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HUMOR: ANTIDOTE TO ANXIETY OR A CASE OF THE EMPEROR'S NEW  
CLOTHES?

by

David W. Snook

B.A. (Honours Psychology), University of Waterloo, 1984

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF  
THE REQUIREMENTS FOR THE DEGREE OF  
MASTER OF ARTS (EDUCATION)  
in the Department  
of  
Education

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SIMON FRASER UNIVERSITY

April 1990

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ISBN 0-315-66262-X

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## ABSTRACT

One of the most common attributions to humor is a capacity to dispel tension or anxiety. However, in the empirical literature this notion has not been well supported. A criticism of previous studies has been that they implemented measures that were too global to capture the decrements in anxiety precipitated by humor. The first portion of the study was to test for the buffering effect of humor on anxiety and to replicate this inquiry within the more circumscribed domain of scholastic stress and test anxiety. A second consideration to emerge from the literature was that the anxiety reducing quality of humor may require active humor production as opposed to passive humor perception. The goal of the second portion of the study was to test the humor production hypothesis. Three weeks prior to their final exam, 65 subjects, 16 males and 49 females, completed the first test battery comprised of the Life Experiences Survey, the Situational Humor Response Questionnaire, the Coping Humor Scale and the Reactions To Tests. Of the original sample, 63 subjects participated in the second procedure which took place immediately prior to the final exam. These subjects were randomly assigned to one of two control groups or the humor production group. The outcome variables were the Worry Emotionality Scale, a measure of Self-Efficacy, the Causal Dimension Scale, and the grade attained on the exam itself. Results from the first procedure were not supportive of humor as a buffer against anxiety.

Similarly with the second procedure, no significant group differences were found on any of the outcome variables, and the humor production hypothesis could not be supported. The study concludes with some discussion of how humor may have come to be seen as having an anxiety reducing effect when the empirical evidence suggests that this may not be the case.

## ACKNOWLEDGEMENTS

I would like to thank Adam Horvath for his support and supervision with every phase of this project. I would also like to express my gratitude and appreciation to Carey Christiansen for her love and encouragement, and for enduring the many inconveniences of having a husband in graduate school. And thanks to Roxanne for enriching my life in a thousand unexpected ways. It wasn't exactly easier to do a thesis with you in the family, but " " was certainly more fun. And finally, thanks to May Goode, both for the many weekend afternoons you spent with Roxanne, and for the interest and enthusiasm you showed in my research.



## TABLE OF CONTENTS

Approval .....	ii
ABSTRACT .....	iii
Acknowledgements .....	v
List of Tables .....	vii
I. INTRODUCTION .....	1
II. LITERATURE REVIEW .....	6
Humor and Counselling .....	6
The Nature of Humor .....	11
Humor and Well-Being .....	22
Test Anxiety .....	30
Self-Efficacy .....	31
Causal Attributions .....	32
Research Questions .....	34
III. METHOD .....	38
Subjects .....	38
Procedure .....	39
Instruments Used in the Buffering Procedure .....	41
Instruments Used in the Humor Production Procedure .....	45
Research Questions .....	46
IV. RESULTS .....	49
Descriptive Statistics .....	49
Intercorrelations Among Variables .....	53
Analysis .....	54
V. DISCUSSION .....	60
References .....	69

Appendix A: School Scenes .....	82
Appendix B: Exam Scenarios .....	85
Appendix C: Humor Rating Scale and Examples .....	88
Appendix D: Self-Efficacy Questionnaire .....	89

LIST OF TABLES

Table

Page

1. Comparison of Attained Means to Normative Means from Sarason (1984) for the Reactions To Tests (RTT) and Sub-Scales ..... 51

CHAPTER I  
INTRODUCTION

"A merry heart doeth good like medicine: but a broken spirit drieth the bones." (Proverbs 17:22)

As the quote above attests, people have been relating humor to health for millennia. In many circles the salutary benefits of a good sense of humor is treated as a given; part of a common sense understanding of the world. The sentiment is expressed well by the column in Reader's Digest, "Laughter: The best medicine". The purported benefits include improved health, both physical and mental, improved relationships, greater creativity, and reduced stress.

Within the psychological literature, there are numerous writers who similarly espouse this view. There are psychologists on the lecture circuit giving workshops to educators, medical professionals, business groups, and social workers, on how to improve their capacity for humorous interaction on the job, and in their lives generally (Goodman, 1983). The purported benefits are again numerous; improved communication among co-workers, reduced monotony, increased creativity, reduced stress, and reduced incidents of burnout (Fry & Saleme, 1987).

While traditionally humor has not always been considered appropriate for use in counselling, there is a growing body of

literature from a wide variety of theoretical orientations extolling the virtues of humorous interaction in the therapeutic process. Humor in counselling has been said to circumvent defenses, spawn insight, provide psychological distance from one's problems, influence self confidence and perhaps most common of all, to reduce stress. Interestingly, while there is a growing consensus that humor includes a salutary component, there is far less agreement on how this comes about. The empirical literature examining the mechanisms by which humor engenders health is scant and emerged only since the 1960's.

Of the numerous theories put forward to explain humor (Keith-Speigel, 1972), the model receiving the most empirical support is the cognitive incongruity model. This model, in its various renderings, posits that the essential features of humor lie in the cognitive domain. With the presentation of a joke, the recipient creates a cognitive frame for the information. With the presentation of the punch line, the recipient must reorganize or reframe the information presented in the joke narration such that the punch line fits. The humor arises from the novel resolution of the incongruity presented by the punch line.

It follows then that the salubrious aspects of humor, particularly as they may be manifest psychologically, are based on the process of incongruity resolution or reframing. People who are able to "make light" of a stressful situation are said to be able to step back from their problems, to gain perspective

or psychological distance from their concerns. The reframing of a stressful event into a humorous mode may provide alternative frames for interpreting situational demands, assessing potential coping strategies, and anticipating the consequences of good and bad performance. Indeed, there is some evidence to suggest that those who report a greater use of humor cope better with stress and experience lower levels of discomfort when confronted by stressful events (Nezu, Nezu & Blisset, 1987; Martin & Lefcourt, 1983). However, while a commonly stated attribute of humor is a stress reducing quality, studies that have specifically addressed the effect of humor as a buffer for stress or anxiety have generally not been supportive of this hypothesis. These investigations follow a similar format. An initial assessment is made of the subjects' levels of negative life stress, as increased levels of negative life stress generally coincide with increased reports of subjective distress. A measure is then made of the subjects' use of humor, and this is then used to test whether humor mitigates or buffers the distress arising from negative life stress. As previous investigations have tended to employ global measures of life stress and trait measures of anxiety, a goal of the current study was to test whether humor could buffer the stress accruing from negative life experiences, but in the more circumscribed domain of scholastic life stress and exam anxiety. Therefore, the first research question posed was whether a sense of humor could act as a buffer for the distress arising from scholastic life stress as manifested on a measure of test anxiety.

A second consideration that has emerged in the literature is the distinction between humor perception and humor production. It has been suggested that for humor to be effective as an anxiety reducing activity, humor must be actively created, as opposed to the passive perception of humor. Previous investigations of the effect of humor on exam anxiety have been predicated on humor perception, and generally have yielded equivocal results. A second goal of the present study was to test whether students who actively produced humor prior to writing a final exam exhibited reduced levels of exam anxiety. As it has been suggested that humor can reframe a stressful task from a "threat" to a "challenge" (Dixon, 1980), it was anticipated that students who engaged in humor production would exhibit a profile of responses on the measures of exam anxiety, self-confidence, and attributions that reflected this beneficial transformation. More specifically, students who actively created humor about an impending exam were anticipated to score lower on a measure of exam anxiety, to report higher levels of self-confidence in their abilities to control their level of exam anxiety, and to make attributions that indicated a greater sense of efficaciousness. Finally, should the intervention prove particularly effective, these subjects were anticipated to score higher on the exam as well.

The study involved data collection on two separate occasions, one for each of the research questions. The Buffering Procedure was designed to test for the buffering effect of humor

on test anxiety. For the Buffering Procedure, all subjects completed identical test protocols and did so three weeks prior to their respective final exams. The Humor Production Procedure was designed to test the humor production hypothesis. Subjects were assigned to one of three groups, one of which was a humor production group, and completed this portion of the study immediately prior to writing their final exam.

The first chapter of this document provides a general overview and orientation to the study. Chapter Two provides a review of the relevant literature on humor as well as the constructs utilized as outcome variables. Chapter Three presents the methodology of the study and introduces the measuring instruments, while Chapter Four presents the results. Finally, Chapter Five provides a discussion of the results in terms of the stated hypotheses and goals of the study.



CHAPTER II  
LITERATURE REVIEW

Humor and Counselling

Numerous counsellors have written from a variety of theoretical positions of the salutary benefits arising from the utilization of humor. These authors have written from orientations as diverse as behavior therapy (Ventis, 1987), Adlerian therapy (Olsen, 1976), family therapy (Madaness, 1987), and rational emotive therapy (Ellis, 1977). This literature was further extended in 1987 with the publication of the Handbook of Humor and Psychotherapy (Fry & Salameh, 1987), a text devoted entirely to applications of humor to therapy. While there have been detractors (see Kubie, 1971), the accolades have been considerably more numerous. Indicative of this, Cade (1986) writes:

The effectiveness of humor for facilitating the development of a relationship, for putting people at their ease, for de-fusing tension, and for creating a distance between a person and the source of his or her distress is well recognized by most therapists. (p.65)

The acceptance of humor as an admissible style of interaction within the therapeutic milieu has paralleled a shift in society at large. It is only within the last hundred years or so that laughter in public has been considered socially acceptable (Goldstein, 1982). It has been more recently still that humor has come to be seen as having not only potentially

health engendering properties, but as an essential feature of the healthy personality (Greenwald, 1977; Mindess, 1976; Olson, 1976; Salameh, 1983).

It would seem natural that some therapists would come to view humor within therapy as a desirable event. Some have devised therapies in which humor plays a pivotal and integral part (Farrelly & Matthews, 1981; O'Connell, 1981). Albert Ellis (1977), in an article provocatively titled "Fun as Psychotherapy", provides a list of 10 advantages to be garnered through the inclusion of humor in psychotherapy. Indeed, it is the provocative aspect of humor, the affront to commonplace sensibilities, that is an often cited therapeutic ingredient in the humorous experience (Fabry, 1982). An additional benefit of using humor is that it provides an opportunity for the therapist to model a healthy attitude to life's exigencies (Olson, 1976). While a sense of humor is not likely to dispel all difficulties, a developed sense of humor helps mitigate the potentially self-defeating "deadly seriousness" that sometimes accompanies seemingly intractable problems.

Humor generated by the client has similarly been thought to have a beneficial connotation. A number of authors have posited that a goal of therapy is for the client to recover his or her sense of humor (Ellis, 1977; Greenwald, 1987). Olson (1976), in a similar vein considers the re-emergence of the client's sense of humor a criterion of success for therapy. Ventis (1987) writes, "the ability to see humor in a context previously viewed

as more exclusively fearful or aversive may denote an increment in self-efficacy" (p.155). Self-efficacy in this context refers to a marker of positive client change. The occurrence of humor in therapy seems to be supported by the testimonials of numerous therapists. However, by and large this support is based on casual observation, case studies, and intuition.

The research on humor in therapy has tended to have been exploratory or descriptive in nature. Killinger (1977, 1987) examined patterns of humorous interactions throughout the course of therapy, but did not make outcome comparisons. Similarly, Gervaise, Mahrer, and Markow (1985) and Maher and Gervaise (1984) have investigated types of syntactic constructions to elicit humor in therapy, and therapists' statements that preceded incidents of laughter, again without outcome measures to test for the effectiveness of the humorous intervention. Rosenheim and Golan (1986) tested patients with various diagnoses, for their preference for humorous or non-humorous counselor/client interactions, but did not relate this to outcome in therapy. Rule's (1977) report of an intervention based on the application of humor found a change in subjects' reports of self/other attitudes. However, the subjects were students, not therapy clients, and there was no control group. Prerost (1984) reported on an effective intervention with a single adolescent girl using what he calls the Humorous Imagery Situation Technique. Although his results were encouraging, generalization is limited. While long term therapeutic benefits

from humor in therapy have yet to be demonstrated, the use of humor in counselling can also be approached on a less global, more strategic level as well (Young, 1988).

Strategic uses of humor in therapy. Perhaps the most common strategic goal of using humor in therapy is to help the client to consider the problem from an alternative perspective (Fry & Salameh, 1987). Reframing dire circumstances into an opportunity for humor is thought to provide for a shift on both cognitive and affective levels. This shift has been discussed from the perspective of paradoxical interventions (Fabry, 1982; Lamb, 1980; Lukas, 1982), as a change in metaphorical interpretations (Kuhlman, 1984), as an opportunity for the re-assertion of the pleasure principle (Grossman, 1977; Kline, 1977), or within Koestler's (1976) framework of "bisociation", the pairing of two previously perceived incompatible concepts (Hickson, 1977; Sands, 1984; Ventis, 1987). Other writers have described the impact of humor in terms of enhancing mental flexibility and the interruption of stereotypic thought patterns (Dixon, Willingham, Chandler, & McDougal, 1984; Ellis, 1977; Prerost, 1984). Similarly, humor has been likened to creativity or the creative process (Cade, 1982; Koestler, 1976; Ziv, 1983). Numerous authors have noted how the humorous attitude, play and creativity seem to be closely aligned (Greenwald, 1987; Salameh, 1983; Sands, 1984). Levine (1977) and Olson (1976) suggest that humor provides an opportunity for the client to experience a sense of mastery over one's circumstances, that may contrast

with the client's pervading feelings of guilt and failure. Additionally, other authors have discussed this effect of humor as providing the client with psychological distance from the problem (Lamb, 1980; Rosenheim & Golan, 1986).

Within the psychoanalytic tradition, humor has been described as a vehicle for inducing insight (Kuhlman, 1984; Nagaraja, 1985). The similarity of "joke work" and dream mechanisms have been noted by Freud (1960). This provides an opportunity for the psychotherapist to use the client's humor in an interpretive fashion, in much the same manner that dreams provide an indication of repressed conflict (Kuhlman, 1984). An additional facet to this approach has been suggested by Grossman (1977). He suggests utilizing the client's favorite joke as a projective technique, to reveal underlying concerns.

One of the most common of all strategic applications for humor is the purported capacity humor has to reduce tension or anxiety. Greenwald (1987) describes this function of humor as facilitating a non-threatening interpretation of events. Ellis (1977) also suggests that humor is an anxiety reducing activity in its own right. Levine (1977) presents the notion that laughter and humor are part of the "freedom to play", and contrary to the experience of tension or anxiety. Hickson (1977), Mindess (1976), and Ventis (1987) have all suggested that the experience of humor is antithetical to the experience of anxiety. The capacity of humor to "de-fuse tension" has received wide anecdotal support (Cade, 1986), yet it should be

noted that this purported benefit still awaits empirical substantiation. While studies of physiological concomitants of laughter generally support the notion of subsequent arousal reduction over the short term, long term benefits have not been as clearly delineated (Goldstein, 1982).

From the foregoing discussion, it can be seen that the use of humor in therapy has been considered from a number of perspectives. Humor has been discussed as a feature of the healthy personality, as a lifestyle to be modeled by the therapist, and as a marker of successful client change. A variety of strategic applications of humor in therapy have also been suggested, which have included humor as reframing a problematic situation, humor as a vehicle for insight, and humor as a technique for dispelling tension. A literature describing the impact of humor in therapy is emerging, however the more primary question of how these effects come about has not been addressed. A better understanding of the nature of humor itself may provide insight into how humor can seemingly operate in so many diverse yet salutary ways.

### The Nature of Humor

A distinction needs to be drawn between humor and laughter. While the two are obviously closely aligned, it is also true that people experience humor in the absence of laughter, and laugh in the absence of humor. For this review of theories of

humor, laughter will be considered a secondary, concomitant feature of the humorous experience.

There has been an abundance of theories developed to account for the experience of humor. It has been suggested by Eysenck (1942) that these can be seen to vary by the degree to which they emphasize the cognitive, affective, or conative features of the humorous experience. Overall, the older theories tend to emphasize affective and conative features, while the newer empirical trend is focused more on the cognitive features.

Contemporary empirical work supports a tripartite typology of humor theories as well, but with a shift in emphasis from Eysenck's (1942) formulation. In a large factor analytic study of humor, Wicker, Thorelli, Barron and Ponder (1981) found humor to load on three factors which they labelled emotionality, superiority and incongruity resolution. For the purposes of this review a three way classification system will be used as well, modelled after the work of Wicker et al. (1981). The term superiority will be retained for the first class of humor theories to be presented. The second class of humor theories to be presented will be denoted by the more general term arousal theories rather than emotionality. The term incongruity resolution will likewise be replaced with the more general term of cognitive theories. It should be noted that the theories presented within any of the classifications are grouped on the basis of which features of the humorous experience are most emphasized, and does not indicate that other aspects of humor

are unaccounted for.

Superiority theories. Superiority based theories of humor have a long history. The classical Greek and Roman scholars understood humor to be based in infirmity and deformity (Gregory, 1987), and this view persisted for many centuries. Aristotle, Plato, Hobbes and Rousseau have all written on humor, and all focused on the derisive qualities of laughter and how it is directed towards ugliness, deformity and infirmity (Lefcourt & Martin, 1986). Hobbes described humor as laughter in triumph, a "sudden-glory" in comparison to others' folly, weakness or stupidity (Keith-Spiegel, 1972). There is current, empirically based work as well that supports the classification of at least some forms of humor expressions as superiority based (Wicker et al., 1981; Wilson, 1979; Zillman, 1983).

However, superiority humor is most likely expressed within a social context and as such can be understood as a form of communication, a tool of social interaction and influence. Giles, Bourhis, Gadfield, Davies and Davies (1976) have suggested there are four reasons a person might decide to encode humor, two of which are in accord with superiority types of humor, i.e. geared to concerns of the social status of self or others. Krane, Suls and Tedeschi (1977) provide a schema of five functions of humorous expressions, again two of which are the social enhancement of self, and social slighting of others. Further evidence of the social status orientation of superiority humor can be seen in the effect of one's relationship with



either the protagonist or the target of the joke, on the perceived humorousness of the statement. In general, if one holds a positive estimation of the joke presenter, or a negative attitude towards the subject of the joke, the humorousness will be enhanced (Giles et al., 1976; Krane et al., 1977; Suls, 1977; Zillman, 1983). The converse also holds; a joke recipient who sympathizes with the disparaged party, or dislikes the joke presenter, may not interpret the communication as funny.

Superiority humor is also bound by considerations of taste and morality. Jokes that are overly cruel, or too-malicious, or expressions of extreme brutality, seem to impair humor appreciation, even when pitted against resented victims (Cantor & Zillman, 1973). So it seems that, while superiority humor may be humor with a barb, it is a barb with practical applications in the affairs of daily interaction, and as such, is replete with social ramifications, as well as socially prescribed restraints.

Contrary to the historical view of humor, Suls (1977) has noted that not all humor is based on disparagement, nor are all disparaging statements likely to be considered humorous, even given the foregoing qualifiers. People frequently engage in activities geared to concerns of social status. People with more active social orientations also engage in more humor (Lefcourt, Sordani & Sordani, 1974; McGhee, Bell & Duffy, 1986; Turner, 1980). That humor would be a popular style of communication for matters of social commerce is perhaps more a reflection of the

✓ subtlety and flexibility of humor than any malice integral to humor itself. Indeed, Suls (1977) has suggested that humorous disparagement still requires the presentation of, and subsequent resolution of an incongruity.

While superiority based theories of humor have a long history, this classification can be understood to stem from a focus on the content and application of humorous communication, rather than representative of the essence of humor itself. As has been noted, for a disparaging statement to be humorous, it must meet the requirement of the presentation and resolution of an incongruity (Suls, 1977). That superiority humor is embedded within a social milieu is further evidenced by the manner in which humor perception is circumscribed by the relationships among the joking group members, and considerations of taste. Superiority based humor theories do not seem to provide a comprehensive accounting of the nature of humor.

Arousal theories. Of the older theoretical offerings, perhaps the most germane to this review is the work of Freud (1905, 1928). Freud made a distinction among jokes and wit, the comic, and humor, each of which he posited as a unique manifestation of mirth. It would seem that all three types of Freudian mirth were predicated on the same process, a savings in psychic energy that is expressed through laughter and pleasure. This savings in psychic energy is made possible through the various techniques referred to as "jokework" (Freud, 1905). Through the application of jokework, material that would

normally be repressed is rendered palatable to the censor and is allowed to be expressed. The energy normally required to repress these sexual and aggressive themes then becomes superfluous and is released through merriment.

Although other authors have provided theoretical formulations that could be construed as providing support for an energy release model of humor (Khulman, 1985; Koestler, 1976; Wilson, 1979), empirical support has been equivocal. Berlyne (1972) notes that modern day understandings of the workings of the nervous system do not support the notion of a build up and release of nervous energy. Berlyne instead proposed a physiologically based theory of the pleasure-giving potential for humor. This model described a cycle of increased arousal, i.e. arousal boost, with the presentation of an incongruity, followed by an arousal reduction, i.e. arousal jag, once the punch line is delivered and the incongruity is resolved. The pleasure is derived from the sudden change in arousal level. The arousal boost/jag cycle has been observed in studies with humans and animals to have pleasure giving potential. Humor is unique however in the brevity of the cycle. Berlyne (1972) speculated that the suddenness of the sequence in the arousal boost/jag cycle may act to intensify the pleasure experienced with humor.

A considerable body of empirical studies exist testing Berlyne's arousal based formulation of humor. Overall, Berlyne's model has not been well supported, or rather, instances of humor have been noted to coincide with increased arousal, as in the

arousal boost segment of Berlyne's model, but support for the arousal jag has not been forthcoming (Deckers & Hricik, 1984; Goldstein, 1982; Lefcourt & Martin, 1986; McGhee, 1983).

Increased arousal within a humor conducive context has been shown to lead to elevated reports of amusement (Cantor, Bryant, & Zillman, 1974; Schacter & Wheeler, 1962). Rothbart (1976) has proposed an arousal/safety model to account for the contextual factors in eliciting humor. She suggests that any stimulus that is sudden, intense and/or highly incongruous could result in fear, curiosity, problem-solving behavior or humor, depending on the state of the recipient and the context. Humor requires that the recipient perceive the situation as safe, and that a cue be given that this is for fun. It would seem then that the humorous experience coincides with a state of physiological arousal, within a situational context conducive to a playful interpretation. However the question remains, is arousal elemental to the humorous experience, or is it an associated phenomenon?

In a well executed piece of research, Gavanski (1986) addressed this issue. It is a well known phenomenon that repeated presentations of the same joke result in decreases in experienced amusement. Gavanski demonstrated that while subjective amusement declined on repeated exposures, assessed humorousness was unaffected. In other words, while physiological and affective responses likely contribute to the amusement one experiences, particularly on the initial presentation of a

joke, the humorousness of the material per se is not dependent on the experience of arousal. He suggests instead that cognitive factors likely form the basis for humor. Similarly, in the factor analytic study by Wicker et al. (1981), while humorousness was found to load on the three factors, emotionality, incongruity resolution, and superiority, incongruity resolution was found to mediate the effects of emotionality on humorousness.

It would seem that while arousal may contribute to the experience of mirth, the essential features of the humorous experience appear to lie in the cognitive factors. Interestingly, while Kuhlman (1984, 1985) has expressed a psychodynamic orientation, he has suggested a reinterpretation of Freud's position. Repressed material may be expressed in many guises, not all of which are humorous. Rather than focus on the sexual or aggressive content of the joke, he suggests that humor stems from a violation of phenomenal expectations, or social taboos, done in a safe, playful setting. As will be seen, this interpretation of the humor process is very much in accord with cognitive theories of humor.

Cognitive theories. Currently, the cognitive orientation to humor is the most pervasive in the theoretical literature and in experimental work. While a variety of terms have been offered to delineate the key features of the various cognitive theories of humor (Kieth-Spiegel, 1972), the term most commonly used is incongruity. In the Oxford Companion to the Mind (Gregory,

1987). incongruity is described as a discrepancy between what was perceived and what was expected, and is considered to be a necessary condition for humor to occur. Generally, humor theorists and researchers contend that both an incongruity and its subsequent resolution are essential to the humorous experience. Suls (1983) described the process as "akin to problem solving, but it appears much faster, almost automatic - more like viewing the Necker cube from a different perspective or an insight experience, than solving a crossword" (p.43). Suls concluded that the weight of evidence supports the incongruity resolution model of humor. Similar conclusions have been reached in reviews by Shultz (1976), Wilson (1979), McGhee (1977; 1983) and Gregory (1987).

Crosscultural studies by Shultz (1977), examining the structure of humor in eastern and western literate and non-literate societies likewise reported that while humor content varied among cultures, the structural features seemed consistent, i.e. an incongruity followed by a resolution. The factor analytic study by Wicker et al., (1981), also found results supportive of an incongruity resolution model of humor. Developmental studies of humor generally support the incongruity resolution model as well. While children under the age of 6 - 9 years seem to appreciate humor that is comprised solely of incongruity, once this age has been surpassed, children's humor comes to resemble adult humor and is then based on incongruity with resolution (McGhee, 1977; Shultz, 1976; Suls, 1983).

Similarly, Rothbart and Pien (1977) suggested that while incongruity alone may contribute to one's amusement, incongruity with resolution provides the lion's share of input to the humor experience.

Returning for the moment to material presented in the previous two sections, there is additional support for cognitive models of humor. A perusal of the mechanisms Freud (1905) presented as part of the jokework, reveals a variety of essentially cognitive manipulations (eg. indirect representation, displacement, condensation). To an even greater extent, his work Humour (Freud, 1928) is confluent with the cognitive models, based as it is on frame shifting, choosing to view potentially dire circumstances as an opportunity for a jest. Berlyne's (1972) work, while focused on arousal, nevertheless posited an incongruity with a subsequent resolution as the triggering mechanism of the arousal boost/jag cycle. Similarly with superiority humor, certainly not all disparaging statements are funny. Even given favorable social circumstances, for the statement to be humorous requires the delivery and subsequent resolution of some sort of an incongruity (Suls, 1977).

A difficulty for the incongruity resolution model has been how to differentiate humor from problem solving or riddles. There are a number of qualifying conditions besides its resolution that must be met for an incongruity to result in humor. It has been suggested that in addition to the joke

material, a play cue must be given to cue the recipient that this is for fun, and to invoke a playful mental set (Rothbart, 1976). Rothbart and Pien (1977) suggest that the joke recipient's role involves the willing suspension of disbelief and the acceptance of impossible incongruities for the purposes of enjoying the joke. In like manner, McGhee (1977) presents two corollaries to the humorous incongruity; a play cue, and a style of processing discrepant information characterized by a "make-believe" interpretation. Suls (1983) has stated that the purpose of the play cue is to invoke a fantasy set, which permits illogical resolutions. It would seem then, that one requisite condition for differentiating humorous incongruities from riddles and problem solving is the delivery of a play cue. The play cue signals the joke recipient to adopt a fantasy set, or playful orientation. This allows for make-believe resolutions to the incongruity, greatly expanding the range of possible resolutions beyond the linear requirements for problems and riddles.

A second qualifying feature of humorous incongruity resolution relates to the length of time required to resolve the incongruity. Generally, jokes that require longer periods of time to solve the incongruity, referred to as long time-span humor, are perceived to be less humorous (Wilson, 1979). Addressing this point, McGhee (1977) writes, "prerequisite for all forms of incongruity based humor is a high level of mastery over the stimulus elements which compose the incongruity"



(p.30). Otherwise, the resolution becomes too effortful, and mirth is attenuated.

Within an information processing framework, this effect has also been described in terms of the degree of complexity of the resolution. The effect of joke complexity on humorousness has been described with an inverted-U shaped curve (Suls, 1972; 1983). An overly simple joke lacks sufficient incongruity to stimulate intrigue, and the punch line may even be anticipated, whereas a joke that requires too much effort to resolve ceases to be funny, and becomes a riddle or problem to be solved.

In summary, for an incongruity resolution to be experienced as humor requires that two conditions be met. First, there must be the delivery of a play cue to signal the recipient to adopt an appropriate mental set. Second, the incongruity resolution must be sufficiently complex to allow for the generation of some arousal without being so effortful that resolution requires a long time-span, thereby impairing the humor. As anyone who has ever not gotten a joke knows, having the joke explained resolves the riddle, but misses the mark as far as humor goes.

#### Humor and Well-Being

It is becoming increasingly well accepted that humor may play a role in maintaining health. Concurring with the cognitive models of humor, O'Connell (1976) has described a person with a developed sense of humor as "skilled in rapid

perceptual-cognitive switches in frames of reference" (p.327). It follows then, that the purported benefits of humor to one's well-being stem from the mental act of frame switching such that situational characteristics are reinterpreted, usually in a more benign fashion.

A cognitive model of humor appears to be in accord with theoretical understandings of the promotion of well-being. The role of situational assessment has been recognized by researchers and theorists interested in stress and coping. Of particular interest here is the work of Antonovsky (1979). He points out that the normative response of an organism to a stressor is tension, but whether this tension be drink or poison depends, among other things, on the available repertoire of coping resources and the assessment of the situation itself. The power of humor to yield perspective on a situation (Hickson, 1977), to provide distance from one's problems (Frankl, 1969), or to reassert one's mastery over the environment (Levine, 1977), may indeed lie in the reframing of stressors in a manner confluent with a health engendering orientation. I turn now to the empirical research addressing humor and well-being.

Empirical tests of the relationship between humor and health. Empirical tests of the relationship of humor with health have only recently appeared. Cousin's (1979) anecdotal account of his recovery from a debilitating illness with the application of humor and megavitamins perhaps represents the first such piece of evidence. Other authors have examined the effects of

humor and laughter, and have reported links to increased production of catecholamines and endorphins (Robinson, 1983), increased levels of immunoglobulin A, a salivary immune system product (Dillon, Minchoff & Baker, 1985), and pain inhibition (Smith, 1986).

Within the psychological literature, empirically based efforts to delineate this relationship did not appear until the 1980's (Porterfield, 1987). The bulk of articles published to date follow a very similar cross-sectional design. An assessment is made of each subject's life stress, sense of humor, and as a dependent variable, level of psychological distress. Various correlational analyses are then conducted to test for the hypothesized buffering effects of a sense of humor on the distress accruing from negative life experiences. Despite the similarities in methodology, the results of the handful of published studies have been quite equivocal. Safranek and Schill (1982) published the first such empirical investigation. They assessed their subjects' use and appreciation of humor, ambient life stress, and their psychological distress as measured by the Beck Depression Inventory and the State Trait Anxiety Inventory. It was concluded that neither humor use nor appreciation acted to moderate the effects of negative life stress. As neither humor use nor appreciation related to subjective levels of distress, Schill and O'Laughlin (1984), in a subsequent replication, tested if preference for type of humor might be related to stress reduction. The only significant relationship

they found was that male subjects with low Beck Depression Inventory scores preferred sexual humor over other types of jokes.

Martin and Lefcourt (1983, 1984) published a pair of articles providing support for the stress buffering role of humor. The 1983 article in particular provides robust support for the stress buffering hypothesis, presenting data from three separate experiments. The first of these follows a cross-sectional design analogous to Safranek & Schill's (1982) methodology. The only variation was their choice of a dependent measure; they used the Profile Of Mood States. Martin and Lefcourt (1983) reported a significant buffering effect of humor on negative life stress. The second and third studies reported in the article both involved a similar design with the addition of two features; subjects were required to actively create humor, and to do so in an experimentally induced stressful situation. Again, their results were supportive of the stress moderating role of humor. Trice (1985) and Trice and Price-Greathouse (1986) have also provided support for Martin and Lefcourt's work with simpler correlational studies, utilizing experimentally induced "helplessness" and its alleviation with humor, and subjects waiting for dental work, respectively.

The Martin and Lefcourt (1983, 1984) articles are also noteworthy as they introduce two humor measures, the Coping Humor Scale (Martin & Lefcourt, 1983), and the Situational Humor

Response Questionnaire (Martin & Lefcourt, 1984), which have since come to be the benchmark humor assessment instruments. The 7 item Coping Humor Scale is geared specifically to assessing respondents' use of humor to cope with stressful situations, while the lengthier Situational Humor Response Questionnaire introduced in the 1984 article with three supporting validity studies, is a more general measure of sense of humor. One or both of these instruments were used as the humor measure for all of the following studies testing the buffering effects of humor.

Other researchers investigating the stress buffering potential of humor have also used cross-sectional designs. Porterfield (1987) replicated Martin and Lefcourt's (1983) study with a larger sample, and a depression measure for a dependent variable. He found no support for a buffering effect of sense of humor. Instead, his findings suggested that sense of humor directly mitigates depression, rather than assists individuals to cope with stressful life events. Labott and Martin (1987) similarly tested for the stress moderating effects of humor, using a large sample and the Profile Of Mood States as a dependent measure. They report that humor coping (as measured on the Coping Humor Scale) did buffer the effects of negative events upon mood disturbance. Nezu, Nezu and Blissett (1988) assessed the buffering effects of humor on both depression and anxiety, using the Beck Depression Inventory and the State Trait Anxiety Inventory. Contrary to Safranek and Schill (1982), they found support for the buffering role of humor on the depression

measure. However, in accord with Safranek and Schill; there was no evidence to support this relationship on the anxiety scale. Nezu et al. (1988) suggest a number of possible reasons for this differentiation. Prominent among these was the notion that there may have been some subjective labelling problems for the participants in the experiment. As both anxiety and humor represent arousal states, particularly when contrasted to depression, there may be some difficulty in differentiating a humor from an anxiety response, depending on the assessment instrument used. As both Nezu et al. (1988) and Safranek and Schill (1982) utilized the same trait measure of anxiety for their dependent variable, (a fairly global construct), it may be that any potential differentiation between humor and anxiety was obfuscated by this instrument.

The results of Nezu et al. (1988) and Safranek and Schill (1982) are all the more curious if one bears in mind that one of the effects most commonly attributed to humor, by therapists and theorists alike, is the release of tension. Following this line of reasoning, a number of researchers have attempted to delineate the relationship of humor and anxiety.

Humor and anxiety. A common procedure for testing the effects of humor on anxiety has been to make use of a naturally occurring stressful situation familiar to many people, the writing of exams. These studies have also tended to follow a similar format. Two or more versions of an exam are created, one of which includes cartoons or humorously worded questions or

responses. Subjects are randomly assigned to one of the testing conditions and their exam performance and/or anxiety is assessed as a dependent variable. Unfortunately, the results from all of these studies cannot be accepted without some reservations as the methodologies in some cases have tended to be weak.

Ascough, Ettinger and Nelson, (1971) examined the effect of humor on anxiety and test performance by creating two versions of a multiple choice exam, one with and one without humorous alternatives. They found that high test anxious subjects scored significantly higher in the humor condition, than did high test anxious students in the regular exam. They concluded that the results were supportive of predictions derived from a conception of humor as having anxiety reducing properties. Contrarily, Deffenbacher, Deitz and Hazaleus (1981) report on a series of tests that involved humorous exam questions, or the insertion of three "Peanuts" cartoons into the exam, in the humorous exam condition. In addition, they collected exam anxiety data after the intervention on a state measure of exam anxiety, the Worry Emotionality Scale. However they administered the Worry Emotionality Scale after the exam was over. As anxiety is generally construed as anticipatory by nature (McCrae, 1984; Nezu et al., 1988), it is not clear how to interpret the scores generated on the Worry Emotionality Scale. Nevertheless, they conclude that humor did not decrease state anxiety, nor did it improve performance on the exam. In a similar vein, McMorris, Urbach and Connor (1985) have reported the results of a humorous

versus non-humorous exam on test scores and anxiety. They report no effect of humor on anxiety or performance. However, the test was a mock exam, and over 80% of the subjects reported very little or no pre-trial exam anxiety. Finally, Rosenfeld and Anderson (1985), employing a very similar methodology, reported evidence for a sex difference in response to the inclusion of humor in an exam. Female subjects in the humor group scored significantly higher on the exam, while males in the humor group scored significantly lower.

While the question of the effect of humor on anxiety in general, and exam anxiety in particular, has sparked sufficient interest to promote investigation, both the methodological shortcomings of some attempts, and the equivocal results overall, preclude any definitive statement. Despite ubiquitous testimonials, from an empirical point of view, the relationship of humor with anxiety remains essentially unknown.

Production of humor. An additional consideration that has emerged within the recent literature relating to humor and psychological health, has been the suggestion that a distinction be made between the production of humor and the perception of humor (Lefcourt & Martin, 1986; Martin & Lefcourt, 1983; Nezu et al., 1988). It has been suggested that having a person actively create humor about their stressors will have a greater impact on how that person subsequently views the situation, than merely exposing the individual to humorous material. As a person's view of the situation has been variously shown to influence the



experience of stress through constructs such as personal control beliefs, cognitive appraisal and attributional perceptions (Nezu et al., 1988), it would seem plausible that humor production may indeed influence an individual's situational evaluation in a facilitative manner. It may be that studies reporting support for the relationship between reduced stress levels and a developed sense of humor are accessing a shift in situational interpretation precipitated by the act of creating humor, as opposed to the the ability to perceive humor in the environment. Work by Martin and Lefcourt (1983) and Lefcourt and Martin (1986) has provided some initial, although again equivocal support for this notion.

#### Test Anxiety

It is generally accepted within the literature that test anxiety is not a unitary construct. While numerous subordinate dimensions such as tension and test irrelevant thoughts (Sarason, 1984), test generated interference (Deffenbacher, 1980), and cognitive interference (Wine, 1980) have been proposed, the most robust delineations have been the worry and emotionality components introduced by Liebert and Morris (1967). Worry refers to the cognitive elements of the anxiety experience such as negative expectations and concerns about oneself, the situation and potential consequences. Emotionality refers to one's perception of the physiological and affective elements of the anxiety experience, indications of autonomic arousal and

unpleasant feeling states such as nervousness and tension (Morris, Davis & Hutchings, 1981). Worry typically correlates negatively with performance, whereas emotionality does not seem to be predictive. Subjects may experience high levels of arousal whether or not they are test anxious, and level of arousal is not related to exam performance. Conversely, test takers reporting high levels of negative cognitions about themselves, the testing situation, and consequences of poor performance, as typified by the worry construct, consistently exhibit poorer performance (Morris et al., 1981; Deffenbacher, 1980). It would seem that for test anxious people, the root of their experience lies in the type of cognitions they make regarding the testing situation, and their perception of the task/situation. As exam anxiety seems to reside in the cognitive activity of the test taker, and humor has also been discussed as a primarily cognitive phenomenon, exam anxiety may prove amenable to a humorous intervention. Exam anxiety will be utilized as the primary dependent measure for both experimental manipulations in the present study.

### Self-Efficacy

A great deal of Bandura's work has focused on delineating the cognitive mechanism of self-efficacy. It is Bandura's contention that this mechanism is central to the therapeutic process, as all psychological procedures can be understood as ways of creating and strengthening expectations of personal

effectiveness (Bandura & Adams, 1977). The assessment of self-efficacy on a given task occurs prior to engagement in the task, and as such, will have repercussions on actual performance, effort invested, perseverance, and on whether the task will even be attempted (Bandura, 1977).

The level of expressed self-efficacy of an individual can be understood to be the outcome of a two step equation. Initially the individual makes a judgement of perceived task demands, followed by an assessment of perceived skills relative to the demands of the situation. The stated level of self-efficacy is the result of the comparison of perceived skills with perceived demands. Intervention within this model is geared to skill acquisition such that self-efficacy is enhanced. Typically, little attention is paid to the client's perception of the situation. If humor provides for more favorable conceptualizations of stressful events, then self-efficacy may also be expected to be favorably influenced.

### Causal Attributions

Attribution theory refers to the study of perceived causation (Grunau, 1988). A tenet of attribution theory is that people interpret events in light of the causes assigned to them, and that these interpretations will have an effect on their reactions to that event. It has been suggested that the individual's search for a causal understanding is motivated by

the goal of acquiring effective control of one's self and the environment, and is a spontaneous, ongoing component of one's interpretation and understanding of the world (Weiner, 1986).

While the specific attributions an individual may make will vary from situation to situation, it has been proposed that attributions can be categorized along a small number of discreet dimensions. Within the achievement domain, Weiner (1983, 1986) has demonstrated support for a taxonomy of three dimensions of causal attributions, referred to as locus, stability, and controllability.

Locus refers to the location of a cause, whether it be internal or external to the person. An ascription for poor performance on a quiz to lack of effort would be indicative of an internal locus, whereas attributing lack of success to an unfair exam would exemplify an external locus of causality. Stability refers to the temporal nature of the cause. While some causes may be seen as relatively enduring in nature, others are perceived as much more transient (Weiner, 1986). For example, if poor performance on a task is understood to be the result of a lack of aptitude, this usually represents a relatively stable or enduring cause. Conversely, performance decrements arising from a headache would represent an unstable cause. The third dimension, controllability, "refers to the degree of volitional influence that can be exerted over a cause" (Weiner, 1983, 531). Causes such as fate, luck or disposition are generally not perceived to be within one's control, while effort or strategy

are usually perceived to be influenceable and controllable.

An instrument for measuring causal attributions in the achievement domain is the Causal Dimension Scale, developed by Russell (1982). This nine item paper and pencil instrument accesses the three causal dimensions suggested by Weiner: locus, stability and controllability. Should humor prove to be effective in reducing exam anxiety, scores on both the locus and controllability scales would be anticipated to be elevated, indicating greater internality of locus and increased perceptions of control.

### Research Questions

Given the foregoing discussion, it would seem plausible that humor can function as a reframe, i.e. offer alternative frames of reference for interpreting a situation. A person's anticipation of a situation reorganized into a humorous frame may also have the effect of reorganizing the meaning of that situation, such that both task demands and likely consequences of positive or negative performance take on an altered salience. Some support for the contention that humor can mitigate the negative effects of stress has been presented. However, support for this contention seemed to be restricted in terms of which "dis-ease" states were assessed for the dependent measure. Despite numerous theoretical assertions, investigations of the supposed tension or anxiety reducing properties of humor have

not yielded uniform results. A potential explanation offered to account for these results was that the trait measure utilized in these cross-sectional investigations was too global an instrument to detect the fluctuations in arousal and/or task perceptions precipitated by humor. One goal of the present study will be to test this premise in a replication conducted within a more focused domain of inquiry; scholastic stress and exam anxiety.

Lefcourt and Martin (1986) have used the term "buffering" hypothesis to refer to the proposed anxiety reducing quality of humor, and this term will be used to denote the experimental procedure testing this hypothesis. The buffering hypothesis is predicated on the established relationship between negative life events and psychological distress. In general, an individual who experiences greater numbers of negative life events will also experience greater levels of distress. However, the successful utilization of coping techniques can act to buffer the noxious effects of negative life experiences, mitigating the resultant distress. The potential for humor to function as a psychological buffer provided the focus for the first research question tested in the Buffering Procedure. Therefore the first research question to be tested in the study was whether humor could provide a psychological buffer against the increases in test anxiety anticipated to accompany increased levels of negative school life experiences.

A second consideration to emerge from the literature was the distinction between humor perception and humor production. It was suggested that active humor production may be required in order for humor to function as a stress buffer, as opposed to passive humor perception. As the available research into the effects of humor on exam anxiety has been predicated on humor perception, the second goal of this investigation will be to examine the effect of humor production on exam anxiety. Expressed in terms of test anxiety, humorously reframing the negative cognitions associated with "worry" may have the effect of reducing the debilitating impact of these concerns. Converting the dire images of defeat and failure into more innocuous images, may help the individual to see the task as a "challenge" rather than as a "threat" (Dixon, 1980). In terms of self-efficacy theory, the creation of a humorous presentation of an anticipated event may indeed function to reframe the "perceived task demands". As perceived task demands is one step of the self-efficacy equation, the outcome of a humorous presentation then could be an elevation in stated self-efficacy. Moreover, people confronted with a challenge are more likely to exhibit attributions indicative of an internal locus of control, and to view the situation as being within their abilities. Therefore the research question addressed in the Humor Production Procedure was whether actively producing humor would result in reduced levels of exam anxiety, and if so, is this change accompanied by reports of increased perceptions of self-efficacy, internality of locus, increased controllability,

and elevated scores on the exam.



## CHAPTER III

### METHOD

#### Subjects

Participants were recruited from four upper level undergraduate courses in the Faculty of Education at Simon Fraser University. All potential subjects were apprised of the voluntary nature of their participation, and were assured that their decision to participate would have no effect on their grade. All students who participated were entered in a raffle for one of five theater passes. There were two separate procedures, hereafter referred to as the Buffering Procedure and the Humor Production Procedure. In total 65 students participated in the Buffering Procedure, 49 females and 16 males, representing approximately 60% of the available students. Of these, one female subject failed to complete one of the four instruments in the test battery administered in the Buffering Procedure. Out of this initial sample, 63 subjects completed the Humor Production Procedure. One subject who was observed to complete the outcome measures prior to the intervention was deleted, and another person was absent.

## Procedure

Buffering. All subjects were introduced to the study in the same fashion. The study was described as an attempt to further define the influence of mental set on performance. For the purposes of the study, performance was to be performance on the final exam from whichever course each participant was solicited. On this occasion a battery of instruments was administered approximately three weeks prior to the final exam. This battery of instruments was comprised of the Life Experiences Scale, the Coping Humor Scale, the Situational Humor Response Questionnaire, and the Reactions To Tests, counter-balanced for order.

Humor production. Subjects completed this procedure immediately prior to their final exam. From the sample of subjects who completed the first round of testing, subjects were randomly assigned to one of three groups; the Control group, the "Straight" group, and the "Humor" group. The second stage of data collection was similar for each group; each subject first engaged in a sentence completion task, and then responded to the Worry Emotionality Scale, the Self-Efficacy questionnaire and the Causal Dimensions Scale appended to the Self-Efficacy instrument. These instruments were administered in a counter-balanced order. Despite the names assigned to each of the groups, both the Control group and the Straight group were included as control conditions. The Control group was included

to control for any effects on how the subjects perceived the exam that may have arisen as a result of having participated in the study. The Straight group was included to control for the effects of having subjects respond to a stimulus protocol concerned with exam anxiety, as did subjects in both the Straight and Humor groups, in the time period immediately preceding the exam.

The three groups varied in terms of the sentence completion tasks they were assigned. The Control group was given a sentence completion task titled "School Scenes" (see Appendix A), comprised of 10 common scenarios experienced in the life of a student (eg. you are standing in line in the cafeteria, and you notice that the student in front of you is in one of your classes, although you have not spoken before). Subjects were instructed to write one or two sentences in the space provided to continue the scenario as they felt it might unfold. Once this task was completed, subjects were then instructed to complete the Worry Emotionality Scale, and the Self-Efficacy and Causal Dimension Scale instruments.

The sentence completion task for the "Straight group", titled "Exam Scenarios", was also 10 items, but the items dealt with various situations that can occur when writing exams (eg. You have studied really hard but when you see the exam paper your mind goes completely blank). These scenarios (see Appendix B) were derived from reported by students experiencing exam anxiety (Wallace, 1982). Subjects were requested to write one or

two sentences to continue the scenario as they felt it might unfold. These subjects then completed the Worry Emotionality Scale, and the Self-Efficacy and Causal Dimension Scale instruments.

The "Humor group" was administered the same sentence completion protocol (Exam Scenarios) but with a change in the instructions. Subjects in this group were directed to write one or two sentences to continue the exam scenarios, but with the additional directive to do so in as humorous a fashion as they were able. Subjects in this group then responded to the Worry Emotionality Scale and the Self-Efficacy and Causal Dimension Scale instruments.

Once the second round of the procedure was completed, two raters blind to group membership, scored the sentence completion protocols of the subjects in the Straight group and the Humor group, for quality of humor production. Humor production was scored on a four point scale derived from Turner (1980). The scale (see Appendix C) ranged from zero, "not at all humorous", to three, "very humorous, genuinely comical". The humor production scores generated by the raters correlated at .90.

#### Instruments Used in the Buffering Procedure

Life experiences survey. Respondents' life stress was assessed with the Life Experiences Survey (LES; Sarason, Johnson and Seigel, 1978). The test is designed to provide a measure of

social events that are experienced as stressful. Increased life event scores are generally predictive of increases in symptomology (Monroe, 1983). Initial investigations of this relationship utilized life event scores regardless of the respondent's perception of the desirability of the event (Kanner, Coyne, Schaefer & Lazarus, 1981). Sarason et al. (1978) refined this assessment by having respondents assign weightings for each event based on subjective impact and whether the event was positively or negatively experienced. The LES requests individuals to rate the perceived stressful impact of each relevant event that has occurred within the previous 12 month period on a seven-point scale ranging from -3 to +3. While scores can be computed for negative, positive and total (positive + negative) life stress, previous research with the LES has indicated that positive life events are not correlated with scores on measures of distress (Sarason et al., 1978). Only negative life stress scores were used in this data analysis. The final 10 items of this self-report measure (items 51 to 60) were utilized as they pertain to events relevant to a university student population (eg. beginning a new school experience). Three additional blank items were provided so that subjects could also report events not included in the list. The negative life events score has been shown to correlate significantly with measures of anxiety, depression and general psychological discomfort, as well as a variety of indices of physiological distress (Sarason, Sarason, Potter & Antoni, 1985). Reliability estimates with the negative life events scores reported by

Sarason et al. (1978) range from .56 to .88.

Coping Humor Scale. The Coping Humor Scale (CHS) is a 7-item scale designed by Martin and Lefcourt (1983) to assess the degree to which people actually use humor as a coping strategy to deal with stressful life events (eg. "I can usually find something to laugh or joke about even in trying situations"). Responses are scored on a 4 point scale ranging from strongly disagree to strongly agree. Martin and Lefcourt (1983) estimate internal consistency at .61 for the CHS. Lefcourt and Martin (1986) report on several validation studies with the CHS, finding that scores on the CHS correlated positively with: i) ratings of spontaneous humor elicited by a failure experience, ii) peer ratings of humor use when confronted by problems, and, iii) ratings of humor production in a stressful situation.

Situational Humor Response Questionnaire. The second humor measure was the Situational Humor Response Questionnaire (SHRQ; Martin and Lefcourt, 1984). The SHRQ is a measure of overall sense of humor based on the respondent's self report of the frequency with which s/he displays mirth in a variety of situations. Eighteen relatively common scenarios are included (eg. having a waiter spill a drink on you while eating out with friends), and subjects are asked to indicate on a five-point scale, the degree to which they would have experienced mirth in such a situation. As well, there are three additional self descriptive items, (eg. How would you rate yourself in terms of your ability to experience mirth in a wide variety of

situations?), extending the scale to 21 items in total. Lefcourt and Martin (1986) report Cronbach alphas ranging between .70 and .85 for the SHRQ. Lefcourt and Martin (1986) report on a series of validation studies for this instrument as well. They found positive and significant correlations between scores on the SHRQ and observations of spontaneous smiling and laughter in an interview situation, peer ratings of sense of humor, self reports of positive moods anticipated to be related to the sense of humor (i.e. joy, happiness and vigor), and ratings of humor production in a humor production task.

Reactions To Tests: The Reactions To Tests (RTT; Sarason, 1984) is a measure of test anxiety, and was the dependent variable administered in the Buffering Procedure. This is a 40-item instrument comprised of four sub-scales of 10-items each; Tension, Worry, Test-Irrelevant Thinking, and Bodily Symptoms. Respondents indicate on a 4-point scale ranging from one to four, the degree to which each of the 40 items apply to themselves. A total scale score is computed as well as scores for each of the subscales. Sarason (1984) reports alpha coefficients ranging from .68 to .81 for each of the subscales, and .78 for the RTT total score. Sarason (1984) also reported that the RTT correlated significantly with other measures of test anxiety and with a measure of cognitive interference, a construct associated with performance deficits arising from test anxiety.

## Instruments Used in the Humor Production Procedure

Worry Emotionality Scale. The revised Worry Emotionality Scale (WES; Morris, Davis, and Hutchings, 1981) is a 10-item questionnaire assessing an individual's level of exam anxiety. The test requires that respondents record, using a five point scale, the degree to which each of the ten statements corresponds to their subjective experience at the time of writing. The items are evenly split between the worry and emotionality scales. Morris et al. (1981), report alpha levels of .81 for the worry scale and .86 for the emotionality scale. Scores on the WES have consistently been demonstrated to correlate negatively with exam performance (Bailey, & Hailey, 1983; Deffenbacher, 1985; Furst, Tenenbaum & Weingarten, 1985).

Self-efficacy. All subjects also completed a self-efficacy (SE) questionnaire (Bandura, 1977), comprised of a single item. Subjects were asked how confident they felt regarding their ability to optimally maintain their own level of arousal during the final exam for the course from which they were drawn. Responses were collected on a 100 point scale marked with 10 point increments, ranging from 0, "not confident at all", to 100, "completely confident". Self-efficacy judgements for performance on specific activities has generally proved to predict performance accurately (Bandura, 1977; Bandura & Adams, 1977; Bandura & Schunk, 1981), and to be influenced by mood states (Kavanagh & Bower, 1985).



Causal Dimension Scale. Appended to the Self-Efficacy questionnaire was the Causal Dimension Scale (CDS; Russell, 1982). This is a nine-item instrument designed to assess the nature of subjects' attributions. Subjects are queried as to the degree to which they perceive the determining factors for their performance to have an internal vs. external locus, to be stable vs. unstable, and to be controllable vs. uncontrollable. Each of the factors are equally represented among the nine items, and scored on a nine-point Likart scale. While there have been some questions regarding the internal consistency of the controllability subscale (Vallerand & Richer, 1988), support for the locus and stability scales has been robust (Russell & McAuley, 1986; Russell, McAuley & Tarico, 1987). Russell (1982) reported alpha coefficients of .87 for the Locus scale, .84 for the Stability scale, and .73 for the Contollability scale indicating that the scales were internally consistent.

### Research Questions

Buffering. The buffering hypothesis (Lefcourt & Martin, 1986) posits that humor can mitigate the noxious effects of negative life events. The Buffering Procedure was designed to test the buffering hypothesis within the more focused domain of inquiry of scholastic life events and test anxiety. It was predicted that subjects experiencing negative life events who utilize humor as a psychological buffer would exhibit lower levels of test anxiety than subjects who also are experiencing

negative life events but who do not engage in humor.

Negative life events were assessed using the student portion of the Life Events Scale. The humor measures were the Situational Humor Response Questionnaire and the Coping Humor Scale. Subjective distress was assessed with two measures of test anxiety, the Reactions To Tests administered in the Buffering Procedure and the Worry Emotionality Scale, administered in the Humor Production Procedure. As two measures of test anxiety were employed, it was possible to conduct two tests of the buffering hypothesis, one with each of the test anxiety measures serving as the dependent variable. If humor is an effective buffer for anxiety, then it is predicted that statistically removing the effects of humor will result in an increased level of correlation between negative life events and scores on the measures of test anxiety.

A variation on this hypothesis which was also examined states that, regardless of the level of negative life stress, humor may directly mitigate anxiety. If this is the case, then humor scores on the Situational Humor Response Questionnaire and the Coping Humor Scale would be predicted to correlate negatively with the test anxiety scores.

Humor production. The Humor Production Procedure was designed to examine hypotheses related to humor production. Should humor production prove to be an effective way of reducing anxiety, then those subjects in the humor production group would

be expected to exhibit lower scores on the dependent measure of anxiety, the Worry subscale of the Worry Emotionality Scale, than would the subjects in the control groups. In addition, it was predicted that subjects in the humor production group would also score higher on Self-Efficacy and on the the Locus and Controllability subscales of the Causal Dimension Scale. The other research question of interest involved the grade attained on the exam. If producing humor proved to be effective in reducing anxiety, then subjects in the humor production group would likely score higher on the exam than the subjects in the other groups.

## CHAPTER IV

### RESULTS

The first portion of this chapter presents descriptive statistics for each of the instruments used and compares these with normative data when available. This is followed by an examination of a number of intercorrelations among measures used in the study. The results of the study are then presented in the order that the research questions were addressed. The analysis of the Buffering Procedure research questions, which test the humor as a buffer hypothesis, is followed by the analysis of the humor production hypothesis of the Humor Production Procedure.

#### Descriptive Statistics

Buffering Procedure. To test for possible gender bias of the measures used, t-tests were computed on each variable to test for differences due to gender. There were no significant sex differences found on any of the measures within the first test battery, therefore subsequent analyses of the Buffering Procedure measures were conducted using the pooled scores for all subjects.

Of the initial sample of 65 students, 34 reported negative life experiences on the Life Experiences Survey. The mean total negative life events score was -2.14, and the SD 3.24. Comparative normative data were not available for the student

portion of the Life Experiences Survey.

The mean humor score on the Situational Humor Response Questionnaire was 59.32 (SD=7.92). These values are similar to those reported by Martin and Lefcourt (1983) who reported a mean of 59.61 and SD of 9.06. On the Coping Humor Scale, the obtained mean score of 20.37 and SD of 2.90 also closely approximate the values of 20.22 and SD of 3.56 reported by Lefcourt and Martin (1986) from a sample of 250 undergraduate psychology students.

The dependent measure in the first test battery was the Reactions To Tests. The normative data presented by Sarason (1984) reports separate means and standard deviations for males and females. Values for the present study are presented with the normative data in Table 1.

The attained values for the 16 male subjects are generally lower than the normative data. t-tests revealed that only the Test-Irrelevant Thinking scale was significantly lower (the Bonferroni procedure was implemented within each gender to control for experimentwise error). As well, this scale shows a floor effect, as the lowest obtainable score is 10, and the attained mean was 13.25. For the 49 female subjects, the obtained scale means were lower than the normative means for every scale, and significantly lower for all but the Bodily Symptoms scale. Once again the Test-Irrelevant Thinking scale displays a floor effect. While one might be tempted to conclude from these results that the present sample represents a group of

Table 1

Comparison of Attained Means to Normative Means from Sarason (1984) for the Reactions To Tests (RTT) and Sub-Scales

	<u>Normative</u>		<u>Attained</u>	
	M	SD	M	SD
<b>Males (N=16)</b>				
RTT	74.04	17.99	66.86	15.79
Body	14.95	4.12	15.46	4.05
Tension	22.39	6.58	21.25	6.63
Worry	19.51	5.93	16.96	5.52
Test Irrelevant Thinking	17.19	6.40	13.25	3.49 *
<b>Females (N=49)</b>				
RTT	80.37	21.13	67.81	16.17 *
Body	16.08	5.70	15.40	3.77
Tension	25.17	7.58	22.35	7.19 +
Worry	21.30	6.72	16.56	5.02 *
Test Irrelevant Thinking	17.83	7.01	13.50	4.11 *

Note: Bonferroni adjustment used to determine significance levels within each gender.

+ p<.05; \* p<.01

students with overall lower levels of exam anxiety, the scores reported from the second measure of exam anxiety, the Worry Emotionality Scale, argue against this interpretation. This disparity between the Buffering Procedure and the Humor Production Procedure exam anxiety scores will be addressed further in the discussion chapter.

Humor Production Procedure. In total, 63 subjects completed the data collection in the Humor Production Procedure. t-tests were computed on each of the measures of the Humor Production Procedure to test for sex differences. The only difference found due to sex was on the Emotionality scale of the Worry Emotionality Scale, with female subjects reporting significantly more Emotionality than males ( $t=3.05$ ,  $p=.003$ ). However, it has been demonstrated that Emotionality scores are not predictive of exam performance (Deffenbacher, 1980; Morris et al., 1981). As a result, all subsequent analyses will be reported utilizing the entire subject pool.

The normative data on the Worry Emotionality Scale provided by Morris et al., (1981) are as follows: mean Worry 12.43, SD 4.68; and mean Emotionality 9.17, SD 4.37. The values obtained in the present study were mean Worry=11.38, SD=4.48; mean Emotionality=11.71, SD=4.83. The emotionality score was significantly higher than the reported normative value ( $t=4.38$ ,  $p<.05$ ).

The mean level of Self-Efficacy obtained in the analysis was 75.08 with a SD of 13.12. The mean scores on the three subscales of the Causal Dimension Scale appended to the Self-Efficacy questionnaire were as follows: Locus =21.41, SD=3.38; Stability=15.24, SD=5.91; and Controllability=20.02, SD=5.03. Scores greater than the midpoint score of 15 represent increased internality of Locus, and greater Stability and Controllability. Finally, the mean grade in percent attained on the final exam was 86.18%, SD=9.10.

#### Intercorrelations Among Variables

A number of correlations were calculated in addition to those required to test the hypotheses of the study. These correlations were calculated between measures that have been reported to be related in the published literature. These correlations were computed with the entire subject pool of each test battery,  $n=65$  in the Buffering Procedure and  $n=63$  in the Humor Production Procedure. Examination of the relationship between the two humor measures revealed that the Coping Humor Scale correlated with the Situational Humor Response Questionnaire at  $r=.28$ ,  $p>.05$ , lower than the correlation of  $r=.37$  reported by Lefcourt and Martin (1986) but in the anticipated direction. Among the variables of the Humor Production Procedure, as expected, the Worry scale correlated moderately and negatively with Self-Efficacy,  $r=-.55$ ,  $p<.01$ . Worry also correlated in the anticipated direction with the



three scales of the Causal Dimension Scale and significantly with Controllability: Locus  $r = -.23$ ,  $p > .05$ ; Stability  $r = -.20$ ,  $p > .05$ ; and Controllability  $r = -.31$ ,  $p < .05$ ; indicating that those subjects with higher levels of Worry perceive the factors influential to their exam anxiety to be less controllable. The correlation of Worry to Grade, although in the expected direction, was non-significant,  $r = -.12$ ,  $p > .05$ .

Subjects' reported confidence in being able to control their exam arousal as measured by the Self-Efficacy questionnaire also correlated with the scales of the Causal Dimension Scale in the anticipated direction and significantly with Controllability. Self-Efficacy correlated with Locus at  $r = .30$ ,  $p > .05$ , with Stability at  $r = .21$ ,  $p > .05$ , and with Controllability at  $r = .46$ ,  $p < .01$ , indicating that those with greater confidence perceived the causes to be more controllable. Self-Efficacy also correlated in the anticipated fashion and significantly with Grade at  $r = .32$ ,  $p < .05$ .

### Analysis

Buffering Procedure. The hypothesis to be tested with the Buffering Procedure was whether a sense of humor would mitigate the distress, as measured by exam anxiety, accruing from negative (school) life experiences. There are potentially two ways in which humor could be conceptualized to bring about this effect. The buffering hypothesis, developed by Lefcourt and

Martin (1986) among others, would predict that the use of humor by those experiencing high levels of negative life stress, will result in reduced levels of subjective distress in comparison to those with high levels of negative life experiences, but lacking in humor. As discussed previously, this hypothesis assumes a relationship between negative life events and subjective distress, and the buffering effects of humor are then tested by using a partial correlation procedure. However, in the present study, the anticipated relationship between negative life stress (Life Experiences Survey scores) and the Buffering Procedure measure of distress (Reactions To Tests scores) was not obtained. For the 34 subjects reporting negative life stress on the Life Experiences Survey, Life Experiences Survey scores correlated with Reactions To Tests at  $r = -.07$ ,  $p = .34$ , and with each of the subscales as follows: Bodily Symptoms  $r = -.04$ ,  $p = .41$ ; Tension  $r = -.06$ ,  $p = .38$ ; Worry  $r = -.11$ ,  $p = .26$ ; and Test-Irrelevant Thinking  $r = -.02$ ,  $p = .46$ . As there was no demonstrated relationship between negative life events and exam anxiety, it was not possible to test for the hypothesized buffering effect humor may have on the anxiety arising from these negative experiences.

A second test of the buffering hypothesis was conducted utilizing subjects' test anxiety scores from the Humor Production Procedure. For the dependent measure, subjects' scores from the Worry scale of the Worry Emotionality Scale were utilized. Whereas negative life stress was not found to

correlate with exam anxiety as measured by the Reactions To Tests, a significant correlation was found between reports of negative life experiences (Life Experiences Survey scores) and scores on the Worry scale of the state measure of exam anxiety, the Worry Emotionality Scale. Negative life experiences correlated with Worry at  $r=.30$ ,  $p<.05$ ,  $n=31$ . As a result, it was possible to test for the buffering effects of humor on anxiety with a partial correlation procedure. With the effects of humor as measured with the Coping Humor Scale partialled out, the correlation of negative life experiences with Worry was reduced to  $r=.28$ ,  $p>.05$ . In like manner, partialling out the effects of humor as measured by the Situational Humor Response Questionnaire also weakened the correlation of Life Experiences Survey scores with Worry,  $r=.29$ ,  $p>.05$ . If humor acts as a buffer for the distress accruing from negative life experiences, then the correlation of negative life experiences with anxiety should increase once the effects of humor have been partialled out. Since these results are in the opposite direction to that predicted by the hypothesis, the humor as a buffer for anxiety hypothesis could not be supported.

A second way humor could act to reduce exam anxiety would be directly, regardless of the level of negative life stress. In this case, one would anticipate humor (as measured on the Situational Humor Response Questionnaire and the Coping Humor Scale) to correlate negatively with exam anxiety (as measured by the Reactions To Tests and the Worry Emotionality Scale). The

entire available subject pool was utilized to test this hypothesis. None of the correlations of Situational Humor Response Questionnaire or Coping Humor Scale with Reactions To Tests and subscales approached significance. Similarly the correlations of the humor measures with the Worry Emotionality Scale and subscales were weak and nonsignificant (SHRQ:Worry,  $r = -.03$ ,  $p = .42$ ; CHS:Worry,  $r = .14$ ,  $p = .14$ ). Consequently, the hypothesis that humor mitigates anxiety directly could not be supported either. While the lack of support for the hypothesis of humor as a stress reducer may be a result of factors unique to this subject pool; i.e. only 34 of 65 subjects reporting negative life experiences, and the lower than normative levels of exam anxiety reported on the Reactions To Tests; results reported by Safranek and Schill (1982) and Nezu et al., (1988), using similar experimental designs, are similar to the current findings.

Humor Production Procedure. The dependent variable of primary interest for the Humor Production Procedure was the Worry Emotionality Scale, and in particular the Worry scale of the Worry Emotionality Scale. If producing humor about a pending stressor is an effective way of reducing stress, one would then anticipate that scores on the Worry scale of the Worry Emotionality Scale would be lower for the subjects in the humor producing group when compared to subjects in the other two groups. The Self-Efficacy and Causal Dimension Scale measures were included to assess if the predicted change in exam anxiety

occurred due to the hypothesized factors, i.e. a change in how the subjects' perceived the situation. It is expected this change would be to a less threatening interpretation of the situation, with the result that Self-Efficacy scores would be elevated and scores on the Causal Dimension Scale would indicate greater internality of locus and increased perceptions of control.

A one way Manova was calculated to compare the three groups on the seven outcome variables (Worry, Emotionality, Self-Efficacy, Locus, Stability, Controllability, and Grade) with df 2, 60. The results of the Manova indicated no significant differences among the groups (Wilk's Lambda=.77,  $F=1.06$ ,  $p=.40$ ). Consequently, the hypothesis that producing humor about a pending stressor would reduce anxiety was not supported in this study. A t-test was calculated on the humor production scores of the subjects in the Straight and Humor groups. The Humor group produced significantly more humor than the Straight group ( $t=5.21$ ,  $p<.01$ ), providing support for the efficacy of the experimental manipulation.

A final test of the humor production hypothesis was conducted which utilized subjects' mean humor production scores derived from the raters' scoring of the Exam Scenarios sentence completion protocols. If humor production is an effective means of reducing anxiety, then humor production scores would be expected to correlate negatively with scores from the Worry Emotionality Scale, and positively with Self-Efficacy and scores

on the Locus and Controllability scales, of the Causal Dimension Scale. As the subjects in both the Straight and Humor groups responded to the Exam Scenarios protocol, 41 of the 63 subjects were available for this analysis. This analysis was conducted independent of group membership as some subjects in the Straight group spontaneously generated humorous responses while some subjects in the Humor group failed to generate any humorous responses at all. The mean humor production total score for the 41 subjects was 4.0, SD 5.97.

Correlations were calculated between the humor production scores and each of the dependent variables. Scatter plots were examined for bimodal distributions and none were evident. Humor production correlated significantly only with exam grade,  $r=.39$ ,  $p<.01$ . The correlation of humor production with Self-Efficacy also approached significance at  $r=.23$ ,  $p=.07$ . Correlations of humor production with the Worry, Emotionality, Locus, Stability, and Controllability scales were all non-significant. Humor production was not found to be related to exam anxiety, although it was significantly correlated with exam grade. It was not possible to determine whether the humor production somehow assisted some students to perform better, or whether those students with the greatest academic prowess were most able to divert their attention to a humor production task immediately prior to writing an exam.

## CHAPTER V

### DISCUSSION

In recent years humor has come to be seen as having potential for a salutary effect both on somatic and psychological ailments. In the psychological literature, one of the most commonly expressed notions is that humor dispels tension or anxiety. Yet the scant empirically based literature examining the relationship between humor and anxiety has generally not supported this contention. The results of the present study also are not supportive of humor as an anxiety reducer.

The initial hypothesis to be tested was that humor could act as a buffer for the deleterious effects of negative life experiences. As it had been suggested (Nezu et al., 1987) that the nonsignificant findings in previous investigations may have been due to using instruments that were too global to capture the momentary fluctuations in anxiety precipitated by humor, the field of inquiry in the present study was restricted to scholastic life stress and state measures of test anxiety. The lack of a relationship between negative life events and exam anxiety in the Buffering Procedure data did not provide an opportunity to test for the buffering effect of humor on anxiety. While the relationship found between negative life experiences and the Humor Production Procedure measure of exam anxiety did afford this opportunity, the hypothesized buffering

effect of humor was not supported.

A variation of the buffering hypothesis is that a sense of humor may directly mitigate anxiety regardless of the severity of ongoing negative life events. However, the correlation of humor with anxiety was again non-significant, and therefore not supportive of this hypothesis either. Other researchers have also reported a lack of support for humor as a buffer for anxiety (Nezu et al., 1987; Safranek & Schill, 1982), yet support for humor as a buffer for other states of psychological distress has been forthcoming (Labott & Martin, 1987; Martin & Lefcourt, 1983; 1984; Nezu et al., 1987; Porterfield, 1987). Given that the common wisdom is that humor acts to "defuse tension", the consistent lack of substantiation in these findings presents empirical difficulties for the proposed theoretical mechanisms.

Nezu et al. (1987) have suggested a temporal factor may account for the differential salutary effect of humor as a buffer for depression but not anxiety. They speculate that anxiety reactions may represent anticipatory concerns regarding the negative outcomes of a stressful event, whereas depression may reflect the affective response following the experience of a stressor such as a loss. For example in the present study, exam anxiety was assessed prior to the exam. Expressed test anxiety was essentially an anticipatory concern. Conversely with depression the event has already happened. Humor may then provide for alternative viewpoints for dealing with the losses



that have already accrued.

An alternative interpretation may be gleaned from Apter's (1982) work on the theory of psychological reversals. Reversal theory posits that there are two metamotivational states referred to as the telic and the paratelic modes. In the telic state, the individual sees himself as serious minded, seeking to avoid excessive arousal; and thinking in a future oriented, and goal directed manner. In the paratelic state, the individual sees himself as playful, seeking out arousal, and thinking in a present oriented, process focused manner (Murgatroyd, 1985). Whether an individual is in the telic or paratelic mode is determined by one's phenomenological viewpoint, and not by the activities in which one is engaged (Murgatroyd, 1981). In addition, while an individual may have a predisposition to one state or the other, it is a tenet of reversal theory that individuals oscillate between states throughout the day, and even within an activity. For example, a mountain climber enjoying the excitement of the quest in the paratelic state, may shift quite abruptly into the telic mode should a near mishap occur.

Martin, Kuiper and Olinger (1988) have suggested that, regardless of an individual's preference for the telic or paratelic state, when an individual appraises a situation as a threat to his well-being, that person is likely to switch into the telic mode if he is not already in it. This would seem to aptly fit the case of students who experience some degree of

exam anxiety, and are about to begin an examination. Being in the telic mode, whatever elevation of arousal they experience will tend to be perceived as unpleasant.

The situation with humor is to some extent the converse of anxiety. While humor is also a condition of elevated arousal, humor is experienced in the paratelic mode (Apter, 1982). Svebak and Apter (1987) have also demonstrated that humorous material tends to induce the paratelic state, even in telic dominant individuals. As humor occurs in the paratelic state, and anxiety in the telic mode, the incompatibility of humor as an intervention for exam anxiety becomes apparent. People confronted with a threatening situation tend to the telic state, yet humor requires the paratelic mode. As such, in the case of exam anxiety, humor operates at cross-purposes to most people's inclinations, and unless one could convince the students that exams were not to be taken seriously, would represent an incompatible form of intervention.

The second hypothesis, and the focus of the Humor Production Procedure of the present study, was that humor production rather than humor perception may be a prerequisite for the anxiety reducing effect of humor. While Svebak and Apter (1987) demonstrated that humor perception tends to induce the paratelic mode, it would seem plausible that humor production, at least for most people, also requires a paratelic orientation. If this is the case, then humor production would be no more effective as a buffer for anxiety than humor perception. The lack of group

differences in exam anxiety between the humor production group and the control groups in the Humor Production Procedure of the present study is in accord with this interpretation. In addition, as some subjects in the control group spontaneously generated humorous responses, and some subjects in the humor production group failed to generate any humorous statements at all, a correlation was conducted between exam anxiety and humor production scores independent of group membership. However, once again this relationship was non-significant and not supportive of the hypothesis that humor production may act to reduce anxiety.

While a number of researchers have demonstrated a relationship between subjects' reports of negative life experiences and psychological distress (Lefcourt & Martin, 1986; Nezu et al., 1987; Porterfield, 1987), in the present study, this relationship was dependent on when the data were collected relative to the exam itself. The Buffering Procedure data, collected three weeks prior to the exam, did not yield a significant relationship between reports of negative life events and exam anxiety. Contrarily, the Humor Production Procedure data collected in the half hour prior to the exam did yield a significant correlation between negative life events and exam anxiety. Other investigators have also found exam anxiety scores to become elevated with increasing proximity to the testing period (Bolger, 1987; Butler & Mathews, 1987). Butler and Mathews (1987) discuss this temporal variability in exam anxiety

reports in terms of an associative network model. This model proposes that memories of threatening events associated with anxiety are organized and stored together in long-term memory. When an individual becomes anxious again, this material is relatively easy to bring to mind and then influences estimates of the likelihood of future unpleasant events. However, they go on to suggest that mood states induced through techniques such as imagery, hypnosis, or literary material, represent distinct cognitive activities from the mood state induced by an event such as an exam. The result of this is an elevation in exam anxiety scores when collected near the examination period. In accord with this notion, Safran (1987) has suggested that thinking about an emotion and experiencing an emotion represent discrete psychological events. Safran and Greenberg (1986) have similarly discussed emotional experience as a synthesis of information from sources both external and internal to the individual. Directing someone to imagine a stressful situation lacks external referents, and is therefore not synonymous with actual experience of the event. The data from the current investigation support this distinction between imagined and actual events. The exam anxiety protocols collected three weeks prior to the exam can be understood as requiring the subjects to imagine how it feels to write an exam, while the data collected in the Humor Production Procedure represent their responses to the event itself. That this distinction yielded differential results in a population with considerable exam writing experience provides support for this premise. Similarly,

Bandura's (1976) contention that therapeutic interventions that include in vivo practice are more efficacious, can be seen as an application of the understanding that imagined and actual events are phenomenologically discrete.

A number of limitations of the present study should be noted. First, although the literature review begins with a review of humor and counselling, the study itself was conducted outside the domain of counselling and the results cannot readily be generalized to a therapeutic milieu. Second, while all students of each class were presented with an opportunity to participate in the study, the rate of participation was about 60%. It is possible that in regards to either humor or test anxiety, that this group represents a unique subset of the available students. Third, in regards to the humor production hypothesis, it may be that the intervention was not sufficiently powerful to induce a change in anxiety. As humor often includes a social aspect, and the subjects in this study individually responded to written protocols, the humorous effect may have been attenuated. That not all subjects in the humor production group were capable of generating humorous responses may be a further indication that the intervention was inadequate in some way. The final point to be raised here relates to conceptualizations about humor prevalent in the literature. Despite assertions that humor can be encouraged and even taught (for example Goodman, 1983), it may be that humor is more of a trait than an attitude or skill. The inability of some subjects

in the humor production group to create humor, and the spontaneous humor generated by a few subjects in the control condition, may be indicative of a trait like quality to humor. If this is the case, then randomly assigning subjects to a humor production group to test for the effect on anxiety may be an inappropriate test of the relationship between humor and anxiety.

However, the question remains, how is it that the common knowledge asserts that humor dispels tension when the research evidence suggests that this is not the case? Cantor, Bryant and Zillman (1974) demonstrated a phenomenon that they called transferred excitation. Subjects who had previously been aroused, regardless of the hedonic tone of this arousal, judged subsequent humorous material to be more humorous than subjects who were in a more quiescent state. It may be that people who are nervous about a pending event represent a primed audience. With the presentation of humor, and the requisite social and situational cues, these people may then fleetingly shift from the telic to paratelic mode, and respond to the humor with some vigor giving the impression of greatly appreciating the humor. To an observer this may be interpreted as dispelling the tension. While the humor may provide momentary relief from the negative hedonic quality of anxious arousal, there is no enduring change in the situation nor one's personal assessment of it. Once the effect of the joke has passed, or the pending stressor is reintroduced, the result is likely to be a reversal

to the telic mode, and the attendant experience of arousal as nervousness or anxiety. Readily available testimony and common knowledge to the contrary, the premise that humor dispels anxiety may indeed be nothing more than a case of the emperor's new clothes.

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APPENDIX A: SCHOOL SCENES

SCHOOL SCENES

1  
(last 4 digits of  
student # \_\_\_\_\_)

The following is a list of statements, each one describing a different hypothetical scenario that could occur to a person while on campus. Read each of the statements, and imagine how you would anticipate the situation to unfold further. That is, use each of the statements as a starting point, and in a sentence or two, describe what would likely occur next. Your description could be of something you think might happen, or how you would likely feel, thoughts you might have, or your description might focus on the consequences you expect to follow a scenario such as the one described. Whichever way you decide to continue the 'story', try to focus your description on the time immediately following the event presented on the statement. It is not necessary that you conclude the scenario, merely continue it beyond the starting point, and in a fashion that is congruent with the information presented in each scenario. Please respond to all of the items, with one or two sentences.

1. As you are standing in line at the cafeteria, you notice that the person ahead of you is a classmate whom you have not spoken with before.

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2. You are waiting to process a course change, and overhear some other students talking about the professor of the course you want to change into. They are saying what an extremely hard marker she is.

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3. You are sitting in tutorial, discussing the week's lecture, and you realize that the tutorial leader is mistaken.

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4. You have spent half an hour walking the library looking for a study carrel, and you notice that the same carrel is still empty, with a few unopened books sitting on it.

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5. In lecture, the professor happens to be discussing something that you are knowledgeable about, and you don't agree with what is being presented.

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6. A week before the mid-term exam, a person you hardly recognize asks to borrow your notes.

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7. While you are out shopping you see an acquaintance from your class in the same store.

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- 8. While researching in the library for your final paper, you meet one of your classmates, and it turns out that you are interested in the same books.

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- 9. While planning a group project, your co-workers have asked if you would be willing to be the group speaker when presenting your work to the rest of the class.

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- 10. As you arrive outside the lecture room, a classmate has dropped an arm load of books.

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APPENDIX B: EXAM SCENARIOS

EXAM SCENARIOS

(last 4 digits of student # \_\_\_\_\_)

The following is a list of statements, each one describing a different hypothetical scenario that could occur when a person is writing exams. Read each of the statements, and imagine how you would anticipate the situation to unfold further. That is, use each of the statements as a starting point, and in a sentence or two, describe what would likely occur next. Your description could be of something you think might happen, or how you would likely feel or think, thoughts you might have, or your description might focus on the consequences you expect to follow a scenario such as the one described. Whichever way you decide to continue the 'story', try to focus your description on the time immediately following the event presented in the statement. However, continue the scenarios in as humorous a way as possible. You could do this by continuing the 'story' in some way incongruous with the material that is presented; i.e., with exaggeration, bizarreness, irreverence, puns, slapstick, etc., etc. Whichever way you choose to continue the scene, just try to make it as humorous as possible. There are no correct or incorrect responses. Please respond to all the items.

1. You are lying in bed and you continue to have negative thoughts about tomorrow's test.

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2. During lunch hour everyone at your table is cramming for the final English exam. They are discussing an area that you thought you knew but now you are having your doubts.

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3. While writing a test your heart starts to pound and you begin a series of negative self-statements.

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4. The instructor has announced the time and you panic. You are feeling that you won't finish in time.

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5. After a test you are talking with your friends and you are wondering if you should have answered some questions differently.

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6. While writing a long answer to a history question your mind goes blank and all the points you had thought of seem to leave you.

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7. You have studied really hard but when you see the exam paper your mind goes completely blank.

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8. While writing a multiple choice question you begin to doubt your knowledge even though you are familiar with the information.

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9. You are halfway through the examination and other students start handing in their work.

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10. You are sitting down to write an exam. As you read over the test questions you find that they are much more difficult than you expected.

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## Appendix C: Humor Rating Scale and Examples

### Humor Rating Scale

<u>Score</u>	<u>Criteria</u>
0	- not at all humorous, simply continues the scenario.
1	- slightly humorous, an attempt at being humorous with limited success.
2	- moderately humorous, a clearly humorous remark.
3	- very humorous, genuinely comical, a good joke.

### Examples of Scoring

Item 1 from "Exam Scenarios":

"You are lying in bed and you continue to have negative thoughts about tomorrow's test".

Responses scored at 3: i) You imagine your instructor in raggedy underwear lecturing to you.  
ii) I jump on my husband and use sex as a diversionary tactic until I am exhausted and fall asleep.

Responses scored at 2: i) I wake up my husband for sex.  
ii) On an hourly basis I would phone the prof. and hang up without speaking.

Responses scored at 1: i) You imagine you are sitting taking the exam and a group of children dressed up for a party come in with cake and decorations.  
ii) A bird flies in your window with the exam.

Responses scored at 0: i) I try to stop the negativity by thinking about something else.  
ii) I would tell myself to not worry about it and try to get a good night's sleep.

APPENDIX D: SELF-EFFICACY QUESTIONNAIRE

Coping Skill Confidence

**Instructions:** While study, preparation, and test taking skill are important factors in exam performance, so is the ability to maintain an appropriate level of arousal. Too much arousal can lead to poorer performance, whereas too little can lower motivation. How confident do you feel of your ability to control your level of exam arousal, so that you perform at an optimal level? Record how confident you feel on the scale below. One hundred represents complete confidence; zero represents complete uncertainty.

