativity and personality and psychopathological features is proposed.

7.1 Summary and Consideration of the Findings

7.1.1 Study 1 – The Phenomenology of Artistic Creativity

Study 1 presented a study of artistic creativity guided by the principles of phenomenological psychology. It was based on phenomenological interviews with 11 artists of different mediums, including writers, musicians, and visual artists. Qualitative analysis of these interviews yielded a multifaceted explication of the experience of the artistic creative process as it unfolds through time. A pilot study indicated that the *meaning* associated with the creative process was of critical importance to the artists interviewed, and held a close connection with the nature of the experience of the creative process. Therefore, analysis focused on this existential dimension, as it was labelled, as well as the experiential dimension of the creative process.

The explication of the experiential dimension of artistic creativity as lived by these 11 artists is summarised below. The central elements, or constituents, of this General Structure are italicised. The experience of artistic creativity occurred within a general context of ongoing *commitment to artistic activity*, either in the form of producing finished

artworks or being more experiential in focus, and a *routine to artistic activity*. The more immediate psychological context of the experience consisted of *preparation for the artistic activity, aimed at becoming mentally settled*. These preparatory activities belong to a general process of *narrowing the focus of attention on and becoming increasingly absorbed in the artistic activity*, associated with decreased engagement with other aspects of the life-world. The deep absorption is coupled with heightened sensitivity to elements of the medium and the artwork and a sense of being fully present to immediate experience. A mutually reinforcing relationship exists between the narrowing of focus on the artistic activity and an experience of a *synthesis of various elements*, which may be both internal and external to the artwork. This synthesis provides a new coherence to the artwork, associated with intensely felt excitement and a sense of urgency to capture emerging possibilities. This leads to a period of activity characterised by a *sense of confidence, of effortlessness, and non-awareness of technical aspects of the activity*, frequently referred to as "the zone" or "flow". At this point, there is a sense of clarity about the direction in which the artistic activity should proceed. This period is *dominated by intuitive processes*, with the artist intuitively grasping what seems to 'belong' in the piece. The deep absorption in the activity and the dominance of intuition give rise to a *unity in sense of self*, which includes a lack of division between the artist and his medium. Affective components, including *a sense of joy, freedom, and purity*, are strongly present during this period. *An attitude of exploration and discovery* is maintained, with the artist including elements in the artwork about which she is curious or recognises as 'belonging' in the piece. The artistic activity is felt to be propelling itself forward, as having *a self-generating momentum*. This, combined with the deep absorption in the activity, prompts *a change in the artist's sense of control* over self and the artwork, experienced either as a heightened or a diminished sense of control. Rather than the intuitive mode being present throughout the whole creative process, there is *a movement between intuitive and analytical modes*. This movement is dependent on the nature of the artistic medium, the general approach of the artist, and the stage of the artwork. *A movement in and out of self-awareness* is concomitant with the movement between intuitive and analytical modes. There is a strongly felt positive *emotional reaction to completing the artwork*, which is either preceded or followed by a sense of vulnerability.

The existential dimension of artistic creativity for these 11 artists, as represented in the General Structure, is summarised below. *The personal importance or significance of artistic activity is assumed* in the artist's life. It is a backdrop to existence that is rarely brought to awareness or questioned. Not only is its importance assumed, but it also holds *central significance* in the artist's life. That is, it is a basic form of engagement with life which influences many other aspects of the artist's life-world, reflected in the strong affective components attached to the creative process. The artistic activity functions as a means of *deepening engagement with self and world*, both through the content of the work and the experience of the activity. This ability to deepen engagement with self and world, which applies both to the artist and to the audience, combined with the intensity of the experience of the creative process, endows it with a certain power in the artist's mind. There is *a sense of fascination* with this power and its implications for other aspects of the individual's life-world. There is an *intrinsic motivation* to the artistic creative process – the quality of the experience itself is its main attraction, rather than the meaning generated by reflection on the process or other factors external to the experience itself. Another basis of the significance attached to artistic creativity is *the sense of the experience as 'special'*, as a blessing or an enchanted way of being. Artistic activity is felt to be *a need or necessity*. The artist feels *a commitment to the art form*, which relates to the social context of the artwork.

Three psychological dynamics were found to underlie the experiential themes. These consisted of an intuition-analysis dynamic, a unity-division dynamic, and a freedom-constraint dynamic. The particular themes emerged from movement within these dynamics. A significant degree of overlap was apparent between these findings and the findings of previous phenomenological studies, as well as other descriptive studies of the artistic creative process. In the context of these studies, the current findings emphasised the shift in sense of self associated with creative experience and the energising effect of a sense of synthesis of disparate elements. A number of points of contact were apparent between creative experience and literature relating to spiritual experience. Although the construct of 'flow' is represented in the findings with some differences in details, creative experience was found to be broader and more multifaceted than this construct, particularly when the temporal unfolding of the process is taken into account. The main dynamic operating in the existential dynamic was found to be meaning-meaninglessness. The creative process is a prominent means by which

the artist finds meaning in existence and is thereby a means of deepening engagement with self and world. This meaning-providing function of creativity emerges from either or both the experience that the artist associates with creativity and the content of the art work itself.

7.1.2 Study 2 – The Relationship Between the Phenomenology of Artistic Creativity, Personality, and Psychopathology

Study 2 consisted of two psychometric experiments. Experiment 1 described the development of a questionnaire (the ECQ) based on the qualitative findings of Study 1. Experiment 2 related the experiential/existential dimensions of artistic creativity, as measured by the ECQ, to aspects of personality and psychopathology. The experiential section of the questionnaire (Part A) consisted of five scales. In brief, these were:

1. Distinct Experience: a broad factor with the common theme of the creative process as a distinct *shift* in experience. This 'change' may exist in a variety of ways, including a loss of self-awareness, a breakdown of boundaries, a sense of contact with a force beyond the individual self, and a confidence and effortlessness about the artistic activity.
2. Anxiety: a sense of anxiety and vulnerability associated with the creative process, particularly after the process.
3. Absorption: being deeply absorbed in the artistic activity and experiencing a state of inspiration
4. Power/Pleasure: a sense of control, power, and pleasure during the creative process.
5. Clarity/Preparation: a sense of certainty and clarity about the direction in which the artistic activity should proceed, including the meaning of the piece, and cultivating an appropriate mood for the creative process.

The existential section of the questionnaire (Part B) consisted of three scales:

1. Transformation: the transformative effect of artistic creativity, particularly due to the nature of the experience associated with the creative process. This transformation can occur through artistic creativity's ability to broaden experience, provide confidence in one's own subjective experience, and through its 'healing' quality. The scale emphasises how creativity enables a deeper engagement with self and world.
2. Centrality: a need to engage in artistic activity and its centrality in the artist's life; creative activity providing a fulfilment and sense of meaning that is not derived from other areas of life; a spiritual dimension to the creative process.

3. Beyond the Personal: a concern with the context of artwork beyond the personal domain, such as interpersonal elements of artwork (e.g., communication and rebellion), and exploration of artistic rather than purely personal possibilities.

Due to its exploratory nature, the findings of Study 2 were fairly diverse, relating to several different areas of theoretical interest. The major findings of this study are listed below.

1. Compared to normative data, the artist sample was elevated in the personality domains of Openness to Experience and Neuroticism, thin mental boundaries, 'positive symptom' schizotypy, and both unipolar and bipolar affective disturbance. These findings are consistent with previous research. However, contrary to the previous emphasis on hypomanic features, these features were not found to be a prominent aspect of the affective disturbance in the current sample.

2. On all of the measures that were elevated in the current sample, writers were found to be the most elevated, followed by visual artists, and then musicians. Musicians were generally not found to diverge significantly from norm data. This pattern was particularly marked in bipolar conditions in which depression plays a stronger role, as opposed to milder bipolar conditions with predominantly hypomanic features.

3. Although they did not display a strong relationship with any particular experiential/existential aspects of the creative process, thin mental boundaries were, in accordance with expectations, related to the sense of becoming deeply absorbed or immersed in the creative process (as represented in the Absorption scale). Thin mental boundaries were also related to the creative process as a distinct shift in experience (Distinct Experience), to anxiety associated with the creative process (Anxiety), and to the transformative potential of the creative process (Transformation).

4. Features of normal personality, as conceived in terms of the five-factor model of personality, were found to have some bearing on experiential/existential aspects of creativity. Agreeableness predicted deep absorption in the creative process (Absorption) and viewing the creative process as having transformative potential (Transformation). Extraversion was a negative predictor of both deep absorption in the

creative process (Absorption) and the centrality of the creative process in the individual's life (Centrality). Neuroticism predicted anxiety or vulnerability associated with the creative process (Anxiety) and viewing the creative process as having transformative potential (Transformation). Conscientiousness predicted a sense of power or pleasure associated with creative experience (Power/Pleasure) and the centrality of the creative process in the individual's life (Centrality). Finally, Openness to Experience predicted a sense of power or pleasure associated with creative experience (Power/Pleasure).

5. 'Positive' schizotypy was found to be the strongest predictor of the ECQ experiential and existential scales, suggesting a strong overlap of schizotypal and creative experience. Schizotypy was found to predict Distinct Experience, Anxiety, Absorption, Power/Pleasure, and all three of the existential factors. This pattern of relationship between schizotypy and the experiential factors was interpreted as indicating that schizotypy is associated with the central features of flow-type experience, a core element of creative experience, as identified in the Study 1 findings. The neurologically-based construct of latent inhibition was proposed as a possible mechanism that facilitates entry into flow-type states in schizotypal individuals. This may occur by reduced latent inhibition (an attenuated 'screening' of new stimuli on the basis of prior significance attached to the stimuli) allowing a 'fresh' awareness and therefore a greater absorption in present experience, thus leading to flow-type states. The findings were also consistent with Storr's (1972) suggestions regarding the function of creative work for individuals in the schizophrenia spectrum, including an assertion of a sense of control and an attempt to overcome a stark division between the inner world of mental life and outer world of reality. This relationship of schizotypy with a drive towards a sense of control or meaning is consistent with experimental research that indicates that schizotypy is associated with an increased tendency to find meaning in relatively random events.

Furthermore, there is a case for a connection between positive schizotypy and one pole of each of the dynamics operating in artistic creative experience that were identified in Study 1. In terms of the intuition-analysis dynamic, an intuitive, non-analytical mode is arguably a characteristic of the 'irrational' core features of positive schizotypy, including unusual experiences and magical beliefs (see Wolfradt & Watzke, 1999). The 'unity' pole of the unity-division dynamic is apparent in the probable relationship of positive

schizotypy to mysticism (see Thalbourne, 2004; Maltby & Day, 2002; Clarke, 2001; Jackson, 1997), a central feature of which is a sense of union (see Chapter 5). Finally, the 'freedom' pole of the freedom-constraint dynamic may be related to the concepts of cognitive disinhibition and cognitive looseness, which have both been associated with schizotypy (see Barrantes-Vidal, 2004; Eysenck, 1995; Peters, Pickering, & Hemsley, 1994; Bruger & Graves, 1998). A defining feature of both of these latter concepts is a freedom from mechanisms that may constrain or narrow cognitive processes, albeit with an ultimately organising function. These connections reinforce the notion of a resemblance, and possibly even a causal relationship, between positive schizotypal and creative experience.

6. The findings did not support the notion of the creative process as being experienced by affectively disturbed individuals as a discharge or release of anxiety or negative affect, as some commentators have suggested. Rather, affective disturbance (both unipolar and bipolar) was linked to a sense of anxiety and vulnerability associated with the creative process (as represented in the Anxiety scale). However, it was suggested that although the sense of relief or discharge from negative mood may not be present in an immediate experiential sense, creative activity might serve such a function for the affectively disturbed individual in a more general sense. This possibility was indicated by the fact that Neuroticism predicted the tendency to regard the creative process as having transformative potential (Transformation); by the correlation between affective disturbance and creative work being a need and as central in the individual's life (Centrality); and also by consideration of particular items of the Anxiety scale. It was suggested that the neurotic or affectively disturbed individual might find transformative potential in the shifting of ego boundaries that occurs in creative experience.

7. Due to the qualitative findings of the influence of the creative process on mood and other aspects of experience, the correlations between the experiential/existential dimensions of creativity and personality and psychopathological features was examined, with consideration of the possible influence of the former on the latter. The ECQ scales of Distinct Experience, Anxiety, and Power/Pleasure demonstrated the strongest relationship with schizotypy. This raises the possibility that the sense of a shift in experience associated with creative experience, including the anxiety-provoking aspects of this experience, may even promote a general openness to and belief in unusual

experiences or magical beliefs, thus possibly encouraging schizotypal tendencies. The Anxiety and Transformation scales demonstrated the strongest relationship with thin boundaries. This was interpreted as indicating that the recession of ego defences that can be associated with the creative process, and which may provoke a sense of anxiety and vulnerability, may promote thin boundaries in individuals who already have these features. The main ECQ scales that demonstrated a relationship with affective disturbance, both unipolar and bipolar, were Anxiety and Centrality. The Beyond the Personal scale also demonstrated a relationship with bipolar affective disturbance. It was suggested that the strong commitment to an activity that stimulates a sense of anxiety and vulnerability may cause or maintain depressed affect, while an orientation towards the broader context of one's artwork, including comparing one's work with the achievements of the field, coupled with the anxiety associated with the process, may encourage the mood swings that characterise bipolar conditions.

8. The relationship between the experience of the creative process and the meaning attached to the creative process was also addressed. The Absorption scale was found to be a particularly strong correlate of the Transformation and Centrality scales. This suggests that deep absorption and immersion in creative activity, a central feature of flow-type experience, is integral both to regarding artistic activity as a central source of meaning, even as a need, in the creator's life and to regarding the creative process as having transformative potential. Other elements of flow-type experience, including a sense of pleasure or joy and the sense of a shift in experience, also contribute to these existential aspects of creativity. Finally, the findings indicated that Absorption and Power/Pleasure were the strongest correlates of the Beyond the Personal scale. It was suggested that deep absorption in artistic activity may involve coming in contact with the strong influence or power of the creative process, which may encourage identification with the medium, artistic tradition, and social context of the artwork, ideas represented in the Beyond the Personal scale. Additionally, a sense of power and control associated with creative experience may consolidate an individual's sense of self in an artistic role, which may also contribute to an orientation towards the broader context of one's artwork.

7.1.3 Issues of Causality and the Nomothetic Versus the Idiographic

In the introductory chapters, it was noted that it is important to consider the issue of causality in creativity research. It was argued that the possible *effect* of creativity needs to be given greater attention, rather than focusing purely on factors that contribute to the emergence of creativity. The possibility of self-reinforcing, cyclical models of creativity has been raised at various points in the thesis in order to account for the findings. For instance, it was suggested that individuals with thin boundaries might be particularly drawn to artistic activity because a recession of boundaries of various sorts is a central aspect of the experience of artistic creativity. In turn, this experience may consolidate the individual's sense of self and world as being composed of 'thin boundaries'. Similarly, while affective disturbance may facilitate creative activity in the manner discussed in previous research (see section 2.4), the current findings indicate the prominent role of strongly-felt affective components to artistic creativity (including both pleasure or joy and anxiety or vulnerability), which may maintain or exacerbate affective disturbance. The effect of this aspect of the experience of the creative process may be particularly pronounced for affectively disordered individuals due to the fact that such individuals seem to be particularly geared towards creative activity as a central source of meaning in their lives (as indicated by the association between the Centrality scale and affective disturbance). It was also suggested that the exploration of the variety of human potential or the deepening engagement with the life-world associated with artistic creativity may encourage or reinforce the emergence of pathological traits. So while the forms of deviance associated with pathological traits have the potential to facilitate creativity, the experience of and meaning associated with creative activity may strengthen these traits.[25]

This interpretation of the current findings indicates that the experience of creativity may be coloured by features of an individual's personality and psychopathology, which may in turn strengthen these features. This leads away from a 'single direction' approach to causal factors involved in creativity (e.g., personality or cognitive factors) towards a cyclical, self-reinforcing model of causal factors involved in the creative process. As with the caution against developing either-or distinctions between the role of the schizophrenia spectrum and mood disorders in creativity (see section 2.4), analysis of

[25] As suggested in section 6.4.3.1, this self-reinforcing dynamic may also apply to adaptive or healthy aspects of the individual.

causal factors needs to move beyond focus on the causes *of* creativity and creativity *as* cause towards more complex, cyclical models. This is in line with one of the possibilities noted by Richards (2000-2001) regarding causal factors in creativity. The particular dimension of this model that emerges out of the current research is of creativity being facilitated by particular personality types and psychopathological tendencies, the nature of experiential/existential aspects of creativity being shaped by these individual differences, and then these experiential/existential features consolidating or promoting these personality types and psychopathological tendencies. This is represented in Figure 7.1. However, other aspects of the model, such as the role of cognitive factors, need to be explored in future studies. The bidirectional, cyclical model of causal factors in creativity arising from the current exploratory research needs to be tested in future studies.

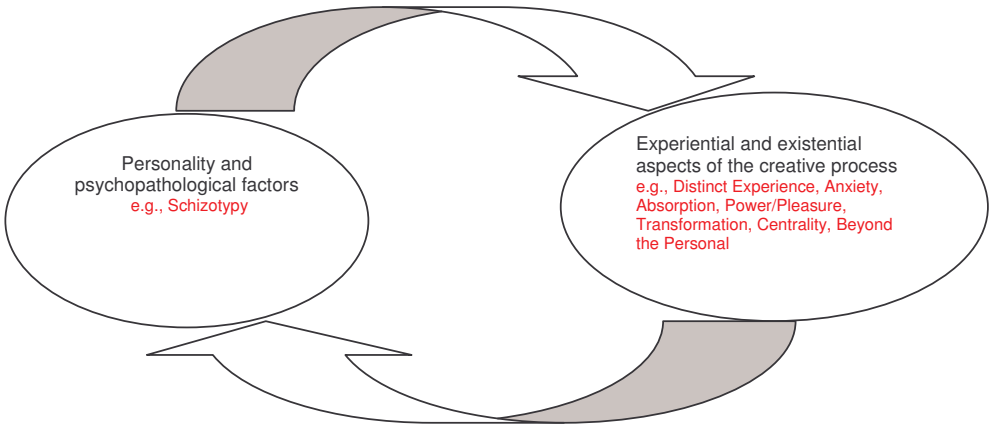

Figure 7.1. Diagrammatic representation of the bidirectional, cyclical model of causal factors in creativity.

This point regarding causal factors involved in creativity raises another issue that runs through the current research – namely, the relationship between the nomothetic and the idiographic. The phenomenological study (Study 1) was particularly concerned with identifying common features of the experience of artistic creativity in a sample of artists and with the existential meaning of the creative process for these artists. The

psychometric study (Study 2), however, was principally concerned with identifying how experiential/existential dimensions of creativity vary in accordance with personality and psychopathology. The question of commonality and generality shifted to questions of variability and specificity, although the norm comparisons of the personality and psychopathology measures in Experiment 2 of Study 2 maintained a concern with general aspects of artistic creativity.

The findings showed that common or essential features of the experiential/existential dimensions of artistic creativity can be identified, as represented in the General Structures. However, Study 2 (Experiment 2) indicated that the relative 'weighting' of these features vary in relation to personality and psychopathology. That is, while all of the essential constituents of creative experience might be identified in an individual's experience, the relative prominence of these constituents may vary. For instance, the constituents of preparation for artistic activity and the dominance of intuitive processes might both be identified in a particular artist's experience, yet the first constituent might dominate the picture, while the latter remains a relatively minor aspect of this individual's experience.[26] Returning to the phenomenological notion of the search for essential features of a phenomenon, the current findings indicate that an individual's lived experience of artistic creativity consists of an interplay between the 'character' of the phenomenon itself and the 'character' (conceived in terms of personality and psychopathological features) of the individual. In other words, the essential 'character' of artistic creativity and the variable factors of personality and psychopathology both contribute to shaping an individual's experience of the creative process. Using this terminology, Study 1 was an attempt to delineate the character of artistic creativity, while Study 2 addressed the relationship between the character of the individual and creative experience.

7.2 Revisiting the Aims of the Thesis

The current research was guided by four principal aims. These were:

[26] Indeed, there are certain features of creative experience that are highly idiographic, as represented in aspects of the Individual Structures, and which do not appear as common features at all.

1. To explicate the phenomenology of the artistic creative process. In other words, to address the question of how the creative process is experienced by artists.
2. To develop a questionnaire for measuring experiential features of the artistic creative process.
3. To investigate whether the experience of artistic creativity varies in relation to personality and psychopathological features. The research question guiding this aspect of the research was: Is the creative process experienced differently depending on personality characteristics and psychopathological features and, if so, how?
4. To explore methodological possibilities, particularly the possibility of combining qualitative and quantitative methodologies.

These aims will be addressed in turn. The phenomenological study (Study 1), described above, responded to the first of the aims. While the explications emerging from this study, as represented in the General Structures, satisfied this aim, further investigations can refine the explication and investigate particular features in greater detail.

The psychometric study (Study 2) addressed the second and third aims of the thesis. Experiment 1 described the development of a questionnaire based on the range of experiential and existential features of artistic creativity that emerged from the initial interviews. A factor analysis indicated particular thematic groupings of items within this questionnaire. The questionnaire was refined and a final version developed for psychometric correlation with other variables and for use in future studies (refer to Appendix O). Experiential and existential features of artistic creativity, as assessed by the questionnaire, were indeed found to vary based on features of personality and psychopathology (Experiment 2). Experiment 2 identified the particular pattern of variation in the ECQ scales in relation to features of personality and psychopathology.

The interface between the qualitative and quantitative approaches of the thesis was fruitful. This was particularly evident in the fact that the qualitative study allowed a multifaceted questionnaire to be developed and that the qualitative findings illuminated and provided further depth to aspects of the quantitative findings, as represented by the frequent references to the qualitative findings in discussion of the quantitative findings. Both instances represent how a qualitative approach can contribute greater richness and nuance to a quantitative analysis. This contribution adds both to theoretical

understanding and to hypothesis generation. For example, the combined interpretation of the qualitative and quantitative findings suggested the cyclical causal model of the relationship between personality and psychopathological features and the experiential/existential dimensions of creativity outlined above. In this sense, the multi-method design was a useful means of addressing the complexity of the construct of creativity. The fourth aim was satisfied in this aspect of the thesis.

A more general rationale for the thesis was that of attempting to contribute to recent calls for greater specificity and comprehensiveness in models of creativity. It was argued, based on the principles of the emerging human science approach to psychological research, that an understanding of the lived meaning, or experience, of the creative process is necessary for a comprehensive model of creativity. The present thesis has extended the small body of phenomenological studies of artistic creativity. There was a considerable degree of overlap between the current findings and the findings of these previous studies, which indicates an increasing robustness to our understanding of the phenomenology of artistic creativity. However, there were a number of aspects of previous findings that have been refined in the current findings and some points of divergence, as outlined in Chapter 5. These areas present opportunities for ongoing research into the phenomenology of creativity.

The current research provides greater specificity to models of creativity by providing the foundations for an integration of the phenomenology of creativity with approaches to creativity research that have focused on personality and psychopathology. The findings indicate that features of the experience of artistic creativity and the meaning attached to artistic creativity vary in relation to personality and psychopathology. The relationship between these dimensions, as indicated in the current research, is represented in Figure 7.2, which is modified from Russ' (1993) attempt to integrate different areas of creativity research, introduced in Chapter 3. Only the significant prediction of the ECQ scales by the personality and psychopathology variables are indicated in the figure. The figure uses the ECQ scales as a convenient means of representing aspects of the experiential/existential dimension of creativity. However, a more thorough representation of this dimension is provided by the constituents of the General Structures (see section 4.8.1). There is clearly overlap between the affective dimension of creativity research represented in the figure and the experiential/existential dimension

introduced in the current research. The links between personality and psychopathological features and the affective and cognitive dimensions are not made in the figure due to the fact that the personality constructs measured in the current research are different from the constructs Russ (1993) originally included in this model and the fact that the connection between personality/psychopathology and the affective and cognitive dimensions was not the focus of the current research. However, creativity research has made a number of connections between the personality and psychopathology variables measured in the current research and the affective and cognitive dimensions, as outlined in Chapter 2. These connections continue to be a focus of research.

The fact that the current research has found experiential/existential factors to be linked to personality and psychopathology variables indicates that the experiential/existential dimension can be integrated into the overall model. Suggestions have been made in discussion of the findings regarding the possible role of cognitive variables in relation to experiential/existential aspects of creativity. For instance, latent inhibition was suggested as a cognitive variable that may play a role in the relationship between schizotypy and experiential features of creativity. Future research may wish to investigate other personality and psychopathology constructs, and other areas of creativity research, such as the cognitive dimension, in relation to the experiential/existential dimension of creativity.

The generation of greater specificity with regards to experiential/existential aspects of creativity points in the direction of the psychological function or motivation that might drive creative activity for different personality/psychopathology profiles. Suggestions were made regarding this functional aspect of creativity in relation to particular profiles in the discussion of the Study 2 findings (section 6.4.3). Regardless of these particular profiles, the current research indicates that experiential features of creativity, including

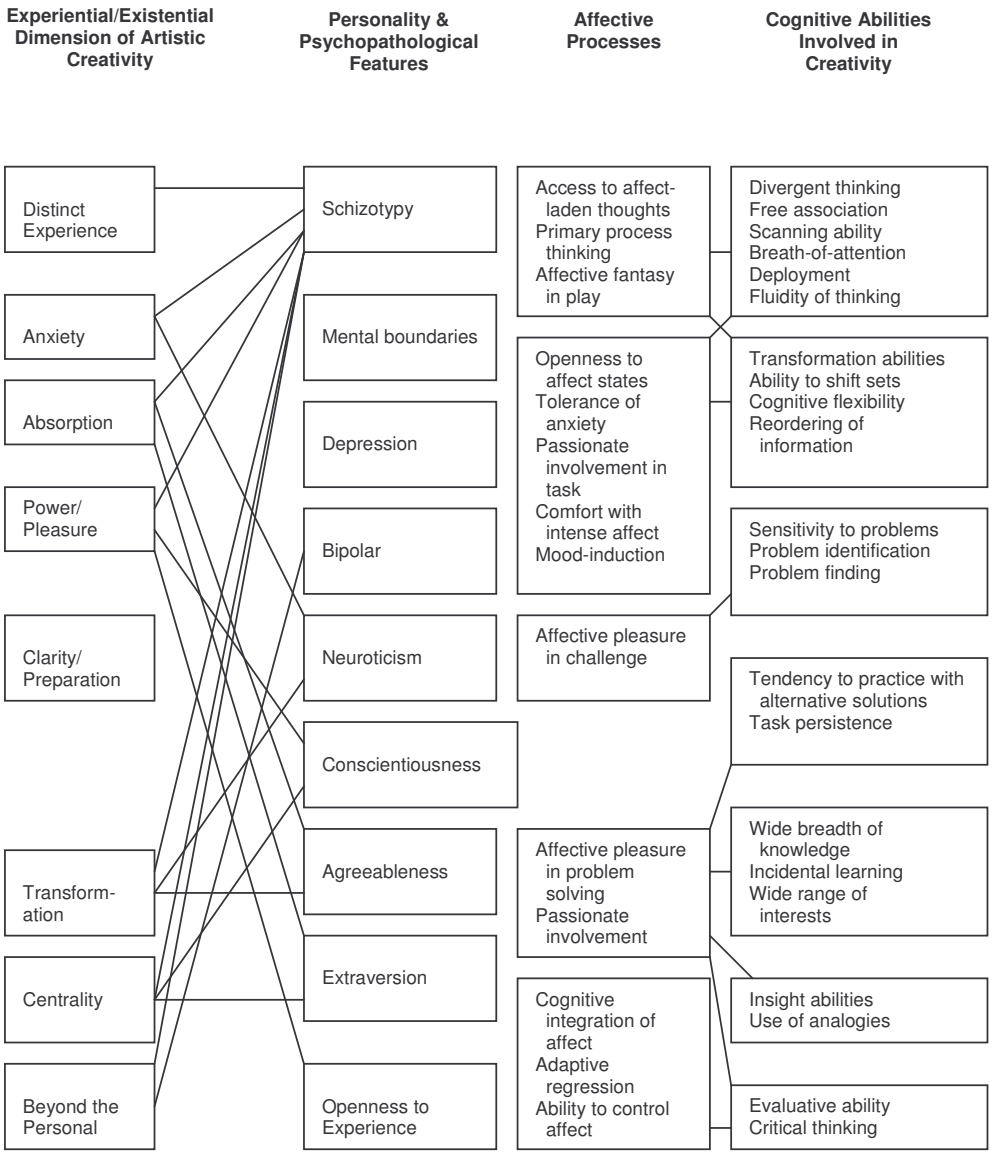

Figure 7.2. The relationship between the experiential/existential, personality and psychopathology, affective, and cognitive dimensions of creativity (modified from Russ (1993): the two right-hand columns are from Russ (1993) and the two left-hand columns have been added.)

the sense of pleasure associated with creativity, the recession of various forms of boundaries, the dominance of intuitive mental processes, and the meaning attached to this experience, such as the deepening engagement with the life-world, play a central role in the drive to create. The linking of the experiential/existential dimension with aspects of personality and psychopathology also indicated why particular individuals might be suited to artistic creativity. For instance, the findings indicated a similarity between important elements of creative experience, as represented in the Distinct Experience, Anxiety, Absorption, and Power/Pleasure scales, and the 'positive symptom' dimension of schizotypy. Therefore, schizotypal individuals might not only be suited to artistic creativity due to a cognitive mechanism that benefits creative production (such as divergent thinking), but also due to the 'overlapping' of the quality of experience in the creative and the schizotypal states.[27]

Overall, the current investigation indicates the value of considering experiential and existential aspects of creativity. While this is of inherent importance from the perspective of phenomenological psychology, it has also been found to contribute to other approaches to creativity research. In particular, it has assisted in developing an understanding of why individuals with particular personality and psychopathological features might be attracted to creative experience; offered insight into the possible psychological function of creative activity in relation to the individual differences of personality and psychopathology; and contributed to debate concerning issues of causality in creativity. The findings indicate that, rather than simply attempting to identify uniform sets of traits or inclinations amongst creators, it is important to consider the range of individual differences associated with creativity, even within single domains such as artistic creativity, and to consider the function that creativity serves for these individual profiles. This functional analysis is illuminated by an understanding of the nature of and the meaning attached to creative experience and the way in which this varies in relation to individual differences.

[27] It is being assumed here that cognitive mechanisms have a causal effect on creative production, but it is also possible that creative experience may have a causal impact on cognitive mechanisms (e.g., encourage divergent thinking), in much the same way that the current thesis suggests an effect of experiential aspects of creativity on personality and psychopathological variables.

7.3 Summary

This chapter summarised and integrated the main findings of the current thesis. It returned to the aims of the thesis and described how these aims have been explored through the phenomenological and psychometric studies. A bidirectional, cyclical model of causal factors involved in creativity was proposed.

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Appendix A.
Approaches to Creativity Research

Mayer (1999) identified six main approaches that have been adopted to researching creativity. These include the psychometric, psychological, biographical, biological, contextual, and computational approaches. These approaches are described below, drawing on the three research paradigms (describing, making comparisons, relating factors) identified by Mayer (1999). Although these six approaches are distinct, it should be noted that the work of particular investigators can belong to more than one approach. For instance, Eysenck's work in creativity research has had a strong psychometric vein, with an emphasis on measurement, yet has also used the experimental approach, especially when concerned with underlying theoretical issues.

The psychometric approach

Mayer (1999) refers to the psychometric, psychological, and biographical approaches as the "big three" (p.452), reflecting the fact that they are the most widely used and well-developed approaches in creativity research. The psychometric approaches view creativity as a measurable individual factor or characteristic, akin to intelligence or personality traits. This approach emphasises quantitative measurement (a numerical value summarising an individual's creativity), controlled environments (testing taking place in artificial contexts), and ability-based analyses (regarding creativity as emerging from the component abilities of the individual). The psychometric measurement of creativity emerged out of the divergent thinking tests introduced by Guilford and refined by Torrance and others.

When describing creativity, the focus of the psychometric approach is on the development of instruments that measure the degree of trait creativity possessed by an individual. When making comparisons, the psychometric approach compares the characteristics of people who score high versus those who score low on tests of creativity. A prominent area of research along these lines has been the investigation of differences in personality characteristics between high and low creative groups. With regards to the research paradigm of relating factors to creativity, the psychometric approach examines the relationship between measures of creativity and other

measures. While research into personality traits has again played a prominent role here, investigations of the relationship of other factors to creativity have also been pursued – for example, intelligence (see Sternberg & O'Hara (1999) for a review) and psychopathological constructs (Andreasen, 1987; Jamison, 1993; Rothenberg, 1990; Sass & Schuldberg, 2000-2001a). While the psychometric approach is certainly the most well-developed approach to creativity research, commentators have cautioned that an over-reliance on the approach will limit research and restrict a fuller understanding of creativity (Mayer, 1999; Mumford, 2003a). These cautions have been built around the criticisms of divergent thinking tests outlined in section 2.1.

The psychological approach

The psychological, otherwise known as the experimental, approach focuses on the cognitive processes involved in creative thinking or creative problem-solving. The assumption that drives this research is that creativity is best understood as cognitive processing and that researchers can gain access to these processes by examining thinking in response to creativity problems. Accordingly, Mayer (1999) notes that the central characteristics of this approach are: controlled environments, in which creativity problems are presented in artificial contexts, quantitative measurement, in which quantitative measurements of cognitive processes are made, and cognitive task analysis, in which the component cognitive processes involved in creative-thinking tasks are analysed.

The notion of distinct phases to creative thought has a long history, with Wallas' (1926) classic four-stage model of preparation-incubation-illumination-verification being one of the earliest and most influential. Such models of creative cognitive processing have guided experimental research in the area. Studies have examined the nature of insight (Mayer, 1995; Metcalfe & Wiebe, 1987; Sternberg & Davidson, 1995), incubation (S.M. Smith, 1995; Smith & Blankenship, 1991; Smith & Vela, 1991), the effects of brainstorming on creative production (Nickerson, 1999; Runco & Sakamoto, 1999), and the teaching of creative-thinking skills (Nickerson, 1999). Attempts to identify and detail phases of creative thinking is an ongoing focus of research, with the recent creative cognition approach (Finke, Ward, & Smith, 1992; Smith, Ward, & Finke, 1995) playing a prominent role.

When focusing on describing creativity, the psychological approach uses cognitive task analysis to identify specific component processes of creative thought. The creative cognition approach, for instance, indicates that creativity may involve two key cognitive capacities: generative processes, involving the initial generation of candidate ideas or solutions, and exploratory processes, involving extensive exploration of these ideas (see Ward, Smith, and Finke (1999) for a review). The model posits that, in most cases, the creator alternates between generative and exploratory processes, refining the emerging structures according to the demands or constraints of the particular task. Other cognitive aspects of creative activity have also been examined, such as the role of problem finding (Jay & Perkins, 1999), skills associated with expertise (Weisberg, 1999), and information search and evaluation (Boden, 1999). Although these cognitive models have introduced an emphasis on the conscious acquisition and manipulation of information, some researchers have continued to stress the role of unconscious, associational processes in creative thought. Both Eysenck (1997) and Martindale (1999) argue that creativity depends on associational linkages, with the 'flatness' of the associational gradient and the range of connections made contributing to the production of novel ideas (Mednick, 1962). Gedo (1997) suggests that creativity in fact requires the flexible integration of both unconscious associational processes and the conscious analogical reasoning processes identified in the cognitive models. Together, the psychological approaches indicate that the creative act is more complex than the 'idea generation' phase of creative activity traditionally assessed through divergent-thinking tests.

On the level of making comparisons, the psychological approach compares the cognitive processes involved in creative and non-creative thinking. A number of studies, for example, indicate that different cognitive processes are involved in insight and non-insight problems (see Ward et al. (1999) for a review). On the level of discovering relationships, the psychological approach examines factors that contribute to or inhibit creative thinking. Research within this paradigm has included studies relating to education and motivation. For example, some studies have attempted to determine whether learning how to use creative thinking strategies enhances creative problem-solving performance (see Nickerson (1999) for a review). There is also good evidence that creative problem solving is facilitated by intrinsic motivation but inhibited by extrinsic motivation (Amabile, 1985; Collins & Amabile, 1999; Csikszentmihalyi, 1988a).

Runco and Sakamoto (1999) note that the psychological approach involves a 'trade-off' between control and generalisability: on the one hand, it allows for studies that are controlled well-enough to reduce the complexities surrounding creativity, thereby allowing sound inferences about causality. However, the external validity of the approach is questionable due to the contrived nature of conditions under which creative thinking is assessed. Runco and Sakamoto (1999) observe that, while this trade-off is inherent to all experimental research, it may be particularly problematic in studies of creativity because creative thought may in fact depend on spontaneous elements not amenable to testing under controlled conditions.

The biographical approach

Biographical approaches to the study of creativity are based on detailed analysis of case histories of creative people in the hope that this will reveal life events or experiences that foster the development of creativity. Creative episodes in the life of the individual are of particular interest. Rather than researching trait creativity in controlled settings, which is the predominant method employed in the psychometric and experimental approaches, the biographical approach researches achievement creativity in authentic settings.

Individual case studies using qualitative methodologies have played a dominant role in this research approach, based on the thinking that creativity is best understood 'in action' with methodologies developed to study creativity in this way rather than limit the study of creativity through a methodological commitment to the laws of prediction and control. For instance, Gruber and Wallace (1999) write, in introducing the evolving systems approach to the case study method: "In the study of creativity, as an alternative to the methodological battle cry of prediction and control, we propose a two-part approach: detailed analytic and sometimes narrative description of each case and efforts to understand each case as a unique functioning system" (p.93). Csikszentmihalyi (1988b, 1996, 1999) has cautioned against the case history approach becoming too individualistic, reminding researchers that the psychology of achievement creativity needs to be examined within a social and cultural context. Attempts to produce generalised findings based on these specific case studies have proceeded both in a qualitative and quantitative manner. While noting the dangers of premature generalisation, particularly in the area of creativity research, Policastro and Gardner

(1999) tentatively report some general qualitative findings. Simonton (1990, 1999) argues for a historiometric approach based on quantitative analyses in which case studies of creative people are collated in an attempt to discover "…general laws and statistical relationships that transcend the particulars of the historic record…" (p.117).

In the research paradigm of describing creativity, the biographical approach can provide rich and detailed narrative descriptions of the case history of a creative person. This approach is illustrated in Gruber's (1981) case study of Charles Darwin, Gardner's (1993) collection of seven case studies, and Wallace and Gruber's (1989) collection of twelve case studies. On the level of making comparisons, the biographical approach summarises commonalities among a collection of case histories of creative people. As noted above, this research has proceeded with both qualitative and quantitative methodologies. The attempt to summarise commonalities reaches back to Galton's (1869) *Hereditary Genius*, which examined the common features of lives of individuals recognised for outstanding achievement. On the level of discovering relationships, the biographical approach attempts to identify life events that foster the development of creativity – either on the individual level or across a collection of case histories. Instances of this research are Howe's (1999) analysis of the relationship between being a child prodigy and achievement creativity in adulthood and Feldman's (1999) analysis of the relationship between being an outstanding student and later production of great creative work, both of which concluded that there is no invariant relationship between these events.

Mayer (1999) observes that the biographical approach provides a level of detail and authenticity that the psychometric and experimental approaches do not offer. It might be added that another advantage of this approach is that it provides a holistic analysis, locating creativity in the larger context of an individual's life and being sensitive to the wide array of psychobiographical information relevant to creative output, rather than extracting creativity as an entity that might be studied in isolation. However, Mayer (1999) notes the lack of control and representativeness inherent in the biographical approach and questions whether a coherent theory of creativity can be built on highly detailed case studies of a few select individuals. He suggests that the biographical approach is most usefully used as an adjunct to other approaches.

The biological approach

Apart from the three major approaches to creativity research described above, biological, computational, and contextual approaches have also been adopted. The biological approach, representing the contribution of cognitive neuroscience to creativity research, seeks to determine physiological correlates of creative thinking. The driving principles of this approach are that creativity is a measurable trait and can be understood by examining physiological changes that accompany creative thinking. The biological approach relies on measuring physiological changes through techniques such as EEG measures of cortical activation and PET measures of brain glucose metabolic rate (Martindale, 1999).

On the descriptive level, the biological approach examines brain activity while people are engaged in creative thinking. This approach has yielded evidence that creative inspiration is associated with low levels of cortical activation, more right- than left-hemisphere activity, and low levels of frontal-lobe activation, leading researchers to assert that it is a mental state characterised by defocused attention, associative thought, and a large number of mental representations being simultaneously activated (see Martindale (1999) for a review). On the level of making comparisons, the biological approach compares the brain activity of creative and non-creative people and brain activity when engaged in creative problem-solving compared to other cognitive processes. Martindale (1999) reviews evidence that suggests that creative people do not display general differences from non-creative people, but only while engaged in creative thinking. During creative thinking, creative people tend to display lower levels frontal-lobe activation than non-creative people, suggesting a deficiency in cognitive inhibition. On the level of discovering relationships, the biological approach looks at how biological factors (such as brain injury) might affect creativity. This level of inquiry has not as yet been widely used (Merten, 1999; Weckowicz, Fedora, Mason, Radstaak, Bay, & Yonge, 1975).

While the biological approach enjoys the rigour of neurocognitive techniques, it remains open to the criticisms of reductionism directed at most psychophysiological research: that is, even if a complete picture of brain activity associated with creative thought were to emerge, would this constitute a complete theory of creativity (Mayer, 1999)? Although they are on opposite ends of the spectrum with regards to standards of control and

predictability, Mayer (1999) offers a similar interpretation of the role of the biological approach as the biographical approach: that it can augment other approaches, but should not function as a dominant approach itself.

The computational approach

The relatively recent computational approach attempts to formalise creative thinking as a computer program using the techniques of artificial intelligence. The underlying view of this approach is that creativity can be viewed as a mental computation representable as a computer program. On the level of describing creativity, this approach involves attempting to generate computer code that simulates creative production. The computer models of creativity are relatively few and not very advanced, but there have been some promising advances in the areas of "combinatorial creativity" and "exploratory-transformational creativity", as reviewed by Boden (1999). On the level of making comparisons, the computational approach attempts to model creative and non-creative thought. On the level of discovering relationships, this approach seeks to determine how features of a formal model (e.g., the manner in which a program is organised) affects creativity.

Although this approach is still in its infancy, it has been praised for offering high levels of precision and objectivity to creativity research (Boden, 1999; Mayer, 1999). However, it suffers from reducing cognition to mathematics amenable to computer modeling and from its current inability to model non-cognitive factors (e.g., affective, motivational, contextual factors) in creativity (Boden, 1994, 1999).

The contextual approach

The final approach identified by Mayer (1999) is the contextual approach. This approach has argued that creativity does not occur in a vacuum as a purely individual-generated phenomenon, but exists and therefore should be studied in context, whether this context is social, cultural, or evolutionary. On the level of describing creativity, the contextual approach attempts to describe creativity as it exists in context. A prominent example of this is Csikszentmihalyi's (1988b, 1990a, 1999) systems model of creativity. This model goes beyond the individual to include the culture (domain) and society (field), arguing that creativity is a phenomenon that emerges from a complex interaction between these three levels.

An instance of the contextual approach making comparisons is the examination of conceptions of creativity and factors influencing the emergence of creativity in different cultural contexts. Although some interesting work has been conducted along these lines (see Lubart (1999) for a review), it is ripe for further research, particularly in the form of empirical psychological studies. On the level of discovering relationships, the contextual approach has looked at contextual barriers to creativity and ways of overcoming these barriers (e.g., in the organisational context, see Williams & Yang (1999)), as well as how evolutionary forces might have shaped creativity (see Grossman, 1981; Lumsden, 1999). Although the broadening of the study of creativity to include contextual factors has been welcomed by many commentators (e.g., Csikszenthmiahlyi (1988b, 1990a, 1999), Lubart (1999), Mayer (1999), Mumford (2003a), Simonton (1988a, 1990)), Mayer (1999) and Lumsden (1999) maintain that this approach needs to further develop the basic scientific principles of testable theories and solid empirical evidence.

Appendix B.
Principles of Phenomenological Psychology

The phenomenological principles of intentionality, the natural attitude, the phenomenological reduction, description, and the search for essences are described below.

Intentionality

The concept of intentionality concerns the relationship between human consciousness and the world. Husserl (1913/1931) argued, drawing on Brentano's (1874/1973) view of consciousness as an *act*, that consciousness is always consciousness *of or about some thing*, it is always directed towards an 'object' (which may be of a concrete nature, such as a chair or another person, or may be an abstract idea or concept). For example, if I am depressed, I am depressed about some thing; if the painter is inspired, the painter is inspired by some thing. These 'things' may not be directly available to conscious awareness; that is, the mind is not always aware of its intended object. In this sense, intentionality refers to the most basic interpretive mental act – it translates "the unknown raw stimuli of the real world, which our senses have responded to, into an object-based (or 'thing'-based) reality" (Spinelli, 1989, p.11).

This concept of intentionality emerges from the more general attitude of phenomenology towards the relationship between individuals and the world. Individuals are not viewed as objects *in* nature, the perspective assumed in the natural sciences. Rather, the phenomenologist sees an indissoluble unity or interrelationship between the individual and the world. Hence the use of hyphenated terms such as 'being-in-the-world' (Heidegger, 1927/1996): neither 'being' nor 'the world' can be entirely separated from each other.[28] The individual and the world are in constant dialogue. They engage in an ongoing process of co-constituting each other: individuals are partly active because they are always acting in their world in a purposeful way, and partly passive because the world is always acting on them (i.e., presenting situations that they must respond to;

[28] Phenomenological psychologists often illustrate this foundational principle by drawing on classic figure-and-ground perceptual diagrams, such as the 'vase and faces' drawing (e.g., see Valle et al. (1989); Spinelli (1989)).

Valle et al., 1989).[29] There is no escape from this relationship, because whatever is in the world can only be known through our consciousness of it; as Heidegger (1927/1996) maintained, we are always 'already-in-the-world'. Accordingly, phenomenology is neither a science of the subject nor of an object, but of their necessary, essential relationship. The phenomenological psychologist conceives of the data, in the form of a text, as describing a relationship between a subject imbuing the described world with meaning (Karlsson, 1993).

Within every act of intentionality there are always two experiential foci, which Husserl (1929/1969) referred to as 'noema' and 'noesis'. The noematic focus is the object (the 'what') that the individual directs his attention towards and focuses upon. This is, as it were, the direction of consciousness. The noetic focus is the mode (the 'how') through which the individuals defines this object. This refers to the manner in which the object is perceived, the meaning an individual attributes to the object. To use Zaner's (1970) illustrative example of an individual looking at a tree, the noematic focus is the tree-as-seen, the perceived tree, and the noetic focus is the seeing-of-tree, the manner of perceiving the tree. Zaner (1970) remarks that this act of consciousness does not simply involve "a seeing of the tree, nor simply a grasping of the seeing alone. *It is rather an apprehension of the entire noetic-noematic complex*" (p.134). The phenomenologist seeks to explicate both of these foci of acts of intentionality, in contrast to the tendency of much psychological research to delineate only one of these foci, generally the noematic focus (Spinelli, 1989).

The noetic-noema relationship highlights the total interrelatedness between individual and world. Objects are made present (are 'intended' or 'constituted') by consciousness (the tree-as-seen), yet consciousness is revealed or elucidated by objects (the seeing-of-tree). In an example provided by Conrad (1990), a lost beloved exists only in the context of grieving, and the act of grieving occurs only as a response to the loss of the beloved. Valle et al. (1989) summarise the phenomenological position: "Without a consciousness (as "consciousing") through which they can show themselves, there are no objects. Similarly, without objects revealing themselves, there is no consciousness.

[29] See Valle et al. (1989) for a discussion of the implications of this co-constituting relationship between individual and world for existential notions (e.g., freedom and choice) and for cause-effect relationships.

They form an indissoluble unity characterized by their mutual intentionality" (p.12). In this sense, the intentional object is distinct from the nature of a putatively 'real' object and the 'subjective' impressions of it, which represent the domains of philosophical materialism and idealism respectively.

The natural attitude and the phenomenological reduction

In order to understand the meaning and purpose of the phenomenological reduction, it is necessary to understand what Husserl (1954/1970) termed the 'natural attitude'. This refers to the dichotomy between objects in the world and mental processes: on the one hand, there are real, material objects which do not possess any inherent meaning and which exist in the 'external' world independently of any observer; on the other hand, there is the 'subjective' realm of private, arbitrary, and internal mental states and processes. This realm is neither directly observable nor publicly verifiable (Conrad, 1990). The natural attitude specifies a causal relationship between these realms: the 'real', external world is assumed to cause internal mental states or processes. This attitude forms the philosophical basis of much work in the natural sciences and is so accepted that it has come to be regarded as common sense. However, as Husserl and many others have pointed out, it remains a *theory* about human experience rather than a simple description of it. The theory of the natural attitude is clearly at odds with the phenomenological view of co-constitution between the individual and the world described above.

In terms of creativity research, Conrad (1990) points out that the natural attitude leads to two alternatives, corresponding to the dichotomy between objects in the world and mental processes. The first is to regard creativity as an objective property of a made object in the world, such as a painting, which is straightforwardly registered in perception by the viewer. This account would fall in the creative product approach to defining creativity, as opposed to the creative person or creative process approaches (see section 2.1). The second alternative is to view creativity as mental state, process, or attribute of the creator – an internal object. This account would sit most comfortably in the creative person approach, with some room for the creative process approach. As Conrad (1990) remarks, the natural attitude specifies external causes to these internal creative objects: a 'natural' cause in the form of "instinctual vicissitudes" (p.107), such as personality or motivation, or a 'supernatural' cause in the form of divine inspiration.

Conrad observes that neither of these explanations, creativity as external or as internal object, examine the experience or phenomenon of creating, but simply propose causes external to the experience itself.

Husserl (1913/1931) maintained that in order to understand a given phenomenon, it is necessary to move from the natural attitude to the 'transcendental attitude'. This shift in attitude is achieved through the phenomenological reduction (or 'epoché'), which refers to the attempt to suspend or put aside one's preconceptions and assumptions. By 'bracketing' these biases as much as possible, one is preparing the ground to approach immediate experience with an openness, to perceive freshly what may otherwise have been "worn smooth with use" (McIntosh, 1997, p.45). The purpose of this is allow subsequent interpretations of the experience or phenomenon to be more adequate than the automatic, instinctive interpretations encouraged by the natural attitude (Spinelli, 1989).

In order to perform the process of bracketing, one must attempt to make one's preconceptions and assumptions as explicit as possible – to bring them from a prereflective to a reflective level. Valle et al. (1989) point out that as newly discovered assumptions are bracketed, more assumptions emerge, need to be reflected upon, and then bracketed. In this sense, the process of bracketing never ends, and so a complete reduction of the world as it is considered in the natural attitude to a world of pure phenomena is an impossibility.

Phenomenology in fact posits two forms of bracketing: phenomenological bracketing, which suspends causal, theoretical explanations, and eidetic bracketing, which sets aside the factual particulars of any single case. In the case of creativity research, the phenomenological researcher needs to hold in abeyance existing theoretical or causal constructs relating to creativity (e.g. personality theories, the bipolar-creativity link, psychoanalytic explanations), personal prejudices relating to creativity (e.g., that creative expression can function as a powerful tool for self-awareness), and the 'facts' of an individual case of creativity (e.g., the type of instrument used, the degree of experience of the creator, and so forth). By bracketing these prejudices and factual particulars, the experience of creating as it appears in immediate awareness comes into sharper relief.

Performing the reduction allows us to suspend our ordinary attention to the objects of consciousness (what is seen, felt, created, and so on) so that we can attend to the very acts of consciousness (the noetic acts of seeing, feeling, creating, and so on), the intentional nature of consciousness. The aim is to become progressively more aware of the way in which phenomena have been built-up and constituted through our consciousness of them. Or, as Brady (1994, cited in McIntosh, 1997) rather poetically puts it, the task is to "to see the eye look". It also allows us to come closer to the essential features of these acts of consciousness, as discussed below.

Description

After having 'opened up' possibilities through the phenomenological reduction, the phenomenological method encourages the researcher not to place another type of limitation on perception by immediately trying to explain or make sense of it (Spinelli, 1989). Such attempts at explanation would reverse the process of reduction by re-introducing theoretical constructs. Instead, a principle of description is applied: the phenomenologist attends to her immediate and concrete impressions and focuses on describing rather than interpreting or speculating about these impressions. Brooke (1991) writes that to describe phenomenologically is "to return repeatedly to the phenomenon itself so that it may show itself in ever deeper, richer and more subtle ways" (p.31). Hence phenomenological research does not start with an arbitrary definition of a phenomenon – rather, it is this very 'whatness' of lived meaning that the researcher seeks to comprehend (Fischer, 1989).

The relationship between description and interpretation is an area of ongoing debate within phenomenological psychology (e.g., Giorgi, 1992, 1995; Parker & Parker, 1994; Salner, 1990). Some have argued (e.g., Salner, 1990) that there is no such thing as pure description, that description always has at least a hermeneutical dimension due to factors such as language, the perspectival nature of experience, and the existence of subjective meanings. While the descriptive position is aligned with the Husserlian tradition of phenomenology, there have also been attempts to develop more of a

hermeneutic phenomenology, drawing inspiration from the work of Heidegger (1927/1996).[30]

Most phenomenologists acknowledge that there is at least a tension between description and interpretation, but advocate staying as close as possible to a descriptive stance. As Giorgi (1997) argues, the true significance of the descriptive task within phenomenology is made clearer when one considers the alternatives to description, such as explanation, construction, and interpretation. These alternatives presuppose what is given to consciousness and depart from it in order to account, construct, or interpret it. Phenomenology is precisely concerned with not presupposing or departing from experience; it is concerned not with accounting for but with grasping experience as fully as possible. Rather than drawing on factors external to the phenomenon itself, which is required in the process of explanation, construction, or interpretation, phenomenology aims to 'stay close' to the experience itself. The descriptive stance is regarded as being the most suitable for achieving these aims (Giorgi, 1997).

The process of phenomenological description involves what has been termed the rule of horizontalisation, or the equalisation rule (Spinelli, 1989). This refers to not placing any initial hierarchies of significance or importance upon the elements of the description, but to treat each initially as having equal value or significance (to keep them 'equal'). To use Spinelli's (1989) metaphor, the process is one of piecing together a jigsaw puzzle without prior knowledge of what image the complete puzzle depicts: in such a situation, we cannot determine from the outset that any one piece of the jigsaw is any more important or valid than any other. Similarly, phenomenologists argue that in order to make sense of the large-scale jigsaw puzzle of our mental experience of the world, immediate, possibly misleading, hierarchically based judgements should be avoided. In other words, the purpose of this 'rule' is, as in the reduction, to assist the researcher in examining the experience of interest with less prejudice.

[30] Interpretive phenomenological analysis (IPA), for instance, draws on both the phenomenological and the hermeneutic traditions in offering a form of qualitative

The search for essences

The phenomenological analysis, through the process of reduction and description, seeks to provide an account of the essence of the phenomenon being researched. For Husserl (1913/1931), the term 'essence' referred not to Platonic substances but to the most invariant meaning of a phenomenon (Giorgi, 1997). It did not reside in a transcendental space, but in the experience itself. The phenomenological essence is the articulation of a fundamental meaning without which a phenomenon could not present as it is.

Husserl (1913/1931) posits that human experience has its own inherent logic apart from and prior to the theoretical structures imposed upon it or the factual particulars of single cases. This allows us to understand the meaning of a phenomenon as it appears within different theoretical frameworks (e.g., across cultures or time periods) and as it manifests itself in different situations (i.e., with variable factual particulars). Conrad (1990) illustrates using the case of Hamlet's grief: "Modern audiences understand and respond to Shakespeare's play, despite the differences in cultural context, precisely because the experience of grief has an inherent logic, apart from the contingent facts of any one instance of grief, and that logic or meaning is the same for Hamlet or any human subject, across different cultures and time periods" (p.108). Performing the bracketing operations as far as possible allows the researcher to come closer to such experiential invariants, the essence or inherent logic of a phenomenon. Spinelli (1989) writes: "Since experiential invariants cannot be removed or bracketed, it is through their discovery that we become aware of the ultimate limitations to our ability to experience 'things in themselves'" (p.28). In other words, what remains after the reduction is revealing of the form or structure of human consciousness.

The method referred to as free imaginative variation plays a central role in reaching an articulation of the invariant structure of a phenomenon (Giorgi, 1997). This method involves freely changing aspects or parts of a phenomenon in imagination and seeing whether the phenomenon remains identifiable with the part changed or not. The factual particulars of an account of a phenomenon are one example of a possible instance of the phenomenon. By multiplying possibilities the researcher becomes aware of those features that cannot be removed, and therefore of what is essential in the phenomenon.

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analysis that has space for both description and interpretation (see Smith, 2004).

In psychological as opposed to philosophical application of the phenomenological method, the facts, actual events and feelings present in the account of the experience do not undergo imaginative variation. The empirical psychologist remains with the account, explicating meanings and judging their relevance for the described phenomenon. The psychological essence is more context determined than the pure philosophical one, as Giorgi (1989b) describes:

> Philosophers want to know what learning is regardless of context, in its most universal sense, without cultural or social constraints. But if psychologists pursue the essence to that level of abstraction or that level of universality, our subject matter is transcended. Thus psychologists seek a more contextualized, a more socialized, a more limited kind of invariant meaning of a description. (p.48)

Rather than seek absolute essences (as in transcendental phenomenology), phenomenological psychology hopes to achieve trans-situational consistency of meaning. It asks what is common and essential in accounts of a lived phenomenon, rather than what is universally true about the phenomenon.

Regarding essences, Karlsson (1993) writes that the purpose of the phenomenological method "is to deepen one's understanding of the phenomenon being studied, rather than simply giving a phenomenal reconstruction of the experience" (p.88). In terms of the phenomenological study of creativity, this means that the goal is not to simply describe experiences of the creative process in psychological language, but to make the implicit connections within the experiences explicit and to examine what is necessary about each experience to make it an experience of the creative process and not something else.

As noted above, phenomenologists acknowledge that a complete reduction is never achieved and therefore conclusions concerning the invariant experience of the world are never complete or final; through ongoing phenomenological examination, these conclusions may simply become more adequate. Conrad (1990) writes: "The enterprise is optimally a cooperative one in which individual researchers compare, and where necessary clarify, correct, or expand upon, each other's insights" (p.110). Therefore, the current research regards itself as an attempt to contribute to understanding the

phenomenology of artistic creativity through comparison with previous phenomenological investigations, rather than a single-handed revelation of the essence of this phenomenon!

It is worth noting that phenomenology's commitment to the notion of essences, particularly in its original Husserlian formulation, does not sit comfortably with much constructionist and postmodern thinking. These philosophical stances, more dominant in the current Zeitgeist, emphasise perspective, context, mediation, and difference. Derrida (1973), for instance, argued that Husserl's concept of essences was flawed and that his philosophical emphasis on the 'lived present' concealed a dependence on the idea of death. Derrida's deconstruction maintains that experience and theory can never truly be separated, our biases never truly 'transcended'; analysis should focus on deconstructing context and perspective rather than attempting to identify the essential structure of phenomena (see Lawlor, 1998, 2002). However, criticisms of the notion of essences in phenomenological thought should be tempered by the phenomenologist's acknowledgment that complete access to essential structure is always deferred, never completely achieved.

Appendix C.
Methodological Implications of Phenonomenological Psychology

The application of phenomenology to psychological research has been guided by the principles outlined in Appendix B. However, there is not a single method shared by all phenomenological psychologists and the field continues to refine methodological details. The basis of these empirical methods and their ongoing refinement is captured in Merleau-Ponty's (1945/1976) phrase "fidelity to the phenomenon" – that is, the task of capturing the lived meaning for the subject of psychological situations.

Issues of method have been vigorously debated in the human science literature over the last several decades. These have included such questions as: how should notions of validity and reliability be construed in the phenomenological context? What is the role of subject numbers? What are the limits of description as data? Clearly, given the different philosophical outlooks of the natural sciences and phenomenology, these approaches differ in various issues of method (see Giorgi, 1970, 1988). The following outline will present the phenomenological view of three major methodological issues - validity, data gathering, and sample size - in order to contextualise the approach of the current research.

Validity

The phenomenological researcher, as with all empirical researchers, is concerned throughout the investigative process that the findings are valid – that they are well grounded, well supported, and that one can have confidence in them. The main issue of validity within the natural science framework is whether one can have confidence in measuring instruments, such as questionnaires. Phenomenological research adopts a more general perspective towards validity – "as a conclusion that inspires confidence because the argument in support of it has been persuasive" (Polkinghorne, 1989, p.57). The validity of a phenomenological study depends on the power of its presentation to convince the reader that its findings are accurate. It works in the linguistic realm, rather than being able to draw on the reader's commitment to the conclusive power of statistically based arguments.

Polkinghorne (1989) notes that the reader must be persuaded that two key inferences made by the phenomenological researcher are powerfully supported: a) the transformation of the raw data into phenomenological, informed psychological expressions and b) the synthesis of the transformed meaning units into a general structural description. The reader must be able to follow and be convinced by the thought processes that have led to the conclusions, agreeing that the general description reflects the common features and structural connections manifest in the examples collected. Also, if the reader has experience of the phenomenon under investigation, she must be able to identify her own experience in the findings.

Polkinghorne (1989) lists a number of other considerations in the assessment of validity: was the paricipant's report influenced in any way, so as not to accurately reflect his or her true experience? Were there conclusions other than those offered by the researcher that might have been derived from the transcripts? If so, has the researcher identified these and demonstrated why they are less probable than the one presented? Can the reader move from the general structural description back to the original descriptions and find that it accounts for the specific contents and connections described?[31]

Data gathering

In contrast to philosophical phenomenology's use of self-reflection as its main material for analysis, phenomenological psychology uses independent participants to gather data. Strasser (1969) proposed the use of independent participants, which he referred to as dialogal phenomenology, in order to avoid solipsism. However, self-reflection on the part of the researcher regarding his own experience of the phenomenon under investigation is regarded as an important initial step in order to locate biases and presuppositions that may come into play during data analysis.

Although written descriptions are often used as data, many phenomenological researchers prefer individual interviews as they tend to allow for a more immediate, less distant and less reflective description of experience (Polkinghorne, 1989). They also allow for clarification of meaning on the part of the interviewer. Although content of

[31] See Giorgi (1971, 1983) for an extensive consideration of issues of validity in phenomenological psychology and Smith (2003b) for consideration of issues of validity in qualitative research generally.

language is certainly the main form of data, other forms of data are sometimes also used, such as the form of language (e.g., hesitation, speed of speech), non-verbal cues, or drawings (e.g., McIntosh, 1997). The phenomenological interview is often conversational, with an interest in arriving at a shared understanding of what is being described. The attitude of the interviewer is non-directive, relying on clarification and elaboration.

The participant is viewed as an informant regarding the experience that is the topic of research. Many topics (e.g., 'being angry' or 'feeling understood') are part of the general experience of most people (Polkinghorne, 1989). However, when the phenomenon of interest is more specific, individuals who have had direct experience of this phenomenon (e.g., criminal victimisation) will be able to provide richer, more revealing accounts. Collaizzi (1978) identifies experience with the investigated topic and articulateness as the main principles that should guide participant selection (see van Kaam (1969) for more elaborate discussion of this issue). The phenomenological researcher is concerned with obtaining richly varied descriptions, rather than meeting statistical requirements for making statements about distribution within a group of participants (Polkinghorne, 1989).

Sample size

A range of participant numbers are used in phenomenological studies, but they are generally small (1-20). Phenomenological researchers generally do not specify participant numbers prior to commencing data collection, but are informed by the data collection itself and what it reveals cumulatively about the structure of the phenomenon in question (McIntosh, 1997). It is generally decided that sufficient data has been collected when a 'saturation' point has been reached with regards to the meaning of the phenomenon: that is, subsequent accounts do not vary in essence from the descriptions of previous participants or contribute further to explicating the meaning of the phenomenon. This is sometimes referred to in qualitative research as the principle of redundancy. Phenomenological researchers have found that this 'saturation' point is often reached with about 5-8 participants (Simms, 1994; Fischer, 1995, cited in McIntosh, 1997).

Apart from this empirical experience of the number of participants required to describe essential features of a given phenomenon, the principle of comparatively small participant numbers is also grounded in theoretical elements of phenomenology. As described in Appendix B, phenomenological philosophers emphasise the 'shared' nature of consciousness, the inherent logic of human experience (Husserl, 1913/1931; Merleau-Ponty, 1945/1976). Therefore, any human subject is, in principle, able to access the logic of a given human phenomenon.

Appendix D.
Biographical Details of Study 1 Participants

Participant one: Chris

Chris is a 43 year-old pianist who has been performing for over 25 years. He plays classical and jazz piano, solo and in band settings. He has a particular interest in playing piano in an improvisational manner. He has postgraduate qualifications in the area of music performance from the Victorian College of the Arts, Melbourne.

Participant two: Pierre

Pierre is a 26 year-old musician. He records and performs electronic music, with a particular emphasis on ambient and trance styles. The music combines the use of keyboard and synthesiser skills with sound sampling. He tends to play music alone, although he occasionally performs together with other musicians. Pierre has a classical musical background, having been trained in piano, trumpet, and tuba.

Participant three: Nico

Nico is a 40 year-old drummer and composer. He plays free jazz and composes for a variety of groups, ranging from jazz quartets to symphony orchestras. He is well-known within the Melbourne jazz scene and tours internationally on a regular basis. He has been playing music since he was a child.

Participant four: Stephen

Stephen is a 39 year-old electric bass guitar and double bass player. He has been playing in successful Australian pop bands for 25 years. He has had extensive experience performing live and in the studio. Stephen also teaches bass guitar.

Participant five: Tim

Tim is a 34-year-old musician. He plays the Hammond organ and saxophone. The bulk of his musical work is as a performer in a band. He has been performing improvisational jazz, popular and rock music for 20 years and is well-known in the Melbourne music scene. He has also studied music performance and theory at a tertiary level.

Participant six: Stella

Stella is a 36 year-old writer. She started writing professionally in her early 20s. She writes short stories and film scripts, often in a comedic style, and some journalism.

Participant seven: Nic

Nic is a 25 year-old playwright, theatre director, and actor. He has been writing in various forms since childhood. His work started being performed in 1996 and has won several prizes.

Participant eight: Anthea

Anthea is a 45 year-old writer. She writes novels, short stories, and essays, and has been published consistency since her teenage years. She also works as a mentor and proof-reader for other writers.

Participant nine: Jeanne

Jeanne is a 40 year-old visual artist. Her work consists mainly of naturalistic drawings and paintings. She has been engaged in artwork since childhood and has held multiple exhibitions of her work.

Participant ten: Dominique

Dominique is a 41 year-old writer and painter. She writes novels, poetry, drama, and essays. She describes her painting as abstract with narrative content. The main thematic concerns of her work are identity, issues of femininity, and the relationship between creativity and madness. Dominique has published widely and exhibited for many years. She is also a teacher of creative writing.

Participant eleven: Peter

Peter is a 34 year-old visual artist. His main style is abstraction, often incorporating 'everyday', mass-produced materials into his pieces. He has been producing visual art since his teenage years. Peter has completed a Fine Arts tertiary degree and started exhibiting his work 4 years ago.

Appendix E.
Advertisement for Study 1

Creativity: what is it?

We are conducting a research project into the experience of artistic creativity. What is the nature of this experience? How does the artist feel during the creative process? What meaning does this process have for the individual?

This study will involve open-ended interviews with professional artists. These interviews take about 1 - 1.5 hours.

So: if you are a professional painter, musician, performer, sculptor or any other artist, we would appreciate hearing from you.

Appendix F.

Plain Language Statement for Study 1

This study investigates the ways in which artistic creativity is experienced. It takes the form of an open-ended interview. Four broad questions will be posed concerning your thoughts and feelings while involved in art work, both momentarily and over the course of a piece of work. Other questions will also be included for the sake of clarification and elaboration. We are interested in your personal experience of creativity, rather than theories about creativity. The research project comprises the PhD research in psychology being undertaken by Barnaby Nelson.

The interviews in this study will be analysed for thematic content. This analysis will constitute the findings of this study. A questionnaire will also be constructed based on the findings of these interviews, and will be used in a second study to investigate the relationship between the experience of the creative process and aspects of personality.

The interview will be audio-taped. However, if you would prefer the interview not to be audio-taped, this will be arranged. Additionally, the tape recorder will be turned off at any stage during the interview if you so desire. You are free to leave the study at any time should you so wish. The study poses no risk to participants. However, if there are any questions you would prefer not to answer, this is fine. If you decide after the interview that you would prefer your interview not to be included in the study, contact the researchers and your interview will be withdrawn from analysis.

We will attempt to preserve the confidentiality of the interview in the following way. The tape on which the interview will be recorded will have a number placed on it. The list of numbers and the names of the participants to which the numbers refer will be stored in a locked filing cabinet accessible only to the researchers. Your consent form will also be stored in this cabinet. The tapes themselves will be kept secure in a separate locked cabinet. Your name will not appear on any computer files. All written work (published or unpublished) or oral presentations based on these interviews will use a fabricated name to refer to particular interviews, so as to maintain your anonymity. However, we need to inform you that the confidentiality of the data is subject to legal limitations. The tape on which the interview will be recorded will be erased 5 years from the time of research publication.

If for any reason you wish to contact the researchers, our names and contact details are below. If there are any issues raised by the interview which you would like to talk about with a clinical psychologist, the researchers will refer you to a clinical psychologist associated with the university.

This project has received clearance by the University's Human Research Ethics Committee. If you have any concerns arising from the conduct of the project, please contact the Executive Officer, Human Research Ethics, University of Melbourne, Vic. 3010 – phone 8344-7507; fax 9347-6739.

Thank you for your participation.

Appendix G.

Debriefing Statement for Study 1 and 2

The psychological research into creativity has tended to focus on the 'stages' of creative thought and personality characteristics associated with creativity. However, the nature of creativity itself has tended to be ignored. This project attempts to gain an understanding of the *experience* of creativity itself. The area of artistic creativity was chosen as the domain to study. The interview-based first study was designed to yield accounts of experiences of the creative process, which will be analysed for commonalities and differences in thematic content. In order to create a link with previous research, the second study examined whether the nature of this experience of creativity relates to aspects of personality. That is, does the way in which the creative process is experienced vary depending on an individual's personality, including cognitive and emotional experiences? This study involved the completion of questionnaires relating to experience of self, thinking style, mood, and a questionnaire based on the analysis of the interviews.

If you have any concerns about this project or would like to discuss it further, please contact the researchers.

Thank you again for your participation.

Appendix H.

Individual Structure of the Artistic Creative Process: Chris (Participant One)

a) Experiential dimension

Chris chose to describe a recent solo performance in front of examiners, friends, family members, his students and a general audience as part of his postgraduate degree. He described this performance as being quite pressured and as involving "*fairly high stakes"* due to it being an examination. The researcher was present at this performance.

This experience occurred in the context of significant preparation having been devoted to this performance. This preparation existed primarily on a mental or experiential level. Chris described developing his ability (*"teaching himself"*) to enter a 'still' state of mind by narrowing the focus of his awareness and reducing awareness of other stimuli. He strengthened this ability by rehearsing entering this state of mind in other performances he considered to be of less significance. He also engaged in other, non-musical activities in which he enters a similar experiential state, such as regular meditation practice and playing golf. In preparation for the performance, Chris also described a process of trying to purify or 'clear' himself by leading a balanced lifestyle (in the form of regular sleeping and eating habits), and reducing his areas of stimulation (e.g., reducing interpersonal interaction and information consumption, such as through the media). The purpose of this 'simplification' of his day-to-day experience leading up to the performance was to strengthen his mental resources, so that he could focus intensely during the performance. He also hoped to conserve energy, because he anticipated that the sort of experience he was striving towards during the performance would be draining.

Of secondary concern in Chris' preparation for the performance were his technical skills. He purposefully did not to devote much effort to developing or sharpening his technical skills. Rather, he reassured himself through other performances that his technical skills were in "good enough" shape to express the musical ideas that emerged during the creative process itself: *"…I was doing the odd gig, so my hands were in good condition*

and my ears were developing, but I think the biggest thing was to get the mind settled so that I could forget about the audience."

As this quote suggests, one of Chris' main purposes in developing a 'still' state of mind while playing was that it allowed a high degree of absorption in and focus on the music-making, without paying attention to other stimuli such as the audience or events outside of the music-making itself. This purpose was informed by Chris' previous artistic activity, from which he has learnt that intense absorption increases the quality of his music. The other motivating force behind developing his ability to attain this level of absorption was the sense of joy it stimulates in him. He has found this to be the case from previous experiences of playing music and from other activities in which he has been deeply absorbed. Cultivating his ability to enter this mental state of 'stillness' while performing music was also part of a longer-term exploration of different approaches to playing music.

Immediately prior to the performance, Chris' meditative, focused state of mind deepened. Rather than focusing on anything in particular, this state was characterised by a sense of being detached from others and his surroundings and an internal emptiness and stillness, which he described as a "*non-verbal, non-thinking state*". When Chris started playing piano, his concern was to reach a certain experiential state, a certain state of feeling, which he referred to as "*the zone*" (see below), rather than focusing on technical aspects of producing the music or thinking about the piece as a whole. He played music within a musical structure on which he had decided beforehand, which consisted of six sections, each with a particular mood and theme. He focused on the sounds he was producing, appreciating their tone and emotional resonance. This aesthetic appreciation of the sounds occurred within a spirit of exploration and discovery: he had not planned the sequence of sounds, he simply played, searching for sounds and musical sequences that conveyed the mood he was trying to create. There was a sense that he was discovering and even surprised by these sounds while playing them. He pursued the sounds he enjoyed hearing, trying to develop them further. Rather than imposing his will or forcing his musical production in pre-determined directions, Chris listened closely to the sounds, intuiting which direction the music 'wanted' to go in. There is a sense here of an internal logic to the music that he was discovering or following, rather than wilfully creating. Rather than having a fixed

image of what he was trying to create or reproduce, Chris committed himself to the process as it unfolded. Implicit here is that he was not striving for a sense of perfection in his performance, but attempting to allow his creative ideas to flow as freely as possible.

Before elaborating on the different elements of Chris' experience of the creative process it should be noted that he experienced these elements as aspects of a single state, rather than as discrete entities. He referred to this state using both spatial terminology, as being in "*the zone*", and temporal terminology, as having "*a flow*". He experienced this state as being a clear removal from ordinary perception. A prominent aspect of this state was the ease with which Chris felt he was playing music. There was no sense in which he was making an effort or forcing the artistic activity. He also experienced a profound sense of joy during the experience, a highness of mood that seemed to be propelling the artistic activity forward.

The experience was also characterised by a sense of freedom and purity in his sense of self, two elements which were closely linked. In the act of playing music, Chris had the impression of being released from self-conscious, analytical thought processes: "*It didn't seem to be incumbent with a whole lot of mental decision-makings and worryings, kind of deliberations.*" The *"non-verbal, non-thinking"* state he attained before the performance maintained itself and intensified during the performance itself. There was a sense of relief and freedom associated with this. Implicit here is a sense of self-conscious, analytical thought processes as constraining, as some form of 'entrapment', from which the creative process released him. The music-making revealed a 'purer' form of experience. This sense of purity emerged from the artistic activity 'uniting' the self: there did not seem to be any divisions in Chris' sense of self, no division between subject and object in the form of "*decision-makings*", "*worryings*", "*deliberations*". The divisions inherent in self-conscious experience seemed to break down, leading to a sense of self as 'pure action' – that is, there was no distinction experienced between mental processes and the act of playing piano. The psychological dynamic here is a movement away from a state of division and constraint, which gives rise to a sense of freedom, towards a state of unity, which gives rise to a sense of purity of self.

However, the 'unified' state was not a constant aspect of the experience. Chris drifted back and forth between being in a 'unified' state, characterised by being deeply immersed in the musical activity, and a 'divided' state, characterised by self-awareness. In other words, he moved in and out of the 'unified' state he referred to as "*the zone*", characterised by a flowing ease of production, a sense of joy, freedom and purity. Chris became aware that he was 'out' of this state when he engaged in internal dialogue – that is, when he developed awareness of a mental object, such as thoughts about the presence of the audience (what they might be thinking about the performance, his own reactions to the audience, and so on) or about the music he was creating and which direction he should take it in (e.g. "*this isn't working*" or "*I should try this*"). This self-awareness signalled to him that he was no longer fully immersed in the musical production. The movement from a 'loss' of self to awareness of self was experienced as his 'area' of awareness spreading and losing its intense, concentrated focus, like a widening camera lens. During these periods, he became more effortful in his music-making and no longer experienced the sense of joy stimulated by his immersion in the musical activity.

There was also some anxiety associated with coming out of the immersed state because it indicated to Chris that he was no longer being optimally creative. He responded to this anxiety by accepting the change in his experience, and directing his attention away from his thoughts by re-focusing on the sounds he was producing:

> I would refocus on the music, then I would lose myself, become unaware of the audience again…Without panicking, which is sort of like in meditation, I just took myself back into what I call 'the zone' or 'flow', by focusing the attention basically."

The movement of focus from the internal dialogue to the 'here and now', the immediacy of the sounds, allowed Chris to immerse himself in the musical activity again.

The acceptance of the creative process as it unfolded assisted Chris to accept the movement 'in and out' of an immersed state of musical activity and thereby minimise the associated anxiety. Chris accepted the creative process as it unfolded, letting others be witness to the vicissitudes of this process, rather than feeling he must present a 'perfect'

piece. This attitude is associated with the spirit of exploration and discovery with which Chris approached the music.

The particular experience described by Chris involved significant pressure and expectations due to it being an examination. Awareness of the expectations and judgment of some audience members was one of the major forces pushing him out of an immersed state and towards self-awareness. He described a sense of being "*looked at*" by the audience rather than the audience being "*with*" him, witnessing and encouraging him in his musical exploration. Quietly underlying his experience was an awareness of the disparity between his own approach to the creative process, which was one of exploration and acceptance of what emerged in the process, and the nature of the situation, which involved judgments about the quality of his musical activity. This disparity served as a force tugging him away from the experiential state of "*the zone*", which he experienced as an end-in-itself, and which, ironically, he felt also facilitated producing music of high standard.

b) Existential dimension

Chris does not tend to reflect on the personal significance or meaning he finds in the creative process. There is a sense in which he assumes or takes for granted the 'importance' to him of the activity of playing music. The activity has provided a backdrop, as it were, to his life that is rarely brought into question. He also noted, perhaps due to his previous lack of reflection on the importance of the creative process to him, a difficulty in describing the creative process, both in terms of the immediate experience and in terms of the meaning it has for him.

Upon reflection, Chris identified the periods of joy he experiences during artistic activity as being central to what keeps him interested in the process. It is this experience of joy that fuels his commitment to his vocation as a musician and motivates him to develop the technical aspects of his art. In fact, Chris further develops his technical skills in order to increase his ability to enter the 'flowing' state of experience described above, which results in this experience of joy. The joy associated with the experience also justifies for Chris the high degree of mental preparation, the self-discipline required for this, and the draining nature of the experience. The mental and technical preparation

are means of 'preparing the ground' for the experience, which is ultimately self-fulfilling in nature. He does not regard the experience as a means to an end, such as a sense of success or financial reward, but as being intrinsically rewarding. Although he acknowledges that there are many activities which allow him to experience the same 'flowing' state (citing sport, nature, and sex as examples), playing music allows him to experience this state, and the associated joy, most fully: *"…That particular activity amuses me, so that's where I get the deepest entry into that state…"*

Although Chris continues to be engaged in the creative process primarily for the sake of the joy he associates with it, this continued engagement is also driven by a commitment to producing music of high quality. There is a dependent relationship between these aspects of the process: he believes that the 'flowing' experiential state prompts both the sense of joy and leads to more creative, better quality music. This latter notion is more implicit and less emphasised in Chris' description compared to the joy and satisfaction found in the experience itself. The fact that having the 'flowing' experience improves the quality of his music is viewed as a fortuitous 'flow-on' effect, rather than being the motivating core of the artistic activity. The excitement and intensity present in Chris' discourse regarding the experience suggests an addictive quality. The 'emotional high' yielded by being in the 'flowing' state is an experience that he is determined to continue to achieve.

The importance of the creative process to Chris does not reside only in the nature of his experience while playing music, but also on a more reflective or conceptual level. He describes being fascinated by the mental dynamic involved in the creative process and as viewing it as central to his thinking about the nature of self. This dynamic is built on a tension between desiring to enter the 'flowing' state he associates with his more creative work and the knowledge that desiring to enter this state impedes its emergence. That is, Chris finds himself confronting a paradox of wanting to enter a 'flowing' state of creativity, yet discovering that trying to enter this state prevents him from doing so. He describes having learnt 'not to try', utilising mental techniques he has developed through the practice of meditation. As with meditation, the creative process allows him to move from self-observation or self-consciousness towards a lack of self-observation, a lack of self-awareness. This movement is from a divided sense of self to a unified sense of self, as presented in the description of the experiential dimension. In this dynamic, the

creative process presents Chris with a human potential that he does not encounter as forcefully in other areas of life, and which enriches his understanding not only of his individual self, but of states of consciousness more generally. Interest in this dynamic, having developed through his experience of the creative process, has led Chris to an ongoing interest in Zen Buddhist literature.

In addition to the joy he associates with the creative process and his fascination with the experiential dynamic it involves, artistic creativity also exists as an existential choice for Chris. He states that there have been times when he has thought *"on a deep level that 'here (creativity, creating the beautiful, the awesome) is a very worthwhile thing to be doing with this stupid flicker of existence'….To me it's this magical element which makes sense of this otherwise meaningless flash of consciousness."* The creative process helps him discover meaning and purpose that he would not otherwise find in life; it structures his approach to existence. His strong emotional responses to artwork, both to his own musical performance and the artwork of others, have indicated to Chris the central meaning-making role that creativity serves for him. Chris believes that these strongly felt emotional responses have been prompted by either experiencing or witnessing the immersed 'flowing' state described above.

As described above, Chris regards the subjective experiences that frequently emerge during the creative process as revealing important aspects of human consciousness. In a related manner, he views his engagement with the creative process as a means of self-discovery and authenticity. He is critical of contemporary society's attitude towards creativity, artwork in particular: *"…I think that making art, creating, is a primal part of human existence which this modern culture seems to have lost touch with. Now we tend to leave it to "the artists" to do that messy work…What I'm getting at, is that it seems to me that being creative should be a natural part of everyone's existence."* Chris regards modern culture as being disconnected from the fundamental importance of creativity to human life and as discouraging individuals from pursuing the self-discovery he associates with the creative process. Part of the purpose that Chris finds in his musical work is to inspire in others, or 'spread', the type of experience he associates with the creative process.

Appendix I.

Plain Language Statement for Study 2

This study is part of a research project investigating the experience of artistic creativity and how this relates to aspects of personality. A first study used interviews with artists to explore the experience of creativity. The current study investigates how this experience of creativity relates to other experiences and people's attitudes and feelings. This research project comprises the PhD research in psychology being undertaken by Barnaby Nelson.

Your participation in the study will involve the completion of questionnaires relating to experience of self and the creative process, thinking style and mood. The questionnaires will take approximately 1.5 - 2 hours to complete. You are free to leave the study at any time should you so wish. If there are any questions you would prefer not to answer, this is fine. If you decide after the completion of the questionnaires that you would prefer your responses not to be included in the study, contact the researchers and your data will be withdrawn from analysis.

We will attempt to preserve the confidentiality of the data you supply to the best of our ability in the following way. There is a number on your questionnaires and the same number on the envelope in which you will put your consent form (with your name on it). You should seal the envelope. We shall not open the envelope unless you ask us to or unless for some exceptional reason we believe it is important to contact you. The envelopes will be kept securely sealed in a locked filing cabinet. The data will be kept secure in a separate locked cabinet. Your name will not appear on any computer files, or anywhere other than in the consent form in the sealed envelope. However, we need to inform you that the confidentiality of the data is subject to legal limitations. The completed questionnaires will be destroyed 5 years from the time of research publication.

If for any reason you wish to contact the researchers, our names and contact details are below. If there are any personal matters raised by the questions which you would like to talk about with a clinical psychologist, the researchers will refer you to a clinical psychologist associated with the university.

This project has received clearance by the University's Human Research Ethics Committee. If you have any concerns arising from the conduct of the project, please contact the Executive Officer, Human Research Ethics, University of Melbourne, Vic. 3010 – phone 8344-7507; fax 9347-6739.

If you agree to participate, please now fill in the consent form with your name, sign it, put it in the envelope, and seal the envelope.

Thank you for participating in the project.

Appendix J.

The Experience of Creativity Questionnaire (ECQ) – Initial Version

PART A:

Please think of a particular occasion when you were engaged in your art form and you felt you were producing good, creative work.

Please record what type of creative activity you have remembered (e.g. painting, performing music, etc.):

The following are statements based on descriptions made by artists, musicians and writers of their creative experiences. How well do these statements describe feelings or impressions which were part of the experience that you have remembered? Please respond to the statements as they relate to the particular experience you have in mind, rather than to your experience of creativity generally.

Answer by circling the most appropriate number next to the description. You might relate to some aspects of the statement but not others – just use the number that comes closest to your experience (there is an opportunity to elaborate on your experience below).

1 2 3 4 5 1. Before the experience, I had a sense of lethargy, congestion and irritability.

1 2 3 4 5 2. Before the experience, I became mentally still and 'empty' and became quite withdrawn from others.

1 2 3 4 5 3. I devoted a considerable amount of attention beforehand to creating a comfortable atmosphere for myself. This allowed me to enter a creative state more easily.

1 2 3 4 5 4. There was the sense of a build up of creative ideas, of energy and emotions that was pressuring me towards releasing them in the form of creative expression.

1 2 3 4 5 5. I put myself in the mood I wanted my creative work to take on.

1 2 3 4 5 6. I derived erotic pleasure during this experience.

1 2 3 4 5 7. At the beginning of the experience, I was anxious and nervous.

1 2 3 4 5 8. It was as if different elements of the creative piece were 'coming together' and meshing, stimulating further ideas for the piece.

1 2 3 4 5 9. I had a very clear image before starting about what sort of ‘world’ or atmosphere I wanted to create.

1 2 3 4 5 10. I had the impression of a creative breakthrough, an ‘opening up’ of expression, as though I was now able to express material I had been unable to previously.

1 2 3 4 5 11. I felt that the source of my creative ideas was located physically in a certain part of my body (e.g. my chest).

1 2 3 4 5 12. I experienced relief that I was removed from the world of everyday perception.

1 2 3 4 5 13. It was characterised by intense feelings of joy and satisfaction.

1 2 3 4 5 14. Joy and satisfaction were the main driving forces behind the process.

1 2 3 4 5 15. I felt the creative production was pushing me over a period of time towards an emotional collapse.

1 2 3 4 5 16. I attempted to keep my conscious mind busy so that it would not interfere in the process.

1 2 3 4 5 17. I had a sense of my personal boundaries breaking down – that I was part of my surroundings.

1 2 3 4 5 18. There was a sense of the creative work as fitting in or as having significance within a social or historical context.

1 2 3 4 5 19. There was a sense in which I was channeling the creative ideas from another source, as though I was not the origin of the creative ideas.

1 2 3 4 5 20. I did not feel a sense of release from reasoning, analytical thought processes.

1 2 3 4 5 21. The creative process made me feel more secure, as though it was ‘containing’ my volatile emotional / mental state.

1 2 3 4 5 22. I had a sense of awe at the high levels of technical skills being brought out of me.

1 2 3 4 5 23. The creative expression seemed to be a form of celebration, an expression of gratitude.

1 2 3 4 5 24. There was a sense of purity about the experience or about my sense of self.

1 2 3 4 5 25. I experienced a sense of freedom during the experience, which was associated with being fully focused in the present moment.

1 2 3 4 5 26. There was a sense that intuitive, instinctive capacities were becoming more dominant than reasoning, analytical thought processes.

1 2 3 4 5 27. I had a 'parallel' sense of being absorbed in my creative production and analysing it simultaneously.

1 2 3 4 5 28. There was a flowing ease to the process. I was not paying attention to technical aspects of the art form.

1 2 3 4 5 29. There seemed to be a breakdown between myself and what I was creating – I *was* what I was writing / playing / painting.

1 2 3 4 5 30. I believed strongly in what I was creating, without doubting or questioning myself.

1 2 3 4 5 31. I had a sense of being 'in touch' with myself.

1 2 3 4 5 32. I lost awareness of time and my physical surroundings.

1 2 3 4 5 33. There seemed to be an internal logic to the creative production. The experience involved being receptive to this and 'following' this logic.

1 2 3 4 5 34. The inspiration continued in response to what was emerging in the creative process itself – the creative output inspired me to new creativity, building upon itself.

1 2 3 4 5 35. I felt excited by the knowledge that the creative activity was working well and wanted to take full advantage of this while it lasted.

1 2 3 4 5 36. This episode was characterised by a calm, tranquil emotional state.

1 2 3 4 5 37. I went 'in and out' of two states - one state of being deeply absorbed, not being aware of myself, with there being a flowing ease to the process and another state of observing myself, using more critical mental processes, with greater effort involved in the creative process.

1 2 3 4 5 38. There was a sense of exploring what emerged in the creative process, rather than having a fixed notion of what I was trying to create.

1 2 3 4 5 39. There was a sense of anxiety associated with 'coming out' of an immersed state of creative production. I tried to maintain emotional calm and waited to become re-immersed in the process.

1 2 3 4 5 40. I felt a sense of emptiness and confusion when I came out of an immersed, flowing state of creative production.

1 2 3 4 5 41. I felt a heightened sense of control over my creative expression.

1 2 3 4 5 42. I felt a sense of power, as though I was harnessing an energy.

1 2 3 4 5 43. I experienced a sense of diminishing self-control, which was

associated with a sense of beauty or pleasure.

1 2 3 4 5 44. I had a clear sense of which direction the creative expression should go in.

1 2 3 4 5 45. I found that 'forcing' the creativity did not hinder the experience.

1 2 3 4 5 46. The experience was quite fragile – there was a sense it might 'fall apart' at any moment.

1 2 3 4 5 47. I tried to control my emotional reactions during the process, because I felt this might interfere with producing the work.

1 2 3 4 5 48. There was a sense of a 'closeness' to what I was producing, a greater than normal emotional connection with it.

1 2 3 4 5 49. The experience had a spiritual or mystical quality, particularly due to feeling that I was coming in contact with a larger, more powerful force.

1 2 3 4 5 50. After the experience, I felt vulnerable, raw and fragile.

1 2 3 4 5 51. After the experience, I felt mentally and physically depleted and physically tense, combined with feeling satisfied with what I had done.

1 2 3 4 5 52. After the experience, I had a light and euphoric feeling and a sense of connectedness with others. It took a while to 'come down' from this feeling.

1 2 3 4 5 53. After the experience, I felt an inflated sense of self, as if there were no limits to what I could achieve.

1 2 3 4 5 54. After the experience, I felt a disparity between my own internal state of inspiration and my environment, which struck me as drab and ugly.

1 2 3 4 5 55. There was a sense afterwards that I had been in similar creative territory to the achievements of eminent people in my field.

1 2 3 4 5 56. The meaning of the piece only became clear to me after the creative process itself.

PART B

Please rate the relevance of the following statements made by artists to the meaning or personal significance you find in being engaged in your art form. This time you are not thinking about one specific creative experience but about your art form generally.

Answer by circling the most appropriate number next to the description:

1 2 3 4 5 1. The experience of joy during the creative process is the primary motivation for engaging with my art form. It justifies the difficulties of

developing the technical aspects of the art form and the difficulties it presents to other areas of my life.

1 2 3 4 5 2. My artistic expression (painting, playing music, writing, etc.) allows me to have the type of experience referred to in Part A more fully than any other activity.

1 2 3 4 5 3. I have found there is a compulsive, addictive quality to the experience of being engaged in the creative process.

1 2 3 4 5 4. I regard producing something of artistic beauty as a reflection of an internal beauty.

1 2 3 4 5 5. I regard my creative pursuits as a means of coping with and dealing with aspects of life, as though it gives me greater control over these aspects of life.

1 2 3 4 5 6. I find a spiritual dimension in the creative process, because I feel I am coming into contact with a force beyond myself.

1 2 3 4 5 7. Coming into contact with a 'pure' aspect of myself, and the sense of internal beauty associated with this, is a major reason for me engaging with my art form.

1 2 3 4 5 8. Creative production gives me a sense of connection with others, a sense of a commonality of experience.

1 2 3 4 5 9. I find there is quite a strong difference between the type of experience I have while creating and my everyday experience.

1 2 3 4 5 10. I become anxious and unsettled when I am not devoting time to my creative work.

1 2 3 4 5 11. The creative process widens the range of my experience, and can therefore stimulate change in myself.

1 2 3 4 5 12. I feel that my creative work is one of the most powerful means I have of communicating with others.

1 2 3 4 5 13. Creative expression is one way of validating my subjective experience and can encourage others to have confidence in their subjective experience.

1 2 3 4 5 14. Although the creative process can introduce elements of uncertainty in my sense of self, I am compelled towards the self-discovery associated with this.

1 2 3 4 5 15. My creative work can widen the range of other people's experience, and therefore has the ability to stimulate change in others.

1 2 3 4 5 16. There is a 'healing' quality to the creative process due to the type of

experience I have while engaged in it.

1 2 3 4 5 17. I see my creative work as a rebellion against narrowness and dullness.

1 2 3 4 5 18. There is a sense that the creative process has 'taught' me about modes of experience and about how to engage more deeply with life.

1 2 3 4 5 19. My artistic work gives me strong feelings of satisfaction that I do not gain from other areas of my life.

1 2 3 4 5 20. The satisfaction I gain from my art work is partly from having created a piece of work that endures through time.

1 2 3 4 5 21. My strong emotional response to the creative work of others signaled the importance of the creative process to me.

1 2 3 4 5 22. I feel as though I am becoming part of and contributing to an artistic / cultural tradition through my artistic pursuits.

1 2 3 4 5 23. Receiving positive feedback from others in response to my work makes the effort I put into my artwork worthwhile.

1 2 3 4 5 24. There is a sense that I am exploring artistic possibilities, the possibilities of my creative medium, rather than simply trying to satisfy my personal potential.

1 2 3 4 5 25. Producing artwork is the main activity that gives meaning and purpose to my life. It forms the centre of my life.

1 2 3 4 5 26. I have a sense of trying to foster the tradition of my art form.

1 2 3 4 5 27. I produce artwork partly as an attempt to stimulate in others an awareness beyond everyday perception (for example, a sense of wonder or of beauty).

PART C

Is there any part of the experience or any aspects of your artwork that aren't really brought out by any of the items in the questionnaire? Are there any elements you wish to put particular emphasis on?

Appendix K.

Pattern Matrix Following Maximum Likelihood Extraction and Promax Rotation of Items in the Initial ECQ-Part A

Item	*F1*	*F2*	*F3*	*F4*	*F5*	*F6*
21	.632					
17	.625					
22	.568			.337		
12	.551					
19	.531					
15	.519		.385			
43	.489					
49	.486					
30	.431		-.377			
11	.421					
28	.417				-.323	
10	.383			.340		
29	.381	.360				
54	.349		.310			
16	.293					
4	.272					
6	.263					
52	.238					
35		.686				
34		.665				-.341
38		.635				
32		.626				
25		.566				
48		.516				
31		.513				
26		.501				
8		.485		.353		
33		.441				
27		.437		.338		
40			.729			
50			.690			
51			.678			
39			.587			
37		.382	.493			
46			.462			
2			.375			
1			.374			
41				.614	.364	
13				.579		
42				.517		
20				.445		
55				.430		
45				.385		
7			.332	.353		
14				.351		
18				.302		
9					.785	
44					.492	
5					.369	
56					-.345	
23						.492
53	.367			.353		-.445
3						.414
24	.265					.410
47		-.341	.371			.400
36						.338

Note. Cross-loadings of .30 and greater have been retained. Item numbers are as in the initial ECQ.

Appendix L.

Matrix of Inter-Correlations Between the Initial ECQ-Part A Factors

	F1	F2	F3	F4	F5	F6
F1	-					
F2	.39	-				
F3	.20	-.02	-			
F4	.30	.40	-.07	-		
F5	7.E-02	.21	-.08	.21	-	
F6	.16	.13	.10	<.1	<.1	-

Appendix M.

Pattern Matrix Following Maximum Likelihood Extraction and Promax Rotation of Items in the Initial ECQ-Part B

Items	*F1*	*F2*	*F3*
3	.715		
2	.701		
10	.577		
19	.554		
9	.499		
7	.470		
25	.460		.306
16	.405	.353	
1	.405		
14	.332	.301	
4			
15		.982	
13		.643	
11		.630	
18		.455	
5	.344	.365	
12		.357	
17		.352	
8			
22			.902
26			.671
20			.523
24			.516
27		.406	.476
6	.343		.420
23			.334
21			

Note. Cross-loadings of .30 and above have been retained. Item numbers are as in the initial ECQ.

Appendix N.

Items in the final Experience of Creativity Questionnaire

The items are presented according to sub-scales using the numbering from the initial ECQ.

Part A

Distinct Experience

17. I had a sense of my personal boundaries breaking down – that I was part of my surroundings.

21. The creative process made me feel more secure, as though it was 'containing' my volatile emotional/mental state.

19. There was a sense in which I was channelling the creative ideas from another source, as though I was not the original of the creative ideas.

49. The experience had a spiritual or mystical quality, particularly due feeling that I was coming in contact with a larger, more powerful force.

15. I felt the creative production was pushing me over a period of time towards an emotional collapse.

12. I experienced relief that I was removed from the world of everyday perception.

28. There was a flowing ease to the process. I was not paying attention to technical aspects of the art form.

11. I felt that the source of my creative ideas was located physically in a certain part of my body (e.g. my chest).

43. I experienced a sense of diminishing self-control, which was associated with a sense of beauty or pleasure.

2. Before the experience, I became mentally still and 'empty' and became quite withdrawn from others.

Anxiety

50. After the experience, I felt vulnerable, raw and fragile.

51. After the experience, I felt mentally and physically depleted and physically tense, combined with feeling satisfied with what I had done.

40. I felt a sense of emptiness and confusion when I came out of an immersed, flowing state of creative production.

39. There was a sense of anxiety associated with 'coming out' of an immersed state of creative production. I tried to maintain emotional calm and waited to become re-immersed in the process.

37. I went 'in and out' of two states - one state of being deeply absorbed, not being aware of myself, with there being a flowing ease to the process and another state of observing myself, using more critical mental processes, with greater effort involved in the creative process.

46. The experience was quite fragile – there was a sense it might 'fall apart' at any moment.

30. I believed strongly in what I was creating, without doubting or questioning myself. (reversed item).

1. Before the experience, I had a sense of lethargy, congestion and irritability.

Absorption

35. I felt excited by the knowledge that the creative activity was working well and wanted to take full advantage of this while it lasted.

32. I lost awareness of time and my physical surroundings.

38. There was a sense of exploring what emerged in the creative process, rather than having a fixed notion of what I was trying to create.

34. The inspiration continued in response to what was emerging in the creative process itself – the creative output inspired me to new creativity, building upon itself.

26. There was a sense that intuitive, instinctive capacities were becoming more dominant than reasoning, analytical thought processes.

48. There was a sense of a 'closeness' to what I was producing, a greater than normal emotional connection with it.

31. I had a sense of being 'in touch' with myself.

33. There seemed to be an internal logic to the creative production. The experience involved being receptive to this and 'following' this logic.

27. I had a 'parallel' sense of being absorbed in my creative production and analysing it simultaneously.

29. There seemed to be a breakdown between myself and what I was creating – I *was* what I was writing / playing / painting.

Power/Pleasure

13. It was characterised by intense feelings of joy and satisfaction.

42. I felt a sense of power, as though I was harnessing an energy.

55. There was a sense afterwards that I had been in similar creative territory to the achievements of eminent people in my field.

41. I felt a heightened sense of control over my creative expression.

20. I did not feel a sense of release from reasoning, analytical thought processes.

22. I had a sense of awe at the high levels of technical skills being brought out of me.

18. There was a sense of the creative work as fitting in or as having significance within a social or historical context.

45. I found that 'forcing' the creativity did not hinder the experience.

53. After the experience, I felt an inflated sense of self, as if there were no limits to what I could achieve.

10. I had the impression of a creative breakthrough, an 'opening up' of expression, as though I was now able to express material I had been unable to previously.

14. Joy and satisfaction were the main driving forces behind the process.

54. After the experience, I felt a disparity between my own internal state of inspiration and my environment, which struck me as drab and ugly.

Clarity/Preparation

9. I had a very clear image before starting about what sort of 'world' or atmosphere I wanted to create.

44. I had a clear sense of which direction the creative expression should go in.

5. I put myself in the mood I wanted my creative work to take on.

3. I devoted a considerable amount of attention beforehand to creating a comfortable atmosphere for myself. This allowed me to enter a creative state more easily.

Part B

Transformation

11. The creative process widens the range of my experience, and can therefore stimulate change in myself.

18. There is a sense that the creative process has 'taught' me about modes of experience and about how to engage more deeply with life.
5. I regard my creative pursuits as a means of coping with and dealing with aspects of life, as though it gives me greater control over these aspects of life.
13. Creative expression is one way of validating my subjective experience and can encourage others to have confidence in their subjecttive experience.
16. There is a 'healing' quality to the creative process due to the type of experience I have while engaged in it.
14. Although the creative process can introduce elements of uncertainty in my sense of self, I am compelled towards the self-discovery associated with this.
9. I find there is quite a strong difference between the type of experience I have while creating and my everyday experience.

Centrality

25. Producing artwork is the main activity that gives meaning and purpose to my life. It forms the centre of my life.
3. I have found there is a compulsive, addictive quality to the experience of being engaged in the creative process.
2. My artistic expression (painting, playing music, writing, etc.) allows me to have the type of experience referred to in Part A more fully than any other activity.
7. Coming into contact with a 'pure' aspect of myself, and the sense of internal beauty associated with this, is a major reason for me engaging with my art form.
6. I find a spiritual dimension in the creative process, because I feel I am coming into contact with a force beyond myself.
26. I have a sense of trying to foster the tradition of my art form.
10. I become anxious and unsettled when I am not devoting time to my creative work.
19. My artistic work gives me strong feelings of satisfaction that I do not gain from other areas of my life.
20. The satisfaction I gain from my art work is partly from having created a piece of work that endures through time.

Beyond the Personal

12. I feel that my creative work is one of the most powerful means I have of communicating with others.

24. There is a sense that I am exploring artistic possibilities, the possibilities of my creative medium, rather than simply trying to satisfy my personal potential.

17. I see my creative work as a rebellion against narrowness and dullness.

Appendix O.

The Experience of Creativity Questionnaire (ECQ) – Final Version

Please think of a particular occasion when you were engaged in your art form and you felt you were producing good, creative work.

Please record what type of creative activity you have remembered (e.g. painting, performing music, etc.):

The following are statements based on descriptions made by artists, musicians and writers of their creative experiences. How well do these statements describe feelings or impressions which were part of the experience that you have remembered? Please respond to the statements as they relate to the particular experience you have in mind, rather than to your experience of creativity generally.

Answer by circling the most appropriate number next to the description. You might relate to some aspects of the statement but not others – just use the number that comes closest to your experience (there is an opportunity to elaborate on your experience below).

PART A:

1 2 3 4 5 1. I put myself in the mood I wanted my creative work to take on.

1 2 3 4 5 2. I felt the creative production was pushing me over a period of time towards an emotional collapse.

1 2 3 4 5 3. I felt that the source of my creative ideas was located physically in a certain part of my body (e.g. my chest).

1 2 3 4 5 4. I experienced a sense of diminishing self-control, which was associated with a sense of beauty or pleasure.

1 2 3 4 5 5. There was a sense of exploring what emerged in the creative process, rather than having a fixed notion of what I was trying to create.

1 2 3 4 5 6. There was a flowing ease to the process. I was not paying attention to technical aspects of the art form.

1 2 3 4 5 7. Before the experience, I became mentally still and 'empty' and became quite withdrawn from others.

1 2 3 4 5 8. After the experience, I felt vulnerable, raw and fragile.

1 2 3 4 5 9. I felt excited by the knowledge that the creative activity was working well

and wanted to take full advantage of this while it lasted.

1 2 3 4 5 10. I felt a sense of emptiness and confusion when I came out of an immersed, flowing state of creative production.

1 2 3 4 5 11. I experienced relief that I was removed from the world of everyday perception.

1 2 3 4 5 12. There was a sense of anxiety associated with 'coming out' of an immersed state of creative production. I tried to maintain emotional calm and waited to become re-immersed in the process.

1 2 3 4 5 13. After the experience, I felt mentally and physically depleted and physically tense, combined with feeling satisfied with what I had done.

1 2 3 4 5 14. The experience was quite fragile – there was a sense it might 'fall apart' at any moment.

1 2 3 4 5 15. I believed strongly in what I was creating, without doubting or questioning myself.

1 2 3 4 5 16. Before the experience, I had a sense of lethargy, congestion and irritability.

1 2 3 4 5 17. I lost awareness of time and my physical surroundings.

1 2 3 4 5 18. The inspiration continued in response to what was emerging in the creative process itself – the creative output inspired me to new creativity, building upon itself.

1 2 3 4 5 19. There was a sense that intuitive, instinctive capacities were becoming more dominant than reasoning, analytical thought processes.

1 2 3 4 5 20. I had a sense of my personal boundaries breaking down – that I was part of my surroundings.

1 2 3 4 5 21. The creative process made me feel more secure, as though it was 'containing' my volatile emotional/mental state.

1 2 3 4 5 22. There was a sense of a 'closeness' to what I was producing, a greater than normal emotional connection with it.

1 2 3 4 5 23. I had a sense of being 'in touch' with myself.

1 2 3 4 5 24. I went 'in and out' of two states - one state of being deeply absorbed, not being aware of myself, with there being a flowing ease to the process and another state of observing myself, using more critical mental processes, with greater effort involved in the creative process.

1 2 3 4 5 25. There seemed to be a breakdown between myself and what I was creating – I *was* what I was writing / playing / painting.

1 2 3 4 5 26. It was characterised by intense feelings of joy and satisfaction.

1 2 3 4 5 27. I felt a sense of power, as though I was harnessing an energy.

1 2 3 4 5 28. I had a clear sense of which direction the creative expression should go in.

1 2 3 4 5 29. I did not feel a sense of release from reasoning, analytical thought processes.

1 2 3 4 5 30. I had a sense of awe at the high levels of technical skills being brought out of me.

1 2 3 4 5 31. I had a 'parallel' sense of being absorbed in my creative production and analysing it simultaneously.

1 2 3 4 5 32. There was a sense of the creative work as fitting in or as having significance within a social or historical context.

1 2 3 4 5 33. I found that 'forcing' the creativity did not hinder the experience.

1 2 3 4 5 34. After the experience, I felt an inflated sense of self, as if there were no limits to what I could achieve.

1 2 3 4 5 35. I had the impression of a creative breakthrough, an 'opening up' of expression, as though I was now able to express material I had been unable to previously.

1 2 3 4 5 36. There seemed to be an internal logic to the creative production. The experience involved being receptive to this and 'following' this logic.

1 2 3 4 5 37. Joy and satisfaction were the main driving forces behind the process.

1 2 3 4 5 38. After the experience, I felt a disparity between my own internal state of inspiration and my environment, which struck me as drab and ugly.

1 2 3 4 5 39. There was a sense in which I was channelling the creative ideas from another source, as though I was not the original of the creative ideas.

1 2 3 4 5 40. There was a sense afterwards that I had been in similar creative territory to the achievements of eminent people in my field.

1 2 3 4 5 41. The experience had a spiritual or mystical quality, particularly due feeling that I was coming in contact with a larger, more powerful force.

1 2 3 4 5 42. I had a very clear image before starting about what sort of 'world' or atmosphere I wanted to create.

1 2 3 4 5 43. I devoted a considerable amount of attention beforehand to creating a

comfortable atmosphere for myself. This allowed me to enter a creative state more easily.

1 2 3 4 5 44. I felt a heightened sense of control over my creative expression.

PART B

Please rate the relevance of the following statements made by artists to the meaning or personal significance you find in being engaged in your art form. This time you are not thinking about one specific creative experience but about your art form generally.

Answer by circling the most appropriate number next to the description:

1 2 3 4 5 1. I have found there is a compulsive, addictive quality to the experience of being engaged in the creative process.

1 2 3 4 5 2. I regard my creative pursuits as a means of coping with and dealing with aspects of life, as though it gives me greater control over these aspects of life.

1 2 3 4 5 3. There is a 'healing' quality to the creative process due to the type of experience I have while engaged in it.

1 2 3 4 5 4. I have a sense of trying to foster the tradition of my art form.

1 2 3 4 5 5. The creative process widens the range of my experience, and can therefore stimulate change in myself.

1 2 3 4 5 6. Producing artwork is the main activity that gives meaning and purpose to my life. It forms the centre of my life.

1 2 3 4 5 7. I see my creative work as a rebellion against narrowness and dullness.

1 2 3 4 5 8. My artistic expression (painting, playing music, writing, etc.) allows me to have the type of experience referred to in Part A more fully than any other activity.

1 2 3 4 5 9. I find there is quite a strong difference between the type of experience I have while creating and my everyday experience.

1 2 3 4 5 10. Coming into contact with a 'pure' aspect of myself, and the sense of internal beauty associated with this, is a major reason for me engaging with my art form.

1 2 3 4 5 11. Creative expression is one way of validating my subjective experience and can encourage others to have confidence in their subjecttive experience.

1 2 3 4 5 12. There is a sense that the creative process has 'taught' me about modes of experience and about how to engage more deeply with life.

1 2 3 4 5 13. I find a spiritual dimension in the creative process, because I feel I am coming into contact with a force beyond myself.

1 2 3 4 5 14. My artistic work gives me strong feelings of satisfaction that I do not gain from other areas of my life.

1 2 3 4 5 15. Although the creative process can introduce elements of uncertainty in my sense of self, I am compelled towards the self-discovery associated with this.

1 2 3 4 5 16. The satisfaction I gain from my art work is partly from having created a piece of work that endures through time.

1 2 3 4 5 17. I feel that my creative work is one of the most powerful means I have of communicating with others.

1 2 3 4 5 18. I become anxious and unsettled when I am not devoting time to my creative work.

1 2 3 4 5 19. There is a sense that I am exploring artistic possibilities, the possibilities of my creative medium, rather than simply trying to satisfy my personal potential.

PART C

Is there any part of the experience or any aspects of your artwork that aren't really brought out by any of the items in the questionnaire? Are there any elements you wish to put particular emphasis on?

Scoring details:

The items in each sub-scale are listed below.

Calculate sub-scale scores by summing ratings on each item.

Part A

Distinct Experience: 2, 3, 4, 6, 7, 11, 20, 21, 39, 41.

Anxiety: 8, 10, 12, 13, 14, 15 (reversed), 16, 24.

Absorption: 5, 9, 17, 18, 19, 22, 23, 25, 31, 36.

Power/Pleasure: 26, 27, 29, 30, 32, 33, 34, 35, 37, 38, 40, 44.

Clarity/Preparation: 1, 28, 42, 43.

Part B

Transformation: 2, 3, 5, 9, 11, 12, 15.

Centrality: 1, 4, 6, 8, 10, 13, 14, 16, 18.

Beyond the Personal: 7, 17, 19