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## CLASSICISM VS ROMANTICISM AS AN ASPECT

OF INTROVERSION-EXTRAVERSION

by Catherine M. L. Miller B.A., Queen's University, 1971 M.A., University of Windsor, 1974

## A Dissertation

Submitted to the Faculty of Graduate Studies through the Department of Psychology in Partial Fulfiliment of the Requirements for the Degree of Doctor of Philosophy at the University of Windsor

Windsor, Ontario, Canada

Catherine M. L. Miller 1982

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#### ABSTRACT

A review of a number of traditional conceptions of Introversion-Extraversion from Jung's and Murray's dynamic formulations to the physiologically based models of Eysenck and Gray indicated a need for a multidimensional approach to clarify the construct's complex nature. A recently proposed 3-dimensional model appeared to provide an empirically promising set of constructs for further investigation. In particular, this framework suggested the existence of a fourth bipolar trait called Classicism vs Romanticism which had previously been inconsistently incorporated within the Introversion-Extraversion domain.

The primary focus of the present study was to rationally construct a 20-item scale to measure the Classicism vs Romanticism dimension based on definitions obtained from a broad range of psychological and literary references. A supporting causal framework was provided by Pavlov's typology of human temperament and recent research on the differential functioning of the brain hemispheres.

Analysis of scores from 388 subjects on a preliminary 60-item scale permitted the selection of the 20 best items to form a final Classicism vs Romanticism scale with encouraging psychometric properties. A rotated item factor analysis revealed that the final scale provides a measure of classicism as an emotionally controlled, orderly approach to life and of romanticism as a sensual, unconventional approach to life.

• The external criterion validity of this scale was examined in the context of scores obtained from the subject sample on two other inventories,

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the PRF and the EPI, and on three scales previously constructed to measure the components of the 3-dimensional model. Correlational and factor analytical support was obtained for 22 of 25 convergent and discriminant validity hypotheses reflecting Classicism vs Romanticism's expected relationships with the substantive scales of these questionnaires. In particular Romantic Intraception emerged as a personality factor distinct from Extraversion, Achievement, Dependency, Anxiety and Hostility.

The analyses also provided partial support for the structure of the 3-dimensional model, although the difficulty of measuring the operation of physiological mechanisms via self-report inventories suggests that further exploration is necessary.

It was concluded that a multi-dimensional approach to the analysis of Introversion-Extraversion has important implications for the accurate representation of this portion of the personality domain. Classicism vs Romanticism emerged as a relevant and viable construct and a number of recommendations for future research to enhance generalizability and establish construct validity were made.

#### ACKNOWLEDGEMENTS

According to one of the major sources for this dissertation, a work of quality requires both a romantic openness to inspiration and the classical discipline to investigate that inspiration in an orderly. fashion. To whatever extent quality is embodied in this work, I must acknowledge the contributions of many who have provided both romantic sustenance and classical guidance in my pursuit of this elusive goal. For whatever errors of belief and thought remain, I bear full responsibility.

By example and precept, Dr. Martin Morf has for many years provided a model of creative energy and intellectual integrity which, in an increasingly pragmatic world, is a rare standard for the achievement of academic excellence. Now and in the coming years I may aspire to no less.

I am grateful to the other members of my committee, Dr. Frank Auld and Dr. Henry Minton, for two contrasting but equally important contributions. First they have performed their traditional evaluative roles with a care and insight which could not but enhance the final product. Second, their enthusiasm for the ideas incorporated here, has provided a sustaining beacon throughout this endeavour, which as every graduate student knows, has its inevitable bleak and stormy moments.

I feel privileged that Dr. Michael Apter agreed to perform the duties of outside reader.' Not only did our chance encounter in Leipzig demonstrate the power of serendipity, but his interest and encouragement provided a crucial impetus in the early stages of the project. I am truly honoured that he continued his participation despite the barriers of time, distance and postal service insanity, and trust that in some small way this dissertation reflects the quality which is a hallmark of his own work.

Without subjects, empirical research is impossible; without analytical tools it remains meaningless. For the former I thank the social science students of Fanshawe College and the University of Windsor. For the latter, I am indebted to the good humoured patience and expertise of the Psychology Department computer assistant, Peter O'Neill.

The production of a manuscript requires many skills and I am grateful to Mrs. Irene Arseneau for providing both speed and accuracy at oftentimes unconventional hours in typing the final draft.

I would like to express my profound gratitude to my friends and relatives for their active support and long-suffering forebearance in what must often have seemed a peculiar if not pathological enterprise. The addition of <u>et al</u> to the authorship of this dissertation would be an honest reflection of their contribution.

Finally, to my husband, Malcolm, I dedicate this work. His interest in Zen and motorcycles provided the seed crystal which precipitated both theory and research. Although this process was often a solitary one, it was never lonely. His love and respect carried me throughout.

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## CHAPTER I

### INTRODUCTION

The terms "introvert" and "extravert" have been used to describe certain kinds of personality for over two hundred years (Wilson, 1978). That the concept embodied in the distinction between introversion and extraversion has such an established tradition suggests that it continues to be an important and viable means of differentiating individuals. Such broad acceptance, however, has resulted in a multiplicity of conceptions, definitions, descriptions and analyses of the behaviour and its underlying causal mechanisms. Common everyday usage of the two terms implies the existence of a typology, but even theories based almost exclusively on the construct (e.g., those of Jung and Eysenck) propose at least one other category or dimension in order to account for the full range of human behaviour.

Recent evidence suggests that the dichotomy itself, every men combined with other constructs, may be too general to describe and explain personality with sufficient precision. Thus the present investigation is an attempt to measure and examine the interrelationships between four dimensions of personality which appear, on the basis of an exploration and analysis of theory and research, to be distinct aspects of Introversion-Extraversion.

The first three dimensions, Anxiety vs Sociability; Restraint vs Impulsivity; and Intraception vs Extraception, are not new and have

emerged individually and in combination in previous attempts to clarify Introversion-Extraversion, as described in the following literature review. Some aspects of a fourth dimension, which will be identified here as Classicism vs Romanticism, have from time to time been incorporated in definitions of Introversion-Extraversion, but with insufficient consistency to yield a clearcut description of its contribution to the domain. However, at least two schools of neuropsychological investigation - Pavlov's later work, and the more recent studies of hemispheric differences - suggest that this fourth dimension may provide a useful addition to the descriptive framework of personality traits.

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The primary focus of the present study was to devise a scale to measure the Classicism vs Romanticism dimension based on definitions derived from a broad sample of psychological, philosophical, artistic and literary references and using Jackson's (1967) rational method of test construction.

In addition, three scales constructed in a separate research effort (Hackett, Note 1) to measure the Anxiety vs Sociability, Restraint vs Impulsivity and Intraception vs Extraception dimensions were included in the preliminary investigation of the criterion validity of the new scale.

# Traditional Conceptions of Introversion-Extraversion

Although not the originator of the use of the terms, Jung (1913) certainly may be credited with the first effort to develop a theory of personality with a major focus on the Introversion-Extraversion

dimension. He sought and found evidence for his typology not only in his own clinical observations but throughout history, philosophy, literature and art. Such an extensive and intensive investigation, while yielding rich and dynamic formulations of two basic types of personality, inevitably resulted in vagueness and contradictions. Empirical efforts of later investigators, notably Guilford (e.g., Guilford & Zimmerman, 1949), Eysenck (e.g., Eysenck & Eysenck, 1964), and Cattell (e.g., Cattell, Eber & Tatsuoka, 1940) to scientifically limit the scope of the construct resulted in factoranalytically derived measures of a relatively clear-cut, second-order dimension which evidenced a noteworthy convergence (Wilde, 1977). Nevertheless, even before this process had fully begun, Murray (1938) was criticizing the "vulgarization of Jungian concepts" (p. 232) by neglect of much of what Jung considered important. What remains today of an originally broad and complex domain of behaviour are two distinct though related dimensions which reflect what has been called the dual nature of Introversion-Extraversion (Carrigan, 1960; Eysenck & Eysenck, 1963): Sociability and Impulsivity.

Murray (1938), however, sought to explicate the dichotomy by a careful summary of Jung's many descriptions into six aspects which were further subsumed under the three general traits of Endo- vs Exocathection, Intra- vs Extraception, and Projectivity vs Objectivity. The first refers to the manner in which an individual directs mental energy - inwardly to the self or outwardly to the tangible world. The second seems to refer more to the type of content of one's thoughts and beliefs - a cognitive or attitudinal style trait.

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The third appears to be a consequence of the first two traits - the degree of egocentricity in perception and interpretation of events, depending on where and in what one finds meaning. It is by definition an unconscious process - its measurement by questionnaire was excluded in Murray's efforts and it will not be considered further here.

Murray's definitions and corresponding questionnaire items for Endo-Exocathection and Intra-Extraception do not clearly differentiate the two. Nevertheless, the former appears to come closest to Jung's primary definition of Introversion-Extraversion i.e., the "location" in which an individual searches for meaning, either inwardly within one's own thoughts and feelings, or outwardly in the surrounding environment. Intra-Extraception on the other hand appears to refer to the content and style of behaviour and strongly resembles William James' (1911) dichotomy of tendermindedness vs toughmindedness. For example, the extraceptive person is characterized as "objective, factual, impartial, cool and phlegmatic, reasonable in action, toughminded, scientific, mechanistic" (p. 212) while the intraceptive person is described as "imaginative (fanciful), impractical, partial, warm and passionate, unreasonable in action, tenderminded, artistic, idealistic" (p. 212). It is not difficult to see why many theorists beginning with Jung, might tend to combine the characteristics of Endocathection with those of Intraception and conversely Exocathection with Extraception to yield the broad definitions of Introversion-Extraversion. Murray (1938) however, indicates that such a correlation is not inevitable. Thus "a man may turn outward (Exocathection) with his head full of

romantic aspirations and ideals (Intraception)" (p. 211) and presumably a person may turn inward (Endocathection) to analyze a set of facts and observations (Extraception): The suggestion is that these are two essentially orthogonal traits which may be manifested differentially in individuals to yield at least four types of characteristic behaviour usually classified as either introvérted or extraverted. The difficulty here, of course, is that one is still inclined to associate Intraception with Introversion and Extraception with Extraversion simply on the basis of the similarity of prefixes. Such an association results in a direct contradiction in terms of the definitions of the constructs, e.g., fanciful, emotional and unreasonable are not characteristics included within the domain of introversion. Efforts to construct self-report measures of Murray's needs e.g., the Adjective Check List (Gough & Heilbrun, 1965); the Edwards Personal Preference Schedule (Edwards, 1959), appear to have resolved the conflict by simply eliminating those aspects of the original definition of Intraception which do not" readily coincide with the thoughtful, intellectual and analytic characteristics of introversion. Instead the term Intraception is used to label behaviours which Murray defined as Endocathection. However, an as yet unpublished research effort (Morf, Note 2) has attempted to devise a scale of Intraception vs Extraception carefully based on Murray's descriptions and also preserving the Jungian flavour of preferred psychic orientation. This scale has been refined (Hackett, Note 1) and in the context of the present study was examined with reference to other experimental scales developed to measure aspects of Introversion-Extraversion which are described in the

#### following sections.

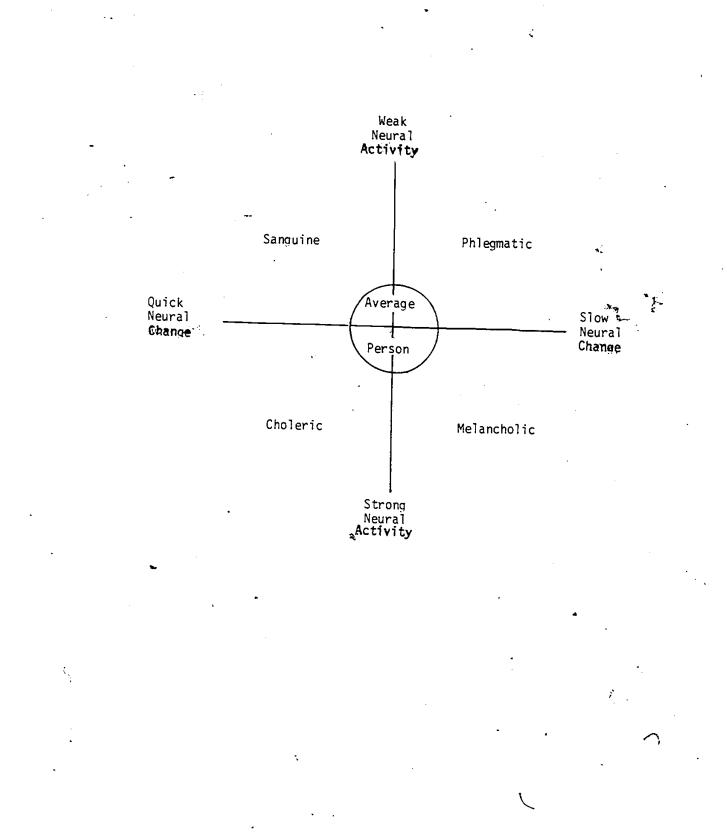
### Causal Theories of Introversion-Extraversion

The Four Types Problem. In addition to developing descriptive frameworks of personality, many theorists have also speculated on causal mechanisms underlying behaviour in general and specifically Introversion-Extraversion e.g., McDougall's chemical secretion "X" (1929), psychic energy or libido (Jung, 1960), regnant brain processes (Murray, 1938). All of these explanatory efforts recognize to one degree or another, the importance of taking into account the physiological bases of personality. Indeed, with the exception of radical behaviourism, this has been so since Galen and Hippocrates proposed typologies based on the predominance of one of the four body humours, namely, black bile (melancholic), yellow bile (choleric), blood (sanguine), and phlegm (phlegmatic). However, in the past century typologies have given way to dimensional rather than categorical approaches to classification, beginning with Wundt (1903) who proposed that the four ancient types could be accounted for by the two dimensions of quick versus slow neural change and strong versus weak neural activity (see Figure 1).

Such a conception of the causes of individual differences has been echoed most strongly in the efforts of Pavlov (1963) and his successors to develop a theory of types of nervous systems. Initially, consistent differences between dogs in response to various conditioning situations led to the identification of four types of animals corresponding to the ancient classification of human temperament previously mentioned, and representing different positions on a single continuum ranging

Figure 1: The Galen (categorical) and .Wundt (dimensional) systems

.Wundt (dimensional) systems
of personality description.
(Adapted from Eysenck, 1970
p. 18)



from an extreme predominance of neural excitatory processes (choleric dogs) to an extreme predominance of inhibitory processes (melancholic dogs). The first pole was operationally defined as an ease of formation of positive conditioned associations and a corresponding difficulty in acquiring inhibitory associations. The opposite pole was characterized by a preponderance of inhibitory processes and difficulty in establishing positive conditioned responses.

This unidimensional system was later discarded in favour of three properties which in combination yield different types of nervous systems - strength of the nervous system; equilibrium of excitation and inhibition processes; and mobility of these processes. Thus melancholics are characterized by a general neural weakness - an inability to endure prolonged or frequent stimulation; cholerics have strong systems unbalanced in favour of excitatory processes. Both sanguine and phlegmatic individuals have strong balanced systems but the former are more mobile i.e., they can shift easily between excitation and inhibition while phlegmatics tend to be inert. It can be seen that certain of these criteria contradict Wundt's (1903) two-dimensional descriptive framework in which for example, melancholics are located in the strong, slow, neural activity quadrant.

More recent research emanating from Russian laboratories, while retaining the importance and basic descriptions of the three properties listed above has provided more evidence against the "four types" theory, has added a fourth criterion called "lability" and has dropped equilibrium in favour of Nebylitsyn's "dynamism". It is now thought that all four properties may function differently with regard to the

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excitatory and the inhibitory processes, a major departure from Pavlovian theory which emphasized the balance between the excitatory and inhibitory processes in differentiating cholerics from the more stable sanguines and phlegmatics (Teplov, 1979).

Present day Soviet physiologists exhibit a much greater caution in extending experimental results from animal research to humans than did their mentor. One major difficulty in the area of classical conditioning was and continues to be the ethical limitations of human experimental research particularly in long term studies requiring the precise measurement of responses to both aversive and appetitive stimuli.

Pavlov, however, was particularly interested in extrapolating his twenty-five years of laboratory findings (1963) to the examination of forms of human psychopathology. In this he has not differed from the majority of personality theorists whose work with the extremes of human behaviour has subsequently yielded theories to explain normal as well as abnormal behaviour. Thus the weak nervous system of melancholics, identified by anxiety-prone, unadaptive behaviour in dogs, was thought to be the cause of depressive neurasthenia (or potentially, schizophrenia) in humans. Choleric behaviour caused by strong but unbalanced nervous systems and characterized by aggressive impulsivity in dogs seemed to be manifested in humans as excitatory neurasthenia and in the extreme, as manic-depressive psychosis. Phlegmatics and sanguines, of course, were endowed with strong, balanced nervous systems resulting in different types of normal, stable behaviour depending upon the degree of neural mobility.

Gray's Two-Dimensional Reinterpretation of Eysenck's Introversion-Extraversion. It would seem that the work of Eysenck, and, more recently, Gray, is most clearly related to that of the Pavlovian school. Eysenck's approach (1944) began with the attempt to distinguish two types of neurotics who manifested quite different types of behaviour hysterics and dysthymics. He postulated and factor analytically defined two bi-polar dimensions which he believed were sufficient to account for human behaviour, including the two broad categories of neurosis with which he began. Although Eysenck (1970) identified these two dimensions, Extraversion-Introversion and Neuroticism-Stability, as paralleling the Wundt (1903) dimensions of Quick vs Slow Neural Change and Strong vs Weak Neural Activity, providing a pleasing continuity between early and modern theories of temperament, only a limited correspondence may be claimed. Wundt's rather vague neural mechanisms have been discarded. Eysenck's theory (1967) proposes that physiological differences in the activity of the ascending reticular activating system (ARAS) account for the differences in behaviour and personality of people defined psychologically as introverted and extraverted. Specifically, he states that introverts have a persistent higher level of ARAS activity leading to a constant state of higher arousal than extraverts which results in greater conditionability of introverts. At the behavioural level introverts are characterized by over socialized inhibited behaviour whereas extraverts who are less easily conditioned are characterized by under socialized unrestrained behaviour. Neuroticism is treated by Eysenck as equivalent to the degree of emotionality and its effect is to raise the general intensity of

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emotional reactions in both introverts and extraverts, yielding corresponding neurotic disorders.

 $\sim$  At least three major problems with Eysenck's theory and the research it has generated have been identified (e.g., Berlyne, 1968). First there is a relative lack of evidence for a general factor of conditionability across different response modalities. All of the experimental work derived from the theory has relied on aversive conditioning and to propose that introverts condition better is not acceptable unless non-aversive tasks are included, yielding the same results. This argument extends also to the socialization process; Eysenck's research implies that all parental training depends primarily on the acquisition of instrumental avoidance and conditioned fear responses to aversive consequences. Secondly, it is questionable whether a neurotic subject sample can yield adequate criterion groups to validate a measure of extraverts and introverts to be used with a normal population. Finally, of course, there is the previously noted controversy regarding the dual characteristics of extraversion sociability and impulsivity. Carrigan (1960) suggests that these are two separate traits which relate differently to Eysenck's other second-order dimension, Neuroticism, such that on the Maudsley Personality Inventory (a measure of the two dimensions) neurotic extraverts endorse items representing manifestations of impulsivity resulting in a positive correlation with Neuroticism, while normal extraverts endorse sociability items which correlate negatively with Neuroticism. Although equating the number of items representing the two aspects of Extraversion yielded statistical independence of the

two factors, as is the case with the currently used Eysenck Personality Inventory, it has not solved the basic issues of what behaviourally constitutes extraversion and introversion and consequently what causal mechanisms can be postulated to account most parsimoniously for the observed differences within the realms of both normal and abnormal behaviour.

To resolve this issue Gray (1964, 1970, 1971) has proposed a theory of the psychophysiological bases of both Extraversion and Neuroticism, derived from Eysenck's efforts but also incorporating the Pavlovian notion of strength of the nervous system. Gray feels that a more physiologically and behaviourally accurate conception of the causes of introverted and extraverted behaviour may be found in the differential susceptibility of introverts and extraverts to reward (and to relieving non-punishment) and punishment (including frustrative non-reward). In brief he proposes, in agreement with Eysenck, that introverts do have high ARAS activity compared to extraverts but that one must include the activity of higher brain centres in response to ARAS a rousal as part of the explanation. Specifically, to judge from antimal research, the medial-septal-hypothalamus, frontal cortex and other parts of the brain operate as a "Stop" or "avoidance" system forming a feedback loop with the ARAS to inhibit behaviour which may result in punishment. On the other hand, certain parts of the brain, including the medial forebrain bundle and hippocampus, operate as a "Go" or "approach" system which activates the organism toward environmental reward. Thus rather than simple ARAS activity and arousal differences

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between introverts and extraverts, Gray theorizes that introverts have a more easily aroused "Stop system" i.e., they respond more to the at or receipt of punishment, while extraverts have a more easily aroused "Go system" i.e., they respond better in rewarding conditions. At a behavioural level, Gray (1970) notes that since other people are the dispensers of reward and punishment for the individual, the extravert with the more active medial-forebrain-hippotampal system would be expected to be more sociable, outgoing, and risk-taking in attempts to obtain rewards, particularly since the relative activity of the septal-hypothalamic system is low, thus rendering the extravert insensitive to threats of punishment or nonreward. The same argument would hold in reverse for introverts, whose quiet and restrained behaviour results from a relative inability to perceive potentially rewarding outcomes in a situation and from a sensitivity to inherent dangers.

Contrary to Eysence, Gray (1971) conceives of emotionality not as general drive but as an increased degree of sensitivity to all classes of reinforcement caused by an overall weakness of the nervous system rendering it susceptible to a high degree of non-specific bombardment of the cortex by the ARAS for any given stimulus. This has the effect of greatly elevating the activity of both neural systems but especially that of the predominant system of a given individual, thus accounting for the inhibiting fearfulness of neurotic introverts and the excessive impulsivity of neurotic extraverts.

The behavioural labels which seem best to correspond to Gray's two physiological dimensions of high vs low sensitivity to reward

signals and high vs low sensitivity to punishment signals are Impulsivity vs Restraint and Anxiety vs Sociability, respectively. When compared with Eysenck's two-dimensional system, Gray's analysis appears to have the effect of rotating Extraversion and Neuroticism through an angle of 45° to a more parsimonious and neurologically accurate explanation of these major aspects of human behaviour (see Figure 2).

It can be seen that the basic characteristic of the stable introvert is restraint; of the stable extravert - sociability; of the neurotic introvert - anxiety; and of the neurotic extravert - impulsivity. These descriptions again correspond well with the four historical types, i.e., phlegmatic, sanguine, melancholic and choleric. Further, they add considerably to the nomological network (Cronbach & Meehl, 1955) of theory and research concerned with the construct of Introversion-Extraversion in human behaviour ranging from normal to pathological, including both neurophysiological and behavioural evidence. Certainly the problematic duality of the construct previously mentioned i.e., impulsivity and sociability, has been neatly sorted out.

#### <u>A Three-Dimensional Elaboration of Gray's Model</u>

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There seems to be nothing in Gray's analysis which corresponds to that aspect of Introversion-Extraversion which has been identified with Murray's Intraception vs Extraception dimension. Recently, however, an extensive research project was undertaken which proposed a multi-dimensional model of Introversion-Extraversion incorporating all three hypothetical constructs - Anxiety vs Sociability; Restraint vs Impulsivity; and Intraception vs Extraception (Morf, Notes 3, 4, 5). While the first two were explicitly derived from Gray's explanatory

Figure 2: The relationship between Gray's and Eysenck's two-dimensional personality description models. (Adapted from Gray, J., 1971)

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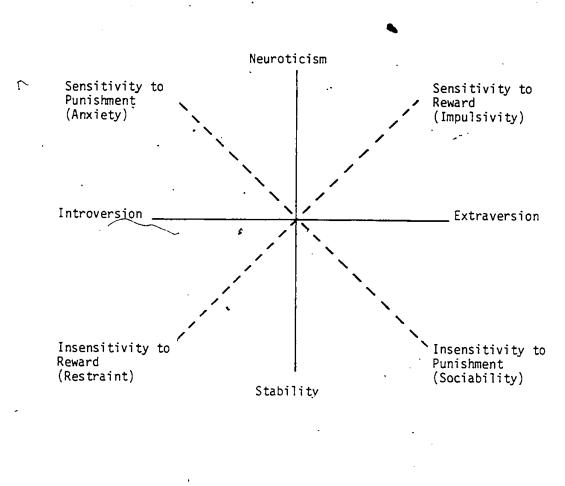
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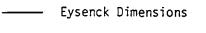
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physiological analysis, the last has received no direct investigation at a causal level. Nevertheless, Morf (Note 3) makes a case for a certain correspondence between his definition of Intraception vs Extraception reflecting Jung's characterizations of self- and objectorientation, and Pribram's (1968) "ethical" and "esthetic" reaction modes, respectively. These modes are based on differential sensory channel recovery rates - high for the ethical mode resulting in perception characterized by focussed clarity, and low for the esthetic mode, resulting in perception characterized by an external sensitivity. to the environment. Gray's and Pribram's theories constitute causal approaches to the multi-dimensional nature of Introversion-Extraversion. Morf's model, on the other hand, is a structural representation for which to date, there have been two main avenues of exploration.

First, several existing personality inventories which include various measures of Introversion-Extraversion have been factor analyzed and the results examined for evidence of the proposed dimensions (Morf, Notes 4, 5). In general, only Restraint vs Impulsivity emerged clearly across the sexes as a bipolar dimension. In one study (Morf, Note 5) two sociability factors were identified for females - Displayed Forthrightness and Withdrawal - which might be interpreted cautiously as representing the two opposing ends of Gray's single dimension of sensitivity to punishment signals. Nevertheless, they remained as two factors, separate from each other and from an additional Anxiety or Neuroticism factor. Anxiety also emerged as a factor relatively independent of Sociability for males

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and for both sexes when the data were combined (Note 4). Thus, in so far as these constructs can be measured at all by scales developed in the context of other personality theories, Gray's theory received only partial support from these rather complex results. Finally, in both studies, Intraception emerged as a specific factor exclusively defined by Cattell's 16 PF Tendermindedness, in one case for females only (Note 5). Since only this scale, of all those analyzed, has a relatively clear a priori relationship to Intraception, this result is not entirely surprising.

The outcome of these studies is somewhat equivocal with regard to the structure of personality as related to the dimensionality of Introversion-Extraversion. One problem is of course that none of the scales used was designed to reflect the hypothesized constructs and thus only a limited correspondence may obtain between measures which bear the same or similar labels, since the underlying theories and methodologies giving rise to scales and items varies widely across the inventories used.

A second thrust of the overall project was thus to attempt to rationally construct three scales to provide direct and psychometrically-sound measures of the constructs. One aspect of the present research was to administer these three scales to shed some light on the viability of the three-dimensional model. More importantly however, an analysis of the model suggested the existence of a fourth dimension of personality structure with additional implications for the nature of Introversion-Extraversion. It is this construct and its relationships to the other three dimensions that constituted the major focus of

this thesis.

### A Fourth Dimension - Classicism vs Romanticism

A primary aim of the original model which placed Anxiety vs Sociability, Restraint vs Impulsivity and Intraception vs Extraception in mutually orthogonal relationship to each other (Morf, Note 3) was to use these dimensions in an exploration of the construct of competence as applied to western culture, particularly in the world of work. Initially it was hypothesized that the industrial, competence-oriented life view could be contrasted with the recent, post-industrial, freedom-oriented life view on the basis of classical and romantic approaches to life attributed to introverts and extraverts, respectively. The classical approach was equated with the personality characteristic of restraint; conversely, romanticism was equated with impulsivity. However, further investigation suggested that the relation of Classicism vs Romanticism to Introversion-Extraversion is more complex; Jung, for example, identified introversion both with classical restraint and romantic tendermindedness. It can thus be inferred that introverts may be either classical or romantic and presumably the same is also true for extraverts. Morf (Note 5) proposed a typology based on these dimensions as follows:

Classical introverts characterized by restraint Romantic extraverts characterized by impulsivity Romantic introverts characterized by tendermindedness (and thus intraception)

Classical extraverts characterized by toughmindedness (and thus extraception)

The introduction of the Classicism vs Romanticism dichotomy helps clarify, at least at a theoretical level, some of the previous contradictions encountered in definitions of Introversion-Extraversion. For example, introverts may be variously coolly analytical and sensitively intuitive if they are differentiated on the basis of Classicism vs Romanticism. Viewed in this context, Classicism vs Romanticism emerged as a hypothetical personality construct potentially related to at least two of the other three Introversion-Extraversion dimensions and thus worthy of empirical attention. Indeed, an extensive review of the literature beyond that traditionally associated with the study of Introversion-Extraversion provides additional theoretical and experimental evidence for the viability of the construct, as outlined below.

## Pavlov's Human Types - "Thinkers" and "Artists"

In addition to the four basic nervous system types which correspond to the four temperaments identified by Hippocrates, Pavlov (196\_) proposed that "to obtain a full and clear idea of the variations of human behaviour, normal and pathological, it is necessary to add to these types which are common in (both) men and animals, certain particular, purely human types" (p. 388). What distinguished humans from the rest of the animal world was the evolution of the cerebral cortex resulting in the uniquely human capacity for speech. Pavlov proposed that all animals have what he called a "primary signalling system", a mechanism of neural activity which directly connects the impressions of external stimuli gathered by the five senses with the

corresponding CNS cells. Human beings however have evolved a secondary signalling system which translates these primary signals into speech. This analysis led Pavlov to propose two additional personality types which, according to Berlyne (1968), he came to recognize as he turned his attention late in life to the explanation of human behaviour.

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Thus, "...life definitely uses (sic) two categories of people artists and thinkers...the artists comprehend reality as a whole, as a continuity, as a complete living reality, without any division, without any separation. The other group, the thinkers, pull it apart, kill it, so to speak, making out of it a temporary skeleton and then only gradually putting it together anew, occasionally" (p. 275, Pavlov, 196 ). The character of the thinker reveals dominance of the second signalling system (i.e., verbal behaviour and responses to verbal stimuli) over the first signalling system (i.e., behaviour involving nonverbal stimuli and responses) whereas in themartist, the first signalling system predominates. Two types of neuroses which Pavlov identified as being uniquely human were then attributed to the malfunction of one or the other of these systems. In stable "thinkers" and "artists" one of the systems is relatively stronger than the other, but it is never exclusive. In hysterics however, the predominance of the primary system is exacerbated by a breakdown of the second system resulting in chaotic, excessive emotionality of the unrestrained first system. Conversely, psychasthenics are defined as neurotic thinkers; malfunction of the first system results in a lack of contact with reality and excessive cogitation.

At a descriptive level, there appears to be some correspondence between the thinker-artist dichotomy and classicism vs romanticism. In addition, while Pavlov's model of the precise neural mechanisms operating to produce the different behaviours has not withstood the test of time, increasingly sophisticated neurophysiological research has in fact yielded evidence of a possible link between these personality differences and brain functioning.

## Modes of Consciousness - Speculations on the Neurophysiology of Thinker and Artist

In western psychology there has been a recent upsurge in the study of human consciousness; in some ways a return to the origins of a discipline which began as the study of conscious experience, integrating 19th centure philosophy and science e.g., the efforts of Wundt and James (Ornstein, 1974). The inherent subjectivity and speculative nature of this work has been successfully challenged for over half a century by the predominance of experimentally oriented behaviourism with an emphasis on environmental causality as the origin of behaviour. Nevertheless, the new synthesis has again broadened the scope of inquiry to include such diverse disciplines as philosophy and neuropsychology, religion and biochemistry, in the consideration of what has long been known as the "mind-body" problem. Major advances in medical and particularly neurophysiological methodology have permitted a scientific and often an experimental approach to be taken to the study of issues which previously only admitted of theoretical speculation and academic discourse.

One important area of investigation has been the relationship of cerebral hemispheric differences to what has been called the "two modes of consciousness" (Galin, 1974). A brief summary of the characteristics of the two modes reveals a startling correspondence with the Pavlovian descriptions of thinker and artist. Thus one mode is described as active, rational, analytic, intellectual and verbal with a facility for sequential processing; the other, as receptive, intuitive, holistic, emotional and spatial with a facility for lateral or global processing and pattern recognition.

Over the past century, efforts to localize the brain areas responsible for particular behavioural functions have revealed that in typical right-handed individuals the left hemisphere of the brain is specialized for spoken language including reading and writing. Until recently, little attention was paid to the possibility of specialization of the right hemisphere - as Galin (1974) notes: "an injury to the right hemisphere does not usually interfere with speech, and for a long time [it] was considered to be just a rather stupid spare for the left" (p. 28). However right hemisphere lesions have been shown to interfere with spatial abilities and pattern recognition, both visual and auditory e.g., music. It would seem then that each hemisphere is responsible for one of the two modes of consciousness; Sperry's (1968) remarkable split-brain research with epileptics has vividly demonstrated this separation of abilities and processes. Under certain experimental conditions, patients whose hemispheres have been surgically disconnected by severing the corpus callosum show

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marked behavioural limitations. For example, an object presented tachistoscopically to the right visual field or placed in the right hand (both of which are directly connected to the left hemisphere) can be described verbally, but cannot be drawn or selected by the left hand. Stimuli presented visually or tactually to the right hemisphere via the left visual field or left hand cannot be verbally identified but can be reproduced by the left hand or selected from other similar objects. From this and other evidence Sperry has concluded that "each hemisphere seems to have its own conscious sphere for sensation, perception, ideation and other mental activities" (p. 733). And as Galin (1974) points out, it is important to emphasize that it is not that each hemisphere is restricted to a particular type of stimulus, e.g., verbal or spatial, but that each is specialized in terms of the cognitive style in which it processes material. The left hemisphere's analytical, logical mode is best suited to utilizing verbal, sequential input whereas the right hemisphere's holistic, Gestalt mode is particularly suitable for coping with complex patterns. The purpose of this emphasis is to warn against an analysis and interpretation of hemispheric specialization based on what Galin calls neophrenology - a naive localization theory in which each behavioural task is considered to be the function of a different part of the brain. Rather, it would seem that each hemisphere has a more or less unique information processing style; herein may lié the neurophysiological basis of Payloy's thinker-artist dichotomy. Individuals may develop a relative facility for orienting themselves to the world in one or the other mode, although it is obvious that with the exception of commissurotomy

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patients, the two hemispheres never operate completely independently of one another. Galin's (1974) reiteration of Kinsbourne's caution against the excesses of "dichotomania" in which all pairs of taxonomic opposites are forced into the hemispheric differential mould, is welldeserved.

Nevertheless, recent research has provided a definite link between the two categories of mental illness identified by Pavlov as being uniquely human, and the mode of consciousness related to eachcerebral hemisphere. Smokler and Shevrin (1979) measured hemispheric activation by recording the direction of subjects' eye movements after being questioned. According to Kinsbourne (1973) activation of each cerebral hemisphere tends to produce an orientation to the contralateral side of the body; thus, observing the direction in which a person shifts gaze while answering a reflective question should give an indication of hemispheric involvement in the response process (Schwartz, Davidson & Maer, 1975). Smokler and Shevrin report that hysterical personality types tend to look leftward indicating a predominant reliance on right hemisphere processing, while obsessive cómpulsives (Pavlov's psychasthenics) tend to look to the right indicating a left hemisphere preference. It should be noted that the subjects were college students, not a clinical population and were divided into criterion groups on the basis of a modified Rorschach test and WAIS Comprehension subtest scores. 'Students who fell in the mid-range of the personality measures i.e., no marked tendency toward either hysteria or obsessive-compulsiveness divided their eye-movements

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relatively equally between the two directions. Further, the findings do not suggest a total incapacity to use one hemisphere or the other by the criterion groups. Again, it is an issue of relative overreliance on one hemisphere which appears to be consistently related to personality differences.

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Keeping in mind Galin's warning, it nonetheless seems reasonable to propose the existence of a personality dimension with a neurological basis in differential hemisphere activation. That Pavlov's physiology may have been inaccurate and at the time untestable, does not undermine the theoretical viability of his thinker-artist dichotomy. A noticeable weakness in this rejuvenated area of personality research however, has been the lack of a clear definition and description of the dimension as it is manifested in normal behaviour and consequently, the absence of any attempts to devise a reliable measure to test the validity of the construct.

### A New Personality Scale - Classicism vs Romanticism

In seeking to describe the polar extremities of the Classicism vs Romanticism dichotomy, Jung's method (1971) of exploring the broad reaches of human endeavour e.g., history, philosophy, literature and fine arts, seems a particularly fruitful approach. The contrast between the Aristotelian seekers of Truth via reason and the pre-Socratic Sophists championship of the ineffable Good with its appeal to emotion is echoed in the opposition of Western rationality to Oriental mysticism, or in Northrop's terms (1947), the (Western) theoretic versus the (Eastern) esthetic. Often, science and the arts are placed at opposite ends of such a dimension as vividly demonstrated in J. Bronowski's <u>The Abacus and the Rose: A new dialogue on two</u> <u>world systems</u> (1965) in which an analytical, fact-oriented molecular biologist is pitted against an English professor espousing the values of individualism and the search for personal meaning. It is noteworthy here that the distincion seems to go beyond differences in individual temperament. Whole systems of thought, philosophical schools, entire cultures may be differentiated. Indeed Pavlov (196\_) commented that "this division makes itself felt\_both in individual human beings and in nations" (p. 389).

In Zen and the Art of Motorcycle Maintenance, Robert Pirsig (1974) traces the roots of present day Western cultural conflict colloquialized in the familiar expression "groovy versus square", from the ancient philosophical debate between the rhetoricians concerned with individual observable excellence and the dialecticians concerned with abstract universal truth. Pirsig calls this "a conflict of visions of reality" (p. 53), such that all human understanding may be divided into two kinds - romantic understanding and classical understanding, which he described as follows (Pirsig, 1974, p. 66):

Romantic

Classical

- sees the world primarily in terms of immediate appearance
- inspirational, imaginative, creative, intuitive, spontaneous
- sees the world primarily in terms of underlying form

 straightforward, unadorned, unemotional, economical, restrained

### Romantic

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- Decode by feeling intuition and esthetic conscience
- in Western cultures, usually associated with femininity and the arts

### Classical

 proceeds by reason and laws to bring order out of chaos

 in Western cultures, usually associated with masculinity, science and law

The source of conflict between what are essentially two sets of values lies in the tendency for people to think and feel primarily in one mode or the other resulting in a misunderstanding of what the other is about. Thus to the romantic, the classic mode appears "dull, awkward, ugly, heavy and oppressive" (p. 67). Conversely, to the classic, the romantic mode is "frivolous, irrational, erratic, untrustworthy, hedonistic and insubstantial" (p. 67).

Shifting the level of analysis from that of the individual to that of an entire civilization the same sort of conflict is again evident. In tracing the evolution of Western civilization following the collapse of the Roman Empire, primarily through an examination of the works of art and architecture of each succeeding historical period, Kenneth Clark (1969) reveals an intriguing phenomenon. From the llth century A.D. onward, human endeavour in ideas, literature, painting and music, while continuing to evolve with ever-increasing sophistication, appear to have been dominated by classic and romantic influences alternating in approximately one hundred-year intervals.<sup>•</sup> (See Appendix A for complete discussion).

The evidence suggests that conflict between the two modes of consciousness is almost inevitable - to date, with only some

exceptions, romanticism and classicism do not seem to be able to peacefully co-exist within civilization as a whole, let alone within a , single individual. And yet as Clark (1973) notes "inside every classic artist there is a romantic struggling to escape...and...within every romantic artist is a longing for the authority of classicism" (p. 179). Such widely diverse authors as Pavlov and Pirsig have both noted that truly great achievement is accomplished through a strong, balanced combination of both types of understanding. Popov (196), in a commentary on Pavlov's typology, discusses the interrelations between the first and second signalling systems, noting that either system may predominate over the other, or that they may be balanced on different levels. A system may prevail either because it is very strong or because the other is very weak. Other combinations include both systems being weak, or moderately strong, or very strong. Pavlov offers Leonardo DaVinci and Goethe as examples of the latter type. Similarly Pirsig (1974) proposes that to achieve Quality, the ultimate goal of all endeavours, "both an ability to see what "looks" good [romantic understanding] and an ability to understand the underlying. methods to arrive at that "good" [classic understanding] are needed" (p. 285).

While it is tempting at this juncture to speculate that what the individual and indeed the world may need is, in Saul Bellow's words (1976) "a good five-cent synthesis", classical and empirical caution demands evidence that the proposed personality construct Classicism versus Romanticism can be both reliably and validly measured with respect to individual human behaviour.

In order to meet these criteria, the main thrust of this thesis has been to devise a self-report scale of dichotomous items based on the following definitions of the two poles of the dimension, which have been extracted from the range of definitions listed in Appendix B.

CLASSICISM: - strives for perfection through adherence to established rules and models; enjoys simplicity, symmetry, harmony and quiet order; thinks in a straightforward unemotional way using logic and reason; is concerned with analysis of underlying form; is characterized by detachment, objectivity and restraint to achieve calmness and clarity; is at his/her best when dealing with facts and ideas

ROMANTICISM: - strives for creativity and inspiration through empathy, abandoning self to nature and the universe; enjoys change, movement, extravagance, sensuality, colour; takes a panoramic view of life and is not concerned with detailed analysis; tends to be anti-intellectual, to value the unusual and the illogical; is characterized by imagination, passion, subjectivity, open emotionality and spontaneity; at his/her best when dealing with intuitions and emotions

The scale construction procedure based on Jackson's rational method of test construction (1967) is detailed in Chapter II. This method is based on Loevinger's (1959) three part validation procedure,

namely the orderly establishment of substantive, structural and external validity. There are two aspects to the latter step convergent validity, the degree to which a scale correlates with other measures of the same trait, and discriminant validity - the degree to which a scale fails to correlate with irrelevant measures. Of the multitude of published self-report personality inventories available, two seemed both theoretically and empirically appropriate for examining the external validity of the Classicism vs Romanticism The first was the Eysenck Personality Inventory (EPI) scale. (Eysenck & Eysenck, 1964) which provides a measure of Extraversion as it is most commonly defined, as well as a measure of Neuroticism, Evsenck's other major personality factor. The second, the Personality Research Form (PRF, Jackson, 1967), consists of twenty. substantive scales designed to measure traits derived from the personality variables originally defined as needs by Murray (1938). These inventories, which exhibit good psychometric properties provided a useful set of criteria related both to Introversion-Extraversion and the broader domain of personality description as a whole. Additionally, they also provided a suitable validation framework for the three other experimental scales - Anxiety vs Sociability; Restraint vs Impulsivity; and Intraception vs Extraception - whose relationships to Classicism vs Romanticism and to each other as aspects of Introversion-Extraversion were also investigated.

A third inventory, the Locus of Control Scale (Rotter, 1966) was

thought to have some relevance for the domain of Introversion-Extraversion as a whole. This scale provides a measure of the degree to which an individual has a generalized expectancy that reinforcement is contingent upon or independent of his or her behaviour i.e., the degree to which an individual is internally or externally controlled, respectively. This inventory was included as part of the test battery to provide data for future analyses, but its relationship to Classicism vs Romanticism was not considered germane to the present investigation.

Descriptions of the twenty PRF scales (Jackson, 1967) permitted certain hypotheses to be generated regarding the criterion validity. of Classicism vs Romanticism. In addition, the three-dimensional model implies that Classicism vs Romanticism would be expected to have a positive relationship to Restraint vs Impulsivity, a negative relationship to Intraception vs Extraception, and no apparent relationship to either Anxiety vs Sociability, EPI Extraversion or Neuroticism. These hypotheses are recorded in Table 1. The model components themselves would be expected to be independent of each other but all negatively correlated with EPI Extraversion. Finally, if as Gray (1973) proposes, anxiety and impulsivity characterize respectively introverted and extraverted neuroticism, then it would be expected that EPI Neuroticism.would have a positive relationship to Anxiety vs Sociability, a negative relationship to Restraint vs Impulsivity, and no relationship to Intraception vs Extraception. These hypotheses are presented in Table 2.

### TABLE 1

# CRITERION VALIDITY HYPOTHESES FOR

# CLASSICISM vs ROMANTICISM

	Relatio	ergent	Discriminant Relationships
	Positive Correlation	Negative Correlation	No Correlation
PRF Scales	Cognitive structure Order Understanding	Autonomy Change Exhibition Impulsivity Sentience	Abasement Achievement Affiliation Aggression Defendence Dominance Endurance Harmavoidance Nurturance Play Social recognition Succorance
Exptl. Scales	Restraint vs Impulsivity	Intraception vs Extraception	Anxiety vs Sociability
EPI Scales	٩		Extraversion Neuroticism

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### TABLE 2

STRUCTURAL INTERRELATIONSHIPS OF

MORF'S 3-DIMENSIONAL MODEL OF

INTROVERSION-EXTRAVERSION<sup>a</sup>

	Experimental Scales	EPI Scales
Anxiety vs Sociability	Restraint Vs Impulsivity (0) T Intraception vs Extraception (0)	Extraversion (-) Neuroticism (+)
Restraint vs Impulsivity	Anxiety vs Sociability (0) Intraception vs Extraception (0)	Extraversion (-) Neuroticism (+)
Intraception vs Extraception	Anxiety vs Sociability (O) Restraint vs Impulsivity (O)	Extraversion (-) Neuroticism (0)

relationship

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### Summary

An examination of the various manifestations of the personality construct Introversion-Extraversion suggested that this dimension is too broad and thus has tended to yield confusing, if not directly contradictory conclusions about the behaviour it is intended to describe and explain. Increased sophistication particularly in neurophysiological methodology has revealed neurological mechanisms which appear to coincide with two important, well-established aspects of Introversion-Extraversion, namely Anxiety vs Sociability and Restraint vs Impulsivity. A third element, called Intraception vs Extraception has received less consistent attention but has been proposed as a more faithful rendering of the Jungian conception of Introversion-Extraversion. These three hypothetical constructs have recently been the focus of an extensive exploration of the dimensionality of Introversion-Extraversion (Morf, Notes 3, 4, 5), including the construction of relevant scales explicitly designed to measure these proposed personality traits (Hackett, Note 1; Morf, Note 2). The structure of the model as applied to an analysis of work competence suggested the existence of a fourth dimension, heretofore inconsistently included as part of the Introversion-Extraversion domain and called Classicism vs Romanticism. A renewal of interest in the differential functioning of the two brain hemispheres has produced evidence which relates to earlier Russian research concerning exclusively human personality differences and which supports the contention that this dimension is a separate trait differentiating between types of introverts and extraverts. A

brief exploration of the historical and cultural antecedents of the dichotomy indicated that the definitions of the poles correspond well to the behaviours of interest.

The present study was an attempt to rationally construct a bi-polar scale to measure Classicism vs Romanticism and to explore its external criterion validity within the context of some established personality inventories and Morf's three-dimensional model of Introversion-Extraversion.

# CHAPTER II

### METHOD

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### <u>Subjects</u>

The sample consisted of 388 undergraduate behavioural science students from the University of Windsor and Fanshawe College, London, Ontario. Participation in the study was voluntary and the university students obtained extra course credit. In addition, individual feedback on sixteen of their personality scale scores was promised and provided at the end of the testing phase. There were 101 male subjects and 286 female subjects (the sex of one subject was not recorded), with an age range from 17 to 57 years.

### Method of Scale Construction

The preliminary Classicism vs Romanticism scale was devised following the rational method of test construction developed by Jackson (1967) for use in constructing his Personality Research Form. As a first step, to establish substantive validity (Loevinger, 1957) several domains reflecting aspects of human behaviour including, of course, personality theory and research, were examined for evidence of the dimension, as outlined in Chapter I. This search yielded both a theoretical framework to which the dimension appears to be related and the necessary definitions of Classicism and Romanticism (see p. 31).

Dichotomous items were written to reflect behaviours encompassed by each of the definitions and only retained if they survived the screening of two editors. This procedure resulted in thirty items for each pole of the dimensions as listed in Appendix C. It will be noted that all items are True-keyed but since the dimension is bipolar, each item is actually False-keyed for its opposite pole, thus avoiding the problem raised by the response set of True Responding (Morf & Jackson, 1972).

The three other sixty-item experimental scales, Anxiety vs Sociability, Restraint vs Impulsivity and Intraception vs Extraception had been constructed in a similar fashion (Hackett, Note 1) and all 240 items were then combined in random order along with four Infrequency items. The latter are statements that would rarely be endorsed in the keyed direction by the careful, truthful responder and were inserted to check on non-purposeful responding, e.g., carelessness. This 244-item inventory was called the Trait Survey, a copy of which may be found in Hackett, (Note 1).

### Testing Procedure

Four personality inventories were administered in a fixed sequence to subject groups ranging in size from two to twenty-five in sessions usually lasting about two hours. The specific instructions read to each group are presented in Appendix D.

Every subject completed the questionnaires in the following order:

.1. Trait Survey - four 60-item experimental scales; one 4item Infrequency scale

2. Personality Research Form E - twenty substantive

16-item personality scales; one

16-item Infrequency scale; one

16-item Social Desirability response

style scale

3. Eysenck Personality Inventory - two substantive

personality scales i.e., a 24-item

Extraversion scale and a 24-item Neuroti-

cism scale; one 9-item Lie scale

4. Social Reaction Inventory (Locus of Control Scale, Rotter, 1966) - one 23-item substantive personality scale; 6 buffer

items<sup>1</sup>

Statistical Procedure

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<u>Preliminary Scale and Item Analyses</u>. Scores on the thirty-one substantive and response set personality scales were computed and data from six subjects were eliminated on the basis of excessively high Trait Survey and PRF Infrequency scale scores ( $\geq 2$  and  $\geq 4$ , respectively), leaving a final sample size of 388.

Structural validity (Loevinger's second component) of

The data set was obtained as part of a larger research project which will make use of the Locus of Control scale. Its relationship to Classicism vs Romanticism was not explored in the present study.

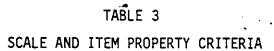
the preliminary Classicism vs Romanticism scale was assessed by computing scale and item characteristics using the programme TESTSTAT (Morf, Note 6). These properties are listed in Table 3 along with the criteria which had to be met for the scale and its items to be considered reliable and structurally valid.

Item Selection. The goal was to reduce the preliminary 60-item scale to a final length of 20 items exhibiting good psychometric properties. As a first step, Jackson's (1967) Differential Reliability Index (DRI) which provides a measure of the Item-Scale Remainder variance after the variance the item shares with an irrelevant criterion scale has been removed was computed for all items separately for each of two criterion scales. PRF Dominance was considered to be a representative, substantive irrelevant scale for Classicism vs Romanticism and PRF Desirability was the critical stylistic irrelevant scale. The two DRI's were computed as follows:

DRI<sub>content</sub> =  $r_{irem}^2 - r_{ici}^2$ 

 $\frac{DRI}{response} = r_{irem}^2 - r_{irst}^2$ 

The smallest of the two DRI's for each item was recorded and the items were then rank ordered from largest to smallest minimum DRI. Next any item with an extreme endorsement proportion ( $\geq$ .90 or  $\leq$ .10) was eliminated. Finally the ten best true-keyed items and ten best false-keyed items (i.e., those remaining items with the highest minimum DRI's) were selected to form the final scale, and both scale and item properties were recomputed. This procedure thus ensured that



Scale Properties Criterion Distribution Normal Variability Moderate to High' Internal Consistency High (Coefficient Alpha) Item Properties Item-Scale Remainder Point Biserial Correlation (r<sub>irem</sub>) High Item-Content Irrelevant Substantive Criterion Point Biserial Low Correlation (r<sub>ici</sub>) Item-Response Irrelevant Style Crÿterion Point Biserial Low Correlation (rirst) ndorsement Proportion Moderate

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only those items least contaminated by irrelevant content variance, least vulnerable to the tendency to answer in a socially desirable \_\_\_\_\_\_manner, and most able to discriminate among individuals, were retained.

### CHAPTER III RESULTS

# Structural Properties of the Final Classicism vs Romanticism Scale

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Of the sixty original items written with a consideration for substantive or content validity the twenty items balanced for direction of keying which evidenced the best structural validity are presented with their respective characteristics in Table 4, in order from largest to smallest minimum DRI. It should be noted that the Item-Scale Remainder correlations ( $r_{irem}$ ) are those computed using the final, twenty-item Classicism vs Romanticism scale scores. Selection of these items for the final scale was of course made using the DRI's computed from the  $r_{irem}$  values of the sixty-item preliminary scale.

The mean item properties are presented in Table 5. As would be expected, the final scale represents an improvement in relevant content saturation over the preliminary scale. The preliminary scale properties were computed separately for each sex as well as for the subject sample as a whole. These values indicate that the difference between the sexes are small - the female score distribution is slightly less variable and the mean score somewhat lower (i.e., tending towards Romanticism) than the score distribution and mean score for males. Table 5 also presents the final scale properties for

TABLE 4

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# ITEMS AND PROPERTIES OF THE FINAL

# CLASSICISM vs ROMANTICISM SCALE

	. I tem	Keyed	r irom	بر بر بر	+ יג ג	DRI min
<i>.</i>	I believe that controlling oneself is more important than expressing oneself.	T	.457	.003	- 153	.431
2.	I dislike free-form art.	F	.303	. 049	.062	.297
з.	I think people who oppose technological advances are overly sentimental.	F	.296	.055	- <b>.</b> 028	.291
4.	I believe my emotions are as important as my thoughts.	ц	.265	.102	.028	.245
ъ.	I believe dreams are an important part of anyone's experience.	<b>LL</b> .	.241	.014	057	.234
6.	I prefer to sort things out logically before making decisions.	Ť	. 269	.050	.153	.221
7.	I enjoy letting my imagination have free rein.	لد	. 224	015	035	.221
8.	I would rather watch a documentary than a fantasy film.	н	.252	074	124	.219
9.	I find most modern dance and music is incomprehensible.	Т	.223	059	054	.215
10.	10. I think people should express their emotions openly.	Ŀ	.216	030	.004	.214
11.	ll. I can be deeply moved by a beautiful sunset.	- 1	.237	.035	103	.213
12.	12. I find my best ideas come when I just let my imagination go.	. ғ	.218	011	071	.206
	· · · · · · · · · · · · · · · · · · ·	Con	Continued			-

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TABLE 4 CONTINUED

<ul> <li>13. I enjoy working out mathematical puzzles.</li> <li>14. I think true excellence can only be detern objectively by experts.</li> <li>15. I think irrational people often do more hi than good.</li> <li>16. I believe the West has a lot to learn fro Oriental mysticism.</li> <li>17. I would rather work on a farm than in a machine shop.</li> <li>18. I believe more problems are solved throug rational analysis than through intuition.</li> <li>19. I think schools and teachers often get in way of creativity.</li> </ul>	Item	Keyed Response	r irem	r ici	r irst	uki min
<ul> <li>14. I think true excellence objectively by experts</li> <li>15. I think irrational peol than good.</li> <li>16. I believe the West has</li> <li>16. I believe the West has</li> <li>17. I would rather work on machine shop.</li> <li>18. I believe more problem rational analysis than</li> <li>19. I think schools and te way of creativity.</li> </ul>	mathematical puzzles.	⊢	.205	.048	012	.199
<ol> <li>I think irrational peol than good.</li> <li>I believe the West has Oriental mysticism.</li> <li>I would rather work on machine shop.</li> <li>I believe more problem rational analysis than rational analysis than way of creativity.</li> </ol>	ence can only be determined	F	.217	.030	160	761.
<ol> <li>I believe the West has Oriental mysticism.</li> <li>I would rather work on machine shop.</li> <li>I believe more problem rational analysis than "ay of creativity.</li> </ol>	oeople often do more harm É	, T	112.	.076	- 039	.197
<ul> <li>17. I would rather work on machine shop.</li> <li>18. I believe more problem rational analysis than</li> <li>19. I think schools and te way of creativity.</li> </ul>	nas a lot to learn from	iy Le	.202	.001	.046	761.
	on a farm than in a '	<b>ند</b>	.186	.034	037	.182
	lems are solved through / han through intuition.	· 🛌	.185	À14	.054	. 146
	teachers often get in the	ئد	.174	. 008	.123	.123
20. I would enjoy being part of like the hippie movement.	part of something exciting ement.	<b>ц.</b>	971.	.013	.149	660.

### TABLE 5

PRELIMINARY AND FINAL ITEM MEAN PROPERTIES AND SCALE PROPERTIES FOR CLASSICISM vs ROMANTICISM

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Item Properties					
	Mean r <sub>irem</sub>	Mean r <sub>ici</sub>	<sup>Mean r</sup> irst	Mean DRI <sub>m</sub>	in
Preliminary Scale (60 items)	.18	.07	. 07	.14	
Final Scale (20 items)	.24	.04	.07	.22	
			· .		
Scale Properties					
,	Mean	<sup>°</sup> Standard Deviation	Alpha,	a <sup>j</sup> a <sup>5</sup>	
Preliminary Scale - Females	26.36	6.15	.72		
Preliminary Scale - Males	28.00	7.06	.78		
Preliminary Scale . – Total Sample	26.79	6.40	.74		
Final Scale - Total Sample	7.28	3.10	.66	.25 ,.03	
					-

the total sample. The latter include measures of skewness and kurtosis and it is evident that the final scale reflects the influence of the two-to-one female/male subject ratio i.e., it is somewhat positively skewed towards the Romanticism end of the dimension.

# Aspects of the Classicism vs Romanticism Construct as Measured by the Final Scale

Within the realm of psychometric theory there is a controversy regarding what constitutes an acceptable level of homogeneity for any scale. The item selection procedure used here was designed to eliminate all but the most reliable (in the sense of internally consistent) items to achieve maximum homogeneity and it can be seen that reducing the scale length by two thirds did not in fact substantially reduce coefficient alpha. This value, .66, while moderately high, is well below that recommended by Nunnally (1978) and Jackson (1967) as evidence of an acceptable level of item consistency. Loevinger (1957) has also distinguished between tests constructed in a blind empirical fashion in which any item related to the criterion will do, regardless of its relationship to other items, and tests constructed "as instruments of psychological theory" which must exhibit homogeneity with regard to the hypothesized trait being measured. The Classicism vs Romanticism scale as a measure of `a personality construct embedded within a theoretical and empirical framework, obviously belongs to the latter category. Nevertheless, Cattell (1957), Loevinger (1957) and Cronbach and Meehl (1967) also caution against selecting items that are so similar

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as to reduce the range of the scale's generality. This warning is perhaps best expressed in the words of Thorndike (1967) - "...a test is also supposed to have a certain amount of breadth and scope... Exclusive preoccupation with item internal consistency may lead to an undue narrowing of the scope of the test." (p. 214)

Classicism vs Romanticism is certainly a complex construct; in addition to being bipolar, the scale encompasses a broad range of behaviours which, although hypothesized to be related, are necessarily of a somewhat heterogeneous nature. Thus, it may be suggested that the moderately respectable alpha value represents an acceptable level of internal consistency while preserving the inherent complexity of the construct. To check whether the latter is indeed true, a Principal Axes Fastor Analysis (Statistical Analysis System (SAS); Barr, Goodnight, Sall & Helwig, 1979) with Varimax rotation was performed on the twenty items. Seven factors with eigenvalues greater than 1.00 were retained for rotation and the rotated factor pattern is presented in Table 6. Each item was considered to belong to that factor on which it loaded most highly although three items (8, 12, 19) have sufficiently similar loadings on more than one factor to not be considered to have met this simple structure criterion. The remaining item loadings (underlined in the table) were examined to discover the common elements from which appropriate factor labels could be derived.

These labels are presented below, together with the capsule descriptions of the content of the items that defined each factor.

			. <u></u>					
Item #	I	II	III	IV	٧	¥I	VII	h <sup>2</sup>
י נ	. <u>44</u>	. 29	.09	.22	.09	.10	.10	.36
2	.32	,. 02	.11	.08	.01	.02	. <u>51</u>	.38
3	. 23	.06	.09	. <u>38</u>	.13	03	.10	.24
4 _	. <u>37</u>	.00	.11	.02	.21	.07	.04	.20
5	. <u>36</u>	.07	.07	.08	.05	01	.02	. + .15
6	.03	. 41	10	.01	.06	.18	.26	. 28
7	.08	.11	. <u>66</u>	.03	.05	.05	.06	. 47
8	.24	. 22	.07	.21	12	. 04	01	.17
9	.00	.03	.11	.10	.03	. <u>43</u>	.15	. 23
10	. <u>47</u>	.04	14	02	.03	.13	01	.26
11	. 25	.09	05	.04	. <u>63</u>	00	00	.48
12	. 26	. 09	. 22	.03	_]7	.34	.02	.28
13	.16	.14	08	. 07	02	. <u>37</u>	02	.19
14	.04	.02	04	. <u>59</u>	.04	.13	.03	.37
15	.15	. <u>33</u>	. 02	.10	03	06	.06	.15
16	.10	. <u>34</u>	.17	06	01	03	`.11	.17
17	.01	00	.17	.18	. <u>32</u>	.08	.06	.17
18	01	. <u>27</u>	05	.20	.09	.09	01	.13
19	01	. 25	.18	01	.06	.14	02	.12
20	11	.23	.01	.04	.04	.09	. <u>45</u>	28

TABLE 6

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VARIMAX ROTATED FACTOR PATTERN OF FINAL CLASSICISM VS ROMANTICISM ITEMS

- I. Preference for Emotional Control
  - 1. importance of self control (.44)
  - 4. importance of emotions (.37)
  - 5. importance of dreams (.36)
  - 10. open emotional expression (.47)
- II. Preference for Rationalism
  - 6. logical decision making (.41)
  - 15. harmfulness of irrationality (.33)
  - 16. value of Oriental mysticism (.34)
  - 18. rational problem solving vs intuition (.27)

III. Concern with Realism

7. I enjoy letting my imagination have free rein (.66)

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.....

IV. Concern with Technical Expertise

3. support for technology (.38)

- 14. objective determination of excellence (.59)
- V. Disinterest in Nature
  - 11. emotional impact of a sunset (.63)

17. farm work vs machine shop (.32)

VI. Preference for Linear Thinking

9. incomprehensibility of modern dance and music (.43)

13. enjoyment of mathematical puzzles (.37)

### VII. Need for Structure

- 2. dislike of free form art (.51)
- 20. excitement of the hippie movement (.45)

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All labels were written to convey the Classicism end of the dimension, which in the case of factors I, III, and V required the reflection of the meaning of the romantic items which defined these factors almost exclusively. A comparison of the labels with the pole definitions in Chapter I ( p. 31 ) indicates the final twenty-item Classicism vs Romanticism scale incorporates a number of the characteristics thought to reflect the construct without sacrificing the requisite degree of internal consistency.

# External Validity - Classicism vs Romanticism and the Three-Dimensional Model of Introversion-Extraversion

A Principal Axes Factor Analysis (<u>SAS</u>, Barr et al, 1979) was computed using the scores of the twenty substantive PRF scales plus the Desirability scale score; the two substantive EPI scale scores; the Locus of Control scale score; and the four final experimental scale scores from the Trait Survey for each subject. Six factors meeting the Kaiser criterion of eigenvalues greater than 1.00 were retained for Varimax rotation.

<u>Scale Intercorrelations</u>. The factor analysis first generated a 28 by 28 correlation matrix of the scale score interrelationships. (This matrix may be obtained from Hackett, Note 1). Since the degrees of freedom for these correlations are so large (386) any <u>r</u> exceeding 1.20] is significant beyond the .001 level. Thus this criterion for examining the scale relationships is relatively unproductive. Instead a frequency distribution of the  $|\underline{r}|$  values revealed that the upper third of the correlations had an absolute value equal to or greater

than .25 and only these were accepted as evidence of support for the convergent validity hypotheses stated in Chapter I. That portion of the correlation matrix directly relevant to these and the discriminant validity hypotheses regarding Classicism vs Romanticism is reproduced in Table 7. Of the ten convergent criterion relationships, seven were supported by the matrix values in both direction and magnitude, within the above noted limits. Contrary to expectation, Classicism vs Romanticism does not appear to be significantly related to PRF Autonomy, Exhibition or Understanding.

There was substantial support for the discriminant hypotheses in that all the relevant correlations fell below [.25]. However, three values did exceed the statistical criterion of [.20] - PRF Play (-.23); PRF Social Recognition (.21); and EPI Extraversion (-.21). Neither of the first two correlations are disturbingly contradictory in terms of the definitions of Classicism vs Romanticism. A case could be made for the blithe, carefree nature of some romantics and the civilized, rule-conscious behaviour of classicists. However, contrary to expectation, the negative correlation of Classicism vs Romanticism with EPI Extraversion suggests romantics are somewhat extraverted while classicists tend to be introverted. On the other hand, as hypothesized, Classicism vs Romanticism is positively related to Restraint vs Impulsivity, negatively related to Intraception vs Extraception and not significantly related to Anxiety vs Sociability or EPI Neuroticism.

### TABLE 7

# CORRELATION MATRIX REFLECTING EXTERNAL VALIDITY

		Classicism vs Romanticism	
PRF Scales	Abasement Achievement Affiliation Aggression Autonomy Change Cognitive Structure Defendence Dominance Endurance Endurance Exhibition Harmavoidance Impulsivity Nurturance Order Play Sentience Social Recognition Succorance Understanding Desirability	.01 .01 18 04 23 25 .38 .15 .06 .11 14 14 37 37 38 .33 23 34 .21 .11 12 <sup>a</sup> 04	
EPI Scales	Extraversion Neuroticism	21 01	$\smile$
	Locus of Control	·09	
Experimental Scales	Anxiety vs Sociability Restraint vs Impulsivity Intraception vs Extraception	.20 .35 57	
·	Highest irrelévant correlation	23	

# HYPOTHESES FOR CLASSICISM vs ROMANTICISM

<sup>a</sup>Unsupported criterion validity hypotheses

Table 8 presents the correlations relevant to the predicted structural interrelationships of the three-dimensional model.--As hypothesized, Intraception vs Extraception is independent of Anxiety vs Sociability and Restraint vs Impulsivity. Contrary to expectation, the negative correlation with Anxiety vs Sociability is statistically significant, although lower than the criterion imposed here. Further, the Anxiety vs Sociability and Restraint vs Impulsivity dimensions are not orthogonal, they are significantly and positively related. Finally two of the model's six hypothesized relationships to EPI Extraversion and Neuroticism were not confirmed. Intraception vs Extraception is independent of Extraversion, and Impulsivity as measured here is evidently not an aspect of Neuroticism.

<u>Personality Factors</u>. Examination of individual correlations within such a large matrix is of limited utility. The scale interrelationships were further explored by the rotated principal axes factor solution, which may be found in Appendix E. An attempt was made to interpret and label all six factors on the basis of the highest scale loadings (i.e., those  $\geq |.50|$ ).

> I: Extraversion - a broad ranging factor whose dual nature is clearly evident in the equal division of high loadings between scales measuring affable sociability - PRF Affiliation (.73), and Play (.66); Anxiety vs Sociability (-.72) - and extravagant impulsiveness - PRF Exhibition (.75) and Impulsivity (.51); Restraint vs Impulsivity (-.63). EPI Extraversion, which has the highest loading (.84)

# TABLE 8

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# SCALE INTERCORRELATIONS FOR THE 3-DIMENSIONAL

# MODEL OF INTROVERSION-EXTRAVERSION

<u>د</u>	Anxiety vs Sociability	Restraint vs Impulsivity	Intraceptior vs Extraceptior
Anxiety vs	Ŷ		
Sociability	1.00		•
Restraint vs			
Impulsivity	.′39 <sup>a</sup>	1.00	
Intraception vs		•	
Extraception	23	16	2 1.00
EPI Extraversion	61	55	.12 <sup>a</sup>
EPI Neuroticism	.37	~.01 <sup>a</sup>	.07
Highest irrelevant <u>r</u>	.39	16	.07

has equal numbers of items reflecting each of these two aspects.

- II. Achievement via Persistence a factor defined primarily by PRF Achievement (.73) and Endurance (.70) whose trait definitions suggest an untiring pursuit of long-term goals. Moderate loadings of other scales on this factor reinforce this description e.g., PRF Cognitive Structure (.41), Dominance (.49), Impulsivity (-.40) and Order (.48). None of the experimental scales or EPI Extraversion appear to contribute to this factor to any significant degree.
- III. Dependency as defined by PRF Autonomy (-.78), Harmavoidance (.50) and Succorance (.74). Further support for this description is found in the moderate loadings of PRF Social Recognition (.46) a measure of approval seeking - and PRF Change (-.40). IV. Romantic Intraception - is defined exclusively by the high loadings of Intraception vs Extraception

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(.79), Classicism vs Romanticism (-.67), and PRF /\* Sentience (.56). Only three other loadings exceed even /.25/ - PRF Change (.27), Nurturance (.35) and Understanding (.31). The direction of this last loading contradicts the previously hypothesized positive relationship between Classicism and PRF Understanding. Although this hypothesis was not

supported by the single correlation between the two scales i.e., -.12, recorded in Table 7, neither does this value indicate à strong negative relationship. Instead the positive loading of Understanding on this factor more likely reflects its .30 correlation with Intraception vs Extraception.

- V. Paranoid Hostility is defined by scales which might be described as measures of potential pathology. With the exception of EPI Neuroticism none of the scales administered is intended as a direct measure of pathological tendencies. Indeed negative PRF Abasement might be considered by itself as a measure of healthy ego strength (-.59) but when combined with the other two scales loading highly on this factor - PRF Aggression (.55) and Defendence (.63) - the shared variance seems best described as reflecting an at least potentially negative behavioural trait.
- VI. Anxiety is defined by EPI Neuroticism (.69) which not surprisingly is related to the tendency to not present oneself in a favourable light i.e., PRF Desirability (-.62). Of greater interest, however, are the moderate loadings of measures of what appear to be two quite difference aspects of neurotic behaviour - PRF Social Recognition (.41) and Anxiety vs Sociability (.42) versus PRF Impulsivity (.42)

and Aggression (.38). This contrast might be summed up as a Restrained Fearfulness versus Impulsive Aggressiveness i.e., the introverted and extraverted • sides, respectively, of Neuroticism.

# CHAPTER IV 22

In general, the major purpose of this research appears to have been accomplished. While a number of specific issues remain to be examined, use of the rational test construction method based on consideration of substantive, structural and external validity has resulted in a new personality scale called Classicism vs Romanticism exhibiting encouraging psychometric properties. Further, contrary to earlier descriptive models of personality structure, the trait measured by the new scale appears to be relatively independent of a number of other familiar constructs including, most importantly, Introversion-Extraversion. This finding provides some support for a new threedimensional model of Introversion-Extraversion from which the Classicism vs Romanticism dimension was initially derived, although other aspects of this model raise a number of questions about the dimensionality of Introversion-Extraversion.

# Structural Properties of the Classicism vs Romanticism Scale

The standard deviation of the new scale is between one-sixth and one-seventh the possible range of scores, a dispersion which permits reasonably good discrimination between individuals. However the overall scale distribution departs somewhat from normality, and is skewed in the direction of Romanticism. The preliminary scale properties indicated this occurs for males and females separately. The most likely

explanation for this outcome is the relatively homogeneous nature of the subject sample. All students were taking at least one psychology course and fully one-quarter of the sample were enrolled in some form of "helping professions" diploma course. It might be expected that introductory social science students would be more likely to exhibit a higher proportion of "romantic" behaviour, e.g., emotional expressiveness, than a more representative sample from the post-secondary disciplines, such as one including science, mathematics and technology students. Indeed, while the results are encouraging as a first step in scale development, further research plans include the analysis of responses of more demographically and vocationally diverse samples to the forty best items from the preliminary sixty-item scale. This will also include item analyses by sex in order to obtain a final twenty-item scale with as high a-level of generalizability as possible.

As noted in Chapter III, the problem of determining what constitutes an adequate level of internal consistency without sacrificing generality confronts any test constructor whose scale is embedded within a theoretical framework. After briefly reviewing the opposing sides • of the controversy, it was concluded that the twenty-item scale achieved a reasonable compromise between homogeneity and scope. The item factor analysis tends to give the impression that the Classicism vs Romanticism scale may actually be a second-order factor composed of several firstorder dimensions. The correspondence between the item factor labels (p. 51) and the range of behaviours included in the definitions of the scale poles (p. 31) indicates that empirical item selection stressing internal consistency did not substantially limit the scale's breadth. A summary of the item factor descriptions suggests that, as measured here,

the classical mode is a controlled, unemotional, rational, orderly approach to life. Conversely, the romantic mode is charácterized by sensual emotionality with little concern for rules or structure.

External Validity - Classicism vs Romanticism as a Personality Dimension

Scale Intercorrelations. As part of establishing whether the Classicism vs Romanticism scale actually measures something corresponding to its underlying hypothetical construct, the scale's correlations with a broad range of personality variables were examined. The limit of (  $r \ge 25$  as a criterion for hypothesis support was established to overcome the difficulties of relatively low correlations being highly significant as a consequence of large sample size. Thus the relationships are discussed here in terms of their relative strength rather than absolute level of significance. Keeping in mind the somewhat arbitrary nature of these conditions, the support for seven of the ten  $\mathbf{\lambda}$  convergent hypotheses and all of the discriminant hypotheses generated on the basis of the theoretically derived scale definitions was taken as evidence of a promising degree of criterion validity. The correlation with PRF Autonomy, was in the predicted direction but lacked sufficient magnitude and evidently PRF Exhibition does not correspond to the kind of demonstrativeness romantics were hypothesized to show. More puzzling is the lack of correlation between Classicism and PRF Understanding. There is a distinct similarity between characteristics of Classicism and several of the list of behaviours thought to exemplify a need for Understanding, e.g., "analytical, intellectual, logical, rational" (Jackson, 1967, p. 7). However, some of the other

behaviours listed in that description include "curious, exploring, inquisitive" which may not be exclusively confined to Classicism. In fact, the initial correlation matrix revealed that Understanding is positively related to Intraception vs Extraception (r=+.30) and most likely reflects the intraceptive person's inner directed mental energy e.g., "values synthesis of ideas particularly when directed at satisfying intellectual curiosity" (Jackson, 1967, p. 7).

Substantial support for the derivation of Classicism vs Romanticism from the three-dimensional model was also obtained. Classicism embodies aspects of restraint and extraception while Romanticism has something in common with both impulsivity and intraception. By comparison, the relationship with Anxiety vs Sociability, EPI Extraversion and Neuroticism are quite weak, as hypothesized. It is possible that the small but statistically significant correlations of Classicism vs Romanticism with the first two scales are based on the stronger relationships all three of these dimensions have with Restraint vs Impulsivity, although a series of stepwise regression analyses would be necessary in order to establish the exact nature of the interrelationships.

In summary, at the level of individual correlations, Classicism reflects a restrained, toughminded need for order and structure while Romanticism reflects an impuls tenderminded need for change and earthy sensuality.

<u>Factor Analytic Evidence</u>. While an attempt was made to interpret and label all six factors retained in the rotated principal axes solution, Factor IV "Romantic Intraception" is of the greatest interest here. First, it can be seen with increased clarity that within the domain

of personality structure, Classicism vs Romanticism together with Intraception vs\_Extraception accounts for a small but distinct portion of variance separate from Introversion-Extraversion. Secondly, despite what classicists and romanticists may think of one another, the dimension is also independent of factors reflecting pathological tendencies. What is most notable is that a number of measures which were substantially related to Classicism vs Romanticism at the correlational level do not maintain this correspondence at the factor analytical level, loading instead primarily on Factors I and II. Measures of restraint help define Factor I - "Extraversion" while measures of a need for structure contribute to Factor II - "Achievement via Persistance". A review of the relevant definitions in Chapter I indicates that these are the characteristics which help differentiate Classicism from Extraception and Romanticism from Intraception. That is, both these dimensions share the toughminded (classical, extraceptive) versus tenderminded (romantic, intraceptive) distinction, but Classicism is further defined by restraint and orderliness in opposition to the impulsive unconventionality of Romanticism. Certainly these relationships are supported by the item factor analysis and the matrix of scale intercorrelations. However, it would seem that the imposition of simple structure on the rotated solution caused the correlations of the measures in question with Factor IV to be minimized in the face of much stronger relationships with Factors I and II. Indeed the variance which Restraint vs Impulsivity shares with both Introversion-Extraversion and Classicism vs Romanticism may account for the past tendency to assume a direct positive correlation between the latter two dimensions, which now appears unwarranted.

Both theoretically and now empirically, Classicism vs Romanticism clearly has much in common with Intraception vs Extraception. In addition to the differences noted above, it may be fruitful to pursue an item factor analysis of the experimental Intraception scale similar to that performed here for Classicism, in order to further clarify both the similarities and differences between these two dimensions. The present factor analysis of scale scores suggests that the two scales as currently constituted measure much the same thing. Yet the literature review of Chapter I and the implications of the three-dimensional model point to important distinctions between the two constructs which have not been unequivocally demonstrated in the present study thus requiring additional investigation. The necessity for certain structural improvements in Classicism vs Romanticism scale has already been noted, for example, a more broadly based subject sample is required. Secondly, Classicism vs Romanticism has been theoretically linked to hypothetical differences in brain function which do not apply to a causal analysis of Intraception vs Extraception. With an improved scale, the techniques are available for assessing differential hemispheric activation of criterion groups divided on the basis of Classicism vs Romanticism, an important experimental step in establishing the construct validity of the dimension.

# The Three-Dimensional Model of Introversion-Extraversion

It may be recalled that an analysis of a variety of aspects of Introversion-Extraversion yielded a model in which Anxiety vs Sociability, Restraint vs Impulsivity and Intraception vs Extraception were hypothesized to be mutually orthogonal but all positively related to

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Introversion. As previously noted, the least familiar of these dimensions, Intraception vs Extraception, is relatively independent of Anxiety vs Sociability and Restraint vs Impulsivity but also, contrary to expectation, is not significantly related to EPI Extraversion. Since Eysenck's definitions of introversion and extraversion (and consequently the scale derived from them) do not incorporate the Jungian concepts of intraception and extraception, the observed lack of correspondence may be more indicative of discrepant construct definitions than of a real divergence between the two traits of intraception and introversion. On the other hand, while Anxiety vs Sociability and Restraint vs Impulsivity clearly contribute strongly to the definition of an Extraversion factor, these two experimental scales are also positively correlated with each other. This result might be interpreted as a lack of support for Gray's physiologically based model in which the two dimensions are hypothesized to be orthogonal. But one explanation for this discrepancy may be that it is difficult to write items which differentiate, for example, between behaviours exhibiting a high sensitivity to punishment (Anxiety) and those which simply reflect a lack of sensitivity to reward (Restraint). While the reinforcement sensitivity mechanisms may operate independently at the level of neurophysiology, their behavioural manifestations as measured by self report inventories may overlap and obscure each other.

One aspect of Gray's theory did receive a kind of indirect support. Factor VI of the rotated scale score factor pattern indicates that neuroticism is not a unitary construct. This factor appears to represent a bipolar dimension defined by extreme sensitivity to punishment signals

(Restrained Fearfulness of neurotic introversion) versus extreme sensitivity to reward signals (Impulsive Aggressiveness or neurotic extraversion). It might even be possible to interpret Factor I as a ... corresponding "insensitivity" dimension i.e., Extraversion as defined by warm sociability (insensitivity to punishment) and impulsive demonstrativeness which could be reflected to define restrained aloofness (insensitivity to reward). However even if these rather tenuous interpretations are accepted, their implications tend to blur the previously clear-cut structural relationships derived from Gray's causal analysis of Introversion-Extraversion. Specifically, the result is two orthogonal dimensions which might be labelled Anxiety vs Impulsivity, and Restraint vs Sociability, the neurotic and stable aspects respectively of Introversion-Extraversion. The poles of the original dimensions have been partially interchanged by this interpretation, and while they may make some intuitive sense, there is clearly no corresponding explanatory framework into which these constructs may be embedded. Further, there is of course some evidence for the viability of the original dimensions in so far as scales have been successfully constructed to reflect Anxiety vs Sociability and Restraint vs Impulsivity (Hackett, Note 1). Thus it would seem that further research is in order to sort out the empirically introduced complexities of a theoretically appealing model of the dimensionality of Introversion-Extraversion.

#### Summary

A dimension of personality called Classicism vs Romanticism was proposed on the basis of a review of several theories seeking to describe

and/or explain a variety of behaviours directly and indirectly related to the familiar construct Introversion-Extraversion. The main focus of the study was to begin to assess the validity of the new dimension by rationally constructing a psychometrically sound, twenty-item scale and testing a number of hypotheses relating Classicism vs Romanticism to the broader domain of personality structure as assessed by two wellestablished personality inventories, the Personality Research Form (Jackson, 1967) and the Eysenck Personality Inventory (Eysenck & Eysenck, 1964).

The new scale exhibited a promising degree of structural validity to the extent that items constructed to reflect the rationally defined poles of the dichotomy maintained a satisfactory level of internal consistency without sacrificing the inherent complexity of the construct. Correlational and factor analytic support for the majority of the convergent and discriminant validity hypotheses provided additional evidence that Classicism vs Romanticism is a viable dimension of personality reflecting the dichotomy of restrained, orderly toughmindedness versus impulsive, unconventional tendermindedness. Further, contrary to the assumptions of a number of traditional theories, classicism is not correlated with introversion, nor romanticism with extraversion. Instead the two dimensions appear to be relatively independent of each other.

A secondary aspect of this study was to examine the structural interrelationships of a three-dimensional model of Introversion which gave rise to the initial concept of Classicism vs Romanticism as a separate dimension of personality. This model expanded Gray's

psychophysiological analysis of Introversion which proposed two orthogonal dimensions of Anxiety vs Sociability and Restraint vs Impulsivity, by adding a third Jungian dimension, Intraception vs Extraception. The present evidence for this particular dimensional structure of Introversion is equivocal. A major problem appears to be the difficulty in constructing self-report inventories which clearly reflect the differential influences of underlying physiological mechanisms. Nevertheless the rather complex factor analytic results do indicate the importance of maintaining the distinction between the previously established dual aspects of Introversion-Extraversion i.e., Restraint and Sociability, and provide support for the proposal of Intraception vs Extraception as an important addition to the domain of personality traits related to Introversion-Extraversion.

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# APPENDIX A

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Tracing the Roots of Classicism and Romanticism in Western Civilization

(Adapted from Clark, K. <u>Civilisation</u>, 1969)

The 11th and 12th century emergence of Europe from the Dark Ages was characterized by sculpture based on Roman and Greek ruins and . the study of Plato and Aristotle. However, as the memories of classical antiquity became mixed with the superstition of the more barbaric \* . European north and the mystery of the orient, a Romanesque style developed (from which the term "romance" is thought to be derived), leading to the full flowering of the age of chivalry during the 13th and 14th centuries. The romantic novel, a main literary form of the time, was obsessed with ideal courtly love and a certain lusty ferocity, gentleness and passionate extravagance, enchantment and the beauty of nature. In art as well as literature women were protrayed with a delicate warmth and feminine grace previously unwitnessed. The soaring columns of Gothic architecture demanded a certain suspension of belief as artists of the time sought to achieve the sublime, an-understanding of absolute beauty through the creation of beautiful things.

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Nevertheless during the 14th century the rise of industry and commerce led to the development of social and economic systems which both required and developed from a different set of values. A brief list of the characteristics of the 15th century Italian Renaissance clearly reveal a classical framework in direct contrast to the preceding Romanesque-Gothic era. The study of Greek and Roman literature was revived, the superiority of the human intellect permitting control over nature and destiny was embodied in a passion for mathematics especially in the elegant economy of geometry. The square and the circle were considered to be the forms of ultimate perfection (witness Leonardo DaVinci's Vetruvian Man). The passionate virtues of the Middle

Ages were replaced by a search for dignity and excellence, by the ideal of fame and heroism of the outstanding individual who sacrificed pleasure for nobility, and by a general emphasis on courtesy, grace and good taste. Perhaps the most vivid summary of the time is found in Raphael's "School of Athens" mural painted in the early 16th century for the papal library. Here are assembled all the classical representatives of human reason - Plato, Aristotle, Euclid - surrounded by individuals engaged in rational activity - logical discussion, grammar, geometry. Despite the predominance of either Romanticism or Classicism in any given period of European history, neither mode existed completely exclusive of the other, particularly from the Renaissance onward. Thus Botticelli's nudes while derived from classical inspiration have a sensuous fluidity evoking memories of the Romanesque. A second Raphael library panel is "Parnassus" portraying the female Muses engaged in music, drama, poetry and affectionate embrace in distinct contrast to the intellectual abstractions of the "School of Athens".

By the mid-16th century the Renaissance was declining in the face of the Protestant Reformation. Artistic expression focussed on the darker side of the human psyche e.g., hysteria, violence and animalism, rejecting measurement, reason and decorum as fit subjects. While classical thinkers did not disappear, they retreated from the ongoing social fabric, rather in the manner of wandering philosophers such as Erasmus, engaged in a detached, "ivory tower" search for truth. The fearful, oppressive side of romantic expression was counterbalanced in the early 17th century by the Baroque style of the Italian restoration, still romantic, but characterized by appeal to the more benevolent emotions via empathy, theatricality and illusion.

Nevertheless, the 17th century was primarily a classical time, particularly in northern and western Europe. The most vivid statement of the prevailing orientation to art, architecture and literature, indeed to life itself is Descartes' well-known aphorism "I think, therefore I am". The founding of the British Royal Society dedicated to the pursuit of knowledge by such members as Newton, Wren and Boyle marked the beginning of the division between scientific truth and imagination. As Clark notes, it seemed to evolve from a perceived "need to tidy up sensations via use of reason" (p. 211) - a concise summary of the classical attitude towards the romantic.

The turn of the 18th century heralded a brief burst of romantic fear and joy, the former in a revival of the Gothic style, the latter in the hedonistic colourfulness of Rococco art and music. However, what followed in the first half of the century is perhaps the best example of pure classicism in this historical survey. This was the Age of Enlightenment - the time of Voltaire, whose classical belief in the importance of form over content is evident in his statement "One word in the wrong place will ruin the most beautiful thought". Literature, art and even architecture expressed a Belief in justice, tolerance, reason a return to that austere stoicism of the ancient Roman Empire that fequired the needs and desires of the individual to be subordinate to the interests of the state. It was within such an environment that the seeds of the French Revolution began to germinate. That such a violent, chaotic event of history should have evolved from the restrained classicism of rational thought is not so paradoxical as may first appear. Indeed one might hypothesize that the apparently continual pendulum-like alternation of classic and romantic cultures was inevitable as the

two modes of consciousness, each inadequate to completely satisfy human need by itself, provoked the rise of their opposite, following Heraclitus' principle of "enantiodromia" - i.e., that everything runs into its opposite.

The advent of the period known formally as the Age of Romanticism i/n the last quarter of the 18th century was marked by the decline of formal religion, particularly Christianity. It is not unreasonable to suppose that the rational, analytic enquiry of classical enlightenment initiated this breach in a system of belief that had dominated Europe for nearly a millenium. The loss of faith was replaced by a worship of nature, a fascination with the mystical, a yielding to the infinite oneness of the universe. In place of physical perfection, heroic splendour and intellectual elegance, poets such as Wordsworth and painters such as Constable expressed a sympathy with the simple, the down-trodden and the instinctual. Reverie was exalted above analysis; colour and unrestricted movement made a direct appeal to the senses and to emotion, shedding the classical restrictions of custom, symmetry and prudent restraint. As Voltaire was for the Age of Enlightemment, Rousseau may be identified as the voice of the romantics. His enchantment with immediate sensation as the basis of existence suggests the response to Descartes - I feel therefore I am.

But in addition to the benign and gentle love of nature as expressed, for example, by Wordsworth, Romanticism's darker side seemed almost to revel in chaos and despair, in nature's potential destructiveness, as portrayed in the writings of Byron and Blake, the paintings of Géricault and Turner and the music of Beethoven. Inevitably, the romantic outpourings of the late 18th century resulted in a retreat

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from such excesses, particularly as the French Revolution, born of reason degenerated into bloody panic and wanton destruction.

By this time, the split between art and science, emotion and reason, avant-garde rebellion and middle-class conventionalism, in short between romanticism and classicism was complete. Indeed, it was not until the early 19th century that the two terms came into general use as antonyms to designate the two widely disparate styles (Oates, 1962).

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# APPENDIX B

# Definitions of Classicism and Romanticism

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### Definitions of Classicism

Oxford English Dictionary (1971)

intellectual ideal, characterized by clarity of thought,
 completeness, symmetry, harmonious proportion, simplicity,
 repose

adherence to rules, models especially based on Greek and Roman
 traditions

- content is subordinate to form

Antal, F. (1966) re: painting

- simple, compact, severe objectivity, austerity, economy

- ideals of patriotism, morality, virtue, heroism

- rigid, simple, sober, puritanically rational

Blume, F. (1970) re: music

- expression of the essential, that which applies to all

humanity - rejection fo the individual

- only form determines the composition - no attempt to appeal to the imagination

- requires simplicity, purity, truth, disciplined judgement

Welleck, R. (1963) re: poetry

- concerned with perfection

- repose, closure, clarity, intellect

Clark, K. (1973) re: art

 satisfies need for order, permanence through structure and formal composition

- aims at noble simplicity, calm grandeur

## Definitions of Classicism (cont'd)

Clark, K. (1973) cont'd

- equates beauty with purity
- clarity of subject matter
- e.g., DaVinci's Vetruvian Man man circumscribed by reason, geometry
- love of truth and discipline
- idea of perfect form

Oates, W. J. (1962) re: art

- stresses noble themes
- adherence to recommended models e.g., statues of antiquity,

- wish to harmonize art and nature

- pure form subordination of nature to rule of art
- definitive formal statement, abstraction from experience
- high degree of detachment from subjects

Murray, H. (1938) re: personality (Extraception)

- thinking - dominated by empiricism - matching of ideas to facts

disposition - determined by concrete, objective, tangible conditions

- behaviour motivated by need to explore, observe and produce
- judgements based on overt behaviour and traits, social
  - derivation clear focus of consciousness including analysis, inductive reasoning - well-developed in science, business

#### Definitions of Romanticism

Oxford English Dictionary (1917)

- subordination of form to theme - importance of content

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- characterized by imagination and passion
- no foundation in fact

- extravagant, going beyond the customary

Antal, F. (1966) re: painting

> subjectivism, openly emotional

- interest in the exceptional, wild, fantastic, picturesque
- uniqueness, individual diversity of nature
- mystical

Blume, F. (1970) re: music

- undertone of the unusual, of chivalry
- remote and fabulous, strange, surprising, nocturnal, terrifying
- composer as the channel for the transcendant, losing self in the infinite
- starts from emotional experience, not professional expertise

- total subjection of form to content

- ecstasy, abandonment, sensuality
- no predetermined intent, model or goal

"Only a Romantic disposition can enter into Romanticism" (p. 116)
 Frye, N. (1963) re: literature

- idea subordinate to image

- is organic, resists fragmentation - takes panoramic view

### Definitions of Romanticism (cont'd)

Frye, N. (1963) cont'd)

- cosmic, apocalyptic

oxymoronic i.e., tolerates apparently illogical contradictions
 e.g., sees humble as grand, trivial as sublime, idea of the antihero

Welleck, R. (1963) re: poetry

infinitude - expressed via dynamic movement and change

- open, dark, emotional

Clark, K. (1973) re: art, poetry

- appeal to emotions through analogy, sensuous use of colour
- fear as a source of the sublime; also sex, animalism, irrationality
- use of colour and movement as expression of vital force
- expresses revolt of the individual
- has two faces optimistic, tranquil, teleological, creative, benevolent (Wordsworth, Constable)
  - pessimistic, catastrophic, violent, ferocious, destructive (Byron, Gericault)
- anti-intellectual colour communicates directly to senses and emotions, independent of form

Murray, H. (1938) re: personality (Intraception)

- thinking dominated by fantasies wishful, imaginative
- disposition determined by subjective feelings and inclinations
- behaviour motivated by mere energy, mood, romantic desires

# Definitions of Romanticism (cont'd)

Murray, H. (1938) (cont'd)

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- judgements based on what is good regardless of objective occurrences
- derivation unconscious, inarticulate brain processes, primitive process of empathy natural to childrén, welldeveloped in artists and women

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APPENDIX C

# Preliminary Items for the Classicism vs Romanticism Scale

#### <u>Classicism Items</u> (All items True-keyed)

1. I enjoy working out mathematical puzzles.

2. I am irritated by poor spelling and grammar.

3. I think any great artist must learn the basics first.

4. I enjoy finding out how things work.

5. I think society is in trouble when basic rules are ignored.

6. I appreciate designs that exhibit precision and symmetry.

7. I dislike free-form art.

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8. I believe that science offers the best means of getting at the , truth.

9. I think irrational people often do more harm than good.

10. I prefer games like chess and bridge to games of pure chance.

11. I prefer to sort things out logically before making decisions.

12. I think people who buck the system cause more troubles than they solve.

13. I am suspicious of claims of mystical experiences.

14. I believe more problems are solved through rational analysis than through intuition.

15. I think that the most important human endeavour is to strive for perfection.

16. I would prefer a movie about some period in history to one about the supernatural.

17. I prefer tasks which yield a single, correct solution.

18. I think true excellence can only be determined objectively by experts.

19. I believe people tend to be led astray by their emotions.

20. I dislike stories that are deliberately exaggerated for effect.

21. I would rather read a good mystery novel than a fantasy.

#### <u>Classicism Items (cont'd)</u>

- I think people who oppose technological advances are being overly sentimental.
- 23. I think that good ideas are useless unless they are clearly expressed.
- 24. I find most modern dance and music is incomprehensible.
- 25. I learn most about myself through careful analysis of my thoughts and feelings.
  - 26. I prefer furniture which has clean simple lines to more elaborate furniture.
  - 27. I believe that controlling oneself is more important than \* expressing oneself.
  - 28. I try hard to keep things in their proper place.
  - 29. I believe a certain amount of self-sacrifice is necessary to improve society.
  - 30. I try to be as objective as possible in order to make the correct decision each time.

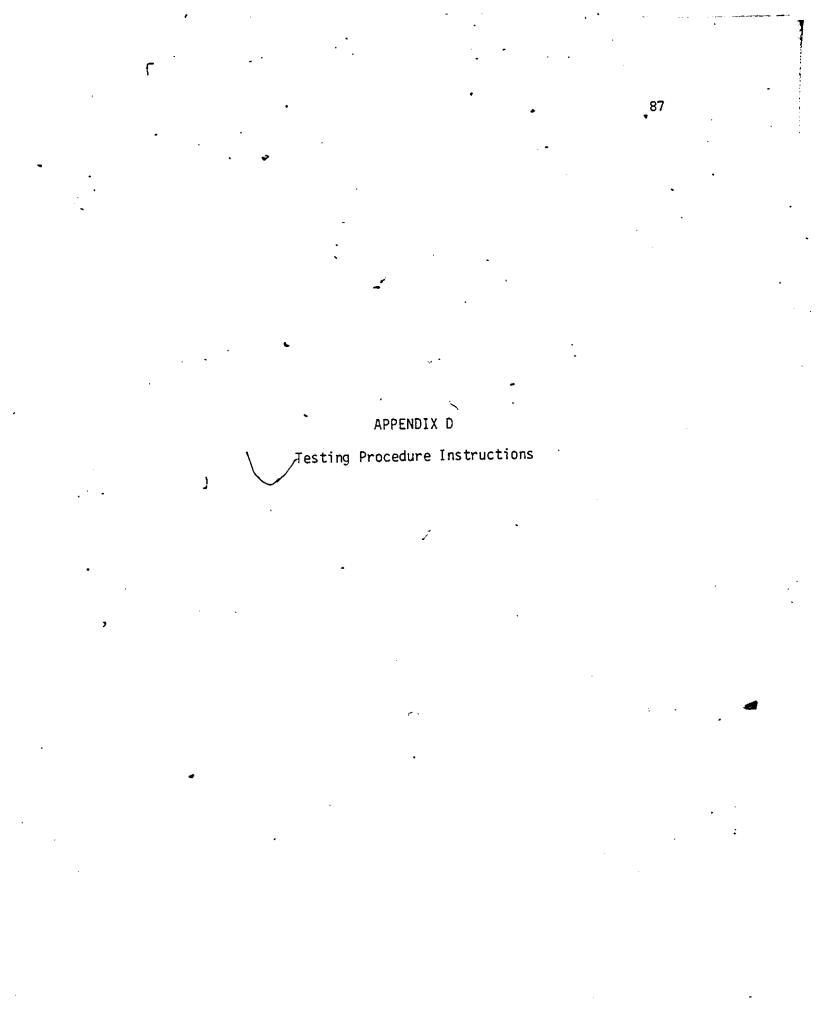
### Romanticism Items (All items True-keyed)

- 1. I can be deeply moved by a beautiful sunset.
- 2. I think schools and teachers often get in the way of creativity.

- 3. I find I can usually rely on my intuition.
- I have experienced being overwhelmed by the mystery of the universe.
- 5. I think that analyzing something too much can destroy its true meaning.
- I think that ultimately each person must judge perfection for themselves.
- 7. I am frustrated when I have to follow a lot of rules and regulations.
- 8. I rarely pay attention to the technical details of how something works.
- 9. I believe my emotions are as important as my thoughts.
- 10. I think it is important for people to let go and just be themselves.
- I would enjoy being part of something exciting like the hippie movement.
- 12. I believe technology has done more harm than good.
- 13. I believe the West has a lot to learn from Oriental mysticism.
- [14. I prefer the freedom of rock and roll to ballroom dancing.
- 15. I find there is something very exciting about being out in a thunderstorm.
- 16. I would rather paint pictures than take photographs.
- 17. I would prefer to work on a farm than in a machine-shop.
- 18. I think a good drug "trip" would be a marvellous experience.
- 19. I enjoy letting my imagination have free rein.
- 20. I find my best ideas come when I just let my imagination go.

# Romanticism Items (cont'd)

21.,	I believe dreams are an important part of anyone's experience.
22.	I believe people worry too much about what is right and proper.
23.	I have experienced powerful emotions when listening to beautiful music.
24.	I am considered to be something of a rebel.
25 <b>.</b>	I would rather observe animals in the wild than study them in captivity.
26.	I think people would benefit greatly from a more natural way of life.
27.	I think people should express their emotions openly.
28.	I seldom worry about what others think of my behaviour or appearance.
29.	I think the needs of the individual should be considered ahead of those of the group.
30.	I prefer to let things happen rather than make too many plans.



"This is a study to measure a large number of normal personality characteristics using four different questionnaires. In front of you is a set of four answer sheets, one for each questionnaire. On each sheet would you now please write your name or student I.D. number in the space provided. On the third sheet which will be used for the PRF answers please also include your age, sex, and where it says date, write the number of years of schooling you have had.

"You will receive the question booklets one at a time. Please do not leave any marks on them, no matter what other instructions on the booklets themselves may say. The total time to complete all four questionnaires should be no more than one and a half hours. Please do not spend too long on any one item. Just answer each one according to whether it is true for you or false; more precise information on what to do is given on each of the questionnaires.

"Before the end of the term you will receive individual feedback on your scores on selected measures of personality. This feedback will be produced by a computer programme which will analyze your particular answers. At the same time you will receive a short description of the overall nature and objectives of the study.

"I will now pass out the first questionnaire. Use the first answer sheet to record your answers. When you are done, raise your hand and I will give you, the next questionnaire. The order in which you should receive the four questionnaires is:

1. Trait Survey

2. Eysenck Personality Inventory

- 3. Personality Research Form
- 4. Social Reaction Inventory

"Note that the Eysenck Personality Inventory is different from the other tests because we ask you to use our own answer sheet to allow us to use the questionnaires repeatedly. So do not write anything on the Eysenck questionnaires, use the second answer sheet instead."

# APPENDIX E

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# Rotated Factor Pattern of 28 Personality Scale Variables

		I	II	ĪII	IV	· V	V	í h <sup>2</sup>
	assicism vs Romanticism	18	.24	.22	67	.04	.00	.59
Anxiety vs Sociability		72	14	∖.09	<b>~.</b> 17 <sup>,</sup>	08		
Restraint vs Impulsivity		63	.27	<b>.</b> 28	16	07	19	
Intraception vs Extraception		n .10	03	01	79	.04	05	
	Abasement	01	.04	.00	01	59	.08	-
	Achievement	.00	.73	11	.16	.05	03	
	Affiliation	.73	.05	- 24 -	.17	.17	.15	-
	Aggression	.22	.02	- 02	.02	.55	.38	÷ .
	Autonomy	`    .07	04	78	.04	.02	10	-
	Change	.30	.21	40	.27	08	02	
	Cognitive Structure	38	.47	.38	18	.22	05	
	Defendence	<b></b> 08 .	.01	.17	10	.63	.31	.53
	Dominance .	.46	.49	22	14	. 29	19	
	Endurance	.01	.70	14	.05	21	-115	
	Exhibition	· .75	.12	07	.04	.21	11	.64
<b>₽</b> RF	Harmavoidance	40	14	.50	10	.09	13	.47
	Impulsivity	.51	40	23	. 18	05	.42	.68
•	Nurturance	.22	.26	. 27	.35	30	04	.40
<b>N</b>	Order	20	.48	.26	18	۰Ò6	16	.40
	Play	.66	24	07	.06	08	.13	.53
	Sentience	.08	.28	00	. 56	06	.07	.40
	Social Recognition	.11	.11	.46	12	.21	.41	.46
	Succorance	.00	17	.74	.07	.03	.23	
	Understanding	07	.37	33	.31	.07 •	22	
	Desirability f	.10	.35	.04		18		
	Extraversion	. 84	05	03	.04	.01	.06	.72
EPI	Neuroticism	13	-		.13			
Locus of Control		.06		.11		07		.04
% Variance Explained 1		15.3	9.5	9.5	7.1	5.5		54.4

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