

A COGNITIVE ANALYSIS OF PANIC ANXIETY AND PANIC DISORDER

by

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## ABSTRACT

The purpose of the present investigation was to examine the psychological and cognitive characteristics of patients with panic disorder compared to normal people who, nevertheless, also experience occasional panic attacks (infrequent panickers). Twenty-eight panic disordered patients and twenty-seven infrequent panickers completed the Panic Attack Questionnaire, the Fearful Cognitions Questionnaire - Revised, the Body Sensations Questionnaire - Revised, the trait form of the State/Trait Anxiety Inventory, the Personal Belief Inventory, and the Self-Efficacy Scale. Comparisons between panic disordered patients and infrequent panickers indicated that panic disordered patients report a greater number of symptoms during a typical panic attack; report more cognitions associated with social/psychological or physical harm; are more frightened by sensations associated with autonomic arousal; are more generally anxious; and perceive that they have less control, not only over their panic attacks but over significant events in their lives as well. Although panic disordered patients also tended to perceive themselves as less self-efficacious than infrequent panickers, this difference between these two groups was not significant. Together these data point to some important differences between individuals who develop panic disorder and individuals who experience only occasional panic attacks, and underscore the importance of discovering the nature of these differences. Results are discussed in terms of their

significance for cognitive theories of panic disorder, especially "fear of fear", as well as for their implications concerning the prevention and treatment of panic disorder. Limitations of the study and directions for future research are also discussed.

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## QUOTATION

I was lying in bed reading and my heart started to pound. My ears rang and I started to sweat profusely. I thought I was having a heart attack as my arms were tingling. I didn't want to wake anyone because I figured they would think I was crazy. I eventually went to the bathroom and was sick. It took about an hour to think myself out of it. There was absolutely no stress in my life at the time. I have no idea what caused it, but I had eight such attacks in the next month. They terrify me and I live in fear of the next one.

Anonymous Subject

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## CHAPTER I

### INTRODUCTION

Recently, the study of panic attacks and panic disorder has gained increasing attention in the psychological and psychiatric literature. This has been largely the result of the work of Klein and his associates (Klein, 1964; Zitrin, Klein, & Woerner, 1980; Zitrin, Klein, Woerner, & Ross, 1983; Zitrin, Woerner, & Klein, 1981) and the publication of the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III; American Psychiatric Association [APA], 1980). Klein and his associates demonstrated that based on a differential response to imipramine, panic anxiety was qualitatively different from chronic or anticipatory anxiety, and the authors of DSM-III subsequently adopted this view when they officially distinguished panic disorder and generalized anxiety disorder as separate diagnostic categories.

#### Definition of Panic Disorder and Differentiation from Generalized Anxiety Disorder

In DSM-III (APA, 1980) panic disorder is characterized by episodic periods of:

"intense apprehension, fear, or terror, [with symptoms of] dyspnea; palpitations; chest pain or discomfort; choking or smothering sensations; dizziness, vertigo, or unsteady feelings; feelings of unreality (depersonalization or

derealization); parasthesias; hot and cold flashes; sweating; faintness; trembling or shaking; and fear of dying, going crazy, or doing something uncontrolled during the [panic] attack" (p. 230).

Unlike simple phobias, these attacks do not occur in the presence of any clearly defined stimulus, nor are they a response to an identifiable life stress. Rather, these attacks, which may last only a few minutes, and more rarely hours, appear to occur unpredictably.

In contrast, generalized anxiety disorder is characterized by "persistent anxiety of at least one month's duration" (p. 232), with symptoms including: motor tension (e.g., shakiness and muscle aches); autonomic hyperactivity (e.g., heart pounding and sweating); apprehensive expectation; and hypervigilance (insomnia, irritability). As in panic disorder, no discernible feared object or external stressor is in evidence. However, the presence of panic attacks with at least three in a three week period and an appropriate cluster of at least four of the fear-related cognitive and somatic symptoms precludes a diagnosis of generalized anxiety disorder.

The delineation of panic disorder and generalized anxiety disorder from what was formerly called "anxiety neurosis" (American Psychiatric Association [APA], 1968) is well supported. Although generalized anxiety may be confused with the chronic anxiety that often develops between panic attacks (APA, 1980), several studies indicate that these two disorders can be

reliably differentiated (e.g., DiNardo, O'Brien, Barlow, Waddell, & Blanchard, 1983). When subjects with panic disorder and generalized anxiety disorder have been compared, those with panic disorder reported more somatic symptoms (Anderson, Noyes, & Crowe, 1984; Barlow et al., 1984; Hoehn-Saric, 1981; 1982), more cognitions associated with physical, psychological, or social disaster (Hibbert, 1984b), higher scores on standardized tests of anxiety (Hoehn-Saric, 1982), higher rates of major depression, and more grossly disturbed childhood environments (Raskin, Peeke, Harmon, Dickman, & Pinsker, 1982). Anderson et al. (1984) further demonstrated that panic disorder had a later, more sudden onset, more symptoms over the course of the illness, and a more sporadic disease course. Data supporting the difference between panic and generalized anxiety also come from reports of different patterns of familial aggregations (e.g., Crowe, Noyes, Pauls, & Slymen, 1983; Harris, Noyes, Crowe, & Chaundry, 1983) and possibly different genetic contributions (Torgersen, 1983). Finally, panic attacks and generalized anxiety have been shown to respond differently to pharmacologic treatments (e.g., Klein, 1981; Zitrin, Klein, & Woerner, 1978; Zitrin et al., 1981), and possibly cognitive-behavioural treatments (Barlow et al., 1984; Waddell, Barlow, & O'Brien, 1984).

## Terminology

While the study of panic attacks and panic disorder is relatively new, anxiety states have been under study for a long period. In 1871, DaCosta (cited in Marks & Lader, 1973; Nemiah, 1975) described a condition he termed "irritable heart", which involved such symptoms as diarrhea, severe chest pains, palpitations, and dimness of vision. "Irritable heart" later became known as DaCosta's syndrome when the emphasis alternated from its physical to its psychological aspects. The cardiac emphasis, however, reemerged in World War I as "disordered action of the heart" and "effort syndrome" in England, and as "neurocirculatory asthenia" in America (Clum & Pickett, 1984; Marks & Lader, 1973). Freud, as early as 1895 (cited in Clum & Pickett, 1984), also recognized the psychological nature of the problem, calling it "anxiety neurosis". During World War II, the same symptoms described by DaCosta were called "anxiety reaction". Finally, the cluster of symptoms which define panic disorder in DSM-III were again called "anxiety neurosis" in DSM-II (APA, 1968).

## Epidemiology

Incidence and clear prevalence rates for panic disorder are hard to come by, partially because the disorder often masquerades as a medical condition (e.g., Grant, Katon, & Beitman, 1983; Katon, 1984), and partially because many of the

studies used to obtain these data are flawed by the use of inconsistent diagnostic criteria (Shader, 1984). Nevertheless, a review of several recent studies has produced some notable consistencies.

Panic disorder appears to occur with similar frequency in most cultures (see Shader, 1984 for a review), with prevalence rates ranging from 0.4% to 1.0% (Meyers et al., 1984; Weissman, Meyers, & Harding, 1978). It is relatively less common than both generalized anxiety disorder and simple phobias, prevalence rates for these disorders ranging from 2.5% to 6.4% and 1.4% to 2.3% respectively (e.g., Weissman et al., 1978). Consistent with generalized anxiety disorder, however, females are at least twice as likely as males to be affected (Marks & Lader, 1973; Meyers et al., 1984; Sheehan, Sheehan, & Minichiello, 1981). Panic disorder typically begins between the ages of 17 and 30 years, the mean age of onset being approximately 22.5 years (Anderson et al., 1984; Cloninger, Martin, Clayton, & Guze, 1981; Sheehan et al., 1981).

### Course and Prognosis

The majority of those affected by panic disorder have a chronic fluctuating course (Klein, 1981; Sheehan, Ballenger, & Jacobsen, 1980). Although some may experience periods of several months during which they are symptom free, follow-up studies indicate that 73% to 93% are symptomatic when reevaluated up to

20 years after the initial diagnosis, and 50% or more have some level of disability throughout their adult life (Coryell, Noyes, & Clancy, 1983; Noyes, Clancy, Hoenk, & Slymen, 1980; Sheehan et al., 1980).

Panic disorder, in addition, appears to have serious short- and long-term consequences. Individuals with panic disorder are more likely than are normal people to develop other psychological disorders such as depression (e.g., Noyes, Clancy, Hoenk, & Slymen, 1978; Sheehan, 1982) and alcoholism (Hudson & Perkins, 1984; Mullaney & Trippett, 1979; Quitkin, Rifkin, Kaplan, Klein, & Oaks, 1972; Woodruff, Guze, & Clayton, 1972), physical disorders such as peptic ulcers and hypertension (Gardos, 1981; Noyes et al., 1978), and are at a greater risk for death by suicide and possibly cardiovascular disease (Coryell, Noyes, & Clancy, 1982; Coryell, Noyes, & House, 1986). It has been suggested that the development of depression in panic disordered individuals is due to a "demoralization reaction" resulting from the fear of frequent panic attacks (Breier, Charney, & Heninger, 1984), and the development of alcoholism is due to an attempt, especially by males, to self-medicate their symptoms (e.g., Quitkin et al., 1972).

### The Ubiquity of Panic

Panic attacks, while being the hallmark of panic disorder are also known to occur in patients with other psychiatric



diagnoses, such as: agoraphobia (Goldstein & Chambless, 1978; Mathews, Gelder, & Johnston, 1981), depression (e.g., Breier et al., 1984; Hall, 1980; Leckman, Weissman, Merikangas, Pauls, & Prusoff, 1983), simple phobia (Goodwin & Guze, 1979; Zitrin, et al., 1981), and obsessive compulsive disorder (e.g., Goodwin & Guze, 1979), as well as in normal people (Norton, Harrison, Hauch, & Rhodes, 1985; Norton, Dorward, & Cox, 1986). In fact Barlow, Vermilyea, Blanchard, DiNardo, and Cerny (1985) observed that approximately 83% of patients with any anxiety disorder experienced panic attacks and Norton et al. (1985) observed the same in almost 35% of a population of university students. The major difference between those diagnosed with a panic disorder and those without a similar diagnosis appeared to be in the frequency, severity, and predictability of the panic attacks. In panic disorder, panic attacks appeared to be more severe (i.e., experienced by a greater number of symptoms), more frequent, and less predictable (e.g., Barlow, et al., 1985; Norton et al., 1986).

Panic disorder, although easily distinguished from most other psychiatric disorders based on the frequency and predictability of the panic attacks, appears to share some common features both with agoraphobia with panic, and with depression. A discussion of the relationships between these disorders is therefore warranted.

Panic Disorder and Agoraphobia. Although DSM-III lists agoraphobia and panic disorder as two discrete diagnostic

entities, data from several reports (e.g., Crowe et al., 1983; Harris et al., 1983; Rhos & Noyes, 1978; Zitrin et al., 1983) reveal more similarities between these two disorders than differences. Spitzer and Williams (1984) and previously Klein (1981) clearly suggested that agoraphobia was a secondary manifestation of panic disorder. Hallam (1978) similarly questioned the two disorders diagnostic validity, noting that agoraphobic features are common to many patients who experience acute anxiety states. Finally, Grant et al. (1983) suggested that agoraphobia with panic may be a more severe form of panic disorder.

The empirical evidence in support of these claims is considerable. In addition to indicating that agoraphobia with panic attacks is a more commonly presented disorder than agoraphobia without panic attacks (DiNardo et al., 1983; Thyer, Parrish, Curtis, Cameron, & Nesse, 1985; Torgersen, 1983; Zitrin et al., 1983), evidence indicates that fear of a panic attack is a salient feature of and major factor in its development (Foa, Stekette, & Young, 1984; Garssen, van Veenendall, & Bloemink, 1983; Goldstein & Chambless, 1978; Thyer, Nesse, Cameron, & Curtis, 1985). This temporal relationship between the onset of panic attacks and the development of agoraphobia is well documented (e.g. Garvey & Tuason, 1984; Klein, 1981; Rhos & Noyes, 1978; Sheehan, 1982; Thyer & Himle, 1985; Zitrin et al., 1983) suggesting that agoraphobia may develop later in the course of the illness (Harris et al., 1983).

Additional evidence in support of these claims comes from treatment and family studies. From treatment studies, it appears that "spontaneous" panic attacks typical of agoraphobia with panic and panic disorder respond favorably to imipramine, whereas "cued" panic attacks typical of simple phobias do not (e.g., Rhos & Noyes, 1978; Zitrin et al., 1983). From family studies, it appears that first degree relatives of both panic disordered and agoraphobic patients share a similar combined risk for developing these two disorders (e.g., Crowe et al., 1983; Harris et al., 1983). Of particular interest is that while relatives of panic disordered patients are affected only by panic disorder, relatives of agoraphobic patients are equally affected by panic disorder or agoraphobia (Harris et al., 1983; Noyes et al., 1986).

Given these similarities, panic disorder and agoraphobia are often studied together (Breier et al., 1984). Furthermore, in the proposed revisions to DSM-III (DSM-III-R), to be published in 1987 (Spitzer & Williams, 1984), these similarities between panic disorder and agoraphobia with panic are also recognized. In DSM-III-R, it is likely that agoraphobia will be subsumed under panic disorder, and that three types of panic disorder will be defined. These are "panic disorder, uncomplicated for individuals with recurrent panic attacks who have no phobic avoidance; panic disorder with limited phobic avoidance; and panic disorder with extensive phobic avoidance, or what in DSM-III is referred to as agoraphobia with panic attacks" (p.

Panic Disorder and Depression. Although depression is a frequent complication of anxiety (Clancy, Noyes, Hoenk, & Slymen, 1978; Dealy, Ishiki, Avery, Wilson, & Dunner, 1981; Harris et al., 1983; Noyes, Clancy, Hoenk, & Slymen, 1980) and anxiety a frequent symptom of depression (Donnelly, Murphy, & Goodwin, 1978; Fawcett & Kravitz, 1983), the relationship between panic disorder and depression is less clear than that between panic disorder and agoraphobia.

Some studies indicate that panic disorder, agoraphobia with panic, and major depression may have a common genetic link, and respond to similar psychopharmacologic treatments. Supporting evidence comes from studies indicating that first degree relatives of patients with panic disorder and agoraphobia with panic have higher rates of major depression (Bowen & Kohout, 1979; Cloninger et al., 1981; Dealy, et al., 1981; Leckman et al., 1983; Munjack & Moss, 1981), and from treatment studies demonstrating that some pharmacologic agents that have antidepressant efficacy (e.g., tricyclics and MAO inhibitors) are also effective for the treatment of panic disorder and agoraphobia with panic (e.g., McNair & Kahn, 1981; Mountjoy, Roth, Garside, & Leitch, 1977; Sheehan et al., 1980; Zitrin et al., 1983). This has led to the suggestion that panic disorder and depression may be a manifestation of a common underlying pathogenic process (Leckman et al., 1983).

However, a considerable amount of evidence also exist to suggest that panic disorder and depression are distinct entities. Firstly, while many patients with panic disorder also have a history of major depression (Bowen & Kohout, 1979; Breier et al., 1984; Cloninger et al., 1981; Dealy et al., 1981; Gardos, 1981; Munjack & Moss, 1981; Pariser, Jones, Pinta, Young, & Fontana, 1979), this appears to be secondary in nature, affecting between 44% and 92% of those diagnosed with a panic disorder (Breier et al., 1984; Clancy et al., 1978; Dealy et al., 1981). Secondly, there appears to be a dramatic prognostic difference between these two disorders. Regardless of the length of follow-up, recovery rates for panic disorder are only about 15.5%, while for depression these rates approximate 60% (e.g., Coryell et al., 1983). Depressed individuals, therefore, have a much higher rate of spontaneous remission and a more favorable outcome (Coryell et al., 1983; van Valkenberg, Akiskal, Puzantian & Rosenthal, 1984). Sheehan et al. (1980), in response to the observation that anti-depressant medications are effective in the treatment of both disorders, suggested that these medications may have different effects on different sites.

In the proposed revisions to DSM-III (Spitzer & Williams, 1984) the relationship between panic disorder and depression, like that between panic disorder and agoraphobia, is also recognized. In DSM-III-R, it is most likely that a diagnosis of affective disorder will no longer preempt a diagnosis of panic disorder. "A patient who fulfills the criteria of major

depressive episode and at the same time has had panic attacks...would then be given a joint diagnosis of panic disorder and major depressive episode" (p. 20). Since patients with both anxiety and depression typically have a more severe anxiety disorder at the time of admission (Breier et al., 1984), and an even poorer social outcome (Clancy et al., 1978; van Valkenberg et al., 1984), this distinction would seem important.

### Etiology and Theories of Panic Disorder

There appears to be a heretibility component to panic disorder. Studies on family morbidity rates have shown concordance rates for first degree relatives ranging from 15% to 18% (Cloninger, et al., 1981; Crowe et al., 1978; Crowe et al., 1983; Harris et al., 1983; Noyes, Clancy, Crowe, Hoenk, & Slymen, 1978; Noyes et al., 1986), with an additional 7.4% being probable panic disorder, and another 30% experiencing occasional panic attacks (Crowe et al., 1983). Evidence for a genetic component also come from the comparison of concordance rates for monozygotic (MZ) and dizygotic (DZ) twins. Torgersen (1983), in a study of 32 MZ and 53 DZ twin pairs found concordance rates for panic disorder and agoraphobia with panic five times greater in MZ than DZ twins. However, given that some of Torgersen's MZ twins were not concordant for their disorders, environmental factors must also be relevant.

Klein (1981) proposed a model of panic which can best be described as psychobiological in nature. In an attempt to explain the paradoxical findings that imipramine alleviates panic attacks but not anticipatory anxiety (e.g., Klein & Fink, 1962; Zitrin et al, 1978; Zitrin, et al., 1981), and at the same time noting that 50% of severe agoraphobics had a history of separation anxiety, he suggested that agoraphobia with panic and panic disorder were a manifestation of an underlying separation anxiety. Having adopted Bowlby's (1973) ethological notion that separation anxiety is controlled by an innate regulatory mechanism which automatically releases a distress signal (i.e., the panic attack) under conditions of separation or its anticipation, he suggested that the threshold for release of this mechanism in panic disordered individuals was chronically lowered. Imipramine, he further proposed might have its anti-panic efficacy by raising this threshold.

The empirical support for Klein's (1981) hypothesis is at best weak. Firstly, his notion that separation anxiety is the basis for panic disorder is based solely on retrospective reports of childhood experiences. Secondly, although one report did find a significant difference between agoraphobics and other psychiatric patients in history of childhood separation anxiety (Gittleman & Klein, 1984), most of the research comparing either agoraphobics or panic disordered individuals to other psychiatric patients have not (e.g., Coryell et al., 1983; Raskin et al., 1982; Thyer, et al., 1985; Thyer, Nesse, Curtis,

& Cameron, 1986). Finally, the evidence that imipramine acts to raise the threshold of an innate separation distress signal is confined to the observation that imipramine is effective in the treatment of school phobia (Gittleman & Klein, 1973). Given that others (Beck, Laude, & Bohnert, 1974; Hibbert, 1984b) have reported significant stressful or precipitating events in up to 85% of their patients who experienced acute anxiety states or panic attacks, it is possible that separation is just one of many stressors that predispose one to anxiety reactions.

Other researchers emphasizing the physiological components of panic attacks have suggested that panic disorder represents some kind of biological disease or neurochemical dysfunction. Their proposals are based on the observations that infusions of sodium lactate (e.g., Appleby, Klein, Sachar, & Levitt, 1981; Liebowitz et al., 1984, Liebowitz et al., 1985; Rainey, Pohl, Williams, Knitter, Freedman, & Etedgui, 1984), and isoproterenol (e.g., Freedman, Ianni, Etedgui, Pohl, & Rainey, 1984), oral administration of caffeine (Charney, Beninger, & Jatlow, 1985), and inhalation of carbon dioxide (Gorman et al., 1984; van den Hout and Griez, 1984) reliably provoke panic attacks in patients with panic disorder but not in normal controls. Hypothesizing about these observations they have attempted to link both naturally occurring and experimentally induced panic attacks with beta-adrenergic hyperactivity or hyper-responsiveness (Gorman et al., 1983), central noradrenergic stimulation (Liebowitz et al., 1985), the lactate



anion (Pitts & McClure, 1967), chronic hyperventilation (Clark & Hemsley, 1982; Clark, Salkovskis, & Chalkley, 1985; Hibbert, 1984a; Ley, 1985a, 1985b; Lum, 1981), central carbon-dioxide sensitivity (Gorman et al., 1984; Liebowitz et al., 1985) and chemoreceptor hypersensitivity (Carr & Sheehan, 1984).

There is no doubt that physiological factors play a role in the experience of panic. However, data do not firmly support any single hypothesis (Liebowitz et al., 1986). Although there have been some nonspecific findings, such as increased epinephrine and norepinephrine in patients with panic disorder when compared to controls (e.g., Appleby et al., 1981; Nesse, Cameron, Curtis, McCann, & Huber-Smith, 1984; Rubin, 1984), as well as some evidence of respiratory alkalosis (Liebowitz et al., 1984; Liebowitz et al., 1985), the panicogenic role assumed by these hypotheses remain speculative (Appleby et al., 1981; Nesse et al., 1984; Roy-Byrne, Uhde, Rubinow, & Post, 1986; Rubin, 1984). For example, it is unclear whether such findings as elevated catecholamine hormones and respiratory alkalosis are a cause of panic, or simply a reflection of panic (Liebowitz et al., 1985).

Perhaps the most consistent finding among these reports is that these agents used to produce panic attacks in the laboratory (e.g., infusions of sodium lactate) produce a variety of physiological changes (e.g., Liebowitz et al., 1985), and a variety of somatic sensations "common" to panic attacks (Freedman et al., 1984; Liebowitz et al., 1985; Rainey et al., 1984; van den Hout & Griez, 1984). For example, Liebowitz et al.

(1985) observed that infusions of sodium lactate produced significant increases in lactate, pyruvate, prolactin, pH, heart rate, and systolic blood pressure, and significant decreases in cortisol, ionized calcium, and phosphate. Similarly, van den Hout and Griez (1984) observed that inhalation of carbon dioxide produced symptoms of dyspnea, palpitations, chest pain, choking, dizziness, paresthesia, faintness, and shakiness. These observations together with those of Freedman et al. (1984) that, although panic disordered individuals exhibit a higher level of sympathetic activity, no physiological measure reliably differentiates panic from nonpanic periods have led some authors (e.g., Freedman, 1984; Liebowitz et al., 1985) to suggest that the subjective experience of panic must also be important.

Along this line, several authors have suggested that panic attacks result from an interaction between somatic and cognitive events, which begins with the perception of sensations associated with panic attacks (Beck, Emery & Greenberg, 1985; Freedman et al., 1984; Goldstein & Chambless, 1978; van den Hout & Griez, 1984; Ley, 1985a, 1985b). The awareness of aberrant bodily sensations precipitate the panic attack when, via a feedback loop, the sensations associated with panic attacks are interpreted in an alarming or threatening way.

Evidence in support of this kind of formulation comes from studies which report fearful cognitions associated with periods of acute anxiety or panic attacks, and from studies which indicate that these thoughts occur in response to the awareness

of uncomfortable somatic sensations. For example, Hibbert (1984b) observed that the ideations of patients with generalized anxiety disorder and panic disorder centered on the fear of some physical, psychological, or social disaster (e.g., fear of a heart attack or loss of control). For all 17 patients with panic attacks these thoughts were a response to the perception of such sensations as palpitations, breathlessness, and tremors. Previously Beck et al. (1974) reported similar findings in patients with acute anxiety reactions. Other studies reporting cognitions related to personal danger and associated with periods of anxiety and panic tend to confirm this picture (Beck, 1963, 1971; Clark et al., 1985; Goldstein & Chambless, 1978; Ley, 1985a; Rapee, 1985).

Additional evidence for an interaction between cognitive and somatic events come from two recent treatment studies, one a case report involving a patient with panic disorder (Rapee, 1985) and the other a study involving 18 patients with panic attacks (Clark et al., 1985). These studies, which assumed panic attacks were triggered by the misinterpretation of the bodily sensations associated with hyperventilation, exposed their patients to these sensations (via voluntary hyperventilation), and provided them with an alternative, less catastrophic interpretation of their perception. In both studies, this procedure together with breathing retraining, led to a significant reduction in both the frequency of panic attacks and the catastrophic thoughts or subjective fears associated with

them. For those treated by Clark et al. (1985), these effects were maintained in a two year follow-up period.

Therefore, it is possible that the panicogenic role of agents used to produce panic attacks in the laboratory (e.g., sodium lactate), do so only with appropriate mediating factors, such as the perception and misinterpretation of aberrant bodily sensations. The observations by Liebowitz et al. (1985) that in the course of infusions of sodium lactate, the perception of sensations associated with panic attacks occur well before the the onset of the panic attack is consistent with this view. Therefore, given that patients with unpredictable panic attacks are also known to be sensitive to physiological changes and bodily sensations (Chambless, 1982; Chambless & Goldstein, 1981), panic disorder may be reconceptualized as a fear of internal body sensations or panic experiences (e.g., van den Hout & Griez, 1984). Goldstein and Chambless (1978) called this phenomenon "fear of fear".

Although largely ignored (Reiss, Peterson, Gursky, & McNally, 1986), the concept of "fear of fear" is not new (see Fenichel, 1945; Hallam, 1978). The phenomenon suggests that once subjects are exposed to acute anxiety or panic attacks, arousal could then elicit anxiety so that a kind of exacerbatory cycle of interoceptive conditioning is created. The perception of uncomfortable sensations and their misinterpretation as signaling harm begins a process whereby arousal and anxiety reinforce each other. As a result, the individual 'spirals' into

panic. According to this view, because the individual also becomes hyperalert to any bodily changes, panic disorder can best be described as a phobia of anxiety (Beck, et al., 1985; Freedman, 1984; Goldstein & Chambless, 1978).

The idea that panic disorder might represent a phobia of anxiety is very appealing. It not only suggests a mechanism of how recurrent panic attacks are maintained but also suggests that specific treatment strategies which directly attack this "fear of fear" can be implemented to treat the panic disorder (van den Hout & Griez, 1984). Furthermore, and contrary to popular opinion, it also suggests that panic attacks in panic disorder are not spontaneous (Barlow et al., 1985; Beck et al., 1985).

However, the concept of "fear of fear" does not explain why all individuals exposed to anxiety do not experience panic attacks. Nor does it explain why all individuals who experience occasional panic attacks do not develop panic disorder. Presumably, for individuals who have never experienced a panic attack this can be reconciled in terms of learning or conditioning (Charney, Beninger, & Breier, 1984). However, given that panic attacks are a very frightening experience (Goldstein & Chambless, 1978; Katon, 1984), suggesting the possibility for one trial learning (Clum & Pickett, 1984), in the development of panic disorder, other mediating factors must also be relevant.

Beck, Emery, and Greenberg (1985) suggest that the probability of noticing aberrant somatic events and appraising them as threatening depends on such cognitive and psychological factors as: the existence and overmobilization of cognitive schema reactive to personal danger; one's current level of anxiety; one's beliefs about personal control; and one's coping strategies available to neutralize the perceived threat. Consequently they proposed a more comprehensive model of panic and panic disorder.

According to this model, certain kinds of stress activate schema reactive to personal danger. These schema, defined as the concept categories for which incoming information are perceived and evaluated, then override more appropriate schema so that the meaning attached to events are more determined by these dominant schema than what may be reality. As a result, the individual selectively attends to information signaling threat to the exclusion of nonthreatening information. For those with panic disorder, these include the body sensations associated with arousal, for which the individual believes will result in some physical or psychological injury. Since the affective response to the arousal is also processed by these same schema, a feedback loop is created. When accompanied by the appraisal that one can't control, cope with, or neutralize the threat, arousal and anxiety are further enhanced. The final result is the panic attack.

Although much like that described earlier in conditioning terms, the primary dysfunction according to this theory is in the cognitive system that selectively processes and attends to information of a threatening theme. While such a cognitive bias has not been confirmed in panic disordered patients, this suggestion receives some support from studies demonstrating that anxious individuals overestimate the subjective risk in a wide range of hypothetical events (Butler & Mathews, 1983) and selectively process verbal threat cues (Mathews & MacLeod, 1985). For example, Mathews and MacLeod (1985), using a modified version of the Stroop colour-naming task, observed that although anxious patients were slow at colour naming all words, they were especially slow at colour-naming words relevant to threat, such as the threat of disease or injury. If this phenomenon is also true for panic disordered patients then panic disordered patients will be more alert to the sensations signaling anxiety, possibly setting the cycle of "fear of fear" in motion at an earlier stage (Margraf, Ehlers, & Roth, 1986).

The dysfunctional cognitive system, and the fearful cognitions associated with it, however, do not actually "cause" panic disorder. Rather, the etiology of panic disorder, Beck et al. (1985) purport, is best understood as an interaction between a variety of predisposing and precipitating factors which "stamp in" unreal concepts and activate these danger schema. These predisposing and precipitating factors may include, for example, one's genetic endowment or developmental history as predisposing

factors, and severe or chronic stress as precipitating factors. In support of this conclusion it is noteworthy that Raskin et al. (1982) reported more grossly disturbed childhood environments in patients with panic disorder when compared to patients with generalized anxiety disorder, and that both Hibbert (1984b) and Gardos (1981) reported significant precipitating stressors in patients with panic attacks.

These predisposing and precipitating factors, according to Beck et al. (1985), give one a sense of "vulnerability". Defined as the perception of the self as subject to danger, vulnerability is highly influenced by one's past experiences, and intimately tied to one's beliefs about personal control and perceptions of self-efficacy. The latter construct is defined as one's perceptions of their coping capabilities (Bandura, 1977). For the individual who perceives threat to his/her domain for which his/her perceptions of personal control and capacity to cope are lacking, the panic attack represents a state of helplessness.

Although not studied in panic disordered patients, the cognitive fears of "dying, going crazy, or losing control" so evident in panic disordered patients (e.g., Barlow et al., 1985), suggest that the role of personal control and self-efficacy in the mediation of panic is considerable. Respectively, these two constructs are best described by Rotter's (1966) theory of internal - external control of reinforcement and Bandura's (1977) theory of self-efficacy.



Rotter's Theory of Internal - External Control of Reinforcement. Simply stated, internal - external control of reinforcement (Rotter, 1966, 1975) refers to the degree to which individuals perceive the events that happen to them as dependent on their own behaviour or attributes, or as the result of luck, chance, fate, or powers beyond their control. If they perceive that events are a result of their own actions or relatively permanent characteristics, they are said to have an internal locus of control. If, on the other hand, they perceive the events that happen to them as occurring independently of their behaviour, they are said to have an external locus of control.

Rotter (1966, 1975) conceived of the locus of control dimension as a generalized expectancy that one develops when one has learned that either internal or external factors control the consequences relative to one's behaviour. In this way, it is said to be a relatively enduring characteristic of the individual that should result in characteristic differences in one's attitudes and behaviours across a variety of situations.

Rotter (1966, 1975) further proposed that the internal - external control expectancy would have its greatest impact when situations were novel or ambiguous. The assumption underlying this hypothesis is that when a situation lacks clear information, the individual will make inferences based on his/her past experiences to understand what is happening. In such an instance, the generalized expectancy would then be translated into a cognitive appraisal of control in the specific

situation (Lazarus & Folkman, 1984).

A considerable amount of research has supported Rotter's view that the internal - external control dimension is a generalized expectancy operating across many situations (see Anderson, 1977; Joe, 1971; Strickland, 1978). However, of particular interest for this thesis is that, by definition, the internal - external locus of control dimension implies a certain relationship to psychopathological phenomenon. For example, a belief that forces beyond one's control determine the occurrence of reinforcement is very similar to an appraisal of helplessness and not coping actively (Lazarus & Folkman, 1984), factors clearly suggested by Beck et al. (1985) as being relevant to the development of panic disorder.

In support of this hypothesis, research has shown that an external orientation is related to higher levels of trait anxiety (Archer, 1980; DeMan & Simpson - Housley, 1985), state anxiety (Archer & Kutash, 1982), irrational fears (Traub, 1982), and depression (Costello, 1982; Morris, 1981). Secondly, in response to real life stressors, it has been shown that internals experience less distress and achieve better outcomes (Anderson, 1977; Bulman & Wortman, 1977; Poll & Kaplan-DeNour, 1980; Johnson & Sarason, 1978). This suggests, then, that one's control orientation may permit one to view and cope with threatening situations in different ways (Lazarus & Folkman, 1984). Therefore, it is possible that one's control orientation may influence not only the development of panic disorder but

mediate the relationship between the experience of panic and efforts to cope as well. In this vein the construct's usefulness in cognitive theories of panic disorder may prove considerable.

Bandura's Theory of Self-Efficacy. Self-efficacy theory (Bandura, 1977) is also concerned with the dynamic interplay between self-referent thought, action, and affect. According to this theory, however, one's judgements of his/her capabilities -- perceived self-efficacy -- affect one's emotional reactions, thought patterns, and behaviour in both anticipated and actual transactions with the environment.

Also conceived as an expectancy variable, perceived self-efficacy is distinguished from outcome expectancies, or the belief that certain actions will result in certain consequences (Bandura, 1982). While both are seen to mediate the impact of stress, this distinction is important both theoretically and practically. For example, an individual may believe that certain actions result in certain consequences (outcome expectancy) but be uninfluenced if they doubt their ability to perform these actions (efficacy expectancy). Similarly an individual may believe they have the necessary skills to produce certain outcomes (efficacy expectancy) but be uninfluenced if they believe the environment is unresponsive to their efforts (outcome expectancy).

The utility of self-efficacy theory in psychological research has been well demonstrated. Self-efficacy theory has

been applied to diverse domains of psychosocial functioning including: depression (e.g., Kanfer & Zeiss, 1983), anxiety disorders (e.g., Bandura, Adams, Hardy, & Howels, 1980; Bandura, Reese, & Adams, 1982; Brian & Wilson, 1981), stress reactions and physiological arousal (Bandura et al., 1982), health behaviour (O'Leary, 1985), and addictive behaviours (Maddux & Rogers, 1983), to name only a few. The results of these diverse lines of research provide validity to the thesis that people's perceptions of their capabilities operate as cognitive mediators of action and significantly affect one's level of psychosocial functioning. The self-efficacy construct not only predicts the degree of change in several domains (e.g., Bandura, Adams & Beyer, 1977; Bandura et al., 1980) but has also been shown to exert influence on the amount of effort one will exert to master a task, and how long one will persist in the face of adversity (Bandura & Schunk, 1981). Mahoney and Arnkoff (1978 cited in Sherer et al., 1982) suggested that self-efficacy theory might represent a heuristic model of the cognitive processes in adjustment in general.

Of relevance to panic disorder, however, is self-efficacy theory's empirical link to the experience of fear and anxiety. According to self-efficacy theory most arousal is activated by thought, which in turn is a source of information one uses to judge their capabilities (Bandura, 1983). If perceived self-efficacy is low, anxiety will be high since the individual will perceive that he/she does not have the resources to

overcome a particularly threatening event. If, on the other hand, one is confident in their capabilities, perceived self-efficacy should operate as a cognitive mediator whereby "controllability" reduces fear and anxiety.

Support for a self-efficacy model of fear and anxiety comes from research involving severe phobics. According to this research, when phobics judge themselves inefficacious in coping with various threatening tasks, their level of anxiety and distress is high. If, on the other hand, their judgements of their capabilities are raised to a maximal level, the opposite is true. This is true not only when measured by subjective report (e.g., Bandura et al., 1980; Williams & Watson, 1985), but when such measures as heart rate and blood pressure (Bandura et al., 1982) or catecholamine secretion (Bandura, Taylor, Williams, Mefford, & Barchas, 1985) are employed as well. For example, Bandura et al. (1985) demonstrated that on tasks for which spider phobics doubted their coping efficacy, plasma levels of epinephrine, norepinephrine, and dopac were significantly increased. However, as the strength of perceived self-efficacy was increased, this catecholamine reactivity subsided. Recalling that catecholamine hormones are heavily implicated in the production of panic attacks, the role of perceived self-efficacy as a cognitive mediator of not only anxiety, but also of panic seems likely.

## Summary

Panic disorder was recently introduced into the third edition of the Diagnostic and Statistical Manual of Mental Disorders (APA, 1980) as a separate subgroup of the anxiety disorders. Patients without panic attacks now come under the label of generalized anxiety disorder. This distinction between panic disorder and generalized anxiety disorder is now supported and commonly accepted.

Panic disorder is characterized by episodic attacks of intense apprehension or fear in conjunction with a variety of other symptoms. The most commonly reported symptoms include dizziness, sweating, shaking, feelings of unreality, and fears of going crazy or losing control (Anderson et al., 1984; Barlow et al., 1985). Physiologically, the panic attack is similar to the flight-or-fight response in that the person is prepared for danger, but the attacks occur spontaneously without any external threat present (Katon, 1984).

Although panic attacks or symptoms mimicking panic attacks are also known to occur in conjunction with other disorders (e.g., Barlow et al., 1985), as well as in normals (e.g., Norton et al., 1985), for a diagnosis of panic disorder to be made, at least three of these attacks within a three week period and a cluster of at least four of the fear-related cognitive and somatic symptoms must be present. Hudson and Perkins (1983) describe the disorder as "one of the most distressing

afflictions known to humans" (p. 462).

Panic attacks occur quite frequently in the general population and the risks to one's well-being can be considerable. Simply having a panic attack is correlated with increased levels of psychopathology (Barlow et al., 1984) and as noted in the review, people with panic disorder have been found to be at greater risk for other psychological disorders and physical disorders, as well as at greater risk for suicide.

Despite the proliferation of studies in the past few years, little is known about panic disorder. For example, the pathogenesis of panic attacks is not known. The symptoms have been attributed to the lactate anion, abnormal metabolism, hyperventilation, fearful cognitions, and stress. Although the disorder is likely a result of a complex interplay between both physiological and psychological events, clearly more work is needed to determine the processes operative in the disorder's development and maintenance.

A major gap in the research on panic disorder is in the characterization of the people who suffer from it. More work is needed to determine why some people develop debilitating, unpredictable panic attacks characterized by many severe symptoms, while others report fewer attacks, or panic only in the presence of well defined cues (Norton et al., 1985). Since the numerous physiological studies lack definitive answers, an examination of psychological and cognitive characteristics may

be important. It is on this conceptual model that the present investigation is focussed.



## The Present Study

With the ascendancy of psychological or cognitive views of panic, as well as the frequency with which normal people experience occasional panic attacks, the purpose of the present investigation was two-fold: (1) to examine panic disordered patients on a variety of psychological and cognitive variables hypothesized to be relevant features of panic disorder; and (2) to examine the significance of these factors in panic disordered patients compared to individuals who experience only occasional panic attacks. Therefore the primary purpose of the present study was to provide a cognitive and psychological analysis of panic disorder and panic anxiety.

Although one could generate a lengthy list of factors which may contribute to differences between these two groups, a decision was made to focus on four particularly promising variables: (1) "fear of fear" or the exaggerated fear response touched off by the belief that anxiety has negative consequences (Chambless, 1985b); (2) trait anxiety; (3) perceived locus of control; and (4) perceived self-efficacy. The premise underlying this decision was simple. Panic attacks, fear, and anxiety involve much more than the physiological sensations which accompany them, and only by an examination of factors from other domains can hints as to the nature and genesis of panic disorder be fully explored. Further, from a practical point of view, if other factors prove significant in panic disordered patients,

our understanding of how to treat panic disorder as well as of how to prevent the development of panic disorder in individuals who now experience occasional panic attacks will be improved.

Based on the clinical and experimental data which have suggested that "fear of fear", trait anxiety, perceived control, and perceived self-efficacy may well be relevant features of panic disorder, the following hypotheses were made: (1) panic disordered patients in contrast to infrequent panickers are more afraid of the sensations associated with autonomic arousal and have more frequent thoughts concerning the catastrophic consequences of anxiety (i.e., the significance of "fear of fear" is more pronounced in panic disordered patients); (2) panic disordered patients in contrast to infrequent panickers are more generally anxious; (3) panic disordered patients in contrast to infrequent panickers perceive themselves as having less control not only over the experience of panic but over significant life events as well; and (4) panic disordered patients in contrast to infrequent panickers perceive themselves as less self-efficacious both generally and socially.

Additionally, and in line with cognitive theories of panic, the present design also allowed for an examination of the extent to which both panic disordered individuals and infrequent panickers perceive maladaptive or anxious thoughts as exacerbating or causing anxiety, and how confident they feel in being able to stop or exclude such thoughts from their conscious awareness. It was hypothesized that if anxious thoughts are

indeed a major factor in the production of panic attacks, then such thoughts should also be: (1) more intense for panic disordered individuals; (2) less easily excluded from conscious awareness; and (3) more capable of exacerbating anxiety. As a specific cause for panic, however, it was expected that anxious or maladaptive thoughts would be significant for both panic disordered individuals and infrequent panickers.

Further, there is some suggestion that panic disordered individuals experience more severe panic attacks than individuals who only experience occasional panic attacks. For example, Barlow et al. (1985) observed that panic disordered individuals reported more symptoms during a typical panic attack than less frequent panickers. Therefore in an attempt to replicate this finding, and determine whether panic disordered individuals experience more sensations when anxious in general, questions concerning the number and types of symptoms experienced during periods of both anxiety and panic were also included. It was expected that not only would panic disordered individuals experience a greater number of symptoms during a typical panic attack, but that they would report more bodily sensations when anxious in general.

Finally, there is some evidence that panic attacks begin during periods of stress (e.g., Hibbert, 1984b). It was expected that this hypotheses would be born out in the present research. However, there is also some suggestion that individuals who experience frequent panic attacks do not connect their emotional

reactions, and therefore their panic attacks, to the events which produced them (Goldstein & Chambless, 1978). Consequently, it was also decided to examine whether panic disordered individuals and infrequent panickers could identify significant stressors in their lives, particularly at the time of their first panic attack, and whether or not they would view these stressors as precipitating factors. If Goldstein and Chambless are correct in their assumption, it is possible that another factor differentiating panic disordered patients from infrequent panickers is that infrequent panickers will attribute their first panic attack to stressors while panic disordered individuals will not.

## CHAPTER II

### METHOD

#### Subjects

Subjects for the present study included 28 panic disordered individuals referred from psychiatric and psychological institutions in British Columbia's Lower Mainland (Burnaby Mental Health, Port Coquitlam Mental Health, Wally Mental Health, and Shaughnessy Hospital), and 27 individuals with no apparent psychopathology who, nevertheless, experienced at least one "spontaneous" panic attack within the preceding 12 months. The latter group of individuals, termed "infrequent panickers", were recruited from the population of students and staff at Simon Fraser University (N=17) and the surrounding communities of Burnaby, Vancouver, North Vancouver, Coquitlam, and Surrey (N=14).

#### Procedure

Each subject was screened for eligibility to participate in the present study by means of the Psychiatric Diagnostic Interview (PDI; Othmer, Penick, & Powell, 1981), a structured interview compatible with DSM-III diagnostic criteria. The aim of this procedure was two-fold: (1) to confirm the experience of at least one "spontaneous" panic attack, and (2) to rule out disorders other than panic disorder which may be associated with

panic attacks (e.g., simple phobia or obsessive compulsive neurosis). In addition, all subjects were questioned as to the frequency of their panic attacks, inclusion criteria being the experience of at least three panic attacks in the preceding three weeks for panic disordered individuals, and the experience of at least one panic attack in the preceding 12 months for infrequent panickers.

An exception to this procedure was granted for five panic disordered individuals. In these cases, the subjects were willing to participate but could not be interviewed. Therefore, since the PDI was not administered, the referring therapist's clinical judgement of panic disorder was taken as eligibility to participate, and considered confirmed if, based on the individual's responses on the Panic Attack Questionnaire (see Appendix B), the individual also: (1) reported that he/she experienced at least three panic attacks in the preceding three weeks as determined by question three; (2) did not report that panic attacks occurred in response to a specific fearful cue as determined on question seven; and (3) did not evidence either a significant social or simple phobia as evidenced on question ten. Furthermore, these individuals were asked to respond to several additional questions presented in a letter format (see Appendix B). If on this form these individuals also indicated that panic attacks had: (1) come over them suddenly "out of the blue"; (2) occurred even though nothing was threatening their life at the time; and (3) occurred even though nothing was

seriously wrong with their heart; the individual was included in the study.

Using these procedures, 45 individuals of a total of 106 who volunteered to participate were excluded. As determined by the PDI these included: two who reported panic attacks secondary to depression; two who reported panic attacks secondary to obsessive compulsive neurosis; 11 who reported panic attacks secondary to a phobic neurosis (four simple phobics and seven social phobics); two who reported panic attacks secondary to life threatening illnesses; and two who reported panic attacks in response to alcohol or drug withdrawal. An additional 11 who reported panic attacks were excluded from the present study as their panic attacks did not meet the panic attack criteria. Also excluded were 12 who reported panic attacks but had not experienced any within the preceding 12 months and three who were referred as panic disordered but did not currently meet the frequency criteria of at least three panic attacks in the preceding three weeks. Finally, an additional six subjects were excluded due to failure to either return the questionnaire package (N=4) or complete at least 75% of the questionnaire items (N=2).

Once eligibility was determined, each subject was asked to read the document entitled "A Study on the Experience of Anxiety and Anxiety States" (see Appendix A). If they agreed to participate they were asked to sign the subject consent form (see Appendix A) indicating their agreement to participate and

their understanding that they could withdraw their consent at any time while completing the study's series of questionnaires. In the case of panic disordered individuals, where a psychiatric or psychological institution and a treating therapist were also involved, institutional approval and therapist approval were also obtained. To obtain therapist approval, each therapist was asked to read the document entitled "Cognitive and Personality Characteristics of Panic Disorder" (see Appendix A) and if agreeable to sign the therapist consent form (see Appendix A). Signing this form indicated that they also understood the terms of the research and agreed to allow the patient under their care to participate. All treating therapists and subjects eligible to participate agreed to this procedure.

All subjects were then requested to complete six questionnaires (see Appendix B). These included: (1) the Panic Attack Questionnaire (PAQ; designed by the researcher for this study); (2) the Fearful Cognitions Questionnaire - Revised (FCQ-R; Chambless, Caputo, Bright, & Gallagher, 1984); (3) the Body Sensations Questionnaire (BSQ-R; Chambless et al., 1984); (4) the Trait portion of the State/Trait Anxiety Inventory (STAI-T; Spielberger, Gorsuch, & Lushene, 1970); (5) the Self-Efficacy Scale (SES; Sherer, Maddux, Mercandante, Prentice-Dunn, Jacobs, & Rogers, 1982); and (6) the Personal Belief Inventory (PBI; Rotter, 1966). Subjects were provided with a private room at Simon Fraser University or their treating institution in order to complete the questionnaires. However, if



preferred, subjects were allowed to take the package of questionnaires home to complete. All subjects were provided with envelopes addressed to the researcher to return their questionnaires in. When appropriate, these were affixed with sufficient postage. Confidentiality was assured and subjects were invited to comment or ask questions at any time.

### Measures

Panic Attack Questionnaire. Designed by the researcher specifically for this study, the aim of the Panic Attack Questionnaire (PAQ) is to look at the phenomenon of panic in more detail. Consisting of nominal scales, checklists, and short answer questions, respondents are asked to indicate: the frequency with which they experience panic attacks; the symptoms they typically experience during a panic attack; the circumstances surrounding their first panic attack and what they feel caused it; the most frequent cause of subsequent panic attacks; how well they believe they can control their panic attacks and how they do this; the things they usually do when they experience high anxiety or panic; how often they avoid situations because they might feel anxious; and finally, to list any significant events or life stressors which have occurred in their life in the preceding 12 months. Many of these questions were used for descriptive or exploratory purposes only and were not analysed for the present investigation.

### Fearful Cognitions Questionnaire and Body Sensations

Questionnaire. The Fearful Cognitions Questionnaire (FCQ) and the Body Sensations Questionnaire (BSQ) are companion questionnaires designed by Chambless et al. (1984) to measure the cognitive and somatic components of anxiety and panic, or "fear of fear". On these questionnaires, subjects rate on five point Likert type scales, how often they think, when anxious, maladaptive self-statements, such as "I'll die" or "I'll go crazy", and how much they fear the interoceptive cues of autonomic arousal, such as "dizziness" or "rapid heart beat". These questionnaires have two factors: (1) fear of social/behavioural consequences of a panic attack and (2) fear of physical consequences of a panic attack. Analyses are reported for the total score (expressed as an item average), as well as for the separate factors. The reliability and construct validity of these scales have been confirmed in a series of studies by Chambless and associates (1984).

Added to these questionnaires by the researcher were four additional components. On the Fearful Cognitions Questionnaire, subjects are also asked to rate on five point Likert-type scales: (1) how frightened or worried they are by each maladaptive thought; (2) how confident they feel, when anxious, in being able to stop or exclude these thoughts from their mind; and (3) how often thinking any of these thoughts initiate or exacerbate an episode of anxiety or panic. On the Body Sensations Questionnaire, subjects are also asked to rate on

five point Likert-type scales how often they experience, when anxious, each listed sensation. Since these revisions do not alter the format of the original questionnaires, they are not believed to interfere with the scales' reliability or validity.

Trait Anxiety Inventory. This questionnaire is the Trait portion of the State/Trait Anxiety Inventory (STAI; Spielberger et al. 1970), and is designed to measure one's level of chronic or general anxiety. A total of 20 statements which people have used to describe themselves (e.g., "I lack self-confidence" or "I worry too much over something that really doesn't matter") are rated on four point Likert-type scales ranging from 1 (almost never) to 4 (almost always). A high score indicates a generally anxious or high-trait anxious individual. Repeatedly this measure has been shown to be reliable and valid (Spielberger, 1970; Spielberger, 1983).

Self-Efficacy Scale. The Self-Efficacy Scale (Sherer et al., 1982), based on Bandura's (1977, 1982) theory of self-efficacy, is a measure of perceived self-efficacy not tied to specific situations or behaviours. It consists of two subscales measuring one's percepts of: (1) general self-efficacy and (2) social self-efficacy. Evidence also indicates that general self-efficacy can be broken down further into two components reflecting: (1) initiation/persistence, and (2) efficacy in the face of adversity. On this scale a total of 23 statements, such as "I avoid facing difficulties" or "failure just makes me try harder" are rated on six point Likert-type scales ranging from 1

(strongly disagree) to 6 (strongly agree). The reliability and construct validity of this scale has been shown to be moderately high (Sherer & Adams, 1985; Sherer et al., 1982).

Personal Belief Inventory. The Personal Belief Inventory (PBI; Rotter, 1966) is a self-report personality test designed to indicate one's degree of internality or externality. It consists of 29 binary choice questions (six representing filler items) with one alternative reflecting an internal orientation (e.g., "In my case getting what I want has little or nothing to do with luck.") and the other an external orientation (e.g., "Many times we might just as well decide what to do by flipping a coin."). Subjects receive a point for each external choice, with the total score reflecting the individual's locus of control. A high score therefore indicates a person with an external locus of control, and a low score, a person with an internal locus of control. Test-retest reliability, discriminant validity, and construct validity have been confirmed (Rotter, 1966, 1975).

### Data Analysis

All data analyses were carried out using revised BMDP statistical software programs (University of California Press, 1983).

Between group differences in symptomology were assessed using a series of t-tests. Levene tests performed on all

relevant variables indicated that none of the assumptions for homogeneity of variance were violated. Therefore, all analyses using t-tests were performed using the usual pooled variance form.

All analyses, however, were corrected for multiplicity. A particular test was judged significant only if it could be declared significant by the multistage Bonferroni procedure as described by Larzelere and Muliak (1977). This procedure involves the use of a series of significance levels which are determined according to the number of tests of the null hypothesis that are considered at each stage. In the first stage, the significance level is determined according to the usual Bonferroni procedure for a family of  $m$  tests and each test of the null hypothesis is performed with that significance level. If none of the tests are significant then the procedure ends. If, however, the null hypothesis is rejected for  $k$  of the tests, then the second stage of the procedure involves examining the remaining tests using  $m-k$  in the calculation of the significance level. This procedure is repeated until a point is reached at which no further null hypotheses can be rejected. In the present research, the familywise error rate was corrected for 17 tests of the null hypothesis.

## Missing Data

Considering the amount of data collected from each subject, there were actually very few missing data points (a total of 21 points from 18 subjects). For all missing data points, estimates were calculated using a two-step regression procedure.

## CHAPTER III

### RESULTS

#### Descriptive and Exploratory Variables

##### Sample Characteristics

Twenty-eight panic disordered patients and twenty-seven infrequent panickers were included in the present study. There were no significant differences between these two groups in age ( $t(53) = .640, p = .5253$ ) or sex distribution ( $\chi^2 = .933, p = .3442$ ). The mean age for individuals in the panic disordered group was 33.4 years ( $SD = 11.02$ ) and the mean age for individuals in the group of infrequent panickers was 35.2 years ( $SD = 8.77$ ). Seventy-five percent ( $N = 21$ ) of the panic disordered individuals were female and 62% ( $N = 17$ ) of the infrequent panickers were female.

##### Description of Panic Experiences

###### *Panic Frequency*

Inclusion criteria for the present investigation meant that each subject had had at least one "spontaneous" panic attack within the preceding year. The average number reported by panic disordered subjects was 45.286 ( $SD = 29.212$ ) and the average number reported by infrequent panickers was 7.741 ( $SD = 8.295$ ). There was considerable variability, however, in the actual

number reported by subjects within each group. For panic disordered subjects, panic attacks within the preceding year ranged from 3-100. Although the majority of these subjects reported between 3 and 60 panic attacks, no particular mode was observed. For infrequent panickers, in contrast, panic attacks within the preceding year ranged from 1-40 with a mode of five. The range for this group was grossly inflated by one subject who reported 40 attacks within the past year.

In order to estimate of the number of panic attacks subjects experienced in the three weeks prior to the present study, subjects were asked to rate on a five point scale ranging from "less than two" to "more than twenty" the range that best described their experiences. Again considerable variability was observed for panic disordered subjects. Although 50% reported 3-5 panic attacks within the preceding three weeks, 18%, 14%, and 18% reported 6-10, 11-20, and more than 20 respectively. This suggests that for the panic disordered subjects in this study, there were varying levels of severity of the panic disorder. In contrast, all infrequent panickers reported two or less panic attacks indicating that although some infrequent panickers experience several panic attacks, none of these subjects currently met the frequency criteria for panic disorder as outlined in DSM-III.



### *Panic Attack Symptomatology*

Table 1 shows the percentage of individuals in each group who endorsed each symptom common to panic attacks. An inspection of this table shows that all symptoms with the exception of: choking or smothering sensations, faintness, nausea or abdominal discomfort, flushes, and fear of dying are common to individuals in both groups. Not shown in this table but indicated in an subsequent analysis were data that indicated that all subjects in each group endorsed at least one of the cognitive fears of "dying, going crazy, or doing something uncontrolled" during the panic attack.

### *Panic Severity*

In order to evaluate whether panic disordered subjects experienced a more severe panic attack, a comparison between the two groups on the mean total number of symptoms endorsed was performed. Results of this comparison indicated that, as predicted, panic disordered subjects when compared to infrequent panickers did in fact report a greater number of symptoms ( $t(53) = 7.436, p < .00005$ ). Out of a list of 15 symptoms, panic disordered subjects endorsed an average of 12.821 ( $SD = 1.93$ ) symptoms and infrequent panickers endorsed an average of 8.926 ( $SD = 1.96$ ). If this can be taken as a measure of severity then the panic disordered subjects in this study, compared to the infrequent panickers, typically have a more severe panic attack.

Table 1

Number of Subjects and Percentage of Groups Endorsing Each Panic Symptom Across Groups

Symptom	Panic disorder (n = 28)		Infrequent panicker (n = 27)	
	n	%	n	%
Shortness of breath	28	100	18	67
Choking or smothering sensations	20	71	7	26
Rapid heart beat	28	100	26	96
Chest pain or discomfort	24	86	14	52
Sweating	26	93	17	63
Faintness	23	82	10	37
Dizziness, lightheadedness, or unsteady feelings	27	96	24	89
Nausea or abdominal discomfort	24	86	11	41
Numbness, tingling, or burning sensations	22	79	6	22
Trembling or shaking	27	96	21	78
Flushes (hot flashes) or chills	19	68	13	48
Weak or rubber kneed	22	79	22	81
Unreal or very strange	26	96	18	67
Fear of dying	19	68	13	48
Fear of going crazy or doing something uncontrolled	24	86	21	78

## *The First Panic Attack and Perceived Cause*

Somewhat exploratory in nature but also of interest in the present study were data concerning the circumstances surrounding the first panic attack, and what subjects felt caused this attack. It was hypothesized that all subjects would describe significant stressful events in their lives at the time of their first panic attack but that only infrequent panickers would attribute the attack to these or other stressful events. The results are interesting. As shown in Table 2, as predicted, the majority of subjects from both groups (86% of the panic disordered individuals and 93% of the infrequent panickers) described stressful circumstances in their lives at the time of their first panic attack (e.g., financial difficulties, marital discord, unemployment), even though the actual panic attack, for many (57% of the panic disordered group and 67% of the group of infrequent panickers), occurred in what was termed an innocuous situation (e.g., in a movie theatre, in a grocery store, waiting at a bus stop). However, also as hypothesized, only 36% of the panic disordered subjects compared to 85% of the infrequent panickers attributed this panic attack to the stress in their lives, or for that matter, any other particular stressor. Typical responses by subjects who did not venture to hypothesize about what may have caused their first panic attack were "I don't know" or "I have no idea".

Table 2

Number of Subjects and Percentage of Groups Reporting Specific Stressors at the Time of the First Panic Attack Across Groups

Stressor	Panic disorder (n = 28)		Infrequent panicker (n = 27)	
	n	%	n	%
Family conflict	7	25.0	5	18.5
Financial difficulties	4	14.3	3	11.1
Difficulties at work	3	10.7	3	11.1
Move away from home	3	10.7	2	7.4
Loss of significant other				
separation	3	10.7	1	3.7
death	1	3.6	1	3.7
Illness	2	7.1	2	7.4
Surgery	0	0.0	3	11.1
University exams	0	0.0	2	7.4
Loss of employment	0	0.0	2	7.4
Birth of a child	0	0.0	1	3.7
Motor vehicle accident	1	3.6	0	0.0

### *Perceived Cause of Subsequent Attacks*

Of interest was also what subjects identified as a cause of subsequent panic attacks. In order to assess this, each subject was asked to indicate on a list of possible precipitants those events they felt usually caused their panic attacks. The percentage of individuals in each group as well as the percentage of the total sample who endorsed each possible precipitant are listed in Table 3.

An examination of Table 3 shows that the majority of the sample (84%), as predicted, reported an "anxious thought" as a common precipitant of their panic experiences. This item was endorsed by 79% of the panic disordered subjects and by 89% of the infrequent panickers. This was followed, in order from next highest to lowest, by "it all happens at once", endorsed by 40% of the entire sample, a "physical feeling", endorsed by 27% of the entire sample, "mood change", endorsed by 13% of the entire sample, "other", endorsed by 9% of the entire sample, and finally, a "specific fearful cue", endorsed by 7% of the entire sample. This suggests that while most subjects felt that their own thoughts were the most frequent contributor to their panic attacks, other factors were also seen as panic provoking.

### *Perceived Control*

As determined on question eight of the Panic Attack Questionnaire, panic disordered subjects compared to infrequent

Table 3

Percentage of Groups Endorsing Each Item as a Perceived Cause of  
Panic Attacks Across Groups

Item	Panic	Infrequent	Total
	Disorder	Panicker	
	%	%	%
Physical feeling	35.71	18.52	27.27
Anxious thought	78.57	88.89	83.64
Mood change	21.43	3.70	12.73
Specific fearful cue	7.14	7.41	7.27
It all happens at once	46.43	33.33	40.00
Other	10.71	7.41	9.09

panickers also perceived that they had less control over their panic experiences. The mean rating on this question observed for panic disordered subjects was 2.393 compared to a mean rating of 3.556 for infrequent panickers. This indicates that while panic disordered subjects perceive that they can "rarely" control the onset of panic, infrequent panickers perceive that they can control their panic attacks at least "half of the time" and often "usually". This difference between the two groups, as predicted, was significant ( $t(53) = 4.660, p < .00005$ ).

### Primary Measures

#### The Fearful Cognitions Questionnaire and the Body Sensations Questionnaire

The mean total scores, subscale scores, standard deviations, t-values, and probabilities for data obtained from the Fearful Cognitions Questionnaire - Revised (FCQ-R) and the Body Sensations Questionnaire - Revised (BSQ-R) are presented for each group in Table 4. Although the small sample size did not permit a direct analysis of the particular thoughts and sensations most relevant to each group, the mean item frequency ratings and the mean item intensity ratings obtained on three of the scales are presented for each group in Tables 5, 6, and 7. Results are reported below first for the significance of "fear of fear" and secondly for the variables added to these questionnaires by the researcher.

## *Fear of Fear*

In order to determine the significance of "fear of fear" the mean total frequency score obtained for each group on the FCQ-R and the mean total intensity score obtained on the BSQ-R, as well as the mean subscale scores for the two factors, Fear of Social/Behavioural Consequences and Fear of Physical Consequences were subjected to a series of t-tests. The results of these t-tests revealed significant main effects in the predicted direction for all comparisons (refer to Table 4). Specifically, as predicted, panic disordered subjects scored significantly higher than infrequent panickers on both total scores: Fearful Cognitions Frequency Index (FCFI,  $t(53) = 5.353$ ,  $p < .00005$ ); and Body Sensations Intensity Index (BSII,  $t(53) = 8.099$ ,  $p < .00005$ ); and on both subscale scores: Fear of Social/Behavioural Consequences ( $t(53) = 2.834$ ,  $p = .0065$ ); and Fear of Physical Consequences ( $t(53) = 5.918$ ,  $p < .00005$ ). These results indicate that panic disordered subjects, when compared to infrequent panickers, are more afraid of the somatic sensations associated with arousal, and have more frequent thoughts concerning potential social/psychological and/or physical consequences as a result. As indicated in Tables 5 and 6, panic disordered subjects rated half of the sensations listed on the BSQ-R as at least moderately frightening or worrisome, and rated seven of the fourteen thoughts listed on the FCQ-R as occurring at least half the time when anxious. In contrast, none of the sensations listed on the BSQ-R were rated as at least



Table 4

## Principle Variables Across Groups

Variable	Panic disordered (n = 28)		Infrequent panicker (n = 27)		t (53)	prob.
	Mean	S.D.	Mean	S.D.		
<b>Fearful Cognitions Questionnaire</b>						
Mean frequency	3.07	0.61	2.20	0.59	5.353	<.00005
Mean intensity	3.17	0.67	2.19	0.62	5.662	<.00005
Fear of physical consequences	23.18	5.94	15.15	3.87	2.834	.0065
Fear of social/behavioral consequences	19.79	4.59	15.70	6.02	5.918	<.00005
Confidence	2.46	0.88	3.37	1.01	3.558	.008
Exacerbation	4.14	0.89	3.26	1.20	3.114	.003
<b>Body Sensations Questionnaire</b>						
Mean frequency	3.42	0.66	2.59	0.59	4.879	<.00005
Mean intensity	3.10	0.58	1.91	0.50	8.099	<.00005
Personal Belief Inventory	13.18	4.58	7.15	3.58	5.427	<.00005
Self-Efficacy Scale						
Total	78.36	22.15	93.00	19.51	2.598	.0121
General	61.00	17.67	71.59	15.09	2.387	.0206
Social	17.36	6.27	21.41	6.81	2.296	.0257
Trait Anxiety Inventory	57.29	9.58	46.48	11.04	3.882	.0003

Table 5

Mean Intensity Ratings and Standard Deviations of Specific Body Sensations Across Groups

Body Sensation	Panic disorder (n = 28)		Infrequent panicker (n = 27)	
	Mean	S.D.	Mean	S.D.
Heart palpitations	3.643	0.989	2.593	1.279
Pressure in chest	3.393	1.197	2.222	1.311
Numbness in arms or legs	2.857	1.407	1.444	0.974
Numbness in another part of your body	2.214	1.371	1.259	0.712
Feeling short of breath	3.964	0.838	2.593	1.338
Dizziness	3.607	1.066	2.556	1.219
Blurred or distorted vision	3.143	1.239	1.741	1.095
Nausea	2.286	1.150	1.481	0.753
Butterflies in stomach	2.179	0.983	1.519	0.849
Knot in stomach	2.464	1.170	1.222	0.506
Lump in throat	2.750	1.295	1.630	1.115
Wobbly or rubber legs	3.500	1.232	2.185	1.145
Sweating	2.214	1.101	1.667	0.877
Dry throat	2.429	1.200	1.370	0.839
Feeling disoriented and confused	4.536	0.744	2.778	1.476
Feeling disconnected from your body: only partly present	4.357	1.224	2.222	1.368

Note. Intensity ratings were made for the following scale: 1 = not frightened or worried, 2 = mildly frightened, 3 = moderately frightened or worried, 4 = very frightened, 5 = extremely frightened or worried.

Table 6

Mean Frequency Ratings and Standard Deviations of Specific  
Fearful Cognitions Across Groups

Fearful Cognition	Panic disorder (n = 28)		Infrequent panicker (n = 27)	
	Mean	S.D.	Mean	S.D.
I am going to throw up	2.857	1.353	1.704	1.068
I am going to pass out	4.000	0.943	2.630	1.391
I must have a brain tumor	2.000	1.305	1.259	0.594
I will have a heart attack	3.679	1.219	2.630	1.305
I will choke to death	2.857	1.353	1.667	1.177
I am going to act foolish	3.821	1.188	3.185	1.570
I am going blind	1.607	1.031	1.222	0.698
I will not be able to control myself	4.393	1.066	3.593	1.248
I will hurt someone	1.750	1.206	1.630	1.079
I am going to have a stroke	2.607	1.641	1.630	0.967
I am going to go crazy	4.393	0.832	2.889	1.311
I am going to scream	2.321	1.416	2.111	1.528
I am going to babble or talk funny	3.107	1.499	2.296	1.463
I will be paralyzed by fear	3.571	1.665	2.407	1.474

Note. Frequency ratings were made for the following scale: 1 = never, 2 = rarely, 3 = half the time, 4 = usually, 5 = always.

moderately frightening by the infrequent panickers, and only two of the fourteen thoughts on the FCQ-R were rated as occurring at least half the time when anxious. Together these results indicate that, as hypothesized, the significance of "fear of fear" is a more salient factor for panic disordered subjects than it is for infrequent panickers. Although men tended to score lower than women on both the FCII and the BSII, two way analyses revealed no significant sex differences or group by sex interactions on any of these variables.

#### *Ancillary Scales and Questions*

With reference to the revisions made to the FCQ, it was hypothesized that panic disordered subjects might, in addition to having more frequent maladaptive thoughts, be: (1) more frightened or worried by these thoughts; (2) less able, when anxious, to stop or exclude these thoughts from their conscious awareness; and (3) rate these thoughts as more capable of exacerbating panic or anxiety. T-tests performed between the mean ratings for each group support these hypotheses (refer to Table 4). As predicted, panic disordered subjects rated the thoughts on the FCQ-R as more frightening as evidenced by higher scores on the Fearful Cognitions Intensity Index (FCII;  $t(53) = 5.353, p < .00005$ ); reported less confidence in being able to stop or exclude these thoughts from their conscious awareness ( $t(53) = 3.558, p = .0008$ ); and rated these thoughts as more capable of exacerbating an episode of anxiety ( $t(53) = 3.114, p$

= .003). Again, although men tended to score higher than women on the FCII, two way analyses of variance indicated that there no significant sex differences or group by sex interactions on any of these variables.

Similarly, with reference to the revisions to the BSQ, the Body Sensations Frequency Index (BSFI), it was hypothesized that panic disordered subjects, in addition to being more afraid of the somatic sensations associated with arousal would report more sensations when anxious in general. As indicated in Table 7, twelve of the sixteen sensations were rated as occurring at least half the time when anxious by panic disordered subjects, while only five of the same sixteen were similarly rated by the infrequent panickers. Again, as shown in Table 4, a t-test performed between the two groups on their respective mean total frequency ratings support the hypothesis ( $t(53) = 4.879, p < .00005$ ). A two way analysis of variance indicated there was no significant sex difference or group by sex interaction on this variable.

However, in order to determine whether FCII and BSFI measured any thing different from their respective counterparts a correlational analysis was conducted. The results of this analysis indicated that while there is some confidence that the BSFI measures something different from the BSII ( $r = .7169$ ), the extremely high correlation between the FCII and the FCFI ( $r = .9009$ ) casts considerable doubt on the possibility that the FCII might measure any thing different from the FCFI. In this regard,

Table 7

Mean Frequency Ratings and Standard Deviations of Specific Body Sensations Across Groups

Body Sensation	Panic disorder (n = 28)		Infrequent panicker (n = 27)	
	Mean	S.D.	Mean	S.D.
Heart palpitations	4.250	1.005	3.333	1.209
Pressure in chest	3.393	1.166	2.556	1.281
Numbness in arms or legs	2.714	1.272	1.889	1.340
Numbness in another part of your body	2.179	1.335	1.481	0.935
Feeling short of breath	4.214	0.995	3.259	1.318
Dizziness	3.964	1.071	2.815	1.360
Blurred or distorted vision	3.179	1.389	1.963	1.055
Nausea	2.964	1.374	2.037	1.160
Butterflies in stomach	3.321	1.219	3.111	1.340
Knot in stomach	2.821	1.416	2.481	1.341
Lump in throat	3.179	1.416	2.519	1.503
Wobbly or rubber legs	3.893	1.257	3.111	1.311
Sweating	4.071	1.184	3.444	1.450
Dry throat	3.179	1.467	2.259	1.607
Feeling disoriented and confused	4.000	1.089	2.852	1.486
Feeling disconnected from your body: only partly present	3.429	1.260	2.444	1.423

Note. Frequency ratings were made for the following scale: 1 = never, 2 = rarely, 3 = half the time, 4 = usually, 5 = always.

it is possible that the maladaptive thoughts, by their sheer frequency, are more frightening.

### Cognitive/Trait Measures

The means, standard deviations, t-values, and probabilities for each remaining variable (trait anxiety, locus of control, and self-efficacy status) are presented in Table 4. Group by sex comparisons revealed no significant sex differences or group by sex interactions on any of these measures. Therefore the results reported below are based on the pooled scores of both male and female subjects in each group.

As indicated in Table 4, comparisons between the two groups for each total score and subscale score revealed significant main effects in the predicted direction for only two of the five comparisons: the STAI-Trait Inventory ( $t(53) = 3.882, p = .0003$ ); and the Personal Belief Inventory ( $t(53) = 5.427, p < .00005$ ). Contrary to prediction, no significant main effects were observed on the Self-Efficacy Scale: including the Total score ( $t(53) = 2.598, p = .0121$ ); and both subscale scores: General Self-Efficacy ( $t(53) = 2.837, p = .0206$ ); and Social Self-Efficacy ( $t(53) = 2.296, p = .0257$ ). Although each score on the Self-Efficacy Scale clearly approached statistical significance, this was not of sufficient magnitude to satisfy significance requirements as determined by the Bonferroni multistage correction for multiplicity. Therefore, although

these results indicate that panic disordered subjects, as hypothesized, are more generally anxious than infrequent panickers and perceive that they have less control over significant life events, their perceptions of personal self-efficacy are not reliably different from those of the infrequent panickers.



## CHAPTER IV

### DISCUSSION

The primary purpose of the present investigation was to examine four psychological and cognitive factors hypothesized to be relevant features of panic disorder ("fear of fear", trait anxiety, an external locus of control, and low self-efficacy); and to compare the significance of these factors for panic disordered individuals when compared to individuals who experience only occasional panic attacks (infrequent panickers). Additionally, however, a decision was also made to explore the nature of the thoughts panic disordered and infrequent panickers typically experience when anxious, how frightening and panic provoking these thoughts are, and how confident subjects feel in being able to stop or exclude these thoughts from their conscious awareness. Finally, a decision was made to explore the circumstances surrounding the first panic attack; the perceived cause of the first and subsequent panic attacks; subjects' perceptions of their control over panic experiences; and the types of symptoms they typically experience during panic attacks.

Examining these factors, a number of important differences between panic disordered subjects and infrequent panickers emerged. Consistent with cognitive theories of panic (e.g., Beck et al., 1985), as predicted, panic disordered subjects reported being more frightened or worried by the sensations associated

with autonomic arousal; reported more frequent thoughts concerning potential social/psychological or physical calamities; reported higher levels of generalized anxiety; and reported less control not only over their panic experiences, but over significant events in their lives as well. Additionally, panic disordered subjects compared to infrequent panickers rated the thoughts associated with psychological or physical harm as more frightening and panic provoking, less easily excluded from their conscious awareness, and more capable of exacerbating their anxiety. Additionally, panic disordered subjects reported more symptoms common to panic attacks and more sensations associated with autonomic arousal when anxious in general. Finally, while the majority of subjects in both groups recalled significant stressors in their lives at the time of their first panic attack, the majority of the panic disordered subjects did not attribute this attack to such stressors, while most of the infrequent panickers did. Although contrary to prediction panic disordered subjects did not perceive themselves as less self-efficacious than infrequent panickers, these data point to some important differences between individuals who develop panic disorder and individuals who experience only occasional panic attacks.

A major finding in the present research pertains to the significance of "fear of fear", or the belief that anxiety has negative consequences (Beck et al., 1985; Chambless et al., 1984). Although "fear of fear" has long been suggested as a

salient feature of anxiety, particularly within the realm of agoraphobia (e.g., Goldstein & Chambless, 1978; Hallam, 1978), the empirical evidence in support of this phenomenon has only begun to appear in the literature (e.g., Chambless, 1985b). The data from the present research confirm its relevance in the study of panic disorder.

The phenomenon of "fear of fear" suggests that what differentiates people who develop panic attacks from those who do not is a marked fear of internal sensations associated with autonomic arousal (Beck et al., 1985; Chambless, 1985a; Chambless et al., 1984). According to this theory, when anxious, people who experience panic attacks misattribute or mislabel the meaning of these sensations, believing that they are much more dangerous than they really are. As a consequence, they also have more frequent thoughts concerning potential calamities that will befall them as a result of their anxiety. The results of the present research are consistent with this view and suggest that the phenomenon of "fear of fear" also differentiates people who experience frequent panic attacks from those who experience only occasional panic attacks. The panic disordered subjects in the present study rated the sensations associated with autonomic arousal as being moderately to very frightening and reported that the thoughts associated with potential social/psychological or physical disasters (e.g., loss of control) occur at least half the time when anxious. In contrast, the infrequent panickers rated the sensations associated with arousal as only

mildly to moderately frightening and reported that the thoughts associated with potential harm occur only rarely. Since the fear of internal body sensations and the thoughts associated with them are thought to reinforce each other (Beck et al., 1985), the observed differences between panic disordered subjects and infrequent panickers, in the significance of this "fear of fear", may also account for the differences between these two groups in the frequency of panic attacks.

The relative importance of "fear of fear", however, also requires that one determine both the nature of the frightening cues, and the attributions people make regarding them (Beck et al., 1985). As indicated in Table 6, seven of the fourteen thoughts listed on the FCQ-R were rated as occurring at least half of the time when anxious by panic disordered subjects, while only two of the same fourteen thoughts were similarly rated by infrequent panickers. For panic disordered subjects these thoughts included fears of passing out, having a heart attack, acting foolish, losing control, going crazy, babbling or talking funny, and being paralyzed by fear. These thoughts clearly resemble those collected by interview for other patients who experience acute anxiety states (Beck et al., 1974), or panic attacks (Hibbert, 1984b), and are the same thoughts as those reported by Chambless and her associates (Chambless, 1985a, 1985b, Chambless et al. 1984) as being important for agoraphobic patients. In contrast, only the fears of losing control and acting foolish were similarly rated by infrequent

panickers. This suggests not only a quantitative difference in the frequency of maladaptive thoughts between panic disordered subjects and infrequent panickers, but a qualitative difference as well. Furthermore, while the fears of dying, going crazy, or doing something uncontrolled are known to be associated with panic disorder (APA, 1980), these findings suggest that other fears are also common and important (cf Norton et al., 1986).

Similarly, half of the sensations listed on the BSQ-R were rated as at least moderately frightening or worrisome by panic disordered subjects, but none of these same sensations were similarly rated by the infrequent panickers. For panic disordered subjects, these sensations included heart palpitations, pressure in the chest, shortness of breath, dizziness, blurred or distorted vision, wobbly or rubber legs, feeling disoriented and confused, and feeling disconnected from the body. Consistent with the thoughts most frequently rated, these suggest extreme loss of both physical and psychological control. Again these results are consistent with those reported by Chambless and associates (e.g., Chambless et al., 1984) for agoraphobic patients.

In sum, "fear of fear" appears to be a salient feature of panic disorder, with the results of the present study consistent with the view that panic disordered individuals suffer a cognitive or attributional problem (Beck et al., 1985; Goldstein & Chambless, 1978; Clark, 1986). Although the theory is borrowed primarily from the literature on agoraphobia, recently Clark

(1986) presented a cogent theory of panic disorder describing exactly this same process. According to Clark, panic disordered patients misattribute the sensations associated with "normal anxiety responses", again, believing they are much more harmful than they are in reality. Therefore the results of the present study, which support a model of panic based on the notion of "fear of fear", also support Clark's cognitive model of panic.

Of interest, however, was also whether panic disordered subjects would report more deviant body sensations when anxious in general. Again this hypothesis was supported. On the BSQ-R, twelve of the sixteen listed sensations were rated as occurring at least half of the time when anxious by panic disordered subjects, while only five of the sixteen sensations were similarly rated by infrequent panickers. Both groups of subjects reported that heart palpitations, shortness of breath, butterflies in the stomach, wobbly or rubber legs, and sweating occur at least half the time, but, panic disordered subjects also reported that pressure in the chest, dizziness, blurred or distorted vision, a lump in the throat, feeling disoriented and confused, and feeling disconnected from the body occur just as often. If this is a true difference between panic disordered subjects and infrequent panickers, then in addition to the attributional problem, panic disordered subjects may have a natural bias which would increase the probability of the exacerbatory feedback loop being set in motion more often. Alternatively, it is possible that panic disordered subjects are

only more aware of these sensations, as cognitive theories would predict (e.g., Beck et al., 1985; Clark, 1986), for which infrequent panickers simply ignore or cope with. Physiological measures which would be a more sensitive, if not more reliable, method of measuring this phenomenon, would help clarify this issue. If there is a difference between how subjects rate their anxiety and how much physiological activity they actually exhibit, then as Fisher and Wilson (1985) suggested, they may "very well be afraid of fear but the 'fear of fear' appears to be taking place on a cognitive level" (p. 106).

It was also predicted that panic disordered subjects would rate their thoughts as more intense (i.e., more frightening or worrisome). Again, as measured in this study, this hypothesis is supported. However, given the high correlation between this measure and the Fearful Cognitions Frequency Index, it is also possible that subjects were simply responding to the frequency with which they think these maladaptive thoughts (i.e., the thoughts may have produced the fright by their sheer frequency). On the other hand, it is possible that panic disordered subjects were responding to the salience of these thoughts, a notion suggested by the fact that panic disordered subjects also rated these thoughts as less easily excluded from their conscious awareness and more capable of exacerbating their anxiety. If this is the case then as Beck et al. (1985) suggest, as a result of a biased cognitive system, these thoughts may be more intrusive and automatic for panic disordered subjects than they

are for infrequent panickers. Perhaps in future research, rather than asking subjects how frightened or worried they are by their own thoughts, subjects should be asked how firmly they believe the events they fear will actually happen (Chambless, 1985a).

Not unexpectedly, panic disordered subjects also scored higher than infrequent panickers on the measure of trait anxiety. This suggests that they have a more marked tendency to be generally fearful, worried, or apprehensive. Theoretically these attributes would predispose them to greater elevations in state anxiety (Beck et al., 1985; Spielberger et al., 1970). However, research is now appearing to suggest that unexpected panic attacks are functionally related to subsequent anticipatory anxiety and fear of additional panic experiences (Rachman & Levitt, 1985). Therefore, while higher levels of anxiety may be a premorbid factor in the development of panic attacks, a notion supported by the research of Noyes, Clancy, Crowe, Hoenk, and Slymen (1978) and Cloninger et al. (1981), these elevated levels of anxiety may also be a consequence of unexpected panic experiences. If this is so, then the higher levels of anxiety reported by infrequent panickers compared to normal subjects (Spielberger et al., 1970), suggest not only a risk for more frequent panic attacks but for elevated levels in generalized anxiety as well.

Additionally, panic disordered subjects scored higher than infrequent panickers on Rotter's (1966) personality measure of locus of control. This suggests that in contrast to the



infrequent panickers, panic disordered individuals perceive that they have little control over significant events in their lives. Consistent with this finding is that they also perceive that they have little control over their panic experiences. The combination of these two suggest a marked sense of vulnerability and helplessness consistent with the clinical picture of panic disorder, Beck's (Beck et al., 1985) theory of panic disorder, and Seligman's (1975) theory of learned helplessness. The significance of this finding also comes from research which suggests that one's locus of control mediates the relationship between stress and coping (e.g., Johnson & Sarason, 1978). If panic disordered individuals believe that the events that happen to them are in fact beyond their control, then active problem focussed coping efforts may be limited (Parks, 1984).

Contrary to prediction, the hypothesis that panic disordered subjects would score significantly lower than infrequent panickers on measures of perceived self-efficacy (total self-efficacy, general self-efficacy, and social self-efficacy) was not born out in the present research. Although panic disordered subjects tended to score lower than infrequent panickers on all three indices, and both groups tended to score lower than normals in the literature (Sherer & Adams, 1985, Sherer et al., 1982), a finding consistent with Beck's (Beck et al., 1985) theory of panic, the wide variability in the scores and the amount of overlap in their distributions, suggest that perceived self-efficacy is not a reliable discriminator between

frequent and infrequent panickers. Although nonsignificant findings may also reflect inadequate measurement of the phenomenon, it is more likely that one's perceptions of their capabilities are a function of some third mediating factor. Given that the most salient difference between panic disordered subjects and infrequent panickers is the number of panic experiences, it is possible that one's perceptions of their coping efficacy are a function of the frequency of panic attacks or, alternatively, a function of when the last panic attack occurred. Post hoc correlations between perceived self-efficacy and the number of panic attacks experienced in the three weeks preceding the study ( $r = -.49$ ), as well as the fact that subjects in the present study also tended to score lower than normal subjects in the literature (e.g., Sherer and Adams, 1985), suggest that this hypothesis is viable. If this formulation is true, then one's perceptions of their capabilities would be expected to change over time as a function of the frequency of panic attacks, or as a function of treatment.

Another factor differentiating panic disordered subjects and infrequent panickers is the number of symptoms commonly reported during panic attacks. At least two thirds of the panic disordered subjects in the present study endorsed all of the symptoms common to panic attacks. In contrast, the same number of infrequent panickers endorsed only about 53% of the symptoms. For panic disordered subjects, these findings are consistent

with those reported by Barlow et al. (1985) for both agoraphobic and panic disordered subjects. For infrequent panickers these findings are consistent with those reported by Norton and his associates (Norton et al., 1985; Norton et al., 1986). This suggests that beyond the difference in the frequency of panic attacks, panic disordered subjects may have a more severe form of panic.

Of significance, however, is that DSM-III (APA, 1980) only requires that four symptoms be reported to qualify as a panic attack. Therefore, the panic disordered subjects in the present study reported three times as many symptoms as required and the infrequent panickers reported twice as many as required. Consequently, it is possible that not only do the panic disordered subjects in this study experience severe panic attacks, but the infrequent panickers in this study appear to experience severe panic attacks as well. Alternatively, the criteria of only four symptoms required by DSM-III is too lenient.

The types of symptoms panic disordered and infrequent panickers experience during a typical panic attack also point to some differences between these two groups. However, their similarities cannot be ignored. Both panic disordered subjects and infrequent panickers reported that palpitations, shortness of breath, sweating, trembling or shaking, and dizziness were common symptoms of their panic experiences. These are the same symptoms reported by several researchers (e.g., Anderson et al.,

1984; Barlow et al., 1985; Norton et al., 1985; Norton et al., 1986) and seem to reflect a typical symptom profile for all who panic. However, inconsistent with the literature, is that the infrequent panickers in the present study, like the panic disordered subjects, reported that feelings of unreality and fears of going crazy or doing something uncontrolled were also common. This has relevance for the infrequent panickers in the present study since the infrequent panickers in the series of studies by Norton and his associates (Norton et al., 1985; Norton et al., 1986) rarely endorsed these symptoms. In order to reconcile this difference, however, it is important to note that all the infrequent panickers in the present study had had at least one spontaneous ("out of the blue") panic attack, while the majority of the infrequent panickers in Norton's samples were termed "situational" panickers. Therefore, feelings of unreality and fears of going crazy or doing something uncontrolled may be specific only to spontaneous panickers. Alternatively, it is possible that some of Norton's subjects were incorrectly reporting panic, since structured interviews were not conducted yet this procedure led to the elimination of 11 subjects reporting infrequent panic attacks in the present study.

The observed differences between situational and spontaneous infrequent panickers, however, does not detract from the observed differences between panic disordered subjects and infrequent panickers in the types of symptoms typically

experienced. Consistent with the literature (e.g., Anderson et al., 1984; Barlow et al., 1985), symptoms of faintness, paresthesia, and choking sensations were also commonly reported by the panic disordered subjects, while these same symptoms were rarely reported by the infrequent panickers. If this is a true difference between panic disordered subjects and infrequent panickers then, because so many symptoms reported by both are also the same, these symptoms may represent markers for those who go on to develop panic disorder. Although the present research cannot answer this question, given that the infrequent panickers, although scoring lower than panic disordered subjects, also scored higher than normals on such measures as trait anxiety (Speilberger, 1970) and lower than normals on measures of self-efficacy (e.g., Sherer et al., 1982), it is possible that there is a continuum of panic whereby infrequent panickers later become panic disordered. In other words, as Sheehan (1982) suggested, there may be a natural progression from subpanic symptoms to more severe panic attacks. If this is the case, it may be more useful to intervene with infrequent panickers before their disorder reaches the intensity and complexity of panic disorder (Norton et al., 1986). A longitudinal study of people at risk for the development of panic disorder or a follow-up study on infrequent panickers, therefore, might prove invaluable. This would not only help clarify this issue but provide important documentation as to the course of the disorder as well.

The data collected on the circumstances surrounding the first panic attack and its perceived cause, although subject to all the criticisms associated with asking subjects to recall events from the past, is highly interesting. Consistent with the observations of several researchers (e.g. Beck et al. 1974; Gardos, 1981; Hibbert, 1984b, Norton et al. 1986), acute anxiety states or panic attacks appear to begin in a background of conflict or stress (e.g., marital conflict or difficulties at work). However, the present research also found that while most infrequent panickers attributed their first panic attack to these or other stressors, even though the actual panic attack was unexpected and occurred in an innocuous situation (e.g., a movie theatre), most of the panic disordered subjects did not.

Goldstein and Chambless (1978) suggested that one of the preconditions for the development of agoraphobia is interpersonal stress or conflict (e.g., marital conflict), for which the individual is usually unaware. According to this view, anger leads to anxiety and subsequently the panic attack. However, the person, not aware of the conflict, does not make the connection between his/her emotions and the events which produced them. In a similar way, Clark (1986) also suggested that panic disordered subjects fail to connect their panic attacks to the events which produced them. According to Clark, panic attacks may result from the misinterpretation of sensations associated with different emotional states (e.g., excitement, anger), or from the misinterpretation of relatively

innocuous events such as standing up from a sitting position too quickly, resulting in dizziness, or exercise, resulting in breathlessness and palpitations. With the extension of Goldstein and Chambless' (1978) theory to panic disordered individuals, and the adoption of Clark's (1986) model, the present research would concur with these suggestions. The fact that for many subjects the stressor and the actual panic attack were also separated in time, may also suggest a reason why panic attacks in panic disordered individuals are unpredictable.

### Summary and Conclusions

The present research began with the question of what differentiates panic disordered individuals from normal people who, nevertheless, also experience occasional panic attacks. It was hypothesized that in comparison to infrequent panickers, panic disordered subjects would report more fear associated with the somatic sensations associated with arousal; higher levels of generalized anxiety; a more externalized locus of control; and lower levels of self-efficacy. It was also hypothesized that panic disordered subjects would report more thoughts associated with potential harm; rate these thoughts as more intense and panic provoking, and less easily excluded from conscious awareness. Additionally, it was hypothesized that panic disordered subjects would report more sensations associated with arousal, more symptoms associated with their panic attacks, and less control over their panic experiences. Finally, it was

hypothesized that although most subjects would report significant stressors in their lives at the time of their first panic attack, only infrequent panickers would attribute this attack to such stressors. With the exception of lower levels of self-efficacy, all of these hypotheses were supported. Although there were also some similarities between panic disordered subjects and infrequent panickers (e.g., the types of symptoms experienced during a typical panic attack), the results of the present research point to a more pronounced cognitive disturbance in panic disordered subjects, consistent with the cognitive theories of panic disorder (Beck et al., 1985; Clark, 1986) and reflected in the amount of emotional distress they report. Panic disordered subjects in comparison to infrequent panickers appear to be more vulnerable to frequent panic experiences by way of their maladaptive fears and beliefs and to the extent that these maladaptive beliefs have become a part of their self-schema, they are a risk for continued panic attacks.

Likewise, from a clinician's point of view, the fact that panic disordered subjects appear to have a more pronounced cognitive disturbance than infrequent panickers has several implications. So far much of the work aimed at controlling panic attacks has focussed on the use of medications (e.g., Zitrin et al., 1983). However, there is evidence to suggest that once medications are discontinued, panic attacks recur (Sheehan et al., 1980; Zitrin et al., 1983). Therefore, given that the



effect of these medications are dependent upon administration, a preference for more psychologically based treatments is suggested. If the results of the present research are in fact true, then in order to reduce both the frequency and intensity of panic experiences, the maladaptive thinking patterns associated with panic must also be changed. This could be achieved by: (1) exposing patients to the sensations they fear and providing them with a less catastrophic interpretation of their perception, a method recently shown to have considerable success (e.g., Clark et al., 1985); (2) by instructing patients to monitor the circumstances surrounding their panic experiences (e.g., Freedman et al., 1984), a method which should make their panic attacks at least more predictable; or (3) by utilizing thought stopping techniques designed to break the exacerbatory feedback loop of "fear of fear" before a full blown panic attack occurs. All of these methods should give the patient more control over their panic experiences, a factor which should also be reflected in how vulnerable and helpless they feel. Future research should focus on the utility of each of these methods in the treatment of panic disorder.

The observed pattern of similarities and differences between the panic disordered subjects and the infrequent panickers in the present research also suggest some areas worthy of future research. Certainly, the results of this study served to raise several questions beyond those initially investigated. For instance, while these data suggest that panic disordered

patients and infrequent panickers significantly differ in their thinking patterns, the question remains as to how these different thinking patterns are learned, and how they can be changed. Additionally, the question still remains as to why some people experience many panic attacks characterized by many severe symptoms while others experience fewer attacks characterized by milder symptoms. Finally, given that there are also some similarities between infrequent panickers and panic disordered subjects, the question is raised as to whether there is a continuum of panic, whereby infrequent panickers later become panic disordered, or whether infrequent panickers represent a group qualitatively different from subjects with panic disorder. Future research should consider the types of symptoms experienced, factors affecting the severity of panic attacks, the role of stressors, the significance of the first panic attack, the delineation of cues for panic, and factors affecting how fear appraisals are learned and maintained. Additionally, future research should consider the role of other cognitive and personality factors. For example, an examination of factors affecting how information is processed and how differing personality needs and coping strategies interact with panic may prove useful. It is only then that a clearer understanding of how panic disorder develops and how panic disorder is maintained can be elucidated.

## Limitations of the Present Research

The findings of the present research contribute to the knowledge of panic disorder as well as to that of infrequent panickers. However, limitations to the present study warrant mention.

First, the present study would have benefited from a larger sample size. This would have enabled more analyses to have been performed between the two groups and possibly allowed for an analysis of the relative contribution of each variable to the observed differences. Additionally, a larger sample size would have permitted stronger assumptions regarding the reliability of these findings.

The present design would have also benefited from the inclusion of a normal control group. This would have provided useful information, especially with respect to the infrequent panickers in the present study, and possibly expanded the conclusions that can be reached from the findings. Normative data from age matched controls would have been particularly useful on the Self-Efficacy Scale where interpretive problems arose.

Additionally, the present design would have benefited from the inclusion of another psychiatric control group. As a result, it could be argued that the observed pattern of results are not specific to panic disorders, but a function of associated

aspects of psychopathology. However, while another psychiatric control group may have allowed for the expansion of the conclusions which can be drawn, its absence does not detract from the relevance of these results for certain predictions about the psychology of panic disordered individuals. For example, panic disordered individuals are more frightened by their internal sensations and have more frequent thoughts concerning psychological or physical harm. Further they can be characterized by both high levels of generalized anxiety and an external locus of control.

Finally, although the present research can provide hints as to the development and maintenance of panic disorder, it can say little about causality. The present study observed higher levels of fear, trait anxiety, and externality in frequent panickers than in infrequent panickers but this in itself does indicate premorbid factors. It is just as likely that these findings reflect the consequences of experiencing many distressing, unexplained, and unpredictable panic attacks as they are a cause. Prospective research which compares those at risk for a panic disorder on factors hypothesized to reflect differences in vulnerability to the disorder would help clarify this issue and provide useful information in establishing an empirical basis for the prediction of panic disorder and its early intervention.

## CHAPTER V

### APPENDIX A

#### Information Sheet for Subjects

Simon Fraser University

FORM 14

##### INFORMATION SHEET FOR SUBJECTS

This form describes proposed tests involving physical, psychological, or any other invasive testing.

Title of Project: A Study on the Experience of Anxiety and Anxiety States

I am a graduate student of psychology and am interested in learning more about the experience of anxiety and how individuals who experience anxiety think. I hope to achieve this by inviting a large number of individuals who have experienced panic levels of anxiety to complete a series of six paper and pencil questionnaires; one of which asks about the experience of panic anxiety, three which measure different aspects of anxiety, and two which ask about personal beliefs.

You may participate in this study on a volunteer basis by completing the consent form and the six questionnaires. In all, this will take approximately 40 minutes of your time. If you choose to participate, please be aware that you may withdraw your consent to participate at any time while answering the questions. Please indicate your age and sex in the space provided at the beginning of the first questionnaire but do not put your name or any other identifying information on any of the other questionnaires. This will assure that your answers remain anonymous. Your answers are completely confidential and will be used only for the purposes of this research project. All questionnaires will be destroyed upon completion of the study.

Upon completing the questionnaires, I will again be available to explain more about the nature of this study to you and will answer any questions you may have. Your comments will also be most welcome.

If you have any other questions about this project, please do not hesitate to contact me (Tel. 291-3354 or 421-4613). I thank you for your cooperation and contribution to this study.

Kathleen Rogers,  
Psychology Graduate Student,  
Simon Fraser University  
Supervised by: Dr. David N. Cox



# Information Sheet for Treating Therapists

Simon Fraser University

FORM 4A

## INFORMATION SHEET FOR DOCTOR, THERAPIST, OR OTHER APPROPRIATE AUTHORITY

Title of Project: Cognitive and Personality Characteristics of

Panic Disorder

I am a graduate student of psychology and am interested in learning more about the experience of anxiety and how individuals who experience anxiety think. I hope to achieve this by inviting a large number of individuals who have experienced panic levels of anxiety to complete the following series of paper and pencil questionnaires:

1. Panic Attack Questionnaire - details the phenomenon of panic.
2. Chambless Body Sensations Questionnaire - Revised - measures the somatic component of anxiety.
3. Chambless Fearful Cognitions Questionnaire - Revised - measures the cognitive component of anxiety.
4. Spielberger Trait Anxiety Scale - measures one's level of chronic anxiety.
5. Sherer and Maddux Self-Efficacy Scale - measures one's level of general and social self-efficacy.
6. Rotter Personal Belief Inventory - indicates one's degree of internality or externality.

All of these measures are designed to quantify attitudes and anxiety states and are available for your perusal upon request.

With your approval, your client may participate in this study on a voluntary basis. He/she will be requested to read the document entitled "A Study on Anxiety and Anxiety States" and, if agreeable, to sign the consent form indicating that he/she agrees to participate and understands that he/she may withdraw from the study at any time while completing the series of questionnaires. All questionnaires will be associated with randomly assigned codes, age, and sex to assure your client's responses remain anonymous, and all information will be kept completely confidential.

If you have any questions about this project, please do not hesitate to contact me (Tel. 291-3354 or 421-4613). I thank you for your cooperation and contribution to this study.

Kathleen Rogers,  
Psychology Graduate Student,  
Simon Fraser University  
Supervised by: Dr. David N. Cox

Therapist Consent Form

SIMON FRASER UNIVERSITY

FORM #3

INFORMED CONSENT FOR MINORS  
AND CAPTIVE AND DEPENDENT POPULATIONS  
BY PARENT, GUARDIAN AND/OR OTHER  
APPROPRIATE AUTHORITY

Note: The University and those conducting this project subscribe to the ethical conduct of research and to the protection at all times of the interests, comfort, and safety of subjects. This form and the information it contains are given to you for your own protection and full understanding of the procedures, risks and benefits involved. Your signature on this form will signify that you have received the document described below regarding this project, that you have received an adequate opportunity to consider the information in the document, and that you voluntarily agree to allow the subject(s) for whom you are responsible to participate in the project.

As (parent/teacher/doctor/etc.) \_\_\_\_\_

of (name of child/patient/other) \_\_\_\_\_

I consent to the above-named engaging in the procedures specified in the document titled:

Cognitive and Personality Characteristics of Panic Disorder

to be carried out in the following place(s):

\_\_\_\_\_ at the following time(s):

\_\_\_\_\_ in a research project supervised by: Dr. David N. Cox

of: Simon Fraser University

I certify that I understand the procedures to be used and have fully explained them to (name of child/patient/other): \_\_\_\_\_

In particular, the subject knows the risks involved in taking part. The subject also knows that he/she has the right to withdraw from the project at any time, and that any complaint about the experiment may be brought to the chief researcher named above or to Dr. Roger Blackman, Chairman of the \_\_\_\_\_

Psychology Department, Simon Fraser University.

I may obtain a copy of the results of this study, upon its completion, by contacting \_\_\_\_\_

NAME (Please print): Kathleen Rogers,

ADDRESS: Department of Psychology,

Simon Fraser University, Burnaby, B. C., V5A 1S6

SIGNATURE: \_\_\_\_\_ WITNESS: \_\_\_\_\_

DATE: \_\_\_\_\_

When you have read the document referred to above, please initial the back of the last page of the document.



# CHAPTER VI

## APPENDIX B

No. \_\_\_\_\_

### Panic Attack Questionnaire

Age: \_\_\_\_\_

Sex: \_\_\_\_\_

A panic attack is described as the sudden onset of intense apprehension, fear, or terror, often associated with feeling of impending doom. Some of the most common symptoms are dizziness, shortness of breath, chest pain or discomfort, and trembling or shaking.

1. Have you ever had a panic attack?  yes  no

If you answered "yes" to question #1, please answer questions 2 through 12.

If you answered "no" to question #1, please go to question 12 on page two.

2. Have you had a panic attack in the past 12 months?  yes  no

If "no", please go to question 12 on page two; if "yes", please continue. <sup>How many?</sup> \_\_\_\_\_

3. How many panic attacks have you experienced in the past three weeks?

2 or less  3-5  6-10  11-20  more than 20

4. On the list below, please check any items that describe your experience of panic or high anxiety.

- shortness of breath  
 choking or smothering sensations  
 rapid heart beat  
 chest pain or discomfort  
 sweating  
 faintness  
 dizziness, light-headedness, or unsteady feelings  
 nausea or abdominal discomfort  
 numbness, tingling, or burning sensations  
 trembling or shaking  
 flushes (hot flashes) or chills  
 weak or rubber kneed  
 unreal or very strange  
 fear of dying  
 fear of going crazy or doing something uncontrolled

5. What were the circumstances surrounding your first panic attack? (i.e., when did it happen - age; where were you; who were you with; how did it start; what was happening in your life at the time; were you under any stress etc.)

6. What do you feel caused your panic attack?

7. If you've had more than one panic attack, what is their most frequent cause?

- a physical feeling  
 an anxious thought  
 mood change  
 a specific fearful cue (e.g., a place or thing frightens you)  
Please specify: \_\_\_\_\_  
 it all happens at once  
 other (please list) \_\_\_\_\_

8. How well do you feel you can control your panic attacks (i.e., prevent them or render them less frightening or worrisome)? Check one.

- I can never control my panic attacks
- I can only rarely control my panic attacks
- I can control my panic attacks about half the time
- I can usually control my panic attacks
- I can always control my panic attacks

9. If you can control your panic attacks some or all of the time, please use the space below to indicate how you control them.

10. On the list below, please check those things you usually do when you experience high anxiety or panic. Check as many as you feel apply to you.

- seek support or reassurance from others
- escape the situation
- wait it out
- concentrate on what I have to do next
- refuse to think about it
- accept it since nothing can be done
- avoid situations that might create anxiety
- distract myself
- take medication
- others not listed (please specify) \_\_\_\_\_

11. How often do you avoid places (e.g., stores, restaurants etc.), situations (e.g., standing in lines, social gatherings etc.), open places (e.g., fields), or vehicles (e.g., riding in cars, trains, airplanes etc.) because you might feel anxious and be unable to escape? Please list those things you avoid and indicate how often you avoid them - rarely, sometimes, usually.

12. Please list any significant events or life stressors which have occurred in your life over the past 12 months (e.g., increased responsibilities, illness, interpersonal conflict, change in residence or occupation, loss of a loved one etc.)

- (a)
- (b)
- (c)
- (d)

# Body Sensations Questionnaire - Revised

Below are some feelings or sensations that you may be aware of when you are anxious, nervous, or frightened.

1. Indicate how often each sensation occurs when you are anxious or frightened. Rate this from 0-4 using the "Frequency" scale listed below.
2. Then indicate how frightened or worried you are of this sensation. Rate this from 0-4 using the "Intensity" scale listed below.

<u>Frequency Scale</u>	<u>Intensity Scale</u>
0 - Sensation <u>never</u> occurs.	0 - <u>Not frightened or worried</u> by the sensation or feeling.
1 - Sensation <u>rarely</u> occurs.	1 - <u>Mildly frightened</u> by the sensation.
2 - Sensation occurs about <u>half the time</u> when anxious.	2 - <u>Moderately frightened or worried</u> by the sensation.
3 - Sensation <u>usually</u> occurs.	3 - <u>Very frightened</u> by the sensation.
4 - Sensation <u>always</u> occurs.	4 - <u>Extremely frightened or worried</u> by the sensation (terrified).

<u>Sensation</u> or <u>Feeling</u>	<u>Frequency</u>					<u>Intensity</u>				
	never	1	2	3	4	0	1	2	3	4
Heart palpitations.	0	1	2	3	4	0	1	2	3	4
Pressure in chest.	0	1	2	3	4	0	1	2	3	4
Numbness in arms or legs.	0	1	2	3	4	0	1	2	3	4
Numbness in another part of your body.	0	1	2	3	4	0	1	2	3	4
Feeling short of breath.	0	1	2	3	4	0	1	2	3	4
Dizziness.	0	1	2	3	4	0	1	2	3	4
Blurred or distorted vision.	0	1	2	3	4	0	1	2	3	4
Nausea.	0	1	2	3	4	0	1	2	3	4
Butterflies in stomach.	0	1	2	3	4	0	1	2	3	4
Knot in stomach.	0	1	2	3	4	0	1	2	3	4
Lump in throat.	0	1	2	3	4	0	1	2	3	4
Wobbly or rubbery legs.	0	1	2	3	4	0	1	2	3	4
Sweating.	0	1	2	3	4	0	1	2	3	4
Dry throat.	0	1	2	3	4	0	1	2	3	4
Feeling disoriented and confused.	0	1	2	3	4	0	1	2	3	4
Feeling disconnected from your body; only partly present.	0	1	2	3	4	0	1	2	3	4
Other sensations not listed. (Please describe and rate them.)										
	0	1	2	3	4	0	1	2	3	4
	0	1	2	3	4	0	1	2	3	4

# Fearful Cognitions Questionnaire - Revised

Below are some thoughts or ideas which may pass through your mind when you are anxious, nervous, or frightened.

1. Indicate how often each thought occurs when you are nervous or frightened. Rate this from 0-4 using the "Frequency" scale listed below.
2. Then indicate how frightened or worried this thought makes you feel. Rate this from 0-4 using the "Intensity" scale listed below.

- Frequency Scale
- 0 - Thought never occurs.
  - 1 - Thought rarely occurs.
  - 2 - Thought occurs about half the time when anxious.
  - 3 - Thought usually occurs.
  - 4 - Thought always occurs when anxious.

- Intensity Scale
- 0 - Not frightened or worried by the thought.
  - 1 - Mildly frightened by the thought.
  - 2 - Moderately frightened or worried by the thought.
  - 3 - Very frightened by the thought.
  - 4 - Extremely frightened or worried by the thought (terrified).

<u>Thought</u>	<u>Frequency</u>					<u>Intensity</u>				
	never			always		not fright- ened			terri- fied	
I am going to throw up.	0	1	2	3	4	0	1	2	3	4
I am going to pass out.	0	1	2	3	4	0	1	2	3	4
I must have a brain tumor.	0	1	2	3	4	0	1	2	3	4
I will have a heart attack.	0	1	2	3	4	0	1	2	3	4
I will choke to death.	0	1	2	3	4	0	1	2	3	4
I am going to act foolish.	0	1	2	3	4	0	1	2	3	4
I am going blind.	0	1	2	3	4	0	1	2	3	4
I will not be able to control myself.	0	1	2	3	4	0	1	2	3	4
I will hurt someone.	0	1	2	3	4	0	1	2	3	4
I am going to have a stroke.	0	1	2	3	4	0	1	2	3	4
I am going to go crazy.	0	1	2	3	4	0	1	2	3	4
I am going to scream.	0	1	2	3	4	0	1	2	3	4
I am going to babble or talk funny.	0	1	2	3	4	0	1	2	3	4
I will be paralyzed by fear.	0	1	2	3	4	0	1	2	3	4
Other ideas not listed. (Please describe and rate them.)										
_____	0	1	2	3	4	0	1	2	3	4
_____	0	1	2	3	4	0	1	2	3	4

3. How confident do you feel in being able to stop these thoughts or exclude these thoughts from your mind, when anxious or nervous?

\_\_\_\_\_ not at all    \_\_\_\_\_ a little    \_\_\_\_\_ some    \_\_\_\_\_ very    \_\_\_\_\_ fully

4. When you think any of these thoughts, do you find that they can bring on an episode of anxiety or panic, or make your anxiety worse?

\_\_\_\_\_ never    \_\_\_\_\_ rarely    \_\_\_\_\_ sometimes    \_\_\_\_\_ usually    \_\_\_\_\_ always

# Trait Anxiety Inventory

## SELF-EVALUATION QUESTIONNAIRE STAI FORM X-2

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

**DIRECTIONS:** A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you *generally* feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

	ALMOST NEVER	SOMETIMES	OFTEN	ALMOST ALWAYS
21. I feel pleasant .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. I tire quickly .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. I feel like crying .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. I wish I could be as happy as others seem to be .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. I am losing out on things because I can't make up my mind soon enough ....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. I feel rested .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. I am "calm, cool, and collected" .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. I feel that difficulties are piling up so that I cannot overcome them .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. I worry too much over something that really doesn't matter .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. I am happy .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. I am inclined to take things hard .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. I lack self-confidence .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. I feel secure .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. I try to avoid facing a crisis or difficulty .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35. I feel blue .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36. I am content .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37. Some unimportant thought runs through my mind and bothers me .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38. I take disappointments so keenly that I can't put them out of my mind ....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39. I am a steady person .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40. I get in a state of tension or turmoil as I think over my recent concerns and interests .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Self-Efficacy Scale

Please read each statement below and indicate how strongly you agree or disagree with the statement. Rate each statement as follows:

- 1-if you strongly disagree with the statement  
 2-if you somewhat disagree with the statement  
 3-if you slightly disagree with the statement  
 4-if you slightly agree with the statement  
 5-if you somewhat agree with the statement  
 6-if you strongly agree with the statement

	strongly disagree	some- what disagree	slightly disagree	slightly agree	some- what agree	strongly agree
1. When I make plans, I am certain I can make them work.	1	2	3	4	5	6
2. One of my problems is that I can not get down to work when I should.	1	2	3	4	5	6
3. If I can't do a job the first time, I keep trying until I can.	1	2	3	4	5	6
4. When I set important goals for myself, I rarely achieve them.	1	2	3	4	5	6
5. I give up on things before completing them.	1	2	3	4	5	6
6. I avoid facing difficulties.	1	2	3	4	5	6
7. If something looks too complicated, I will not even bother to try it.	1	2	3	4	5	6
8. When I have something unpleasant to do, I stick to it until I finish it.	1	2	3	4	5	6
9. When I decide to do something, I go right to work on it.	1	2	3	4	5	6
10. When trying to learn something new, I soon give up if I am not initially successful.	1	2	3	4	5	6
11. When unexpected problems occur, I don't handle them well.	1	2	3	4	5	6
12. I avoid trying to learn new things when they look too difficult for me.	1	2	3	4	5	6
13. Failure just makes me try harder.	1	2	3	4	5	6
14. I feel insecure about my ability to do things.	1	2	3	4	5	6
15. I am a self-reliant person.	1	2	3	4	5	6
16. I give up easily.	1	2	3	4	5	6
17. I do not seem capable of dealing with most problems that come up in life.	1	2	3	4	5	6
18. It is difficult for me to make new friends.	1	2	3	4	5	6
19. If I see someone I would like to meet, I go to that person instead of waiting for him or her to come to me.	1	2	3	4	5	6
20. If I meet someone interesting who is hard to make friends with, I'll soon stop trying to make friends with that person.	1	2	3	4	5	6
21. When I'm trying to become friends with someone who seems uninterested at first, I don't give up easily.	1	2	3	4	5	6
22. I don't handle myself well in social gatherings	1	2	3	4	5	6
23. I have aquired my friends through my personal abilities at making friends.	1	2	3	4	5	6

## Personal Belief Inventory

This is a questionnaire to find out the way in which certain important events in our society affect different people. Each item consists of a pair of alternatives lettered a or b. Please select the one statement of each pair (and only one) which you most strongly believe to be the case as far as you're concerned. Be sure to select the one you actually believe to be more true rather than the one you think you should choose or the one you would like to be true. This is a measure of personal belief; obviously there are no right or wrong answers.

Please answer the items carefully but do not spend too much time on any one item. Be sure to find an answer for every choice. Black-in the space provided beside a or b -- the one you choose as the statement more true.

In some instances you may discover that you believe both statements or neither one. In such cases, be sure to select the one you more strongly believe to be the case as far as you're concerned. Also try to respond to each item independently when making your choice; do not be influenced by your previous choices.

1. ( ) a. Children get into trouble because their parents punish them too much.  
( ) b. The trouble with most children nowadays is that their parents are too easy with them.
2. ( ) a. Many of the unhappy things in people's lives are partly due to bad luck.  
( ) b. People's misfortunes result from the mistakes they make.
3. ( ) a. One of the major reasons why we have wars is because people don't take enough interest in politics.  
( ) b. There will always be wars, no matter how hard people try to prevent them.
4. ( ) a. In the long run people get the respect they deserve in this world.  
( ) b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.
5. ( ) a. The idea that teachers are unfair to students is nonsense.  
( ) b. Most students don't realize the extent to which their grades are influenced by accidental happenings.
6. ( ) a. Without the right breaks one can not be an effective leader.  
( ) b. Capable people who fail to become leaders have not taken advantage of their opportunities.
7. ( ) a. No matter how hard you try some people just don't like you.  
( ) b. People who can't get others to like them don't understand how to get along with others.
8. ( ) a. Heredity plays the major role in determining one's personality.  
( ) b. It is one's experiences in life which determine what they're like.
9. ( ) a. I have often found that what is going to happen will happen.  
( ) b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.
10. ( ) a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.  
( ) b. Many times exam questions tend to be so unrelated to course work that studying is really useless.
11. ( ) a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.  
( ) b. Getting a good job depends mainly on being in the right place at the right time.
12. ( ) a. The average citizen can have an influence in government decisions.  
( ) b. This world is run by the few people in power, and there is not much the little guy can do about it.
13. ( ) a. When I make plans, I am almost certain that I can make them work.  
( ) b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.
14. ( ) a. There are certain people who are just no good.  
( ) b. There is some good in everybody.

15. ( ) a. In my case getting what I want has little or nothing to do with luck.  
 ( ) b. Many times we might just as well decide what to do by flipping a coin.
16. ( ) a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.  
 ( ) b. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.
17. ( ) a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.  
 ( ) b. By taking an active part in political and social affairs the people can control world events.
18. ( ) a. Most people don't realize the extent to which their lives are controlled by accidental happenings.  
 ( ) b. There really is no such thing as "luck".
19. ( ) a. One should always be willing to admit mistakes.  
 ( ) b. It is usually best to cover up one's mistakes.
20. ( ) a. It is hard to know whether or not a person really likes you.  
 ( ) b. How many friends you have depends upon how nice a person you are.
21. ( ) a. In the long run the bad things that happen to us are balanced by the good ones.  
 ( ) b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.
22. ( ) a. With enough effort we can wipe out political corruption.  
 ( ) b. It is difficult for people to have much control over the things politicians do in office.
23. ( ) a. Sometimes I can't understand how teachers arrive at the grades they give.  
 ( ) b. There is a direct connection between how hard I study and the grades I get.
24. ( ) a. A good leader expects people to decide for themselves what they should do.  
 ( ) b. A good leader makes it clear to everybody what their jobs are.
25. ( ) a. Many times I feel that I have little influence over the things that happen to me.  
 ( ) b. It is impossible for me to believe that chance or luck plays an important role in my life.
26. ( ) a. People are lonely because they don't try to be friendly.  
 ( ) b. There's not much use in trying too hard to please people, if they like you, they like you.
27. ( ) a. There is too much emphasis on athletics in high school.  
 ( ) b. Team sports are an excellent way to build character.
28. ( ) a. What happens to me is my own doing.  
 ( ) b. Sometimes I feel that I don't have enough control over the direction my life is taking.
29. ( ) a. Most of the time I can't understand why politicians behave the way they do.  
 ( ) b. In the long run the people are responsible for bad government on a national as well as on a local level.



# Letter Questionnaire for Subjects Unable to be Interviewed

Dear Participant:

I normally also interview participants, in addition to having each complete the series of questionnaires. However, since I am unable to do this in your case, I wonder if you would be so kind as to also answer the following 11 questions.

1. Have your panic attacks ever come over you suddenly out of the blue for no particular reason?     yes     no
2. Did you have these attacks even though nothing was threatening your life at the time?     yes     no
3. Did you have these attacks even though a doctor said there was nothing seriously wrong with your heart?     yes     no
4. Have these panic attacks ever caused you problems in your life?     yes     no
5. Have they ever interfered with your school, your work, or your job?     yes     no
6. Have they ever caused you problems with your family or caused your family to worry about you?     yes     no
7. Have these panic attacks ever interfered with your social activities or friendships?     yes     no
8. Have you ever recieved treatment or medication for panic attacks or anxiety?  
       treatment  
       medication  
       not applicable
9. Are you still recieving treatment or medication for panic attacks or anxiety?  
       treatment  
       medication  
       not applicable
10. If you are recieving, or have recieved treatment for panic attacks or anxiety, please indicate how long treatment has gone on (or went on) and how long ago this took place (weeks, months, years)? -  
       past treatment - how long? \_\_\_\_\_  
       current treatment - how long? \_\_\_\_\_  
       not applicable
11. How old were you when you had your first panic attack?    \_\_\_\_\_ years

Thank you again for your cooperation and assistance with this project.

Sincerely,

Kathleen Hughes  
(Tel. 291-3354)

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