MOOD INDUCTION EFFECTS ON SHORT- AND LONG-TERM AFFECTIVE STATES

CENTRE FOR NEWFOUNDLAND STUDIES

TOTAL OF 10 PAGES ONLY
MAY BE XEROXED

(Without Author's Permission)

ROBERTO DI FAZIO, B.Sc.(Honours)

National Library of Canada
Bibliothèque nationale du Canada

Canadian Theses Service
Service des thèses canadiennes

Ottawa, Canada
K1A 0N4

The author has granted an irrevocable non-exclusive licence allowing the National Library of Canada to reproduce, loan, distribute or sell copies of his/her thesis by any means and in any form or format, making this thesis available to interested persons.

L'auteur a accordé une licence irrévocable et non exclusive permettant à la Bibliothèque nationale du Canada de reproduire, prêter, distribuer ou vendre des copies de sa thèse de quelque manière et sous quelque forme que ce soit pour mettre des exemplaires de cette thèse à la disposition des personnes intéressées.

The author retains ownership of the copyright in his/her thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without his/her permission.

L'auteur conserve la propriété du droit d'auteur qui protège sa thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

ISBN 0-315-55026-0

Canada

MOOD INDUCTION EFFECTS ON SHORT- AND LONG-TERM AFFECTIVE STATES

by

Roberto Di Fazio, B.Sc. (Honours)

A thesis submitted to the School of Graduate Studies in partial fulfillment of the requirements for the degree of Master of Science

Department of Psychology
Memorial University of Newfoundland

July 1989

St.John's Newfoundland

Abstract

A controlled pre-post mixed effects design was used to test whether happiness may be defined as a single- or multi-factor structure. The first hypothesis tested was that older cohorts would demonstrate a greater level of happiness than younger cohorts. Secondly, it was hypothesized that only the short-term measures would react to mood induction procedures. Thirdly, it was proposed that a Velten + music induction procedure would prove superior to a Velten only procedure, since the additional component might enhance the induction effect. One hundred and twenty persons representing three age groups, young (20-34 years), middle-aged (40-54 years), and old (60-74 years) served as subjects.

Subjects were randomly assigned to one of four conditions: (a) Velten + music positive, (b) Velten + music negative, (c) Velten only positive, and (d) Velten only negative. An equal number of males and females were maintained within conditions. In all conditions the subject's mood was assessed before and after the mood induction procedure. Results failed to support the first and third hypotheses. However, the second hypothesis was supported. In addition, the positive and negative induction procedures were found to affect the positive experience and negative experience disposition measures

on the Memorial University of Newfoundland Happiness Scale while the Satisfaction with Life Scale remained entirely unaffected. The results are discussed with reference to a mood congruent recall theory of affect.

Acknowledgements

I wish to express my appreciation to Dr. Albert Kozma, my supervisor, for his advice, constructive criticism and support throughout the writing of this thesis. Also, I would like to thank the other members of my committee, Dr. Michael Stones and Dr. Edward Hannah, for their helpful suggestions. I extend my gratitude to the School of Graduate Studies for their financial assistance.

Special appreciation is expressed to Terry Quinlan for assistance in data analysis, and to Elizabeth Gilbert and Barbara Brophy for their help in data collection. Finally, I wish to express my appreciation to Lana Ning for her help with the typing of this manuscript and for her timely words of encouragement.

Table of Contents

List of Tables

List of Figures

List of Appendices

Over the past two decades the concept of happiness has enjoyed increased popularity. It was during this period that the journal, Social Indicators Research, was developed. Its sole attention was and is directed still towards reviewing and advancing research on social indicators such as happiness.

Happiness as a Construct

Happiness is a popular construct. As a consequence, investigators in the psychological and gerontological fields have produced a substantial body of research in this area. For instance, Veenhoven (1984) accumulated 156 research projects which took place between the years 1911 and 1975. Diener (1984) in his review of happiness noted that over 700 studies had been published in the area between 1967 and 1983. One problem in reviewing studies dealing with happiness is definitional variation. Researchers may be studying the same concept using different terms. On the other hand, they may be examining essentially different concepts but using identical terminology. Happiness has been referred to over the years by numerous labels: satisfaction, life satisfaction, morale, positive affect, psychological well-being, mental health, adjustment, and subjective well-being (Costa, McCrae, & Norris, 1981; Diener, 1984; Glatzer & Mohr, 1987; Larson, 1978; McNeil, Stones, &

Kozma, 1986b; Stones & Kozma, 1986).

Diener (1984) sees subjective well-being as having three distinguishing features. First, it is subjective, in that it resides within the individual. Second, subjective well-being includes both positive and negative components (even though, he adds, the relationship between the two is not as yet completely understood). Finally, measures of subjective well-being typically include a global assessment of all aspects of a person's life. Similarly, Veenhoven (1984) considers happiness as being the degree to which an individual judges the overall quality of his life-as-a-whole favorably.

The implication from the preceding definitions is that happiness is a process and not simply an end state. Thus, when people are happy, they judge their life as favorable rather than unfavorable. In addition to being a subjective judgement happiness also comprises the labelling of a present state, because the judgement refers to a particular moment in time. Further, the definitions imply that happiness requires an overall assessment of the quality of one's life and thus, would include both cognitive and affective judgments (Lawton, 1984).

Accordingly, in this thesis, happiness refers to how well people like the life they are leading. A subjective

appreciation by the individual of their personal life by integrating various experiences (very much like summing the positive and negative in one's life) is involved in the judgement. Other papers have used happiness and subjective well-being interchangeably and this paper will continue to do so.

The Measurement of Happiness

Numerous scales have been devised over the years to measure happiness. The scales can be classified as either single-item measures or multi-item scales. The multi-item scales include both the geriatric and the non-geriatric scales.

Single-item measures. The single item measure generally asks respondents to rate global feelings of subjective well-being. They are characterized as being brief and easy to administer while exhibiting moderate and in some cases good test-retest reliability and validity (Diener, 1984). They are however considered less reliable over time than multi-item scales (Diener, 1984).

Single-item measures have been found to correlate highly with other subjective well-being measures and with such other variables as self-efficacy, marriage, and standard of living (Andrews & Withey, 1976; George, Okun, & Landerman, 1985; Headey, Holmstrom, & Wearing, 1985;

McCrae, 1983; McNeil, Stones, & Kozma, 1985).

While these types of scales may be useful as criterion measures in the process of scale construction (Kozma & Stones, 1980), they provide little information concerning the structure of happiness. Additional criticisms are their reliance on a single-item, variance due to specific wording, and difficulty in separating true change from measurement error. Other problems such as skewed scores (i.e., most responses fall in the happy range; Andrews & Withey, 1976), acquiescence (i.e., due to items always being scored in the same direction), and the fact that they do not provide a finely differentiated view of a person's subjective well-being (because such scales cannot hope to cover all aspects of subjective well-being) have been revealed (Diener, 1984; Larsen, Diener, & Emmons, 1985).

Multi-item scales. In comparing multi-item and single-item scales, evidence indicates that the multi-item measures have provided a greater contribution to the understanding of happiness and its structure. Multi-item scales allow different aspects of the happiness construct to be evaluated by individual or combinations of items within a scale. They also allow for calculations of internal consistency. Thus, multi-item scales are superior, in that they may be subjected to a more

rigorous psychometric evaluation than the single-item measures (McNeil, 1985).

Geriatric scales. These scales have been standardized on the elderly and usually contain item content specific to this population (e.g., the Life Satisfaction Scales of Neugarten, Havighurst, & Tobin, 1961) making them unsuitable for young and middle-aged respondents (Diener, 1984). In addition, these measures have also been found to correlate with external factors. Diener (1984) notes that while geriatric scales do a satisfactory job of measuring the well-being of older persons, more empirical work is required.

Non-geriatric scales. The main difference between the non-geriatric scales and the geriatric scales is that the former have been standardized on people of many ages, in addition to the elderly (e.g., Andrews & Withey, 1976). However, the non-geriatric scales have not been as well researched as the geriatric scales.

Scales of Subjective Well-being

Life Satisfaction (LS) Scales. These scales (i.e., the alternate forms LSI-A and LSI-B) were first created by Neugarten et al. (1961). To establish a criterion, judges rated respondents on five scales (together comprising the LSR) which were believed to represent the five components of life satisfaction (i.e., zest,

resolution and fortitude, congruence between desired and achieved goals, positive self concept, and mood tone). The LSI-A is a 20 item, self-report attitude measure to which subjects "agree" or "disagree". The LSI-B, also a self-report measure, contains 12 open-ended questions scored on a three point basis. Validity coefficients as represented between the LSR and the LSI-A and LSI-B were .52 and .59 respectively (Neugarten et al., 1961). Internal consistency coefficients for the LSI-A have been shown to be in the vicinity of .80 (Carp & Carp, 1983; Larson, 1978). Test-retest reliability has been shown to be low (i.e., r = .35 over a 12 month period, Kozma & Stones, 1983a). Finally, the LSI-A has been shown to average r = .73 when compared to six other geriatric scales (Lohmann, 1977).

These LS scales have been also shown to be problematic in some other areas. Hoyt and Creech (1983), Liang (1984), and Liang (1985) have all disagreed with Neugarten et al. (1961) both in terms of the numbers of components and the content of the components of the LS measures. Other factors that have been identified include zest for life (Hoyt & Creech, 1983) and happiness (Liang, 1985).

Philadelphia Geriatric Center Morale Scale-Revised (PGC-R). The PGC was originally developed by Lawton

(1972). The original scale consisted of 22 items, six factors, and a yes/no response format. Lawton (1975) later published a paper in which he developed what he referred to as the Revised PGC Morale Scale (PGC-R). This consisted of 17 items, three factors, and a yes/no response format. Lawton (1975) named agitation, attitude toward aging, and lonely dissatisfaction as factors which have been found to appear repeatedly (e.g., Liang & Bollen, 1983). Internal consistency coefficients of .85, .81, and .85 were obtained by Lawton (1985) for these three factors. Convergent validity of the PGC-R with nine other well-being measures averages .73 (Lohmann, 1977) and supports the claim that the PGC-R is a good measure of well-being.

Affect Balance Scale (ABS). Originally Bradburn's (1969) ABS consisted of a 10 item format to which respondents answered yes or no. Half of the items reflected positive affect (called the Positive Affect Scale, or PAS; e.g., "On top of the world") and half reflected negative affect (the Negative Affect Scale, or NAS; e.g., "Depressed or very unhappy").

Bradburn's (1969) rationale was that positive and negative feelings were qualitatively different from one another, although they were capable of coexisting in the same individual at the same time or on alternating

occasions. These feelings while being relatively independent of one another could still be looked upon as overall happiness or affect (i.e., the balance between positive and negative experiences that have occurred in the past few weeks, ABS = PAS - NAS).

The two subscales (i.e., PAS and NAS) have repeatedly been shown to be unrelated to each other while being significantly related to the ABS. In addition, the PAS correlates with variables that the NAS does not, and vice versa (Andrews & Withey, 1976; Bradburn, 1969; Bryant & Veroff, 1982; Cherlin & Reeder, 1975; Moriwaki, 1974).

Despite evidence of good validity, problems have been found to be involved with the scale (Himmelfarb & Murrell, 1983; Kozma & Stones, 1980). Kozma and Stones (1980) cite the following problems: (a) an overly restrictive range of item sampling, (b) a weighting assignment to components which may not be as readily applicable with an elderly population, (c) unacceptable test-retest reliabilities during intervals which are no longer than a few days, and (d) failing to include items which are relevant to the dispositional aspects of happiness.

Memorial University of Newfoundland Scale of Happiness (MUNSH). The MUNSH was developed by Kozma and

Stones (1980). The 24 items in this self-report instrument were chosen from a variety of subjective well-being measures (e.g., ABS, LSI, and PGC-R) on the basis of their strong correlations with self-avowed happiness (Kozma & Stones, 1980; Kozma & Stones, 1983b) and judges ratings (Kozma & Stones, 1983b). Kozma and Stones (1983b) and Kozma, Stones, and Kazarin (1985) found age to have no effect on MUNSH scores. Thus, the MUNSH is equally valid over the adult life span. Four subscales emerged upon analysis consisting of five positive affect items (PA), five negative affect items (NA), seven items of general positive experience (PE), and seven items of general negative experience (NE).

In addition to the MUNSH's high intercorrelations with the ABS, LSI, and the PGC-R, it produced an alpha coefficient (alpha = .858) superior to any of the three aforementioned well-being measures (Kozma & Stones, 1980). The MUNSH is capable of measuring total happiness (i.e., MUNSH = PA - NA + PE - NE) over long periods of time (i.e., months and years), allowing it to focus on both the dispositional and shorter-term features of happiness. The test-retest reliability of the MUNSH (ranging from six months to one year, Kozma & Stones, 1980) was high compared to other well-being scales (e.g., LSI, PGC, and ABS), achieving an r = .70. A similar

value of .71 was found by Kozma, Stones, and Kazarin (1985) even when the test-retest interval was increased to 18 months. In addition, Kozma and Stones (1983a) found that 86% of the total explained variance was accounted for by an 18-month stability coefficient.

Satisfaction with Life Scale (SWLS). In 1985, Diener, Emmons, Larsen, and Griffin realized a need for a multi-item scale to measure life satisfaction as a cognitive-judgmental process. The initial phase of scale construction resulted in a five item scale culled from an initial list of 48 self-report items generated by the authors.

Diener, Emmons, et al. (1985, Study 1) designed an experiment to test the psychometric properties of the scale. One hundred seventy six undergraduates were administered the SWLS in a group setting. Two months later, 76 of these students were readministered the scale. Results revealed a two month test-retest correlation coefficient of .82, and a coefficient alpha value of .87. The inter-item correlations ranged from .44 to .71 with a mean of .57. A principal axis factor analysis revealed a single factor accounting for 66% of the variance.

Diener, Emmons, et al. (1985, Study 3) also devised an experiment to assess the psychometric properties of

the SWLS on a geriatric population. In addition, a criterion validity coefficient for the SWLS in terms of a life satisfaction rating was made by experimenters who interviewed each subject about their life. Fifty three elderly persons (average age of 75) participated in an interview concerning their life (from which two interviewers independently rated each subject in terms of global life satisfaction on a seven point scale) and completed the SWLS. The two interviewers ratings correlated .73 and were summed to create a rater life satisfaction composite judgement. This value correlated .43 with the SWLS. The item-total correlations for the five SWLS items were: .81, .63, .61, .75, and .66. Thus, a good level of internal consistency was again demonstrated. Finally, scores on the SWLS correlated .02 with the Marlowe-Crowne measure of social desirability (Crowne & Marlowe, 1964). This indicated that the SWLS was not evoking a social desirability response set.

The Structure of Subjective Well-being

The structure of subjective well-being refers to factors or components that define subjective well-being. The previously discussed scales attempt to measure a second order factor that has been labelled happiness.

In order to comprehend a second order factor analysis, one must first understand the rationale of

first order factor analysis. An example of first order factors are the four subscales of the MUNSH (Kozma & Stones, 1980). Each of these scales has a number of items assigned to it (highly intercorrelated items). Those items associated with a respective component (i.e., factor) can then be totalled allowing the person administering the questionnaire to state, for example, in the case of the positive affect subscale of the MUNSH that the individual has experienced a given amount of positive affect over the past month. Continuing with the MUNSH as an example, the second order factor would be happiness. The four subscales each describe a portion of the total variance of what has been measured. When these subscales are combined through the process of second-order factoring, a one factor structural solution is provided which accounts for over half the variance of subjective well-being. In sum, a second-order factor explains more by simply looking at all the scales at once and integrating them into a more coherent explanation.

At this point in time, it is not the second-order factor but rather the first-order factor that is most often questioned by researchers. After over two decades of such analyses, researchers still cannot come to terms as to what exactly comprises happiness. The most promising conceptualization is that of Kozma (1986) who

perceives happiness as possessing both a mood and a dispositional component as did Beiser (1974).

Evidence for a dispositional component. The strongest evidence to date for a dispositional component comes from the data of the longitudinal studies (Kozma & Stones, 1980; 1983a; Palmore & Kivett, 1977). As already mentioned Kozma and Stones' (1980) MUNSH displayed a strong test-retest reliability coefficient (i.e., r = .70 and r = .71) over phases of six months to one year (Kozma & Stones, 1980) and 18 months (Kozma & Stones, 1983a) respectively. It could have been argued that the apparent stability of the happiness ratings may have been the result of the MUNSH being insensitive to changes in happiness (such as with one's life circumstances) rather than as a result of the presence of a trait-like characteristic of happiness (McNeil, 1985). For this reason, Kozma and Stones (1983a) conducted a study where they investigated MUNSH scores as well as scores on a set of significant predictors of well-being over a two year interval. It was found that the total predictor array for phase two accounted for only 36% of the variance in phase two MUNSH scores, while phase one MUNSH scores accounted for over 50%. They concluded that the MUNSH measures a relatively stable, dispositional component of happiness which appears not to be the result of life

circumstances. Additional support is provided from those studies dealing with the factor structure of well-being (Carp & Carp, 1983; Liang, Lawrence, & Bollen, 1986; Lohmann, 1980; Stones & Kozma, 1986). These studies have found support for one factor which subsumes an affective component (Andrews & Withey, 1976; Carp & Carp, 1983; Kamann, Farry, & Herbison, 1984; Lawton, 1975; Liang, 1984; 1985; Lohmann, 1980). In addition, Andrews and Withey (1976) and Kamann, Farry, and Herbison (1984) found that the identified factor accounted for greater than 50% of the variance. Others have found a common second-order structure to emerge from a wide range of well-being measures (Costa, McCrae, & Norris, 1981; Cutler, 1979; Herzog & Rodgers, 1981b; Lawton, Kleban, & Di Carlo, 1984; Liang, 1984; 1985; Stones & Kozma, 1985). Stones and Kozma (1985) using factor analyses on 27 different scales found that single factor second order solutions were obtained with all the data sets. This factor was also found to contribute approximately 50% to the total variance when averaged across six data sets. Face validity for the MUNSH and the PGC in terms of their measuring a long-term component was found such that they produced the highest loadings (i.e., .993 and .947 respectively) on this second-order factor.

Evidence for a mood component. Evidence of a

temporary state of affect comes mostly from studies dealing with a population aged 50 or younger. Zevon and Tellegen (1982) have provided support for an affective mood component of happiness. Using what they labelled "chain P" (i.e., intraindividual) analysis, Zevon and Tellegen (1982) found two affective factors, that is, positive and negative affect. These same factors have been reported when the more common R-factor (i.e., interindividual) analyses were used (Lorr, McNair, & Fisher, 1982; Watson, Clark, & Tellegen, 1984; Watson & Tellegen, 1985). Additional support comes from a group of studies which report the affective component as appearing as one bipolar factor (Benin, Stock, & Okun, 1988; Bradburn, 1969; Brenner, 1975; Kammann & Flett, 1983; Lorr, McNair, & Fisher, 1982; Stock, Okun, & Benin, 1986). In these circumstances, one affective factor is reported wherein positive and negative affect are attributed opposing valences. However, a great number of studies have found positive and negative affect to be independent components in the mood structure (Bradburn & Caplovitz, 1965; Diener & Emmons, 1984; Diener & Larsen, 1984; Diener, Larsen, Levine, & Emmons, 1985; Headey, Holmstrom, & Wearing, 1984; Hunsley, 1988; Lawton, 1983; Lawton, 1984; Lawton, Kleban, & Di Carlo, 1984; Rossi & Rossi, 1977; Watson, Clark, & Tellegen, 1984; Watson &

Tellegen, 1985; Zevon & Tellegen, 1982). Even though there still remains indecision as to whether these two affective components of mood consist of one or two dimensions, the fact that they are characteristics of mood seems generally accepted.

Testing for short-term affect. Modifiers have been found to be very important when measuring mood. Evidence suggests that disposition rather than mood is assessed, even by mood scales, unless researchers specify that they are requesting information about the subject's present state (Mackay, 1980). Some modifiers which have proven effective include: "present", "current", "at this moment", "right now", and "today". When analysed, "current" mood displays half the test-retest reliability that does "feeling in general" (0.3 vs 0.6; Zuckerman & Lubin, 1965). It is evidence such as this (and similar evidence from Luria, 1975) which allows one to believe that the mood component as opposed to the dispositional component, will prove to be unstable over time.

The recently developed Memorial University Mood Scale (MUMS; McNeil, Stones, & Kozma, 1986a) has provided evidence that supports its claim as a measure of mood. The scale, which measures both affect and vigour, has an alpha value greater than 0.80, while maintaining the low temporal stability ($r<.50$ over a three day period) and

the cyclical vigour pattern expected of a mood measure.

Implications of Age Effects on Mood and Disposition Measures

Diener (1984) and Veenhoven (1984) both have stated (along with Costa & McCrae, 1984; Herzog & Rodgers, 1981a; Kozma & Stones, 1988) that the young display high affect (i.e., similar to the positive measure in our short term component of affect) and the elderly high contentment (i.e., the positive component of our long-term affect state). If these conclusions are indeed true, then certain implications would follow (Kozma, Stone, Stones, Hannah, & McNeil, 1988). First, older cohorts should score higher on positive and/or lower on negative long-term items (i.e., those items numbered above 10 on the MUNSH) than younger cohorts. Second, younger cohorts should display a greater variability on short-term affective measures (i.e., in this case on the MUMS items) than the older cohorts. Such predictions rest upon the following rationale (Kozma, Stone, Stones, Hannah, & McNeil, 1988). Short-term net affect or mood can either increase or decrease, depending on current levels of negative and positive feelings. If younger persons are indeed more reactive to factors producing short-term affect, then they may have both higher positive and higher negative scores than their older

cohorts at any given moment in time. Mean differences across age would remain the same, but the subscale variability would be higher for the young than for the old. Therefore, statements regarding higher levels of mood are too imprecise to permit clear inferences about mean differences among age groups. However, contentment implies a net positive state, consequently, a net long-term affect should be greater for older individuals.

Age effects such as these can best be evaluated cross-sectionally with the aid of three age groups (e.g., 20 males and 20 females each from the 20-34, 40-54, 60-74 age ranges). A much broader mean age spread is available with different cohorts than that possible with a longitudinal component, and will more likely yield a significant effect when such an effect is small. Cross-sectional features are essential for demonstrating age effects as compared to the longitudinal aspects which are most critical for demonstrating stability in long-term affects. It is possible that small, systematic age effects will emerge as mean changes on long-term measures in the longitudinal measures. However, test-retest correlations should remain high on such measures.

Manipulating Affective Components

A convincing argument concerning the nature of happiness is possible if it can be shown that short and

long-term affective states respond differentially to environmental cues. By definition dispositions are robust in comparison to the less stable mood states. As such, these short-term affective states should display a greater change in response to external contingencies. It would follow that the use of a mood manipulation would be critical in evaluating component reactivity during phases and allow for the separation of happiness into short and long-term affective states. Significant pre-post effects would be expected on the short-term measures only.

Velten

Velten (1968) was the first to demonstrate the effectiveness of self-referent statements in determining mood. Depending upon the affective quality of these statements (i.e., elation, depression, or neutral), significant differences were found in subjects' mood. Based on these results, Velten concluded that the procedure was capable of affecting mood.

Replications of the Velten Mood Induction Procedure. Strickland, Hale, and Anderson (1975) reported that subjects in the depression condition reported more depression, $F(1,86) = 14.79$, $p<.001$, than those subjects in the elation condition.

Teasdale and Fogarty (1979) revealed that subjects in a depression mood induction condition were less happy

(M = 41.4) and more despondent (M = 43.9) than subjects in the elation group (Ms = 76.0, = 5.9), t(14) = 10.00, p<.001, t(14) = 17.10, p<.001, respectively. Teasdale, Taylor, and Fogarty (1980) also found subjects in a depression condition to be less happy (M = 37.0) and more despondent (M = 44.8) than subjects in an elation treatment (Ms = 71.7, = 8.5), t(41) = 9.14, p<.001, t(41) = 10.66, p<.001, respectively.

Similar successful results of mood induction using the Velten (1968) have been reported (Frost, Graf, & Becker, 1979; Hale & Strickland, 1976; Natale & Bolan, 1980; Teasdale & Russell, 1983).

Problems with the Velten Mood Induction Procedure. In 1983, Clark reviewed the research which had to that time made use of the Velten procedure. He found that subjects given the depression induction consistently reported higher levels of depressed mood than subjects given the elation induction. Kenealy (1986), concurred with Clark's (1983) statement. Fourteen of the 21 experiments reviewed, reported significant differences among the three treatments (elation, depression, and neutral).

Using a pre-post cut off point of at least 20 out of 100 points difference in despondency ratings, Teasdale and Taylor (1981) found that 54% of their subjects had

experienced a significant mood change. Teasdale and Russell (1983) found that a slightly greater amount of subjects, 70%, responded to the induction procedure. From these studies it would seem that between one third and one half of all subjects show little or no mood change in response to the Velten induction procedure (Clark, 1983). Finally, Polivy and Doyle (1980) and Frost and Green (1982) found the effects of the Velten method to be transient.

Demand Characteristics

Velten as a descriptor of mood states. Polivy and Doyle (1980) set about to determine if the possibility of demand characteristics had in fact been ruled out by Velten (1968). In order to investigate the contribution of demand characteristics to the mood induction technique, Velten's five original groups (elation, depression, neutral, elation demand, depression demand) were replicated with the addition of two counter-demand groups. The counter-demand groups were identical to the Velten mood-induction groups except that they were informed that people who read the statements tended to feel the opposite emotion to that expressed by the statements.

Results indicated that counter-demand subjects actually showed neither significant mood reversal nor

mood induction but tended to behave about the same as the neutral group. Thus, adding the information that most subjects feel the opposite of what the sentences suggest to the instructions prior to sentence reading caused the significant moodlike behavior to disappear. Polivy and Doyle (1980) state that this supports the possibility of experimenter effects altering the behavior of the counter-demand groups. Similar evidence has been found by Buchwald, Strack, and Coyne (1981).

It has been found that when subjects are placed in a depression demand condition they sometimes exhibit overestimated responses on easy-to-fake measures (e.g., self-report questionnaires). At other times, they will exhibit inappropriate (i.e., reversed) behaviors on the less easy-to-fake measures (e.g., writing measures). In contrast, depression-induced subjects exhibit responses very similar to truly depressed individuals. These results were considered inconsistent with a demand explanation (Alloy, Abramson, & Viscusi, 1981).

Velten as a direct influence on mood states. Clark (1983, 1985) considered the Velten mood induction procedure statements as useful descriptions of the mood state subjects are asked to achieve. In contrast, Riskind and Rholes (1985a, 1985b) argued that these statements directly affect mood and behavior. In a

response to Clark's (1983) review of the Velten, Riskind and Rholes (1985a) noted that there exist two areas of research which counter Clark's (1983, 1985) conclusions.

Firstly, Snyder and White (1982) studied the hypothesis of whether the statements simply act as cues for subjects to produce mood states, which they rejected. Their results indicated that although subjects may well be aware of the mood state expected by the experimenter, it is the actual exposure to the statements that is necessary.

Secondly, Riskind, Rholes, and Eggers (1982) sought to establish the concept that the statements directly regulate mood. The induction induces a mood that has the same characteristics as one naturally induced. Overall, the depression conditions were found to produce lower mood than the elation condition, $F(1,48) = 12.7$, $p<.001$. Furthermore, results further indicated that the self-devaluative statements (e.g., "I am worthless") were stronger than the depressed somatic statements (e.g., "I feel listless") when compared for recall of negative life experiences, $F(1,47) = 5.6$, $p<.03$. With these results, Riskind, Rholes, and Eggers (1982) concluded that self-devaluative statements lead to effects observed in naturally observed depression (more so than the somatic statements).

Music

Music has also been used as a mood inducing procedure. The music induction procedure is more powerful than the Velten verbal induction procedure. An additional advantage is that almost all individuals respond to the music procedure (Clark, 1983).

Sutherland, Newman, and Rachman (1982) were the first to use music to induce moods. They found that the musical induction procedure produced larger changes in sad mood, was not as wasteful, produced a more sustained change and avoided the skepticism and reluctance which the Velten method can provoke in potential subjects.

Teasdale and Spencer (1984) used a musical mood induction procedure in hopes of inducing either elated or depressed moods. After the induction, the elated group (M = 76.5) displayed greater happiness than the depressed group (M = 29.7), $F(1,36) = 117.8$, $p<.001$. Also, the elated group (M = 11.9) was found to be less despondent than the depressed group (M =57.8), $F(1,36) = 78.6$, $p<.001$.

Clark and Teasdale (1985) used two different musical selections (i.e., one positive and one negative) to manipulate moods. The results were similar in two studies using similar methodologies. The females (Ms = 58.7, 63.6) and the males (Ms = 61.1, 61.1) in the

depressed condition were found to be more despondent than the females (*M*s = 29.9, 27.8) and the males (*M*s = 32.4, 33.6) in the happy induction group. In addition, these females (*M*s = 11.7, 11.6) and males (*M*s = 10.3, 7.0) in the depressed group proved to be less happy than the females (*M*s = 76.9, 74.9) and males (*M*s = 68.7, 72.5) in the happy mood induction condition.

Pignatiello, Camp, and Rasar (1986) improved the methodology of musical mood induction. Instead of asking subjects to choose their own appropriate affective musical selections (e.g., Clark & Teasdale, 1985), they chose to remove this bias by "vectoring" musical pieces (i.e., musical selections would go from neutral to sad or from neutral to cheerful). A significant mood effect was found for the Depression Adjective Checklist (DACL) scores in both experiments. In the first experiment, participants in the elated condition (*M* = 6.7) scored lower than the neutral subjects (*M* = 9.7), who in turn had a lower score than those participants assigned to the depressed group (*M* = 12.6), $F(2,27) = 4.08$, $p<.03$, regarding depression. In the second study, a significant mood condition effect was found for DACL scores, $F(2,43) = 8.60$, $p<.01$, replicating the finding in Experiment 1, with means of 5.4, 9.8, and 12.1 for the elated, neutral, and depressed groups, respectively. Similar results

using Pignatiello's (1986) musical selections have been found by Di Fazio (1987) and McKim-Dawes (1988).

Kenealy (1988) wished to investigate the effects of pre-selected music on subjects self-reported mood, without explicitly communicating to subjects the instruction to "work at getting into the desired mood". In effect, Velten's (1968) original study was replicated using music as the induction procedure. Subjects in the happy mood inducing condition (M = 57.8) were found to be more happy than those subjects in the sad (M = 15.0) and neutral (M = 20.0) induction conditions, $F(6,28) = 12.14$, $p<.05$. Conversely, the subjects in the happy condition (M = 7.2) were less depressed than those individuals in the sad (M = 60.2) and neutral groups (M = 12.2), $F(6,28)= 22.59$, $p<.05$.

Direct Comparison of the Velten and Music Induction Procedures

It has long been suggested that mood induction procedures be directly compared (Goodwin & Williams, 1982; Pignatiello et al., 1986). Albersnagel (1988) randomly assigned one hundred eighty four individuals to either a Velten or a music mood inducing condition. Concerning effectiveness of mood manipulation, the results partially supported the hypothesized superiority of a musical mood induction procedure. At the group

level, MANOVAs demonstrated stronger results for the music condition, especially for the depressive mood induction, as opposed to the Velten mood induction technique. This tendency has also been noted at the individual level. Subject's response indicated a greater degree of experienced mood in the music condition and that the duration of the music technique ($\underline{M}$ = 5.13 minutes, S.D. = 9.79) was longer lived than that of the Velten technique ($\underline{M}$ = 2.90 minutes, S.D. = 6.71). As a result, Albersnagel (1988) concluded that in conducting mood induction research, the musical mood induction procedure should be the method of choice as opposed to the Velten technique.

Hypotheses

The present study tests the evidence that happiness consists of two components, that is, both short-term (mood) and long-term (disposition) states. Since mood is the primary reactive component it follows that the Velten mood induction procedure and music may be used to modify it. On the other hand, the long-term component by definition is expected to be resistant to such induction procedures.

Since the music procedure has now been empirically demonstrated as superior to that of the Velten, it would be expected that the Velten + music conditions would

demonstrate greater changes than the Velten only conditions due to an enhancing effect. In addition, since a variety of age groups are being tested for the first time with both mood induction techniques, the question of differential responding to mood induction techniques with respect to age may be answered.

A cohort difference is predicted such that older cohorts will score higher on positive and/or lower on negative long-term items than younger cohorts. Also, younger cohorts are expected to display a greater variability on short-term affective measures than the older cohorts.

Method

Subjects

One hundred and twenty residents of the St.John's, Newfoundland area participated in this study. All subjects who agreed to participate were included in the testing. The sample included individuals from a variety of educational and socioeconomical backgrounds. The subjects were divided into three age groups: (a) young (20-34 years), (b) middle-aged (40-54 years), and (d) old (60-74 years).

An equal number of male and female subjects were randomly assigned to one of four conditions: (a) a negative verbal mood induction group in which a subject's mood was induced through the reading of Velten's (1968) depressive statements (see Appendix A), (b) a positive verbal mood induction mood group in which a subject's mood was induced through the reading of Velten's (1968) elation statements (see Appendix B), (c) a verbal-musical negative mood induction group in which subjects read the same negatively valenced Velten statements (Appendix A) as those used for subjects in group (a) while negatively toned music (see Appendix C) played in the background and, (d) a verbal-musical positive mood induction group in which subject's mood was induced by having subjects read positively valenced Velten statements (Appendix B)

while positively toned music (see Appendix D) played in the background. One subject participated at each experimental session, without monetary remuneration.

Mood Measure

Short-term affect or mood was evaluated with the aid of the MUMS (McNeil, Stones, & Kozma, 1986a). The MUMS has demonstrated internal consistency coefficients higher than .80, while test-retest reliabilities over a three-day interval were found to be under .50 for young, middle-aged, and elderly adults (McNeil, 1986). For this study, the MUMS was revised. The initial three point answering format ("Y" for a "yes" answer [scored as a 1], "N" for a "no" answer and "DK" for a "don't know" answer [both scored as a 0]) was changed into a five point response scale. The change to a five point scale is in line with Atkinson's (1982) suggestion that lengthier continua be used, due to the poorer history of the short scale. Carp and Carp (1983) in a similar context have found this change to facilitate statistical analysis without affecting the accuracy of subject's responses.

The measure included the 14 best adjectives from McNeil, Stones, and Kozma's (1986a) original standardization of the MUMS. Nine vigour items from the MUMS were also administered to assess how constant vigour is across age cohorts and what its relationship is to

short and long-term affective states. Subjects indicated for each adjective the degree to which they were experiencing the affective state at the current time by simply circling a number on a scale ranging from "not at all" (1) to "very" (5) (see Appendix E).

Disposition Measure

The dispositional component was measured with the aid of the positive experience and the negative experience subscales of the MUNSH (Kozma & Stones, 1980). The MUNSH has demonstrated an acceptable internal consistency value of .85, and the long-term subscales have higher loadings on a general factor, and greater temporal stability, than the short-term affect subscales (Kozma, Stones, & McNeil, in preparation). The other long-term measure was the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). The SWLS has demonstrated a two month test-retest correlation coefficient of .82, and a coefficient alpha value of .87 (see Appendix F).

Mood Induction

Velten. The procedure used was identical to that described by Velten (1967). For each mood induction condition subjects read 60 index cards (7.62cm x 12.7cm) bearing self-referent statements typed entirely in capitals. For the depressed mood induction (Appendix A),

initial statements were mildly depressing in content, for example, "I feel rather sluggish now", proceeding through more depressing statements, for example, "I've noticed that no one seems to really understand or care when I complain or feel unhappy", to statements such as "All of the unhappiness of my past life is taking possession of me". For the elation mood induction (Appendix B), initial statements were mildly euphoric in content, for example, "I feel light-hearted", proceeding through more euphoric statements, for example, "In the long run, it's obvious that things have gotten better and better during my life", to statements such as "I feel like bursting with laughter ----- I wish somebody would tell a joke and give me an excuse!".

In situations where school or parent related statements were not applicable the content was replaced with one of employment and family members (see Appendices G & H). An example of such a replacement would be "This is one of those days when I can grind out schoolwork with practically no effort at all" becoming "This is one of those days when I can grind out my job day with practically no effort at all". For those individuals who were retired, the school index cards were replaced by statements regarding general activities (Appendix I & J). An example of such a replacement would be " It's

encouraging that as I get further into my major, it's going to take less study to get good grades" becoming "It's encouraging that the older I get, the wiser I become".

Music. Two 18-min tapes were created, one for each of the two moods. Twelve instrumental selections that were recorded from classical, popular, and musical score soundtracks, ranging between 1 to 4 minutes in length, were chosen on the basis of how pilot subjects felt after listening to the respective musical piece. A portion of these selections came from previous studies which had used music to induce moods (Di Fazio, 1987; Pignatiello, 1986). The remaining musical selections were chosen from similar areas by the author.

In the pilot study all selections (among them those selections previously rated as being neutral) were placed in a random order and were rated by 21 students. These students had no apparent deficits in hearing and little or no formal musical training. Subjects were of the untrained category as defined by Cuddy and Cohen (1976). Subjects had either less than two years of formal musical training, or two to five years of training ten years ago or more and were currently not involved in musical activities (Nowlan, 1988).

Subjects used an 11-point Likert scale ranging from

"negative depressed" (1) through "neutral" (6) to "positive uplifted" (11). Of the 23 selections, the 12 that were chosen for the respective mood tapes provided the most consistent ratings. For those selections chosen for the purpose of this experiment their standard deviation ranged from 1.240 to 2.553.

The affective music selections were ordered so that each tape commenced with the least powerful selection for the respective condition. The selections then became either more elating or more depressing with each successive selection. Both tapes contained two recordings of the final and most powerful musical selection on that respective tape. This was done in anticipation of those individuals who required longer than the allotted 15 minutes to complete the reading of the index cards. The musical selections were recorded on Maxell UR-90 min position IEC type I normal cassettes and were presented on a Realistic AC/Battery cassette recorder (Model No.CTR-73) placed in an unobtrusive location and operated by the experimenter.

Procedure

Recruiting. Potential subjects were contacted by telephone and asked if they wished to take part in the respective study. The experimenter would state that "we are interested in studying how things are presently going

with you and how things around you affect your well-being, or how happy you are". The experimenter would then explain that the study would involve mostly the filling out of questionnaires and would be done at a time and place which was most convenient for the individual. It was also noted that the experiment would require approximately one hour of the individual's time. The necessity of having a distraction free environment (i.e., no television or radio being on) was also stipulated at this time. This was done because a loss in effectiveness is experienced when the procedure is undertaken in such surroundings. If such a setting was deemed impossible the notion of the individual being tested at the Science building on the Memorial University of Newfoundland campus was brought forth. If the contacted individual expressed interest in participating in the study an appointment would then be arranged.

Assignment to conditions. Prior to the scheduled appointment the experimenter had already randomly assigned the subject to one of four conditions and to one of 12 possible orderings of the mood/disposition questionnaires. These four mood induction techniques (i.e., Velten positive, Velten negative, Velten + Music positive, and Velten + Music negative) and 12 possible orderings of questionnaires (i.e., mood and disposition)

were counterbalanced producing 48 different combinations.

Conditions. Two conditions were established to induce a positive mood. Subjects either read Velten's (1968) elation statements (Appendix B) alone or in conjunction with positively valenced music (Appendix D) playing in the background. The two remaining conditions were designed to induce negative moods, by having individuals read the corresponding depressive Velten (1968) statements (Appendix A) alone or together with negatively toned music (Appendix C) playing in the background. In view of ethical considerations the negative mood induction conditions were followed by a final positive induction procedure. It was deemed unethical to induce a negative mood in subjects without somehow restoring their mood back to its original state. Frost and Green (1982) and Polivy and Doyle (1980) have shown that the effect of an induced depressed mood is significantly longer lasting than that of a positive mood induction. In addition, Frost and Green (1982) have shown that induced negative moods may be removed by simply having subjects go through a positive mood induction. For this reason, the negative mood induction procedure required more time.

Reading of instructions. Subjects were seen individually by one of three experimenters (one male, two

females). They were reminded once more before pre-testing was carried out of the study's purpose. Further instructions were presented on lineless 12.7cm x 20.3cm index cards typed entirely in capitals (Velten, 1967; see Appendix K). Subjects were required to read the instructions once silently, then aloud, in line with Velten's (1968) procedure. After the instructions were read, the experimenter clarified any ambiguities and ensured that the subject understood what they were to do in the actual mood induction procedure.

Pre-induction measure of mood/disposition. Just prior to beginning the mood induction procedure subjects were asked to complete the test battery. The procedure involved the experimenter's presenting mood (Appendix E) and disposition (Appendix F) questionnaires in a counterbalanced order. After completing the questionnaire subjects were briefly reminded of the mood induction instructions before they were presented with the appropriate induction condition.

Velten only positive mood condition. Subjects in the Velten only positive mood condition then proceeded to read a series of 60 positive mood-inducing statements (Appendix B). They read the statements once silently, then aloud. Following the reading of a statement aloud each subject was allotted a seven second period during

which they were to take on the feeling or mood suggested by the statement, using such strategies as repetition and imagery. This served as a control for the amount of time subjects spent contemplating a particular statement. This is different from those studies (Alloy, Abramson, & Viscusi, 1981; Natale, 1977; Natale & Bolan, 1980; Polivy & Doyle, 1980; Scheier & Carver, 1977; Strickland, Hale, & Anderson, 1975) which established one time period in which individuals were expected first to read silently, then aloud the respective statement, and then proceed to think about it. An error in these studies is made when researchers assume reading speeds (and subsequently the time which subjects spend thinking about the statement) to be constant across individuals. After the specified time period (i.e., seven seconds), the next card in the sequence was placed over the previous one. This procedure was repeated until all the cards paralleling a respective mood tone were read. At this point, subjects again completed the mood (Appendix E) or disposition measures (Appendix F).

Velten only negative mood condition. The procedure was identical up to this point for those subjects in the Velten only negative mood condition, except that instead of reading statements appropriate to a positive mood induction subjects read Velten's 60 negative mood

inducing statements (Appendix A). After completing the mood (Appendix E) or disposition (Appendix F) measures for a second time, these subjects proceeded to the positive mood induction only technique. Then, for a third and final time subjects completed the mood (Appendix E) and disposition (Appendix F) measures.

Instructions for Velten + music conditions. For each subject in the Velten + music conditions, card nine of the instructions was replaced with a card more appropriate to the setting (see Appendix K). This card explained that while the subject would be reading those index cards that included the mood inducing statements, music would simultaneously be playing in the background to help them arrive at the proper mood.

Velten + music positive mood condition. Those subjects in the Velten + music positive mood condition were given the exact same procedure as those subjects in the previously described Velten only positive mood condition. The only difference was that while the participants read the positive mood induction statements (Appendix B) positively valenced music (Appendix D) played in the background.

Velten + music negative mood condition. Subjects in the Velten + music negative mood condition completed a procedure identical to the one given subjects in the

Velten only negative mood condition. In addition, subjects in this condition were provided negatively toned music (Appendix C) while they read the negative statements (Appendix A) and positively toned music (Appendix D) while they read the positive statements (Appendix B).

Summary

Subjects in the positive mood induction conditions completed two phases. Phase A involved the initial happiness ratings while phase B involved the happiness ratings following the positive mood manipulation. These happiness ratings were arrived at by having subjects complete the mood and disposition measures. Subjects in the negative mood induction conditions completed three phases, phase A being identical to that in the positive induction conditions. Phase B included the negative mood manipulation followed by the happiness ratings. Finally, phase C involved a positive mood manipulation followed once again by subjects' rating their happiness levels.

In each case the experiment was at that time complete. The experimenter would then inquire as to how the subject felt, in what way the procedure might have worked better for them, and if they had any questions. In addition, subjects were notified that they would receive a letter informing them of the results of this

study.

Results

The research design used in this study was a pre-post mixed effects design with sex and age the fixed variables and induction and music the random variables. The order of measures was counterbalanced. The design produced four between (Age group, Sex, Music, and Induction) and two within subject factors (Time and Measure). Data were analyzed using the Statistical Package for Social Sciences (SPSS Inc., 1988).

Demographic Data

Subjects' mean ages and associated standard deviations are reported in Table 1. There were no significant age differences among the four induction conditions and indicates successful matching.

Overall Data

Scale totals on all measures across pre and post conditions were standardized separately for positive and negative induction groups. The procedure permitted an assessment of measures by equating scales on size and allowed for the elimination of pre score differences in the two induction conditions. In addition, negative affect and negative experience scores were multiplied by minus one to keep erfects on all measures in the same direction.

Z-scores were analyzed by an Induction (positive,

Table 1

Mean age of subjects in each condition

	Induction			
	Positive		Negative	
	Condition[a]			
Age group	Velten	Velten + music	Velten	Velten + music
20-34				
M	26.30	26.70	24.80	25.80
SD	3.20	4.85	3.65	2.90
40-54				
M	45.20	46.30	46.20	46.00
SD	3.26	3.97	4.13	4.74
60-74				
M	66.80	69.00	68.80	64.90
SD	4.37	3.13	3.61	4.38

[a] n = 10 for each condition

negative) x Age group (20-34, 40-54, 60-74) x Music (Velten + music, Velten) x Sex (male, female) x Measure (positive affect [PA], negative affect [NA], vigour [VG], positive experience [PE], negative experience [NE], Diener [DN]) x Time (pre, post) multiple analysis of variance (MANOVA) design. Due to the large number of comparisons, the significance level for all effects was set at .01.

Significant within subjects effects were obtained for the Induction x Time, $F(1, 96) = 31.96$, $p<.0001$ (see Table 2C), and the Induction x Measure x Time interactions, $F(5, 480) = 8.63$, $p<.0001$ (see Table 2D). The Induction x Time interaction suggests a differential effect of inductions. Figure 1 indicates that the positive induction condition led to an increase in scores while the negative induction led to a decrease. A Newman Keuls mean comparison (Bruning & Kintz, 1977) procedure confirms this interpretation (see Table 3), but also shows that the degree of change provided by the respective inductions did not significantly differ from each other.

The Induction x Time x Measure interaction implies greater effectiveness over time of one of the inductions for some of the measures. A visual representation of the interaction is given in Figure 2. This figure suggests a

Table 2A

Analysis of variance on overall sample data

Source of variation	Sum of squares	Degrees of freedom	Mean squares	F
Within cells	498.07	96	5.19	
Induction (A)	.00	1	.00	.00
Age group (B)	13.67	2	6.84	1.32
Music (C)	1.31	1	1.31	.25
Sex (D)	5.55	1	5.55	1.07
AB	19.98	2	9.99	1.93
AC	1.87	1	1.87	.36
AD	8.81	1	8.81	1.70
BC	7.75	2	3.87	.75
BD	12.44	2	6.22	1.20
CD	10.16	1	10.16	1.96
ABC	5.50	2	2.75	.53
ABD	38.73	2	19.37	3.73
ACD	16.00	1	16.00	3.08
BCD	2.14	2	1.07	.21
ABCD	2.31	2	1.16	.22

Table 2B

Analysis of variance on overall sample data

Source of variation	Sum of squares	Degrees of freedom	Mean squares	F
Within cells	464.06	480	.97	
Measure (E)	.00	5	.00	.00
AE	.00	5	.00	.00
BE	8.96	10	.90	.93
CE	4.61	5	.92	.95
DE	.42	5	.08	.09
ABE	9.48	10	.95	.98
ACE	4.49	5	.90	.93
ADE	3.55	5	.71	.74
BCE	12.33	10	1.23	1.28
BDE	5.52	10	.55	.57
CDE	2.19	5	.44	.45
ABCE	9.68	10	.97	1.00
ABDE	10.97	10	1.10	1.13
ACDE	12.88	5	2.46	2.54
BCDE	9.72	10	.97	1.01
ABCDE	6.15	10	.62	.64

Table 2C

Analysis of variance on overall sample data

Source of variation	Sum of squares	Degrees of freedom	Mean squares	F
Within cells	57.44	96	.60	
Time (F)	.05	1	.05	.08
AF	19.12	1	19.12	31.96****
BF	.19	2	.09	.16
CF	.21	1	.21	.35
DF	.10	1	.10	.16
ABF	2.03	2	1.01	1.69
ACF	.60	1	.60	1.00
ADF	.32	1	.32	.54
BCF	1.28	2	.64	1.07
BDF	1.23	2	.61	1.02
CDF	.23	1	.23	.38
ABCF	.05	2	.02	.04
ABDF	1.61	2	.81	1.35
ACDF	.83	1	.83	1.38
BCDF	1.39	2	.69	1.16
ABCDF	1.81	2	.91	1.52

**** $p<.0001$

Table 2D

Analysis of variance on overall sample data

Source of variation	Sum of squares	Degrees of freedom	Mean squares	F
Within cells	99.52	480	.21	
Measure x Time (EF)	2.56	5	.51	2.47
AEF	8.94	5	1.79	8.63****
BEF	1.27	10	.13	.61
CEF	.83	5	.17	.80
DEF	.96	5	.19	.93
ABEF	2.09	10	.21	1.01
ACEF	.97	5	.19	.94
ADEF	1.02	5	.20	.99
BCEF	1.26	10	.13	.61
BDEF	2.61	10	.26	1.26
CDEF	.80	5	.16	.78
ABCEF	1.42	10	.14	.68
ABDEF	2.79	10	.28	1.35
ACDEF	.35	5	.07	.34
BCDEF	1.51	10	.15	.73
ABCDEF	1.89	10	.19	.91

**** $p \leq .0001$

Figure 1. Induction x Time Interaction for overall data.

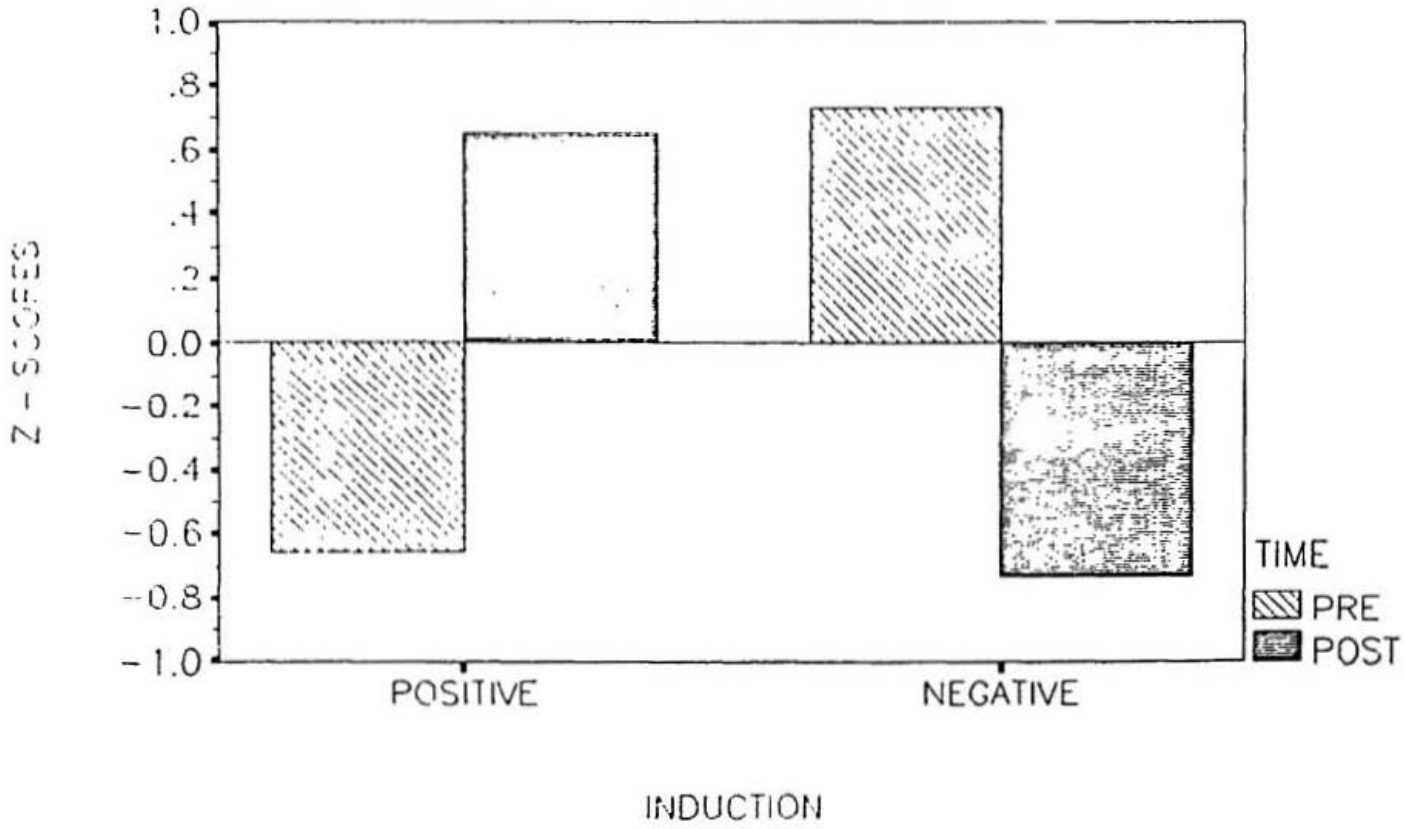


Table 3

Newman Keuls analysis on Induction x Time interaction

Pre-post phase

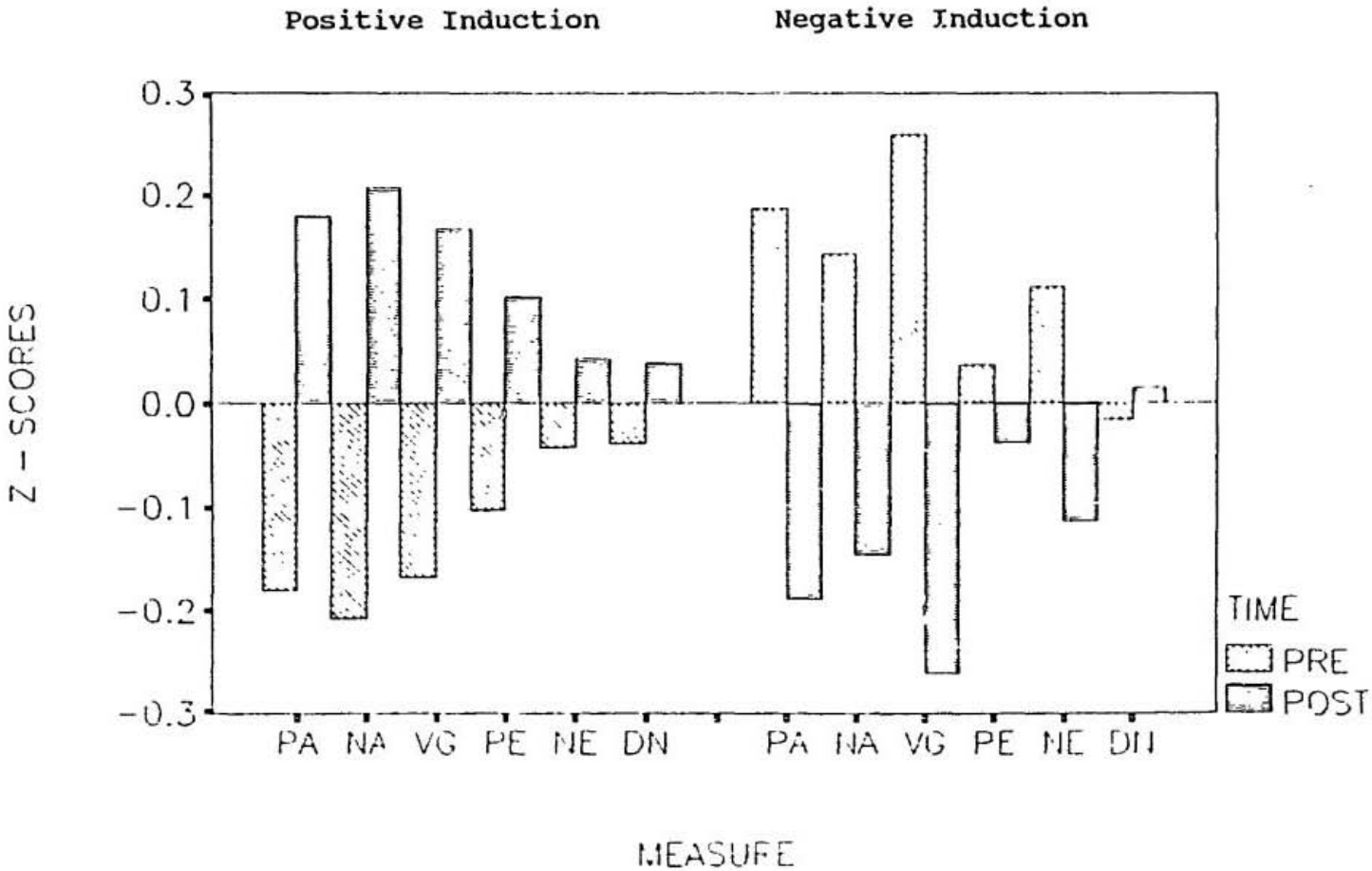
	Positive induction Pre (-.656)	Negative induction Pre (.727)
Positive induction Post (.656)	1.312**	-------
Negative induction Post (-.727)	-------	1.454**

** p<.01

Differences between positive and negative induction changes

	Positive induction pre-post difference (1.312)
Negative induction pre-post difference (1.454)	.142

Figure 2. Induction x Time x Measures Interaction for overall data.



somewhat different pattern for positive and negative induction effects. It appears that mood scores changed significantly more than disposition scores under both induction conditions. However, the positive induction appears to have affected positive experience scores as well, while the negative induction appears to have had a similar effect on negative experience scores.

To test for pre-post differences on measures, Newman Keuls mean comparisons for two step differences were computed for each Induction condition separately. Significant differences were obtained for positive affect, negative affect and vigour with both inductions, while positive experience only showed a significant change for the positive induction condition, and negative experience for the negative induction condition (see Table 4).

To test whether mood changes were greater than dispositional changes, Newman Keuls mean comparisons were carried out on each of the significant measures for both positive (see Table 5) and negative (see Table 6) inductions. The analysis of the positive induction revealed primary changes on the positive affect, negative affect, vigor, and positive experience measures. The analysis of the negative induction provided primary changes on the positive affect, negative affect, vigor, and negative experience measures.

Table 4

Newman Keuls on Induction x Time Measures interaction

		Measures					
	Time	Positive Affect	Negative Affect	Vigour	Positive Experience	Negative Experience	Diener
Positive induction	Pre	-.181	-.207	-.168	-.103	.042	-.039
	Post	.181	.207	.168	.103	-.042	.039
	D	-.362**	-.414**	-.336**	-.206*	.084	-.078

		Measures					
	Time	Positive Affect	Negative Affect	Vigour	Positive Experience	Negative Experience	Diener
Negative induction	Pre	.188	.145	.260	.037	.112	-.015
	Post	-.188	-.145	-.260	-.037	-.112	.015
	D	.376**	.290**	.520**	.074	.224**	-.030

* $p<.05$ ** $p<.01$

Table 5

Newman Keuls on positive induction Measures x Time interaction

	negative affect (-.414)	positive affect (-.362)	vigour (-.336)	positive experience (-.206)	Diener (-.078)	negative experience (.084)
negative affect (-.414)	------	------	------	------	------	------
positive affect (-.362)	.052	------	------	------	------	------
vigour (-.336)	.078	.026	------	------	------	------
positive experience (-.206)	.208	.156	.130	------	------	------
Diener (-.078)	.336**	.284**	.258**	.128	------	------
negative experience (.084)	.498**	.446**	.420**	.290**	.162	------
$q_{.05}$ crit	4.16 .246	3.98 .235	3.74 .221	3.40 .201	2.83 .167	------ ------
$q_{.01}$ crit	4.99 .295	4.82 .285	4.60 .272	4.28 .253	3.76 .222	------ ------

** $p<.01$

Table 6

Newman Keuls on negative induction Measures x Time interaction

	Diener (-.030)	positive experience (.074)	negative experience (.224)	negative affect (.290)	positive affect (.376)	vigour (.520)
Diener (-.030)	------	------	------	------	------	------
positive experience (.074)	.104	------	------	------	------	------
negative experience (.224)	.254**	.150	------	------	------	------
negative affect (.290)	.320**	.216**	.066	------	------	------
positive affect (.376)	.406**	.302**	.136	.086	------	------
vigour (.520)	.550**	.446**	.296**	.230	.144	------
$q_{.05}$ crit	4.16 .246	3.98 .235	3.74 .221	3.40 .201	2.83 .167	------ ------
$q_{.01}$ crit	4.99 .295	4.82 .285	4.60 .272	4.28 .253	3.76 .222	------ ------

** $p<.01$

Discussion

Previous research has shown happiness to be an integration of various sources of satisfaction, some of which are amenable to change. This thesis examined the effects of a mood induction procedure on the structure of happiness. Of the three proposed hypotheses only the effect of the mood manipulation procedure on the happiness measures consistently proved to be statistically significant. Examination of the findings are discussed under relevant headings.

Age groups

Happiness levels. The hypothesis that the older cohorts would demonstrate higher scores on the positive and/or lower scores on the negative long-term items than the younger cohorts was not supported. The overall analysis revealed no significant age group main effect. This finding effectively replicates that of McNeil (1986). It is however inconsistent with findings by Diener (1984) and Veenhoven (1984) among others. Consequently no further analyses were possible regarding this hypothesis.

Reactivity. It was hypothesized that younger cohorts would demonstrate greater variability than older cohorts on the short-term affective measures. Once again, the overall analysis did not support this claim.

Again, this result replicates that of McNeil (1986) while being inconsistent with that of Diener (1984) and Veenhoven (1984).

Induction Effects

The hypothesis that the mood manipulation would result in significant pre-post effects on the short-term measures was supported. In addition, the positive induction manipulation also affected positive experience scores while the negative induction manipulation affected negative experience scores.

More specific analyses (i.e., the Newman Keuls) lent support to a component structure of happiness comprised of two independent factors: transitory affect (mood) and long-term (dispositional) affect. The results of comparisons between pre and post induction happiness ratings on the six subscales for both the positive and negative mood manipulation conditions revealed a distinct difference. The Newman Keuls procedure revealed that three components (i.e., positive affect, negative affect, and vigour) were found to be susceptible to changes in mood. This finding is consistent with the two component model of happiness.

The remaining measures (i.e., positive experience, negative experience, and Diener) comprised the disposition measure. It was predicted that the induction

procedures would have no effect upon these components. Only Diener, Emmons, Larsen, and Griffin's (1985) SWLS remained entirely unaffected by both induction procedures. This finding lends support to the notion that the SWLS is a measure of disposition.

The remaining two components of positive experience and negative experience were affected by the positive and negative inductions, respectively. This finding is best understood in the context of the network theory of affect (Bower, 1981). Bower (1981) believes that recall of an event will be at its best when the emotion at recall is the same as that when the original experience occurred. More specifically, these results are related to the phenomenon Bower (1981) calls mood congruent recall. According to Blaney (1986), mood congruence assumes that some material is more likely to be stored and/or recalled when one is in a particular mood because of the congruency of affectively valenced content with current mood. Thus, there exists a greater likelihood of recalling material that is equivalent in affective quality to one's own current mood. This phenomenon is supported by the research of Teasdale, Taylor, and Fogarty (1980) and Clark and Teasdale (1985), among others.

Teasdale, Taylor, and Fogarty (1980) found that

extremely unhappy memories were retrieved significantly more often in the negative mood than in the elated mood, while extremely happy memories were retrieved significantly more often in the elated mood than in the depressed mood. Clark and Teasdale (1985, study 1) presented subjects with a list of pleasant and unpleasant personality trait words and abstract nouns. The presentation of the words and nouns was first followed by a music mood induction then an incidental recall test. The recall test required subjects to remember as many of the words as possible. They reported that women, but not men, recalled more pleasant than unpleasant words in the happy mood and more unpleasant words than pleasant words in the depressed mood.

Following this logic, one can begin to understand the reason for which those subjects induced into a positive mood would endorse more positive experience items when asked about past life events. Similarly, those who had been induced into a negative mood would be expected to endorse more negative experience items.

Music

The hypothesis that subjects in the Velten + music conditions would demonstrate greater changes than the subjects in the Velten only conditions was not supported. While these results fail to confirm the hypothesis of

music having an enhancing effect in conjunction with the Velten, an answer regarding the superiority of one technique cannot be given. In order to do this, a Velten only and music only induction comparison is required. This would then allow for a comparative statement between the two procedures. One reason no difference was found may have been a ceiling effect regarding induction procedure. If the Velten only conditions produced an almost maximal change in mood, then the addition of music would cause marginal or no alteration.

Finally, the possibility of differential response to mood induction techniques was not supported. More specifically, subjects in the three age groups did not react differently to the Velten only and Velten + music inductions.

Implications

The current study has implications regarding the structure of happiness because of the differential susceptibility of the respective affective states to a mood induction technique. Such an implication supports the hypothesis that happiness consists of short- and long-term affective states as compared to happiness being a one-factor structure. Results also indicate that the short- and long-term components provide an equal contribution to overall happiness for different age

groups. This counters the belief that happiness levels fluctuate between certain age groups.

Data demonstrated change in both positive and negative scale items as a result of the positive and negative inductions. This supports a bipolar mood affective component. Proponents who consider positive and negative mood as independent would expect a change in a mood component only when an induction congruent with the mood is used (e.g., positive mood would be influenced by a positive induction only).

This data set also supports a two-factor disposition component of happiness. This is demonstrated by the positive mood induction affecting only the positive experience items while the negative induction affects only the negative experience items. This finding is in accordance with the related research in this area.

In this study, the lack of shift on the opposite mood experience items by a congruent mood induction may be attributed to a mood overflow on the relevant experiential components. This finding suggests that items which parallel the mood induction would become more salient and more likely to be endorsed. The lack of similar results on the SWLS (Diener, Emmons, Larsen, & Griffin, 1985) is believed to be a result of the SWLS items having a more general nature than the MUNSH items

(Kozma & Stones, 1980). Consequently, one would hypothesize that the more specific an item is to an experience (i.e., positive or negative) the more probable that an item would be endorsed as a result of a parallel mood induction.

Future Directions

Conclusions regarding the structure of happiness would be strengthened by replicating and improving the methodology of this study. An increase in sample size would increase the likelihood of statistical significance. A longitudinal study may be able to substantiate the results of this study or prove that they are a spurious finding. Finally, replication is necessary because results supporting a differential effect on experience items have been found for the first time in this study.

When long term items are stated in a general form, they are less affected by mood induction techniques. Stone (1987) has found similar results to corroborate this finding. In spite of similar findings by Stone (1987), future research is needed to determine the generality of this finding.

This study compared a composite mood induction technique (i.e., Velten + music) to the Velten only mood induction technique. As a result, the relative

effectiveness of music alone across age groups could not be determined in this study. To determine the superiority of either the Velten technique or the music technique, they must be tested in independent conditions. Future research should examine idiographic responding in the event that some individuals are more susceptible to induction than others. Specifically, an individual included in a Velten induction, who was predisposed to music, would attenuate the effect. A study such as this would allow researchers to determine whether susceptibility to a specific mood induction technique is influenced by such factors as age and personality.

References

Albersnagel, F.A. (1988). Velten and musical mood induction procedures: A comparison with accessibility of thought associations. Behaviour Research and Therapy, 26, 79-96.

Alloy, L.B., Abramson, L.Y., & Viscusi, D. (1981). Induced mood and the illusion of control. Journal of Personality and Social Psychology, 41, 1129-1140.

Andrews, F.M., & Withey, S.B. (1976). Social indicators of well-being: Americans' perceptions of life quality. New York: Behavioral Publications, Inc.

Atkinson, T. (1982). The stability and validity of life measures. Social Indicators Research, 10, 113-132.

Beiser, M. (1974). Components and correlates of mental well-being. Journal of Health and Social Behavior, 15, 320-327.

Benin, M.H., Stock, W.A., & Okun, M.A. (1988). Positive and negative affect: A maximum-likelihood approach. Social Indicators Research, 20, 165-175.

Blaney, P.H. (1986). Affect and memory: A review. Psychological Bulletin, 99, 229-246.

Bower, G.H. (1981). Mood and memory. American Psychologist, 36, 129-148.

Bradburn, N.M. (1969). The structure of psychological well-being. Chicago: Aldine Publishing Company.

Bradburn, N.M., & Caplovitz, D. (1965). Reports on happiness: A pilot study of behavior related to mental health. Chicago: Aldine Publishing Company.

Brenner, B. (1975). Quality of affect and self-evaluated happiness. Social Indicators Research, 2, 315-331.

Bruning, J.L., & Kintz, B.L. (1977). Computational handbook of statistics. Glenview, Illinois: Scott, Foresman and Company.

Bryant, F.B., & Veroff, J. (1982). The structure of psychological well-being: A sociohistorical analysis. Journal of Personality and Social Psychology, 43, 653-673.

Buchwald, A.M., Strack, S., & Coyne, J.C. (1981). Demand characteristics and the Velten mood induction procedure. Journal of Consulting and Clinical Psychology, 49, 478-479.

Carp, F.M., & Carp, A. (1983). Structural stability of well-being factors across age and gender, and development of scales of well-being unbiased for age and gender. Journal of Gerontology, 38, 572-581.

Cherlin, A., & Reeder, L.G. (1975). The dimensions of psychological well-being: A critical review.

Sociological Methods and Research, 4, 189-214.

Clark, D.M. (1983). On the induction of depressed mood in the laboratory: Evaluation and comparison of the Velten and musical procedures. Advances in Behavior Research and Therapy, 5, 27-49.

Clark, D.M. (1985). The Velten mood induction procedure and cognitive models of depression: A reply to Riskind and Rholes (1985). Behaviour Research and Therapy, 23, 667-669.

Clark, D.M., & Teasdale, J.D. (1985). Constraints on the effects of mood on memory. Journal of Personality and Social Psychology, 48, 1595-1608.

Costa, P.T., & McCrae, R.R. (1984). Personality as a lifelong determinant of wellbeing. In C.Z. Malatesta & C.E. Izard (Eds.), Emotion in adult development (pp. 141-157). Beverly Hills: Sage Publications.

Costa, P.T., McCrae, R.R., & Norris, A.H. (1981). Personal adjustment to aging: Longitudinal prediction from neuroticism and extraversion. Journal of Gerontology, 36, 78-85.

Crowne, D.P., & Marlowe, D. (1964). The approval motive. New York: Wiley.

Cuddy, L.L., & Cohen, A.J. (1976). Recognition of transposed melodic sequences. Quarterly Journal of Experimental Psychology, 28, 255-270.

Cutler, N.E. (1979). Age variations in the dimensionality of life satisfaction. Journal of Gerontology, 34, 573-578.

Diener, E. (1984). Subjective well-being. Psychological Bulletin, 95, 542-575.

Diener, E., & Emmons, R.A. (1984). The independence of positive and negative affect. Journal of Personality and Social Psychology, 47, 1105-1117.

Diener, E., Emmons, R.A., Larsen, R.J., & Griffin, S. (1985). The Satisfaction with Life Scale. Journal of Personality Assessment, 49, 71-76.

Diener, E., & Larsen, R.J., (1984). Temporal stability and cross-situational consistency of affective, behavioral, and cognitive responses. Journal of Personality and Social Psychology, 47, 871-883.

Diener, E., Larsen, R.J., Levine, S., & Emmons, R.A. (1985). Intensity and frequency: Dimensions underlying positive and negative affect. Journal of Personality and Social Psychology, 48, 1253-1265.

Di Fazio, R. (1987). The effects of mood on memory: How social consensus influences the valence of autobiographical recall. Unpublished honour's thesis, Concordia University, Montreal, Quebec.

Frost, R.O., Graf, M., & Becker, J. (1979). Self-devaluation and depressed mood. Journal of

Consulting and Clinical Psychology, 47, 958-962.

Frost, R.O., & Green, M.L. (1982). Velten mood induction procedure effects: Duration and postexperimental removal. Personality and Social Psychology Bulletin, 8, 341-347.

George, L.K., Okun, M.A., & Landerman, R. (1985). Age as a moderator of the determinants of life satisfaction. Research on Aging, 7, 209-233.

Glatzer, W., & Mohr, H.M. (1987). Special issue on subjective well-being. Social Indicators Research, 19.

Goodwin, A.M., & Williams, J.M.G. (1982). Mood-induction research - It's implications for clinical depression. Behaviour Research and Therapy, 20, 373-382.

Hale, W.D., & Strickland, B.R. (1976). Induction of mood states and their effect on cognitive and social behaviors. Journal of Consulting and Clinical Psychology, 44, 155.

Headey, B., Holmstrom, E., & Wearing, A. (1984). The impact of life events and changes in domain satisfactions on well-being. Social Indicators Research, 15, 203-227.

Headey, B., Holmstrom, E., & Wearing, A. (1985). Models of well-being and ill-being. Social Indicators Research, 17, 211-234.

Herzog, A.R., & Rodgers, W.L. (1981a). Age and satisfaction: Data from several large surveys. Research on Aging, 3, 142-165.

Herzog, A.R., & Rodgers, W.L. (1981b). The structure of subjective well-being in different age groups. Journal of Gerontology, 36, 472-479.

Himmelfarb, S., & Murrell, S.A. (1983). Reliability and validity of five mental health scales in older persons. Journal of Gerontology, 38, 333-339.

Hoyt, D.R., & Creech, J.C. (1983). The life satisfaction index: A methodological and theoretical critique. Journal of Gerontology, 38, 111-116.

Hunsley, J. (1988, June). Dimensionality of the revised multiple affect adjective check list. Paper presented at the 49th annual meeting of the Canadian Psychological Association, Montreal, Quebec.

Kammann, R., Farry, M., & Herbison, P. (1984). The analysis and measurement of happiness as a sense of well-being. Social Indicators Research, 15, 91-115.

Kammann, R., & Flett, R. (1983). Affectometer 2: A scale to measure current level of general happiness. Australian Journal of Psychology, 35, 259-265.

Kenealy, P.M. (1986). The Velten mood induction procedure: A methodological review. Motivation and Emotion, 10, 315-335.

Kenealy, P.(1988). Validation of a music mood induction procedure: Some preliminary findings. Cognition and Emotion, 2, 41-48.

Kozma, A. (1986, June). The structure of happiness. Invited address by the Gerontology Section at the 47th Annual meeting of the Canadian Psychological Association, Toronto, Ontario.

Kozma, A., Stone, S., Stones, M.J., Hannah, T.E., & McNeil, K. (1988). Long- and short-term affective states in happiness: Model, paradigm, and experimental evidence. Unpublished manuscript. Memorial University of Newfoundland.

Kozma, A., & Stones, M.J. (1980). The measurement of happiness: Development of the Memorial University of Newfoundland Scale of Happiness (MUNSH). Journal of Gerontology, 35, 906-912.

Kozma, A., & Stones, M.J. (1983a). Predictors of happiness. Journal of Gerontology, 38, 626-628.

Kozma, A., & Stones, M.J. (1983b). Re-validation of the Memorial University of Newfoundland Scale of Happiness. Canadian Journal on Aging, 2, 27-29.

Kozma, A., & Stones, M.J. (1988). Social desirability in measures of subjective well-being: Age comparisons. Social Indicators Research, 20, 1-14.

Kozma, A., Stones, M.J., & McNeil, K.J. (in

preparation). Psychological well-being in later life. Toronto: Ontario.

Kozma, A., Stones, M.J., & Kazarin, S. (1985). The usefulness of the MUNSH as a measure of well-being and psychopathology. Social Indicators Research, 17, 49-55.

Larsen R.J., Diener, E., & Emmons, R.A. (1985). An evaluation of subjective well-being measures. Social Indicators Research, 17, 1-17.

Larson, R. (1978). Thirty years of research on the subjective well-being of older Americans. Journal of Gerontology, 33, 109-125.

Lawton, M.P. (1972). The dimensions of morale. In D.P. Kent, R. Kastenbaum, & S. Sherwood (Eds.), Research planning and action for the elderly: the power and potential of social science (pp. 144-165). New York: Behavioral Publications, Inc.

Lawton, M.P. (1975). The Philadelphia Geriatric Center Morale Scale: A revision. Journal of Gerontology, 30, 85-89.

Lawton, M.P. (1983). The varieties of well-being. Experimental Aging Research, 9, 65-72.

Lawton, M.P. (1984). The varieties of well-being. In C.Z. Malatesta & C.E. Izard (Eds.), Emotion in adult development (pp. 67-84). Beverly Hills: Sage

Publications.

Lawton, M.P., Kleban, M.H., & Di Carlo, E. (1984). Psychological well-being in the aged: Factorial and conceptual dimensions. Research on Aging, 6, 67-97.

Liang, J. (1984). Dimensions of the Life Satisfaction Index A: A structural formulation. Journal of Gerontology, 39, 613-622.

Liang, J. (1985). A structural integration of the Affect Balance Scale and the Life Satisfaction Index A. Journal of Gerontology, 40, 552-561.

Liang, J., & Bollen, K.A. (1983). The structure of the Philadelphia Geriatric Center Morale Scale: A reinterpretation. Journal of Gerontology, 38, 181-189.

Liang, J., Lawrence, R.H., & Bollen, K.A. (1986). Age differences in the structure of the Philadelphia Geriatric Center Morale Scale. Journal of Psychology and Aging, 1, 27-33.

Lohmann, N. (1980). A factor analysis of life satisfaction, adjustment and morale measures with elderly adults. International Journal of Aging and Human Development, 11, 73-75.

Lohmann, N.L.P. (1977). Comparison of life satisfaction, morale and adjustment scales on an elderly population, (Doctoral dissertation, Brandies

University, 1977) Dissertation Abstracts International, 38, 418B. (University Microfilms No. 77-15, 272).

Lorr, M., McNair, D.M., & Fisher, S. (1982). Evidence for bipolar mood states. Journal of Personality Assessment, 46, 432-436.

Luria, R.E. (1975). The validity and reliability of the visual mood scale. Journal of Psychiatric Research, 12, 51-57.

McCrae, R.R. (1983). Extraversion is not a filter, neuroticism is not an outcome: A reply to Lawton. Experimental Aging Research, 9, 73-76.

McKim-Dawes, K. (1988). Emotional vulnerability: The influence of personality factors on mood induced recall bias in college females. Unpublished manuscript. University of New Brunswick at Saint John.

McNeil, K.J. (1985). Subjective well-being in later life: Issues concerning measurement and prediction. Unpublished manuscript. Memorial University of Newfoundland.

McNeil, K.J. (1986). Mood: Measurement, diurnal variation, and age effects. Unpublished manuscript. Memorial University of Newfoundland.

McNeil, K.J., Stones, M.J., & Kozma, A. (1985).

Longitudinal variation in domain indicators of happiness. Social Indicators Research, 18, 119-124.

McNeil, K.J., Stones, M.J., & Kozma, A. (1986a). Life span structure and measurement of mood. Unpublished manuscript. Memorial University of Newfoundland.

McNeil, K.J., Stones, M.J., & Kozma, A. (1986b). Subjective well-being in later life: Issues concerning measurement and prediction. Social Indicators Research, 18, 35-70.

Mackay, C.J. (1980). The measurement of mood and psychophysiological activity using self-report techniques. In I. Martin & P.H. Venables (Eds.), Techniques of Psychophysiology. New York: Wiley and Sons.

Moriwaki, S.Y. (1974). The Affect Balance Scale: A validity study with aged samples. Journal of Gerontology, 29, 73-78.

Natale, M. (1977). Effects of induced elation-depression on speech in the initial interview. Journal of Consulting and Clinical Psychology, 45, 45-52.

Natale, M., & Bolan, R. (1980). The effect of Velten's mood-induction procedure for depression on hand movement and head-down posture. Motivation and Emotion, 4, 323-333.

Neugarten, B.L., Havighurst, R.J., & Tobin, S.S. (1961). The measurement of life satisfaction. Journal of Gerontology, 16, 134-143.

Nowlan, C.L. (1988). Emotional qualities of music: Influences of tempo and mode. Unpublished manuscript. St.Thomas University.

Palmore, E., & Kivett, V. (1977). Change in life satisfaction: A longitudinal study of persons aged 46-70. Journal of Gerontology, 32, 311-316.

Pignatiello, M.F. (1986). [Musical mood induction: Musical selections]. Unpublished raw data.

Pignatiello, M.F., Camp, C.J., & Rasar, L.A. (1986). Musical mood induction: An alternative to the Velten technique. Journal of Abnormal Psychology, 95, 295-297.

Polivy, J., & Doyle, C. (1980). Laboratory induction of mood states through the reading of self-referent mood statements: Affective changes or demand characteristics? Journal of Abnormal Psychology, 89, 286-290.

Riskind, J.H., & Rholes, W.S. (1985a). The cognitive model of depression and mood-induction procedures: A reply to Clark (1983). Behaviour Research and Therapy, 23, 663-666.

Riskind, J.H., & Rholes, W.S. (1985b). The Velten mood

induction procedure and cognitive manipulation: Our response to Clark (1985). Behaviour Research and Therapy, 23, 671-673.

Riskind, J.H., Rholes, W.S., & Eggers, J. (1982). The Velten mood induction procedure: Effects on mood and memory. Journal of Consulting and Clinical Psychology, 50, 146-147.

Rossi, A.S., & Rossi, P.E. (1977). Body time and social time: Mood patterns by menstrual cycle phase and day of the week. Social Sciences Research, 6, 273-308.

Scheier, M.F., & Carver, C.S. (1977). Self-focused attention and the experience of emotion: Attraction, repulsion, elation, and depression. Journal of Personality and Social Psychology, 35, 625-636.

Snyder, M., & White, P. (1982). Moods and memories: Elation depression, and the remembering of the events of one's life. Journal of Personality, 50, 149-167.

SPSS Inc. (1988). SPSS-X user's guide (3rd ed.). Chicago: SPSS Inc.

Stock, W.A., Okun, M.A., & Benin, M. (1986). Structure of subjective well-being among the elderly. Journal of Psychology and Aging, 1, 91-102.

Stone, S.C. (1987). The structure of Happiness: Effects of mood induction on ratings of subjective

well-being. Unpublished undergraduate thesis, Memorial University of Newfoundland, St.John's, Newfoundland.

Stones, M.J., & Kozma, A. (1985). Structural relationships among happiness scales: A second order factorial study. Social Indicators Research, 17, 19-28.

Stones, M.J., & Kozma, A. (1986). "Happy are they who are happy ..." A test between two causal models of relationships between happiness and its correlates. Experimental Aging Research, 12, 23-29.

Strickland, B.R., Hale, W.D., & Anderson, L.K. (1975). Effects of induced mood states on activity and self-reported affect. Journal of Consulting and Clinical Psychology, 43, 587.

Sutherland, G., Newman, B., & Rachman, S. (1982). Experimental investigations of the relations between mood and intrusive unwanted cognitions. British Journal of Medical Psychology, 55, 127-138.

Teasdale, J.D., & Fogarty, S.J. (1979). Differential effects of induced mood on retrieval of pleasant and unpleasant events from episodic memory. Journal of Abnormal Psychology, 88, 248-257.

Teasdale, J.D., & Russell, M.L. (1983). Differential effects of induced mood on the recall of positive,

negative and neutral words. British Journal of Clinical Psychology, 22, 163-171.

Teasdale, J.D., & Taylor, R. (1981). Induced mood and accessibility of memories: An affect of mood state or of mood induction procedure. British Journal of Clinical Psychology, 20, 39-48.

Teasdale, J.D., Taylor, R., & Fogarty, S.J. (1980). Effects of induced elation-depression on the accessibility of memories of happy and unhappy experiences. Behaviour Research and Therapy, 18, 339-346.

Teasdale, J.D., & Spencer, P. (1984). Induced mood and estimates of past success. British Journal of Clinical Psychology, 23, 149-150.

Veenhoven, R. (1984). Conditions of Happiness. Boston: D. Reidel Publishing Company.

Velten, E.C. (1967). The induction of elation and depression through the reading of structured sets of mood-statements, (Doctoral dissertation, University of Southern California, 1967) Dissertation Abstracts International, 28, 4. (University Microfilms No. 67-13, 045).

Velten, E. (1968). A laboratory task for induction of mood states. Behaviour Research and Therapy, 6, 473-482.

Watson, D., Clark, L.A., & Tellegen, A. (1984). Cross-cultural convergence in the structure of mood: A Japanese replication and a comparison with U.S. findings. Journal of Personality and Social Psychology, 47, 127-144.

Watson, D., & Tellegen, A. (1985). Toward a consensual structure of mood. Psychological Bulletin, 98, 219-235.

Zevon, M.A., & Tellegen, A. (1982). The structure of mood change: An idiographic/nomothetic analysis. Journal of Personality and Social Psychology, 43, 111-122.

Zuckerman, M., & Lubin, B. (1965). Manual for the Multiple Affect Adjective Checklist. San Diego: Education and Industrial Testing Service.

Appendix A

Velten mood-statements for depression induction subjects

CARD 1N

TODAY IS NEITHER BETTER NOR WORSE THAN ANY OTHER DAY

CARD 2N

HOWEVER, I FEEL A LITTLE LOW TODAY

CARD 3N

I FEEL RATHER SLUGGISH NOW

CARD 4N

SOMETIMES I WONDER WHETHER SCHOOL IS ALL THAT WORTHWHILE

CARD 5N

EVERY NOW AND THEN I FEEL SO TIRED AND GLOOMY THAT I'D RATHER JUST SIT THAN DO ANYTHING

CARD 6N

I CAN REMEMBER TIMES WHEN EVERYBODY BUT ME SEEMED FULL OF ENERGY

CARD 7N

TOO OFTEN I HAVE FOUND MYSELF STARING LISTLESSLY INTO THE DISTANCE, MY MIND A BLANK, WHEN I DEFINITELY SHOULD HAVE BEEN STUDYING

CARD 8N

IT HAS OCCURRED TO ME MORE THAN ONCE THAT STUDYING IS BASICALLY USELESS, BECAUSE YOU FORGET ALMOST EVERYTHING YOU LEARN ANYWAY

CARD 9N

PEOPLE ANNOY ME; I WISH I COULD BE BY MYSELF

CARD 10N

I'VE HAD IMPORTANT DECISIONS TO MAKE IN THE PAST, AND I'VE SOMETIMES MADE THE WRONG ONES

CARD 11N

I DO FEEL SOMEWHAT DISCOURAGED AND DROWSY --- MAYBE I'LL NEED A NAP LATER

CARD 12N

PERHAPS UNIVERSITY TAKES MORE TIME, EFFORT, AND MONEY THAN IT'S WORTH

CARD 13N

I'M AFRAID THE THREAT OF NUCLEAR WAR MAY GET A LOT WORSE

CARD 14N

I JUST DON'T SEEM TO BE ABLE TO GET GOING AS FAST AS I USED TO

CARD 15N

THERE HAVE BEEN DAYS WHEN I FELT WEAK AND CONFUSED, AND EVERYTHING WENT MISERABLY WRONG

CARD 16N

JUST A LITTLE BIT OF EFFORT TIRES ME OUT

CARD 17N

I'VE HAD DAYDREAMS IN WHICH MY MISTAKES KEPT OCCURRING TO ME ---SOMETIMES I WISH I COULD START OVER AGAIN

CARD 18N

I'M ASHAMED THAT I'VE CAUSED MY PARENTS NEEDLESS WORRY

CARD 19N

I FEEL TERRIBLY TIRED AND INDIFFERENT TO THINGS TODAY

CARD 20N

JUST TO STAND UP WOULD TAKE A BIG EFFORT

CARD 21N

I'M GETTING TIRED OUT --- I CAN FEEL MY BODY GETTING EXHAUSTED AND HEAVY

CARD 22N

I'M BEGINNING TO FEEL SLEEPY --- MY THOUGHTS ARE DRIFTING

CARD 23N

AT TIMES I'VE BEEN SO TIRED AND DISCOURAGED THAT I WENT TO SLEEP RATHER THAN FACE IMPORTANT PROBLEMS

CARD 24N

MY LIFE IS SO TIRESOME --- THE SAME OLD THING DAY AFTER DAY DEPRESSES ME

CARD 25N

I COULDN'T REMEMBER THINGS WELL RIGHT NOW IF I HAD TO

CARD 26N

I JUST CAN'T MAKE UP MY MIND; IT'S SO HARD TO MAKE SIMPLE DECISIONS

CARD 27N

I WANT TO GO TO SLEEP --- I FEEL LIKE JUST CLOSING MY EYES AND GOING TO SLEEP RIGHT HERE

CARD 28N

I'M NOT VERY ALERT; I FEEL LISTLESS AND VAGUELY SAD

CARD 29N

I'VE DOUBTED THAT I'M A WORTHWHILE PERSON

CARD 30N

I FEEL WORN OUT --- MY HEALTH MAY NOT BE AS GOOD AS IT'S SUPPOSED TO BE

CARD 31N

IT OFTEN SEEMS THAT NO MATTER HOW HARD I TRY, THINGS STILL GO WRONG

CARD 32N

I'VE NOTICED THAT NO ONE SEEMS TO REALLY UNDERSTAND OR CARE WHEN I COMPLAIN OR FEEL UNHAPPY

CARD 33N

I'M UNCERTAIN ABOUT MY FUTURE

CARD 34N

I'M DISCOURAGED AND UNHAPPY ABOUT MYSELF

CARD 35N

I'VE LAIN AWAKE AT NIGHT WORRYING SO LONG THAT I HATED MYSELF

CARD 36N

THINGS ARE WORSE NOW THAN WHEN I WAS YOUNGER

CARD 37N

THE WAY I FEEL NOW, THE FUTURE LOOKS BORING AND HOPELESS

CARD 38N

MY PARENTS NEVER REALLY TRIED TO UNDERSTAND ME

CARD 39N

SOME VERY IMPORTANT DECISIONS ARE ALMOST IMPOSSIBLE FOR ME TO MAKE

CARD 40N

I FEEL TIRED AND DEPRESSED; I DON'T FEEL LIKE WORKING ON THE THINGS I KNOW I MUST GET DONE

CARD 41N

I FEEL HORRIBLY GUILTY ABOUT HOW I'VE TREATED MY PARENTS AT TIMES

CARD 42N

I HAVE THE FEELING THAT I JUST CAN'T REACH PEOPLE

CARD 43N

THINGS ARE EASIER AND BETTER FOR OTHER PEOPLE THAN FOR ME, I FEEL LIKE THERE'S NO USE IN TRYING AGAIN

CARD 44N

OFTEN PEOPLE MAKE ME VERY UPSET --- I DON'T LIKE TO BE AROUND THEM

CARD 45N

IT TAKES TOO MUCH EFFORT TO CONVINCE PEOPLE OF ANYTHING --- THERE'S NO POINT IN TRYING

CARD 46N

I FAIL IN COMMUNICATING WITH PEOPLE ABOUT MY PROBLEMS

CARD 47N

IT'S SO DISCOURAGING THE WAY PEOPLE DON'T REALLY LISTEN TO ME

CARD 48N

I'VE FELT SO ALONE BEFORE, THAT I COULD HAVE CRIED

CARD 49N

SOMETIMES I'VE WISHED I COULD DIE

CARD 50N

MY THOUGHTS ARE SO SLOW AND DOWNCAST --- I DON'T WANT TO THINK OR TALK

CARD 51N

I JUST DON'T CARE ABOUT ANYTHING --- LIFE JUST ISN'T ANY FUN

CARD 52N

LIFE SEEMS TOO MUCH FOR ME ANYHOW --- MY EFFORTS ARE WASTED

CARD 53N

I'M SO TIRED

CARD 54N

I DON'T CONCENTRATE OR MOVE --- I JUST WANT TO FORGET ABOUT EVERYTHING

CARD 55N

I HAVE TOO MANY BAD THINGS IN MY LIFE

CARD 56N

EVERYTHING SEEMS UTTERLY FUTILE AND EMPTY

CARD 57N

I FEEL DIZZY AND FAINT --- I NEED TO PUT MY HEAD DOWN AND NOT MOVE

CARD 58N

I DON'T WANT TO DO ANYTHING

CARD 59N

ALL OF THE UNHAPPINESS OF MY PAST LIFE IS TAKING POSSESSION OF ME

CARD 60N

I WANT TO GO TO SLEEP AND NEVER WAKE UP

Appendix B

Velten mood-statements for elation induction subjects

CARD 1P

TODAY IS NEITHER BETTER NOR WORSE THAN ANY OTHER DAY

CARD 2P

I DO FEEL PRETTY GOOD TODAY, THOUGH

CARD 3P

I FEEL LIGHT-HEARTED

CARD 4P

THIS MIGHT TURN OUT TO HAVE BEEN ONE OF MY GOOD DAYS

CARD 5P

IF YOUR ATTITUDE IS GOOD, THEN THINGS ARE GOOD, AND MY ATTITUDE IS GOOD

CARD 6P

I'VE CERTAINLY GOT ENERGY AND SELF-CONFIDENCE TO SPARE

CARD 7P

I FEEL CHEERFUL AND LIVELY

CARD 8P

ON THE WHOLE, I HAVE VERY LITTLE DIFFICULTY IN THINKING CLEARLY

CARD 9P

MY PARENTS ARE PRETTY PROUD OF ME MOST OF THE TIME

CARD 10P

I'M GLAD I'M IN UNIVERSITY --- IT'S THE KEY TO SUCCESS NOWADAYS

CARD 11P

FOR THE REST OF THE DAY, I BET THINGS WILL GO REALLY WELL

CARD 12P

I'M PLEASED THAT MOST PEOPLE ARE SO FRIENDLY TO ME

CARD 13P

MY JUDGEMENT ABOUT MOST THINGS IS SOUND

CARD 14P

IT'S ENCOURAGING THAT AS I GET FARTHER INTO MY MAJOR, IT'S GOING TO TAKE LESS STUDY TO GET GOOD GRADES

CARD 15P

I'M FULL OF ENERGY AND AMBITION --- I FEEL LIKE I COULD GO A LONG TIME WITHOUT SLEEP

CARD 16P

THIS IS ONE OF THOSE DAYS WHEN I CAN GRIND OUT SCHOOL WORK WITH PRACTICALLY NO EFFORT AT ALL

CARD 17P

MY JUDGEMENT IS KEEN AND PRECISE TODAY JUST LET SOMEONE TRY TO PUT SOMETHING OVER ON ME

CARD 18P

WHEN I WANT TO, I CAN MAKE FRIENDS EXTREMELY EASILY

CARD 19P

IF I SET MY MIND TO IT, I CAN MAKE THINGS TURN OUT FINE

CARD 20P

I FEEL ENTHUSIASTIC AND CONFIDENT NOW

CARD 21P

THERE SHOULD BE OPPORTUNITY FOR A LOT OF GOOD TIMES COMING ALONG

CARD 22P

MY FAVORITE SONG KEEPS GOING THROUGH MY HEAD

CARD 23P

SOME OF MY FRIENDS ARE SO LIVELY AND OPTIMISTIC

CARD 24P

I FEEL TALKATIVE --- I FEEL LIKE TALKING TO ALMOST ANYBODY

CARD 25P

I'M FULL OF ENERGY, AND AM REALLY GETTING TO LIKE THE THINGS I'M DOING ON CAMPUS

CARD 26P

I'M ABLE TO DO THINGS ACCURATELY AND EFFICIENTLY

CARD 27P

I KNOW GOOD AND WELL THAT I CAN ACHIEVE THE GOALS I SET

CARD 28P

NOW THAT IT OCCURS TO ME, MOST OF THE THINGS THAT HAVE DEPRESSED ME WOULDN'T HAVE IF I'D JUST HAD THE RIGHT ATTITUDE

CARD 29P

I HAVE A SENSE OF POWER AND VIGOUR

CARD 30P

I FEEL SO VIVACIOUS AND EFFICIENT TODAY --- SITTING ON TOP OF THE WORLD

CARD 31P

IT WOULD REALLY TAKE SOMETHING TO STOP ME NOW!

CARD 32P

IN THE LONG RUN, IT'S OBVIOUS THAT THINGS HAVE GOTTEN BETTER AND BETTER DURING MY LIFE

CARD 33P

I KNOW THAT IN THE FUTURE I WON'T OVER-EMPHASIZE SO-CALLED "PROBLEMS"

CARD 34P

I'M OPTIMISTIC THAT I CAN GET ALONG VERY WELL WITH MOST OF THE PEOPLE I MEET

CARD 35P

I'M TOO ABSORBED IN THINGS TO HAVE TIME FOR WORRY

CARD 36P

I'M FEELING AMAZINGLY GOOD TODAY!

CARD 37P

I AM PARTICULARLY INVENTIVE AND RESOURCEFUL IN THIS MOOD

CARD 38P

I FEEL SUPERB! I THINK I CAN WORK TO THE BEST OF MY ABILITY

CARD 39P

THINGS LOOK GOOD --- THINGS LOOK GREAT!

CARD 40P

I FEEL THAT MANY OF MY FRIENDSHIPS WILL STICK WITH ME IN THE FUTURE

CARD 41P

I CAN FIND THE GOOD IN ALMOST ANYTHING

CARD 42P

I FEEL SO GLAD AND PLAYFUL TODAY --- I FEEL LIKE SURPRISING SOMEONE BY TELLING A SILLY JOKE

CARD 43P

I FEEL AN EXHILARATING ANIMATION IN ALL THAT I DO

CARD 44P

I FEEL HIGHLY PERCEPTIVE AND REFRESHED

CARD 45P

MY MEMORY IS IN RARE FORM TODAY

CARD 46P

IN A BUOYANT MOOD LIKE THIS ONE, I CAN WORK FAST AND DO IT RIGHT THE FIRST TIME

CARD 47P

I CAN CONCENTRATE HARD ON ANYTHING I DO

CARD 48P

MY THINKING IS CLEAR AND RAPID

CARD 49P

LIFE IS SO MUCH FUN; IT SEEMS TO OFFER SO MANY SOURCES OF FULFILLMENT

CARD 50P

THINGS WILL BE BETTER AND BETTER TODAY

CARD 51P

I CAN MAKE DECISIONS RAPIDLY AND CORRECTLY; AND I CAN DEFEND THEM AGAINST CRITICISM EASILY

CARD 52P

I FEEL INDUSTRIOUS --- I WANT SOMETHING TO DO!

CARD 53P

LIFE IS FIRMLY IN MY CONTROL

CARD 54P

I WISH SOMEBODY WOULD PLAY SOME GOOD MUSIC!

CARD 55P

THIS IS GREAT --- I REALLY DO FEEL GOOD I AM ELATED ABOUT THINGS

CARD 56P

I'M REALLY FEELING SHARP NOW

CARD 57P

THIS IS JUST ONE OF THOSE DAYS WHEN I'M READY TO GO!

CARD 58P

I FEEL LIKE BURSTING WITH LAUGHTER --- I WISH SOMEBODY

WOULD TELL A JOKE AND GIVE ME AN EXCUSE!

CARD 59P

I'M FULL OF ENERGY

CARD 60P

GOD, I FEEL GREAT!

Appendix C

Negative musical selections

Negative tape: (18 minutes 12 seconds)

1. "Sunrise: Omnia sol temperat", (time 1:55), (Manzerak, R.), 1983. A&M Records. In Carmina Burana. SP-4945. (M = 4.571, S.D. = 2.063).

2. "Philadelphia morning", (time 2:31), (Conti, B.), 1976. Liberty Records. In Rocky. CDP 7 46081 2. (M = 4.158, S.D. = 1.573).

3. "Les parfums de la nuit", (time 3:50), (Debussy), 1965. London Records. In Debussy: Images pour orchestre. Ataulfo Argenta conducts l'orchestre de la Suisse Romande. STS 15020. (M = 3.571, S.D. = 1.363).

4. "Sonata No.7 in Dmajor, Op.10, No.3: Second movement", (time 2:10), (Beethoven, L.V.), 1986. In Beethoven: Appassionata. Interpreted by Vladimir Horowitz. LSC 2366. (M = 3.286 , S.D. = 1.554).

5. "Symphony No.6 in Bminor, Pathetique", (time 2:32), (Tchaikovsky, P.I.), 1983. In Mercury Golden Imports Series. Antal Dorati conducts the London Symphony Orchestra. SRI 75031. (M = 3.105, S.D. = 1.696).

6. "Fantasy-Overture" from Romeo and Juliet, (time 2:29), (Tchaikovsky, P.I.), 1980. Phillips. In Tchaikovsky: Romeo and Juliet. Edo De Waart conducts the Amsterdam Orchestra. 9500-745. (M = 2.714, S.D. = 1.586).

Appendix D

Positive musical selections

Elated tape: (17 minutes 22 seconds)

1. "Ode to Joy", (time 2:23), (Beethoven, L.V.), 1970. Deutsche Grammophon. In Beethoven: Bohm 9 symphomien. Karl Bohm conducts the Winer Philharmonica. 2563-377. (M = 7.842, S.D. = 1.463).

2. "Le Basque", (time 1:37), (Galway, J.), 1978. RCA Records. In James Galway plays songs for Annie. KRL1-0294-A. (M = 8.190, S.D. = 2.015).

3. "The Homecoming", (time 2:35), (Hardy, H.), 1979. Attic Records Limited. In the Hagood Hardy Collection. LAT 1073. (M = 8.286, S.D. = 2.533).

4. "Overture", (omit first 0:18, record 1:37, then omit until break at 4:41, resume recording for 1:53), (Conti, B.), 1979. Capitol Records. In Rocky II, UA-LA972-1. (M = 8.263, S.D. = 1.240).

5. "Prelude: Les toreadors"' (time 2:09), (Bizet, G.), 1960. Polygram Records. In Festivo Series. Igor Markevitch conducts the Lamoureux Orchestra. 6570-107. (M = 8.714, S.D. = 1.821).

6. "The Entertainer", (time 2:29), (Joplin, S.), 1974. MCA Records. In The Sting. Conducted and adapted by Marvin Hamlisch. MCAC-37091. (M = 9.429, S.D. = 1.287).

Appendix E

Mood Questionnaire

SWB II: Name..... Phase.... Induction.....

For the following questions, please report the extent of your feeling at this moment in time on a five point scale. A "1" is used to indicate a total absence of the feeling and a "5" is used to show very high intensity.

	Not at all		Moderately		Very
1. Active	1	2	3	4	5
2. Activated	1	2	3	4	5
3. Blue	1	2	3	4	5
4. Contented	1	2	3	4	5
5. Downhearted	1	2	3	4	5
6. Energetic	1	2	3	4	5
7. Enthusiastic	1	2	3	4	5
8. Happy	1	2	3	4	5
9. Lively	1	2	3	4	5
10. Lonely	1	2	3	4	5
11. Peppy	1	2	3	4	5
12. Pleasant	1	2	3	4	5
13. Pleased	1	2	3	4	5
14. Strong	1	2	3	4	5
15. Refreshed	1	2	3	4	5
16. Vigorous	1	2	3	4	5
17. Worried	1	2	3	4	5
18. Angry	1	2	3	4	5
19. Cheerful	1	2	3	4	5
20. Sad	1	2	3	4	5
21. Satisfied	1	2	3	4	5
22. Grouchy	1	2	3	4	5
23. Peaceful	1	2	3	4	5

Appendix F

Disposition Questionnaire

SWB I: Name..... Phase..... Induction.....

The following questions are concerned with several aspects of well-being. Whenever a statement is true for you, please circle the "Y" (yes); if it is untrue for you, circle the "N" (no); if you can't decide about a question, circle the "?" (don't know).

In the past month have you ever felt:

1.	On top of the world?	Y	N	?
2.	In high spirits?	Y	N	?
3.	Particularly content with your life?	Y	N	?
4.	Lucky?	Y	N	?
5.	Very lonely or remote from people?	Y	N	?
6.	Bored?	Y	N	?
7.	Depressed or very unhappy?	Y	N	?
8.	Flustered because you didn't know what to do?	Y	N	?
9.	Bitter about the way your life has turned out?	Y	N	?
10.	Generally satisfied with the way your life has turned out?	Y	N	?

The next set of questions have to do with more general life experiences. As in the preceding set, circle the "Y" for a "yes" answer, the "N" for a "no" and the "?" for "don't know".

11.	This is the dreariest time of my life.	Y	N	?
12.	I am just as happy as when I was younger.	Y	N	?
13.	Most of the things I do are boring or monotonous.	Y	N	?
14.	The things I do are as interesting to me as they ever were.	Y	N	?
15.	As I look back on my life I am fairly well satisfied.	Y	N	?
16.	Things keep getting worse as I get older.	Y	N	?
17.	Do you often feel lonely?	Y	N	?
18.	Little things bother me more this year.	Y	N	?
19.	Do you like living in this city (town, etc.)?	Y	N	?
20.	I sometimes feel that life isn't worth living.	Y	N	?
21.	I am as happy now as I was when I was younger.	Y	N	?

22.	Life is hard for me most of the time.	Y	N	?
23.	Are you satisfied with your life today?	Y	N	?
24.	My health is at least as good as most people's my age.	Y	N	?
25.	I have as much pep as I did last year.	Y	N	?
26.	I see enough of my friends and relatives.	Y	N	?
27.	As you get older you get less useful.	Y	N	?
28.	I have a lot to be sad about.	Y	N	?
29.	People had it better in the old days.	Y	N	?
30.	I am afraid of a lot of things.	Y	N	?
31.	I get mad more often than I used to.	Y	N	?
32.	A person has to live for today and not worry about tomorrow.	Y	N	?
33.	I sometimes worry so much, I can't sleep.	Y	N	?
34.	I take things hard.	Y	N	?
35.	I get upset easily.	Y	N	?

Below are five statements that you may agree or disagree with. Using the 1 - 7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

7 = Strongly agree
6 = Agree
5 = Slightly agree
4 = Neither agree nor disagree
3 = Slightly disagree
2 = Disagree
1 = Strongly disagree

_____ (A) In most ways my life is close to my ideal.

_____ (B) The conditions of my life are excellent.

_____ (C) I am satisfied with my life.

_____ (D) So far I have gotten the important things I want in life.

_____ (E) If I could live my life over, I would change almost nothing.

Appendix G

Negative replacement statements for middle-aged and working subjects

CARD 4N

SOMETIMES I WONDER IF MY JOB IS ALL THAT WORTHWHILE

CARD 7N

TOO OFTEN I HAVE FOUND MYSELF STARING LISTLESSLY INTO THE DISTANCE, MY MIND A BLANK, WHEN I DEFINITELY SHOULD HAVE BEEN WORKING

CARD 8N

IT HAS OCCURRED TO ME MORE THAN ONCE THAT WORKING IS BASICALLY USELESS, BECAUSE YOU SPEND ALMOST EVERYTHING YOU EARN ANYWAY

CARD 12N

PERHAPS MY WORK TAKES MORE TIME AND EFFORT AND ISN'T WORTH THE MONEY EARNED

CARD 18N

I'M ASHAMED THAT I'VE CAUSED MY FAMILY MEMBERS NEEDLESS WORRY

CARD 41N

I FEEL HORRIBLY GUILTY ABOUT HOW I'VE TREATED MY FAMILY MEMBERS AT TIMES

Appendix H

Positive replacement statements for middle-aged and working subjects

CARD 9P

MY FAMILY MEMBERS ARE PRETTY PROUD OF ME MOST OF THE TIME

CARD 10P

I'M GLAD I'M PRESENTLY EMPLOYED --- IT'S SATISFYING TO BE EARNING A SALARY

CARD 14P

IT'S ENCOURAGING THAT THE LONGER I'VE BEEN AT MY JOB IT HAS GOTTEN EASIER TO FULFILL MY JOB REQUIREMENTS

CARD 16P

THIS IS ONE OF THOSE DAYS WHEN I CAN GRIND OUT MY JOB DAY WITH PRACTICALLY NO EFFORT AT ALL

CARD 25P

I'M FULL OF ENERGY, AND AM REALLY GETTING TO LIKE THE THINGS I'M DOING ON THE JOB

Appendix I

Negative replacement statements for elderly and retired subjects

CARD 4N

SOMETIMES I WONDER IF MY ACTIVITIES ARE ALL THAT WORTHWHILE

CARD 7N

TOO OFTEN I HAVE FOUND MYSELF STARING LISTLESSLY INTO THE DISTANCE, MY MIND A BLANK, WHEN I DEFINITELY SHOULD HAVE BEEN DOING SOMETHING

CARD 8N

IT HAS OCCURRED TO ME MORE THAN ONCE THAT EXERCISE IS BASICALLY USELESS, SINCE ONCE YOU STOP YOU GET OUT OF SHAPE EASILY

CARD 12N

PERHAPS MY ACTIVITIES TAKE MORE TIME AND EFFORT THAN THEY ARE WORTH

CARD 18N

I'M ASHAMED THAT I'VE CAUSED MY FAMILY MEMBERS NEEDLESS WORRY

CARD 41N

I FEEL TERRIBLY GUILTY ABOUT HOW I'VE TREATED MY FAMILY MEMBERS AT TIMES

Appendix J

Positive replacement statements for elderly and retired subjects

CARD 9P

MY FAMILY MEMBERS ARE PRETTY PROUD OF ME MOST OF THE TIME

CARD 10P

I'M GLAD THAT I'M ACTIVE --- IT'S SATISFYING TO BE ABLE TO DO THINGS

CARD 14P

IT'S ENCOURAGING THAT THE OLDER I GET, THE WISER I BECOME

CARD 16P

THIS IS ONE OF THOSE DAYS WHEN I CAN GRIND OUT MY DAY WITH PRACTICALLY NO EFFORT AT ALL

CARD 25P

I'M FULL OF ENERGY, AND AM REALLY GETTING TO LIKE THE THINGS I'M DOING

Appendix K

Mood preparatory instructions for elation and depression induction

CARD 1

PLEASE READ EACH OF THE FOLLOWING CARDS TO YOURSELF. THEN READ EACH OF THE CARDS OUT LOUD. LET'S START WITH THIS CARD. BUT TO AVOID REPETITIOUSNESS, BEGIN WITH THE STATEMENTS BELOW THE LINE OF DASHES. AFTER YOU HAVE READ WHAT FOLLOWS TO YOURSELF, READ IT ALOUD.

I WILL READ EACH OF THE FOLLOWING CARDS TO MYSELF. THEN I WILL READ EACH OF THE CARDS OUT LOUD, AND I WON'T WORRY ABOUT THE READING ERRORS WHICH OFTEN OCCUR IN UNFAMILIAR SITUATIONS.

CARD 2

IN THE FIRST PART OF THIS EXPERIMENT, I WILL BE SHOWN A SERIES OF CARDS WITH STATEMENTS TYPED ON THEM. THESE STATEMENTS REPRESENT A CERTAIN MOOD. MY SUCCESS WILL BE LARGELY A QUESTION OF MY WILLINGNESS TO BE RECEPTIVE AND RESPONSIVE TO THE IDEA IN EACH STATEMENT, AND TO ALLOW EACH IDEA TO ACT UPON ME WITHOUT INTERFERENCE. THESE IDEAS ARE CALLED SUGGESTIONS.

CARD 3

FIRST, AS EACH STATEMENT IS PLACED BEFORE ME, I WILL SIMPLY READ IT TO MYSELF, AND THEN I WILL READ IT ONCE OUT LOUD IN A MANNER APPROPRIATE TO ITS INTENDED SERIOUSNESS. THEN I'LL GO OVER EACH STATEMENT AGAIN AND AGAIN IN MY HEAD WITH THE DETERMINATION AND WILLINGNESS TO REALLY BELIEVE IT. I WILL EXPERIENCE EACH IDEA. I WILL CONCENTRATE MY FULL ATTENTION ON IT. AND I WILL EXCLUDE OTHER IDEAS WHICH ARE UNRELATED TO THE MOOD --- --- LIKE, "I'LL SEE IF THIS WILL WORK".

CARD 4

I WILL ALWAYS ATTEMPT TO RESPOND TO THE FEELING SUGGESTED BY EACH ITEM. I WILL THEN TRY TO THINK OF MYSELF WITH AS MUCH CLARITY AND REALISM AS POSSIBLE AS DEFINITELY BEING AND MOVING INTO THAT MOOD STATE.

I AM LETTING MYSELF BE RECEPTIVE TO THESE FEELINGS. DIFFERENT PEOPLE MOVE INTO MOODS IN DIFFERENT WAYS. WHATEVER INDUCES THE MOOD IN ME FASTEST AND MOST DEEPLY IS THE BEST WAY FOR ME. SOME PEOPLE SIMPLY REPEAT THE STATEMENTS OVER AND OVER AGAIN TO THEMSELVES WITH THE INTENTION OF EXPERIENCING THEM.

CARD 5

SOME PEOPLE FIND IT NATURAL AND EASY FOR THEM TO VISUALIZE A SCENE IN WHICH THEY HAD OR WOULD HAVE HAD SUCH A FEELING OR THOUGHT. OR, PERHAPS SOME EASY COMBINATION OF REPEATING THE STATEMENTS AND IMAGINING SCENES WILL COME TO ME. VERY LIKELY, I WILL BEGIN TO FEEL THE WAY I DO WHEN I'M IN THAT MOOD. I WILL CONTINUE TO CONCENTRATE MY FULL CONSCIOUSNESS ON EXPERIENCING AND RETAINING THE MOOD AS THE EXPERIMENTER PRESENTS EACH SUGGESTION. A CERTAIN AMOUNT OF TIME WILL BE DEVOTED TO EACH SUGGESTION. I WILL CONTINUE TO DISCIPLINE AND TRAIN MYSELF IN INDUCING A MOOD IN MYSELF BY CONCENTRATING MY FULL ATTENTION ON THE MOOD-STATEMENTS DURING ANY TIME INTERVAL.

CARD 6

TO SUM UP: THE PURPOSE OF THESE CARDS IS TO HELP A PERSON TALK THEMSELF INTO A MOOD. SOME OF THESE MOOD-STATEMENTS MAY HAVE NO RELATION TO ANY THING I HAVE EVER THOUGHT, SAID, OR DONE. YET, EXACTLY IN THE MANNER OF HYPNOSIS, I WILL FIND IT QUITE EASY TO ACCEPT AND FEEL THESE EMOTIONS. I WILL BE CONCENTRATING ON DOING SO, RATHER THAN COMPARING EACH SINGLE STATEMENT TO MY LIFE EXPERIENCE AND THEN DECIDING WHETHER IT APPLIES TO ME. I WILL LET AND STRIVE TO LET THEM APPLY TO ME. I CAN DO THIS.

CARD 7

I EXPERIENCE EACH STATEMENT AS IF IT WERE ESPECIALLY WRITTEN FOR ME. AT FIRST I MAY FEEL THE IMPULSE TO COMPARE A SINGLE MOOD-STATEMENT TO MY LIFE EXPERIENCE, OR TO RESIST STATEMENTS WHICH SEEM TO BE OR ARE CONTRADICTORY TO WHAT I FEEL MYSELF TO BE. BUT, MOST PEOPLE FEEL THIS AT FIRST. IT WILL BECOME APPARENT TO ME THAT IF I AM ABLE TO TALK MYSELF INTO A MOOD, THEN OBVIOUSLY I KNOW HOW TO TALK MYSELF OUT OF ONE. IF I FIND THAT I CAN DO THESE THINGS, THEN I WILL HAVE LEARNED SOMETHING VALUABLE ABOUT MYSELF: I CAN LEARN TO CONTROL MY MOODS TO AN EXTENT.

CARD 8

IF I FEEL THE URGE TO LAUGH, IT WILL PROBABLY BE BECAUSE HUMOR IS A GOOD WAY TO COUNTERACT UNWANTED FEELINGS ----- OR, IT MIGHT BE BECAUSE I AM SURPRISED THAT I REALLY AM GOING INTO THE MOOD. I WILL TRY TO AVOID THESE REACTIONS, HOWEVER, BY KEEPING IN MIND THAT I HAVE THE CHANCE OF ACQUIRING EXTREMELY USEFUL INFORMATION ABOUT MYSELF AND HOW TO HELP MYSELF OUT OF UNDESIRABLE MOODS THAT OCCUR IN EVERYDAY LIFE. IF FOR ANY REASON I FEEL I CANNOT CONTINUE, I WILL SO INDICATE.

CARD 9

THE NEXT CARD WILL BEGIN THE SERIES OF STATEMENTS. I WILL READ EACH TO MYSELF, THEN I WILL READ IT OUT LOUD. THEN I WILL TRY TO EXPERIENCE THE MOOD AS WELL AS I CAN AND CONTINUE TO DO SO AS THE EXPERIMENTER PRESENTS THE CARDS AND I MOVE FURTHER INTO THE MOOD.

Appendix L

Card #9 replacement for subjects in Velten + Music induction conditions

CARD 9

THE NEXT CARD WILL BEGIN THE SERIES OF STATEMENTS. I WILL READ EACH TO MYSELF, THEN I WILL READ IT OUT LOUD. THEN I WILL TRY TO EXPERIENCE THE MOOD AS WELL AS I CAN AND CONTINUE TO DO SO AS THE EXPERIMENTER PRESENTS THE CARDS AND I MOVE FURTHER INTO THE MOOD. WHILE I AM READING THE STATEMENTS, A TAPE CONTAINING MUSICAL SELECTIONS WILL BE PLAYING IN THE BACKGROUND TO HELP ME GET INTO THE PROPER MOOD.