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Development and validation of the Pathogenic Beliefs Questionnaire.

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DEVELOPMENT AND VALIDATION OF THE PATHOGENIC BELIEFS QUESTIONNAIRE

A Thesis Presented

by

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ABSTRACT

DEVELOPMENT AND VALIDATION OF THE

PATHOGENIC BELIEFS QUESTIONNAIRE

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The major objective of the study was to establish the validity of the newly designed Pathogenic Beliefs Questionnaire (PBQ). The concept of pathogenic beliefs derives from Control Mastery Theory which is a cognitive psychoanalytic theory of psychopathology. Subjects were given questionnaire measures of attachment, identity, separation-individuation, depression, dysfunctional attitudes, and pathogenic beliefs, and the correlations between each of the measures were computed. The results indicate that the measures are tapping different constructs. However, additional research on the PBQ is suggested, especially a factor analysis based on a larger sample of subjects. If the PBQ is eventually found to be valid, then therapists who practice from a control mastery theory perspective can use the PBQ to identify pathogenic beliefs more quickly than is currently possible. In addition, the use of the PBQ with nonclinical populations was a first step toward making control mastery theory a theory of personality, as it is now primarily a theory of psychopathology.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1

INTRODUCTION

Literature Review

Control mastery theory has been developed by Joseph Weiss and Harold Sampson over the last 3 decades. The theory appears to be growing in popularity. When the Mount Zion Psychotherapy Research Group (currently known as the San Francisco Psychotherapy Research Group) was established in 1972, there were only 10 members. Currently there are 40 active members in the group, as well as growing numbers of therapists who practice from a control mastery perspective. In addition, scores of articles relevant to this approach are being published. Even within our own department, several training therapists are thinking about and using aspects of control mastery theory when working with their clients.

Control mastery theory is a cognitive psychoanalytic theory developed by Weiss and Sampson based on some of Freud's later writings. The theory is cognitive in that it includes the concept that pathogenic beliefs influence a person's emotions and behavior. According to the theory, psychopathology arises from unconscious pathogenic beliefs that develop primarily in childhood and adolescence (Weiss, Sampson, and the Mount Zion Psychotherapy Research Group, 1986). An example of such a belief is "if I am successful, then my parents will be hurt." These pathogenic beliefs are

"frightening and constricting" (Curtis, Silberschatz, Sampson, Weiss, and Rosenberg, 1988, p. 257), and thus the individual unconsciously wishes to change these beliefs, becoming free of the inhibiting feelings. However, the client believes that to pursue his or her goals and to disconfirm the pathogenic beliefs would harm either the individual or others, primarily family members.

When a client seeks therapy, he or she has an unconscious "plan" of how to improve his or her functioning. The client unconsciously knows that the pathogenic beliefs have to be disconfirmed and will attempt to do so in relation to the therapist. The "plan" consists of the client's attempts to overcome the pathogenic beliefs, to solve problems, and to achieve goals. The client wishes for the therapist to behave in ways that will disconfirm the client's pathogenic beliefs. In doing so, the client presents the therapist with "tests" to see if the therapist will be able to disconfirm the beliefs. If the therapist "passes" the test, the client will feel less anxious, will bring more material into therapy, and will make bolder insights into the content of a pathogenic belief, into the roots of the belief, or into the goals for therapy.

The goal of control mastery therapy is to disconfirm the client's pathogenic beliefs by making them conscious so that they may be critically evaluated and provide insight. Once the client feels safe enough to work on the pathogenic

belief, the belief is made conscious so that it can be interpreted and disconfirmed. The therapist can use interpretations to illustrate to the client that the symptoms and the beliefs are a way of complying or identifying with the parents. The client then has to be shown that to pursue his or her own potential is a right, and that such striving will not hurt one's parents, or if striving does hurt one's parents, the client must value her or his life enough to pursue her or his goals anyway.

Two key concepts of control mastery theory are survivor guilt and separation guilt. Survivor guilt is the guilt people experience when they assume that they have fared better than their parents or siblings, and that this excelling has somehow caused harm or rejection in the other family members. By acquiring more of the good things in life in relation to other family members, some people feel they have betrayed their family members and so unconsciously feel guilty.

Separation guilt is also tied to an unconscious belief and may develop in children who wish to become independent of the parent, but who unconsciously believe that to do so would hurt the parent. Both types of guilt and the beliefs that they are rooted in are inferred by children from their experiences in life and from their perceptions of these experiences.

Based on the work of Weiss, Sampson, and the Mount Zion Psychotherapy Research Group (1986), Lewis Engel and Tom Ferguson (1990) published a book entitled Imaginary Crimes in which they present five crimes of which individuals may unconsciously convict themselves. These crimes are split up into the two types of guilt discussed by Weiss et al. The crimes that represent survivor guilt include outdoing, love theft, and burdening. The crimes indicative of separation guilt include abandonment and disloyalty.

According to Engel and Ferguson (1990), people may convict themselves of outdoing if they feel that they have surpassed a family member in any way. Having a better profession, enjoying life more, or having more friends are all ways in which people can feel that they have outdone the other members of their family. There are two reasons why people feel guilty about surpassing their family members. One reason is that if one uses up the good things in life then he or she is prohibiting other family members from acquiring these good things. The other reason is that if one continues to achieve the good things while other members are perceived to be suffering without these things, then it appears as though the person is "showing up" his or her family on purpose just to make them look bad.

Engel and Ferguson (1990) add that it is not the mere fact of outdoing one's parents or siblings that causes the guilt. An important contributor to the guilty feelings is

one's parents' reaction to one's success. If one's father views himself as successful in whatever he is doing in life, then one is less likely to feel guilty about getting a "better" job than one's father. If however the father is always lamenting about how unfulfilled he is in his career, then one may feel extremely guilty about getting a job that pays twice as much money as the father makes. As is true for all these crimes, it is the person's perceptions of family members' happiness that influence the extent to which he or she feels guilty.

Another survivor guilt crime is love theft. To be "convicted" of the crime of love theft, one has to feel that he or she has taken more than his or her fair share of the resources of the family such as love and attention, and that this "theft" has caused a sibling (or parent) to suffer in some way. Someone who feels that she was the favorite child of her parents will be more likely to blame herself for her sibling's unhappiness, failure, or illness. By stealing the love or attention that the sibling needed, a victim of love theft feels that she is to blame for her sibling's not developing to his or her full potential.

The third crime of survivor guilt is burdening. If one believes that he was a burden to his parents as a child, he will be likely to convict himself of burdening. By being a burden, a person feels that he is the cause of a parent's unhappiness and suffering. An example of this feeling of

responsibility is the blame a child of divorced parents sometimes puts on himself for being the cause of the divorce. Again, this guilty feeling is based on the child's perceptions. In reality, a child may be extremely difficult to bring up, but if his parents appear to be happy anyway, then the child will be less likely to feel guilty. Conversely, a relatively easy child may suffer from guilt if his parents continued to tell him or in some other way indicated that he was difficult to raise.

The crimes of separation guilt include abandonment and disloyalty. Abandonment can produce feelings of guilt when one's parents appear to be unhappy or threatened by their child's attempts to gain independence and separate from them. If separation produces such guilt, then the child is unlikely to develop her own opinions, make her own decisions, or move out of the parents' house and establish her own life. Even if a child does manage to separate at least physically from her parents, she may still have guilt and will handicap herself by self-sabotage in which she may continuously find some reason for moving back home, or she may continue to rely on parents for decision-making.

Convicting oneself of the crime of disloyalty may occur when one holds opinions, beliefs, or ideals that are different from one's parents, and the parents feel insulted by this rejection of their values. One may also behave in ways that are antagonistic to the expectations of the family

and consider himself guilty of disloyalty. If the last three generations of one's family have become doctors, then for one not to become a doctor may result in the conviction of disloyalty. Another form of disloyalty would be to criticize one's parents and to recognize that they may not always be right.

Weiss and Sampson and their colleagues (1986) have developed a procedure for determining a client's plan. However, there is extensive work involved in developing a case formulation of a client, taking many hours of work by a team of three to five experienced clinicians. This work includes reading over transcripts from many sessions in order to determine the client's plan. The transcripts are dissected in an attempt to determine after what intervention by the therapist the client became less anxious and was able to share more material. This is used to form plan diagnosis.

Determining the pathogenic beliefs that the client unconsciously held would be more efficient and beneficial to the client if it could occur early in therapy. As early as the first session or even at intake perhaps with the use of a questionnaire, the therapist could already begin formulating the client's plan based on the results of the questionnaire. By determining the pathogenic beliefs early, the therapist can attempt to disconfirm them right from the beginning and, more importantly, at least will not confirm

the beliefs. If a therapist were to confirm pathogenic beliefs, the client may discontinue therapy after concluding that the therapist cannot help disconfirm the pathogenic beliefs that have caused the presenting problems.

Another important limitation of control mastery theory is that it is oriented exclusively to an explanation of psychopathology. The theory does not explain normal development and is not a theory of personality. For control mastery to become a theory of personality, more research has to be conducted especially in the area of normal development. Do "normal" people hold any pathogenic beliefs? What kind of effects do pathogenic beliefs have on people who have not sought out therapy? This study was a first step in this direction as the Pathogenic Beliefs Questionnaire (PBQ) was used to determine its validity with a nonclinical sample of college students. If "normal" people are found to have pathogenic beliefs in varying degrees, then further work can be done to evaluate control mastery theory as a theory of personality.

As people become college-aged and leave for school or set out on their own, issues of self-advancement and development of intimate relationships come to the forefront. How successful one will be in life, and whom, if anybody, one will spend the rest of his or her life with become important questions. These two issues are related to two of the most prominent pathogenic beliefs cited in the control

mastery literature, the beliefs of "if I am successful, my parents will feel betrayed," and "if I develop a close, intimate relationship, my parents will feel abandoned." So it would appear that the study of late adolescent individuals may reveal the existence of some pathogenic beliefs.

Two other areas of development that become very salient in late adolescence as individuals attempt to leave their parents' home and establish their own lives are identity and adult attachment styles. Identity deals with questions of where an individual stands on issues such as occupation, religion, and politics and how one's opinions on these issues may be different from those of one's parents. Attachment deals with one's separating from one's parents and developing intimate relationships with others. These two constructs are also relevant to the pathogenic beliefs hypothesized by control mastery theory.

James Marcia (1980) has developed a theory of identity based on Erikson's theory of psychosocial development. In his theory, Marcia discusses four identity statuses: achieved, foreclosed, moratorium, and diffused. A person who is identity achieved has gone through a period of crisis or questioning of values and beliefs in the areas of occupation, ideology, and sexual/interpersonal relationships (Marcia, 1991). After this questioning, the individual determines his or her opinions based on the answers achieved

during the questioning. Identity achieved individuals also have a high level of commitment to their beliefs and values and do not change them on a whim.

While foreclosed individuals have a high level of commitment, they have not gone through a period of serious questioning and have simply adopted the values and beliefs of their parents. For example, a person who follows in his father's footsteps or unquestioningly accepts her mother's political beliefs may be foreclosed. On the other hand, a person who is currently going through crisis will have low commitment and would be said to be in moratorium. The individual is actively engaged in coming to decisions about values and opinions and if successful will one day be identity achieved.

The diffused individual has both low commitment and a history of no crisis. The individual seemingly goes through life not caring about anything and not taking a stand on either side of an issue, basically believing that whatever happens, happens. Such individuals generally show signs of passivity, apathy, and/or boredom and have feelings of helplessness and hopelessness. They merely float through life with no aims and seemingly no purpose.

An apparently closely related concept to identity is separation-individuation or establishing psychological independence from one's parents. Some evidence that demonstrates this relation between identity and separation-

individuation has been provided (Issenberg, 1991). According to Hoffman (1984), psychological separation involves an individual's quest for independence from his or her parents. The level of independence varies from one individual to another as well as between the parents of one individual. Greater independence is believed to produce a healthier, better-adjusted individual (Hoffman, 1984). Although identity formation and separation-individuation both occur primarily in late adolescence, there has been a question of whether the two are related. Issenberg (1991) found that separation-individuation scores did significantly predict identity formation scores.

Another developmental concept that relates to identity development is attachment. The attachment literature has been growing substantially over the last 25 years or so (Rice, 1990). Much of the early work in this area was contributed by Bowlby, who centered attachment theory on the affectional bond between an infant and a caregiver. A child seeks out his or her attachment figure, usually a parent who is familiar and who is perceived to be stronger and wiser. The child is able to develop and explore the world when the attachment figure provides a safe base. If this safe base is not successfully established, then symptoms such as anxiety, depression, and delinquency may develop.

Mary Ainsworth, Bowlby's main research collaborator, and her student Mary Main have provided much research that

supports the ideas of attachment theory. Much of this research has revolved around the Ainsworth Strange Situation Test (Ainsworth et al, 1978) which classifies infants into different attachment styles based on their reactions to being separated from their parent. Main and Goldwyn (1991) have also developed an Adult Attachment Interview that measures adult attachment styles. From this research, four different attachment styles have been identified.

Attachment relationships are divided into one securely attached style which develops as a result of reliable and responsive caregiving and three insecurely attached styles which develop as a result of insensitive and unreliable caregiving (Rice, 1990). The different attachment styles are securely attached, ambivalent, avoidant, and disorganized. Most psychologically healthy individuals fall into the securely attached group. During the Strange Situation Test, securely-attached individuals do not become very upset at the separation and warmly interact with their mother upon return. As adults, securely-attached individuals demonstrate appropriate feelings of anger, sadness, and happiness depending on the situation.

Individuals who are ambivalent-insecure show great distress when separated from the parent, and upon reunion, they demonstrate ambivalence by demanding to be picked up, yet angrily pushing the parent away. The child appears to be angry that he or she was left behind and does not seem to

trust the parent. This pattern of demanding attention yet driving the other away may continue into adult intimate relationships.

Avoidant-insecure individuals show very little emotion. During the Strange Situation Test, the child does not notice that the parent is gone and will often turn towards toys or other objects upon the parent's return. The parent and the child do not have fun together as do the securely-attached individuals. Sadly, the child often gives up trying to get the parent's care as the parent is often unaware of the cues given by the child.

Infants who appear to be dazed, anxious, or disoriented are considered to be disorganized-insecure. This type of attachment style often arises in situations of physical abuse either on the part of the parent or the child. All attachment patterns are believed to be persistent, and the insecure patterns tend to cause more problems than does the securely-attached style.

Over the last several years, the concept of attachment has been expanded to include other relationships besides that of the mother-infant dyad. Attachment is now being looked at from a life-span perspective by some researchers (Lerner and Ryff, 1978), including adolescence. Rice (1990) has completed a review of the literature dealing with adolescent-parent attachment relations, and how attachment styles relate to adolescent development and adjustment and

concludes "that secure attachment relations with parents predict adaptive functioning in a variety of situations for the adolescent" (p. 517).

Hypotheses

The major purpose of the present series of studies was to validate the Pathogenic Beliefs Questionnaire (PBQ). The relation among pathogenic beliefs with identity, separation-individuation, attachment, depression, and dysfunctional attitudes was investigated. The hypotheses for this project revolved around the relationship of the five crimes of Engel and Ferguson (1990) to the other constructs to be measured, including academic difficulties and certain high-risk behaviors.

There were three studies conducted. The hypotheses of Study 1 were: 1) subjects with high scores on the subscales of the PBQ would be more likely to have high scores on the SCL-90-R and 2) subjects with high scores on the subscales of the PBQ would be more likely to have lower grade point averages (GPA). These hypotheses were based on the ideas of Control Mastery Theory which would predict that people who experience high degrees of unconscious guilt will be more likely to have psychological symptoms (as self-handicapping strategies) and will be less likely to do well in school (for fear of hurting their parents).

The hypotheses of Study 2 revolved around whether the PBQ or any of the other measures could discriminate between the high risk and the low risk groups. In other words, did the two risk groups differ significantly on their performance on the measures given. Correlations and t-tests were conducted to address this set of hypotheses.

A demographic questionnaire was also given (during prescreening sessions), and hypotheses were made about the relation between these data and the subject's scores on the PBQ subscales. The following hypotheses were tested: 1) the higher the parents' education, the lower the subjects' scores on the outdoing subscale, 2) higher scores on the PBQ subscales would be related to more drug use, alcohol use, promiscuity, and history of family illness, and 3) subjects in the high risk group would have higher scores on the PBQ subscales than subjects in the low risk group.

It was hypothesized that the PBQ would be tapping different constructs than the other measures. Therefore, the same analyses that were conducted on the PBQ were conducted using each of the other measures to determine if they could discriminate between the risk groups also. Analyses were also done relating the PBQ subscales to the other measures. Table 1 displays the specific predictions based on the Study 2 hypotheses for subjects with high scores on the PBQ, and Table 2 shows the predictions for subjects with low PBQ scores.

Table 1
Hypotheses about Subjects with High PBQ Scores

	Out-doing	Love Theft	Burden	Abandon	Dis-Loyalty
EOMEIS	Fore-closed	xxxx	xxxxx	Fore-Closed	Fore-Closed
PSI	Low Indep	xxxx	xxxxx	Low Indep	Low Indep
Attachment	Ambiv-alent	xxxx	Avoid-ant	Ambiv-alent	Ambiv-alent
BDI	For all crimes, symptoms may show up as depression, as a handicapping strategy.				
DAS	PBQ scores and DAS scores should not be highly correlated, because they are intended to measure different constructs and types of thoughts.				
Possible Behavior	Drop out	Not doing as well as sibling	Sub-stance abuse	Returning home at slightest stress	Choos-ing parent major

The hypotheses of Study 3 revolved around whether the subjects' academic status in the Spring semester was related or could be predicted by the scores on the measures given in the Fall semester. It was hypothesized that subjects with high scores on the PBQ subscales would be more likely to withdraw from the university and/or more likely to have lower GPAs than the subjects who scored lower on the PBQ subscales. Withdrawal rates and GPAs were also expected to differ among the risk groups with the high risk group being more likely to withdraw or have lower GPAs. Similar hypotheses were made about the subjects' subjective

Table 2
Hypotheses about Subjects with Low PBQ Scores

Measure	Predicted Outcome
EOMEIS	Identity achieved
PSI	High independence
Attachment	Securely attached
BDI	Predict low depression scores however depression may be the result of other factors
DAS	Could be high or low - if independent of pathogenic beliefs
Possible behavior	Living to one's full potential

evaluations of how their lives were going on a scale from 1 to 10 with 10 being the highest. In addition, the relation between these status data and the other measures were also investigated.

CHAPTER 2

METHOD

Subjects

In Study 1, 73 subjects who participated in a study last year (Tolman, 1991) participated in a follow-up study. The present sample consisted of 60 women and 13 men. The present study involved the subjects' completing the PBQ and the Symptoms Checklist (SCL-90-R), as well as providing some demographic information. These subjects were sophomores or seniors at the time of the current study.

In Study 2, the subjects were incoming first-year students at the University. First-year students were used, because for many this was their first time away from their families for any given time in addition to their undergoing the developmental stage of separating from their parents, struggling with issues of identity, and trying to succeed in academics and social relationships. These subjects were recruited based on their responses to the questions about high-risk behavior given during the prescreening. We recruited 25 high-risk subjects and 26 low-risk subjects. Subjects completed a packet of questionnaires. When finished, they were interviewed and asked to elaborate on some of their answers as well as provide some background data.

Study 3 was a short follow-up conducted by mail during the Spring semester. All subjects who participated in the

questionnaire and interview portion of the study agreed to be contacted the next semester and were asked to complete a brief questionnaire asking about any changes since the previous semester. Thirty-eight of the 51 subjects participated in Study 3.

Procedures

There were three studies conducted. Study 1 involved following up as many of the subjects from Audrey Tolman's (1991) master's thesis study as possible. These subjects were mailed packets that contained the Pathogenic Beliefs Questionnaire, the Symptoms Checklist (SCL-90-R), and a demographic questionnaire that asked such information as gender, grade point average, and academic status. The subjects were asked to complete and return the questionnaires in exchange for experimental credit.

Study 2 involved giving questionnaires to 51 subjects and later interviewing these subjects so that they could elaborate on some of their answers given on the questionnaires. These interviews were intended to give some qualitative data about the subjects' pathogenic beliefs. The packet of questionnaires included the Extended Objective Measure of Identity Status (EOMEIS), Dysfunctional Attitudes Scale (DAS), Psychological Separation Inventory (PSI), Beck Depression Inventory (BDI), Pathogenic Beliefs Questionnaire (PBQ), and Experiences in Close Relationships.

The subjects were selected according to their answers on a prescreening questionnaire to produce a group that engaged in much high-risk behavior such as drinking alcohol, drugs, and promiscuity and a group that did not engage in many of these types of behavior. Another factor that was used to determine a subject's risk was a history of physical or emotional illness in the family. While family illness is not a behavior, according to CMT, a history of family illness may produce feelings of guilt about outdoing, disloyalty, or even lovetheft which may have a self-handicapping influence on the subject's behavior. Twenty-six subjects who engaged only minimally, if at all, in these types of behaviors, and 25 subjects who reported engaging in these behaviors quite often were recruited. Demographic information obtained during the prescreening sessions was also analyzed after being verified during the interview.

Study 3 was a follow-up of the 51 subjects in the spring semester. In this follow-up, the subjects were sent a brief questionnaire in the mail that asked about their current academic status including whether or not they were still in school, their GPA, their subjective evaluation of their adjustment, and any problems they were experiencing.

Measures

Psychological Separation Inventory (PSI)

The Psychological Separation Inventory (PSI) was developed by Hoffman and published in 1984. According to Hoffman, psychological separation is a multidimensional construct based on psychoanalytic and structural family relations theory that occurs in late adolescence. The construct consists of the following dimensions: functional independence or the ability to conduct one's personal affairs without relying on one's parents; attitudinal independence or the recognition that one is one's own person with one's own beliefs, attitudes, and opinions; emotional independence or the ability to live without excessive approval and emotional support from one's parents; and conflictual independence or the ability to relate with parents without excessive feelings of guilt, anxiety, or resentment. The four scales of the PSI measure these four dimensions.

Internal consistency reliability estimates (Cronbach alpha) for the four scales range from .84 to .92. Test-retest reliability estimates range from .49 to .94 for males and .83 to .96 for females over a two to three week period. Hoffman has found that for both sexes, greater emotional independence from both parents is related to better academic adjustment. In addition, greater conflictual independence

from parents is related to better adjustment in love relationships.

Extended Objective Measure of Identity Status (EOMEIS)

The identity measure was the Extended Objective Measure of Identity Status (EOMEIS; Bennion and Adams, 1986). The EOMEIS is a 64-item questionnaire with a Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree). Subjects report their degree of commitment and crisis on an "ideological" subscale (which includes the areas of career, politics, religion, and life-style) and an "interpersonal" subscale (which includes the areas of friendship, dating, sex roles, and recreation). Subjects read each item and indicate to what degree it reflects their thoughts and feelings by rating from 1 to 6.

The EOMEIS produces four continuous arithmetically orthogonal scores for each subscale, one for each identity status. The scores range from 0 to 20. Pairs of scores for each identity status from the subscales are then summed to make four overall scores, one for each identity status, with possible scores ranging from 0 to 40.

Pathogenic Beliefs Questionnaire (PBQ)

The Pathogenic Beliefs Questionnaire (PBQ) is a newly designed measure by the present author intended to reveal the extent to which one unconsciously holds pathogenic

beliefs as described by Weiss and Sampson (1986) and Engel and Ferguson (1990). The questionnaire consists of five subscales; one each to measure the pathogenic beliefs that are associated with each of the five crimes delineated by Engel and Ferguson (1990). There are 50 Likert-type items on which subjects indicate the extent to which they agree or disagree with each item. Scoring ranges from 1 to 7 on each item with 7 being most pathogenic. Subscale scores have a range of 10 to 70, while the full scale score has a range of 50 to 350. The instrument may also be used to yield two guilt scores; one for separation guilt, and the other for survivor guilt. The intent of the present study was to establish some validity for the PBQ. As on the PSI, high scores on any of the
subscales are predicted to be related to poor academic adjustment or poor adjustment in love relationships.

The PBQ also contains five scenarios to which subjects indicate how they would react if they were in the situation presented in each of the scenarios and how they would feel. The answers are then coded by placing them into three separate categories that represent a healthy or normal response and feeling, a guilty response and feeling, or a response and feeling that is regarded as showing compliance to parents' demands without a mention of guilt. Two judges independently coded each answer to the scenario, and an interrater reliability of .84 was obtained.

Dysfunctional Attitudes Scale (DAS)

The Dysfunctional Attitudes Scale (DAS) was developed by Arlene Weissman in 1980. The DAS is a 40-item instrument intended to measure cognitive distortions that may underlie or cause depression. The DAS is based on Beck's cognitive therapy model and represents seven major value systems: approval, love, achievement, perfectionism, entitlement, omnipotence, and autonomy. The DAS may be considered a measure of the sixth imaginary crime, that of bad messages (see Engel and Ferguson, 1990).

Although no actual norms have been reported, the approximate mean score for nonclinical samples is 113. Scoring is done by giving zeros for omitted items and assigning a score of 1 to 7 with 1 being adaptive to each item and adding up all the scores to get a total score. The range of scores on the DAS is from 40 to 280 if no items are omitted. A lower score represents fewer cognitive distortions.

The DAS has excellent internal consistency (alphas ranging from .84 to .92) and excellent test-retest correlations over eight weeks (.80 to .84). The DAS has excellent concurrent validity and correlates with a number of measures of depression such as the Beck Depression Inventory, the Profile of Mood States, and the Story Completion Test.

Beck Depression Inventory (BDI)

The Beck Depression Inventory (BDI) (Beck, 1978) is a brief, well validated self-report measure used to obtain an assessment of the severity of depression as well as the presence of certain symptoms such as suicide. The BDI is also useful for determining the person's negative thinking that may be the basis for his or her central problems.

The BDI is a twenty-one item measure. On each item, the respondent chooses one of four statements that represents how she or he has been feeling over the last week including the day of completing the questionnaire. The choices range from a nondepressive description through three progressively more depressive statements. The respondent can choose more than one statement if they apply equally as well. The BDI is scored by adding up the number corresponding to each of the chosen statements.

Experiences in Close Relationships (ECR)

The Experiences in Close Relationships (ECR) is a 54-item instrument intended to measure attachment style. The directions ask the respondent to rate each item on a scale from 1 (disagree strongly) to 7 (agree strongly) on how he or she generally experiences relationships. The subscales of the ECR include: proximity seeking, closeness, disclosure, self-reliance, defensive, ambivalence, trust, jealousy or fear of abandonment, and anxious/clinging.

CHAPTER 3

RESULTS

Study 1 revealed significant correlations between scores on the subscales of the PBQ and the subjects' overall SCL-90-R scores. The correlations are positive indicating that the more guilt one experiences as reported on the PBQ, the more symptoms one indicates on the Symptom Checklist. This result holds true for both genders with the exception of the lovetheft subscale for men. These findings provide evidence to support the first hypothesis for Study 1. The correlations are reported in Table 3.

Table 3
Correlations between PBQ Subscales and SCL-90-R

Females

	Abandon	Burden	Disloyal	Lovetheft	Outdoing
SCL-90-R	r = .42 p.= .00	r = .29 p.= .01	r = .52 p.= .00	r = .28 p.= .02	r = .39 p.= .00

Males

	Abandon	Burden	Disloyal	Lovetheft	Outdoing
SCL-90-R	r = .90 p.= .00	r = .59 p.= .02	r = .74 p.= .00	r = .25 ns	r = .72 p.= .00

Another major significant finding from Study 1 was the correlation between subjects' scores on the PBQ subscales and their reported grade point average (GPA). Although there were no significant findings for the males, three

subscales were significantly correlated for the women: disloyalty, outdoing, and burdening. In all cases, the correlation was negative indicating, as hypothesized, that the more guilt one has, the lower her grade point average. The results are presented in Table 4.

Table 4
Correlations between PBQ Subscales and GPA

Females

	Abandon	Burden	Disloyal	Lovetheft	Outdoing
GPA	r = -.19 ns	r = -.27 p.= .019	r = -.25 p.= .028	r = -.05 ns	r = -.26 p.= .027

Males

	Abandon	Burden	Disloyal	Lovetheft	Outdoing
GPA	r = .32 ns	r = -.33 ns	r = -.12 ns	r = -.38 ns	r = -.25 ns

The subjects of Study 2 represented the spectrum of social economic status as determined by parents' education level and occupation. The breakdown of parents' education is presented in Table 5.

It was hypothesized that the level of education of one's parents would be correlated with at least the subscale of outdoing on the PBQ. For the most part this result was not found. There was no significant correlation between outdoing and either parents' education level for the male subjects. However, there was a significant correlation

Table 5
Parents' Educational Achievement

Highest level completed	Number	Percent
Father's education		
Elementary school	2	4
Some high school	1	2
High school graduate	7	14
Some college or trade school	9	18
College or trade school graduate	14	27
Some graduate school	2	4
Graduate degree	16	31
	51	100
Mother's education		
High school graduate	11	22
Some college or trade school	7	14
College or trade school graduate	16	31
Some graduate school	2	4
Graduate degree	15	29
	51	100

between the female subjects' scores on the outdoing subscale and their mother's education ($r = -.3219$, $p. = .034$). This result indicates that the lower the mother's education, the higher the woman's guilt about outdoing her parents.

The data regarding how often the men and women in Study 2 reported engaging in alcohol consumption, drug use, and sex with different partners are presented in Table 6. The hypotheses made about these individual high-risk behaviors as well as a combined risk profile were tested by conducting t-tests and correlations.

T-tests were conducted to determine if the high risk group and the low risk group differed significantly in their scores on the PBQ subscales. For men, significant results were found for the outdoing subscale. The mean of the high

Table 6
Participation in High Risk Behavior by Gender

Alcohol Use

How often	Men(%)	Women(%)
Never	38	30
Once a month	6	30
Once a week	17	3
Twice a week	22	25
3 to 5 times a week	17	12

Drug Use

How often	Men(%)	Women(%)
Never	39	61
Once a month or less	22	18
Weekly	11	12
More than once a week	22	9
Daily	6	0

Promiscuity

Number of partners	Men(%)	Women(%)
Zero	17	49
One	39	18
Two	11	0
Three	11	3
Four - seven	10	9
More than eight	11	21

risk group for the subscale of outdoing was significantly higher than the mean for the low risk group ($t = -2.54$, $p. = .022$). There was also a significant t-test for males on the burdening subscale ($t = -3.16$, $p. = .006$), again with subjects in the high risk group feeling they were more a burden to their parents.

For the women, significant t-tests were obtained for the outdoing subscale and the disloyalty subscale. However, the results were the opposite of what would be hypothesized

by the theory. The low risk group had a higher mean on both the outdoing ($t = 2.44$, $p. = .020$) and the disloyalty subscales ($t = 2.42$, $p. = .022$).

Other t-tests were conducted comparing the high risk group to the low risk group on the BDI, the DAS, and the conflictual subscale of the PSI. None of these results were significant for either sex.

For males, the subscale of outdoing on the PBQ was positively correlated with drug use ($r = .5214$, $p. = .013$). This result indicates that the more guilt a male subject experienced about outdoing, the more he reported using drugs. The opposite effect was found for females. The subscales of disloyalty and outdoing were <u>negatively</u> correlated with drug use ($r = -.3828$, $p. = .014$ and $r = -.3007$, $p. = .045$, respectively) in women. This latter result is contrary to the hypothesis.

Subjects were asked if they had a family history of medical or psychological problems. The large majority of both genders reported no family illness, 83% of men and 82% for women. In addition, 15% of female subjects had one family member who suffered either from a medical or psychological illness, and 17% of the male subjects had two or more ill family members. Control Mastery Theory would predict that previous family illness may lead to high risk behavior as a way of handicapping oneself so as not to outdo

the sick family member. For this reason, family illnesses were included in the high risk profile.

For the women, number of family illnesses was not correlated with any of the subscales of the Pathogenic Beliefs Questionnaire (PBQ). However, for the men the subscale of burdening was significantly correlated with the number of illnesses ($r = .51$, $p. = .015$). The positive correlation indicates that the more family illnesses, the more the male subjects felt they were a burden to their families.

The means obtained on all the measures are presented in Table 7, Table 8, Table 9, and Table 10 separated by risk and gender (see pages 32-35). To test the hypotheses about the relation between the PBQ and the other measures, correlations between the subscales of the measures were conducted. All correlations for men and women were conducted separately. The intercorrelations among the subscales of the PBQ are presented in Table 11.

The PBQ subscales were correlated with the subscales of the ECR, and only a few correlations reached significance for the females. The lovetheft subscale of the PBQ was significantly correlated with the closeness ($r = .3455$, $p. = .024$), the ambivalent ($r = .3242$, $p. = .033$), and the jealousy ($r = .4108$, $p. = .009$) subscales of the ECR. In addition, the trust subscale was significantly correlated with the disloyal ($r = -.296$, $p. = .047$) and the outdoing

Table 7
Mean Scores on all Measures
Low Risk Men (N = 6)

Measure	Mean	Standard Deviation
PBQ		
Abandonment	28.333	5.115
Burdening	22.667	6.282
Disloyalty	22.667	3.204
Lovetheft	24.833	9.432
Outdoing	13.667	2.658
Guilt	1.500	1.517
Healthy	5.000	1.265
Compliance	4.500	.837
PSI		
Mother attitudinal	24.000	4.427
Mother conflictual	75.833	11.374
Mother functional	29.500	8.643
Mother emotional	44.000	13.038
Father attitudinal	22.000	9.633
Father conflictual	79.000	20.000
Father functional	34.167	8.704
Father emotional	48.333	9.771
EOMEIS		
Achieved	32.667	6.377
Moratorium	17.500	5.244
Foreclosed	24.000	4.517
Diffuse	23.500	5.010
DAS	211.167	24.895
BDI	25.500	2.665
ECR		
Proximity	22.500	2.588
Defensive	15.667	2.338
Closeness	19.667	3.502
Disclose	24.833	1.472
Self-reliant	26.333	3.670
Ambivalent	14.500	4.037
Trust	23.000	2.098
Jealousy	22.167	4.167
Anxious	16.833	4.535

Table 8
Mean Scores on all Measures
High Risk Men (N = 12)

Measure	Mean	Standard Deviation
PBQ		
Abandonment	28.583	5.600
Burdening	34.250	7.759
Disloyalty	26.750	6.384
Lovetheft	27.833	7.861
Outdoing	20.250	6.002
Guilt	1.636	1.120
Healthy	6.182	1.779
Compliance	3.182	1.940
PSI		
Mother attitudinal	34.833	15.237
Mother conflictual	75.667	22.382
Mother functional	41.667	9.595
Mother emotional	53.833	16.727
Father attitudinal	35.583	16.217
Father conflictual	84.333	16.983
Father functional	40.750	11.087
Father emotional	55.333	12.872
EOMEIS		
Achieved	32.667	5.898
Moratorium	14.917	5.915
Foreclosed	26.333	3.447
Diffuse	27.750	5.011
DAS	206.667	28.981
BDI	26.833	3.589
ECR		
Proximity	20.667	4.292
Defensive	22.083	4.420
Closeness	20.167	5.132
Disclose	24.583	3.204
Self-reliant	27.917	3.704
Ambivalent	24.667	5.466
Trust	23.833	2.887
Jealousy	22.583	2.109
Anxious	19.083	6.142

Table 9
Mean Scores on all Measures
Low Risk Women (N = 20)

Measure	Mean	Standard Deviation
PBQ		
Abandonment	29.750	9.486
Burdening	26.650	10.277
Disloyalty	29.200	8.256
Lovetheft	28.250	8.583
Outdoing	19.100	6.265
Guilt	2.300	1.593
Healthy	5.750	1.682
Compliance	2.950	1.538
PSI		
Mother attitudinal	36.850	10.781
Mother conflictual	71.000	16.569
Mother functional	28.350	9.691
Mother emotional	38.800	14.377
Father attitudinal	31.950	14.870
Father conflictual	78.650	19.930
Father functional	36.700	12.724
Father emotional	44.800	16.430
EOMEIS		
Achieved	31.000	7.901
Moratorium	18.350	6.900
Foreclosed	25.800	6.058
Diffuse	23.400	6.038
DAS	194.700	24.568
BDI	27.250	5.590
ECR		
Proximity	22.400	3.619
Defensive	19.900	6.146
Closeness	20.250	3.432
Disclose	25.550	2.892
Self-reliant	26.700	3.230
Ambivalent	22.800	6.986
Trust	24.900	3.417
Jealousy	23.050	2.564
Anxious	21.050	4.536

Table 10
Mean Scores on all Measures
High Risk Women (N = 13)

Measure	Mean	Standard Deviation
PBQ		
Abandonment	23.615	9.553
Burdening	25.000	13.534
Disloyalty	22.231	7.812
Lovetheft	24.538	7.827
Outdoing	14.077	4.890
Guilt	1.846	1.281
Healthy	6.154	1.281
Compliance	3.000	.913
PSI		
Mother attitudinal	27.462	12.073
Mother conflictual	71.308	20.139
Mother functional	36.538	13.068
Mother emotional	47.077	16.358
Father attitudinal	35.308	14.637
Father conflictual	81.615	22.183
Father functional	40.615	10.905
Father emotional	45.923	16.651
EOMEIS		
Achieved	33.538	5.301
Moratorium	13.385	5.042
Foreclosed	25.231	6.784
Diffuse	24.077	8.401
DAS	211.923	31.774
BDI	29.308	9.604
ECR		
Proximity	21.769	5.525
Defensive	19.692	7.016
Closeness	20.923	3.328
Disclose	28.769	5.215
Self-reliant	27.692	2.840
Ambivalent	22.231	8.177
Trust	25.538	2.504
Jealousy	25.385	3.176
Anxious	21.000	4.340

(r = -.3480, p. = .024) subscales of the PBQ. No other correlations between pathogenic beliefs and attachment were significant.

Table 11
Intercorrelations among PBQ Subscales

Men

	Abandon	Burden	Disloyal	Lovetheft	Outdoing
Abandon	r = 1.00	r = .14 ns	r = .42 p.= .040	r = .32 ns	r = .38 ns
Burden		r = 1.00	r = .54 p.= .01	r = .11 ns	r = .58 p.= .01
Disloyal			r = 1.00	r = .10 ns	r = .67 p.= .00
Lovetheft				r = 1.00	r = .30 ns
Outdoing					r = 1.00

Women

	Abandon	Burden	Disloyal	Lovetheft	Outdoing
Abandon	r = 1.00	r = .44 p.= .01	r = .73 p.= .00	r = .42 p.= .01	r = .59 p.= .00
Burden		r = 1.00	r = .44 p.= .01	r = .07 ns	r = .47 p.= .00
Disloyal			r = 1.00	r = .32 p.= .04	r = .58 p.= .00
Lovetheft				r = 1.00	r = .36 p.= .02
Outdoing					r = 1.00

For the males, there were more significant correlations between attachment styles and pathogenic beliefs. The burdening subscale of the PBQ correlated significantly with four subscales of the ECR: defensive ($r = .4874$, $p. = .020$), trust ($r = .4144$, $p. = .044$), jealousy ($r = .4602$, $p. = .027$), and anxious ($r = .6619$, $p. = .001$). In addition, the disloyal subscale of the PBQ correlated significantly with two subscales of the ECR including closeness ($r = -.5555$, $p. = .008$) and anxious ($r = .4976$, $p. = .018$). Finally, the lovetheft subscale of the PBQ and the trust subscale of the ECR were significantly correlated ($r = -.4389$, $p. = .034$).

When correlating the subscales of the PBQ with subjects' scores on the DAS, distinctive results were found depending on gender. The results are presented in Table 12. There were no significant correlations between PBQ subscales and the DAS for men. However for women, DAS scores correlated significantly with each of the five PBQ subscales. Moreover, the correlations were negative indicating that the fewer dysfunctional attitudes the female subjects indicated on the DAS, the fewer pathogenic beliefs they indicated on the PBQ subscales. This result indicated that the women who had dysfunctional attitudes were more likely to hold pathogenic beliefs as well.

Table 12
Correlations between DAS and PBQ Subscales (Women)

	Abandonment	Lovetheft	Outdoing	Burdening	Disloyalty
DAS	r = -.61 p. = .000	r = -.35 p.= .024	r = -.69 p.= .000	r = -.41 p.= .009	r = -.58 p.= .000

In general, it was hypothesized that individuals whose scores on the EOMEIS indicate identity achievement would be less likely to hold pathogenic beliefs, and those whose scores indicate the other statuses, especially foreclosure, would be more likely to hold pathogenic beliefs. For the males, this was not the case as there were no significant correlations between the identity statuses and those of the PBQ. In addition, only the females whose scores indicated they were in moratorium had a significant correlation with the burdening subscale of the PBQ (r = -.2993, p. = .045).

The correlations between the Psychological Separation Inventory (PSI) subscales and those of the PBQ produced some mixed results which are reported for men and women, respectively, in Table 13 and Table 14. For the men, there was a significant correlation between their attitudinal independence from their fathers and their unconscious feelings of burdening guilt (r = .46, p. = .028). This result indicates that the less the men rely on their fathers for their attitudes, the more they feel like they are a burden to their fathers. Men also experience burdening (r = .62, p. = .003) and outdoing (r = .45, p. = .031) guilt when

they are independent of their mother's attitudes. However, the more conflictually dependent the men were on their mothers, the less disloyalty guilt they experienced ($r = -.56$, $p. = .007$). Men who were functionally dependent on their mothers experienced less burdening guilt ($r = .44$, $p. = .034$) and less outdoing guilt ($r = .54$, $p. = .010$). Finally, men who were emotionally independent of their mothers experienced more outdoing guilt ($r = .55$, $p. = .008$).

Women who were conflictually dependent on their fathers experienced burdening guilt ($r = -.48$, $p. = .002$) and disloyalty guilt ($r = -.37$, $p. = .018$). In addition, women who were attitudinally independent of their mothers experienced guilt on four PBQ subscales: abandonment ($r = .40$, $p. = .010$), burdening ($r = .49$, $p. = .002$), disloyalty ($r = .30$, $p. = .043$), and lovetheft ($r = .38$, $p. = .014$). These data indicate that in general the more psychologically independent the female subjects were from their mothers, the more unconscious guilt they experienced. However, the more conflictually independent the daughters were from their mothers, the less guilt they experienced: abandonment ($r = -.39$, $p. = .011$), burdening ($r = -.52$, $p. = .001$), disloyalty ($r = -.35$, $p. = .022$), and outdoing ($r = -.34$, $p. = .025$).

Table 13
Correlations between PSI and PBQ Subscales (Men)

PSI Subscales	PBQ Subscales				
	Abandon	Burden	Disloyal	Lovetheft	Outdo
PSIMA	r = .07 ns	r = .62 p.=.003	r = .35 ns	r = .05 ns	r = .45 p.=.031
PSIMC	r =-.36 ns	r =-.30 ns	r =-.56 p.=.007	r =-.20 ns	r =-.33 ns
PSIME	r = .07 ns	r = .32 ns	r = .17 ns	r = .39 ns	r = .55 p.=.008
PSIMF	r =-.06 ns	r = .44 p.=.034	r = .26 ns	r = .31 ns	r = .54 p.=.010
PSIFA	r =-.40 ns	r = .46 p.=.028	r =-.04 ns	r =-.36 ns	r =-.08 ns
PSIFC	r =-.05 ns	r =-.25 ns	r =-.05 ns	r = .01 ns	r =-.17 ns
PSIFE	r =-.28 ns	r = .33 ns	r = .12 ns	r =-.26 ns	r = .01 ns
PSIFF	r =-.39 ns	r = .37 ns	r = .00 ns	r =-.28 ns	r =-.04 ns

The subscales of the PBQ were also correlated with scores on the Beck Depression Inventory (BDI). It was hypothesized that high scores on any of the PBQ subscales would be correlated with high depression scores as indicated by the BDI. As with the DAS, there were no significant correlations between the PBQ subscales and the BDI for men, but there were several significant correlations for the women. These are presented in Table 15. The positive correlations indicate that the more guilt a woman feels, the more depressive symptomatology she will display.

Table 14
Correlations between PSI and PBQ Subscales (Women)

PSI Subscales	PBQ Subscales				
	Abandon	Burden	Disloyal	Lovetheft	Outdo
PSIMA	r = .40 p.=.010	r = .49 p.=.002	r = .30 p.=.043	r = .38 p.=.014	r = .25 ns
PSIMC	r =-.39 p.=.011	r =-.52 p.=.001	r =-.35 p.=.022	r =-.14 ns	r =-.34 p.=.025
PSIME	r = .09 ns	r = .37 p.=.017	r = .07 ns	r = .26 ns	r = .15 ns
PSIMF	r = .05 ns	r = .47 p.=.003	r = .11 ns	r = .20 ns	r = .15 ns
PSIFA	r = .23 ns	r = .13 ns	r = .16 ns	r = .24 ns	r = .09 ns
PSIFC	r =-.26 ns	r =-.48 p.=.002	r =-.37 p.=.018	r = .07 ns	r =-.29 ns
PSIFE	r = .06 ns	r = .18 ns	r = .05 ns	r = .16 ns	r = .02 ns
PSIFF	r = .19 ns	r = .16 ns	r = .11 ns	r = .15 ns	r =-.01 ns

Table 15
Correlations between PBQ Subscales and BDI Scores (Women)

	Abandonment	Burdening	Disloyalty	Lovetheft	Outdoing
BDI	r = .46 p.=.004	r = .57 p.=.000	r = .42 p.=.008	r = .14 ns	r = .30 p.=.047

In addition to analyzing the data obtained from the Likert-type scales, answers given to the open-ended scenario questions were coded and analyzed. The scenarios were coded

in a way that produced three categories into which the answers to the scenarios were placed. These categories represented a healthy or normal response, a response based on guilt, and a response in between health and guilt which was called compliance. An interrater reliability of .84 was established for coding the open ended responses.

A regression analysis was conducted to determine if the subjects' answers to the scenarios could be predicted by their scores on the scenarios. Two regressions reached significance. These significant regressions are presented in Table 16. The subscale of disloyalty on the PBQ predicted scores on the guilt scale and on the compliance scale for the scenarios.

Table 16
Significant Regressions between Scenarios and PBQ Subscales

	PBQ Subscale	R2	B	F	p
Guilt	Disloyalty	.16	.40	9.03	.004
Compliance	Disloyalty	.12	-.35	6.55	.013

Analyses were also conducted on the information obtained from the 38 subjects who returned the brief follow-up questionnaire in Study 3. The subjects reported whether they were still at the university or whether they withdrew or transferred. All subjects were still enrolled at the University in the spring semester except for one high-risk

subject who withdrew because of doing poorly his first semester. The subjects also reported their GPA's for the first semester and rated on a scale from 1 to 10 (lowest to highest) how they felt their lives were going.

A t-test was conducted to determine if the subjects in the original high risk group differed from the subjects in the original low risk group on the measure of grade point average. The t-test was significant ($t = 2.04$, $p. = .049$) with the high risk group having a lower GPA than the low risk group, 2.78 compared to 3.21 respectively. However, there were no significant differences between the groups on their subjective evaluations of how their lives were going. There were also no significant correlations between the subjects' scores on the PBQ subscales from the fall semester and their reported GPAs for that semester.

CHAPTER 4

DISCUSSION

The results obtained in the present study indicate that the attempt to develop a questionnaire that can measure pathogenic beliefs is a worthwhile endeavor. Many of the results were in the hypothesized direction, at least for the women. The PBQ was the only measure that discriminated the two risk groups. The non-significant results obtained for many of the analyses on the men's data are probably attributable to the small number of male subjects.

The two major findings of Study 1 provide some encouraging data in support of the usefulness of the Pathogenic Beliefs Questionnaire (PBQ). There was a positive relation between subjects' self-reported symptoms on the SCL-90-R and their scores on the PBQ subscales. The more guilt one experiences, the more symptoms he or she is likely to report. This finding provides evidence to support the fundamental and underlying assumptions of Control Mastery Theory, that unconscious survivor and/or separation guilt are likely to manifest themselves in psychological symptoms. This result was found for both genders despite a small number of male subjects.

The fact that these results were found using a nonclinical sample must be kept in mind. While the results cannot be generalized to those who do actually seek out professional help, the possibility that pathogenic beliefs

can exist in "normal" people is intriguing and promising as far as making Control Mastery Theory (CMT) a theory of personality in addition to a theory of psychopathology. Further research is required to see the extent to which "mild" levels of pathogenic beliefs in normal people can influence behavior and emotions and thus affect personality. The roots of a promising area of research have been planted.

Another impressive result is the relation found between females' grade point average and the PBQ subscales of burdening, disloyalty, and outdoing. This result is also in line with CMT as the more guilt these women have, the lower their GPA. This finding is even more important than the result found in Study 3 in which the risk groups differed significantly on grade point average. One could argue that of course students will not perform as well in school if they are under the influence of drugs or alcohol, but the finding that the guilt crimes are significantly related goes beyond the deleterious effects of intoxication on school performance. Again the lack of significant results for the men is likely due to the small number of men who participated in Study 1.

A very interesting result from Study 2 was the relation between the female subjects' scores on the outdoing subscale of the PBQ and their mother's education. The result indicates that the lower the mother's education, the higher the woman's guilt about outdoing her mother. This result is

precisely in line with the concepts of Control Mastery Theory. If a woman feels that her mother is bothered by or disappointed about her not advancing as far as she would have liked in school, the daughter is likely to feel guilty about outdoing her mother by getting more of an education than her mother was able to obtain. This seems to be an especially important result in light of women's increasing pursuit of higher education and successful careers.

Significant findings that dealt with specific high risk behaviors were found. However these results were in line with the hypotheses made only for men. Men who reported using drugs more often indicated that they had high levels of guilt about outdoing their parents. CMT would predict that drug use can serve as a self-handicapping mechanism that could prevent one from outdoing his or her parents.

Contrary to expectations, there was a negative relation between drug use and women's experiencing of guilt on both the outdoing and disloyalty subscales of the PBQ. This result is indeed perplexing, but a possible explanation at least for the disloyalty subscale is that the guilt these women experience about betraying or being different from their parents may prevent them from engaging in such "rebellious" behaviors as taking drugs. The results may also be due to the different socialization of men and women with women handicapping themselves in more "stereotypically acceptable" ways.

Men also showed a significant relationship between amount of mental and physical illness in their families and their feelings of burdening guilt. This result seems to indicate that the more illness at home that has to be dealt with the more one will feel that he himself is a burden on his family. There were no significant correlations between family illness and the PBQ subscales for the women.

The mixed results obtained when correlating the PBQ subscales with the ECR subscales and the PSI subscales seem to indicate no clear cut relationship between pathogenic beliefs and attachment styles or one's psychological separation from parents. In fact, the subscale that theoretically seems would be most likely related to attachment styles or separation-individuation, that of abandonment, was not significantly correlated with any of the attachment subscales and only the mother attitudinal and mother conflictual subscales of the PSI for women only. Therefore, while the constructs of pathogenic beliefs, separation-individuation, and attachment are related in some ways, the lack of total overlap of the constructs provides discriminant validity for the PBQ. The construct of identity as measured by the EOMEIS and pathogenic beliefs as measured by the PBQ also appear to be different constructs as there was only one significant correlation between each measure's subscales (burdening being significantly correlated with the moratorium status in a negative direction).

The question of overlapping constructs arises again when one looks at the relation between the PBQ subscales and the Dysfunctional Attitudes Scale (DAS). Although there are no significant results for men (again due likely to the small number of male participants), there is a negative correlation between DAS scores and scores on each of the PBQ subscales for women. The reason the correlation is negative is that high scores on the DAS are considered healthy or not dysfunctional. This result does cause a problem when trying to argue that pathogenic beliefs are distinguishable from dysfunctional attitudes as a potential cause of psychological problems. However, the DAS did not discriminate the high risk group from the low risk group. More research is required to answer this question of possible overlap of constructs.

With the previous discussion in mind, only a very tentative statement can be made about the significant relation found between the PBQ subscales and the Beck Depression Inventory (BDI). As with many of the other results, the relation was only significant for women, but this has to be tempered by the possible overlap of dysfunctional attitudes and pathogenic beliefs.

The t-tests that were conducted to determine if the two risk groups differed significantly on their scores on the subscales of the PBQ revealed contradictory findings. For men, the high risk group indicated higher levels of guilt on

the burdening and outdoing subscales as expected. However, the women in the high risk group had lower scores on the outdoing and burdening subscales. There is no obvious reason for these latter results, but again it may be that the women who have a high degree of guilt about being disloyal to their families will be less likely to act out and engage in behaviors that they have probably been told that they should not do.

Although the t-test results are conflicting, the PBQ is the only measure that produced significant differences on its subscales when comparing the high risk and low risk groups. The risk groups did not differ significantly in their scores on the BDI, DAS, or the conflictual subscale of the PSI for either sex. The PBQ is the only measure that seems to discriminate between those subjects who engage in high risk behaviors and those who do not.

The open-ended answers to the scenarios, while coded with relatively high inter-rater reliability (.84), did not contribute very much as far as producing significant results. Only the disloyalty subscale predicted guilt and compliance answers to the scenarios. This result indicates that more work has to be done either on the scenarios themselves or perhaps on the coding system. In addition, the idea of abandoning the scenario portion of the questionnaire may be considered in favor of enhancing the promising potential of the Likert-type items.

Finally, the results obtained in Study 3 provided evidence to the relation between high risk behavior and GPA. The more high risk behavior one engages in the lower his or her GPA. As mentioned earlier in the discussion of the results of Study 1, this result is overshadowed by the finding that, at least for women, three of the PBQ subscales themselves were correlated with GPA.

What do all these results mean for the future of the Pathogenic Beliefs Questionnaire? The significant results that were obtained indicate that the development of the PBQ may be a worthwhile endeavor and that more work is required to establish the instrument's reliability and validity. The present study is a good first step in developing a measure that is intended to measure unconscious pathogenic beliefs. However, to determine the extent of its usefulness, the PBQ should be tested on clinical populations that can be followed. An outcome study in which one would compare the client's pathogenic beliefs at intake and at termination would be extremely fascinating to determine if pathogenic beliefs change during the course of therapy. This type of study would be another empirical test of Control Mastery Theory as a theory of psychopathology.

In addition, the continued study of the PBQ with a nonclinical population would be important in developing CMT into a theory of personality. One possible study to take a step toward this goal would involve a much larger sample

than the one used in the present study. In fact, such a study is already underway as the PBQ and some of the other questionnaires have been given to approximately 150 more subjects. With a larger sample, a factor analysis could be conducted on the PBQ to lend evidence to the belief that the PBQ contains pathogenic beliefs that represent the five distinct imaginary crimes that Engel and Ferguson (1990) have presented.

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