Phobia: Understanding the Anatomy of Irrational Fear

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A phobia (from the Greek: φ?βος, Phóbos, meaning "fear" or "morbid fear") is a type of anxiety disorder, usually defined as a persistent fear of an object or situation in which the sufferer commits to great lengths in avoiding despite the fear, typically disproportional to the actual danger posed, often being recognized as irrational. In the event, the phobia cannot be avoided entirely, as the sufferer will endure the situation or object with marked distress and significant interference in social or occupational activities. The terms distress and impairment as defined by the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV-TR) should also take into account the context of the sufferer's environment if attempting a diagnosis. The DSM-IV-TR states that if a phobic stimulus, whether it be an object or a social situation, is absent entirely in an environment - a diagnosis cannot be made. An example of this situation would be an individual who has a fear of mice (Suriphobia) but lives in an area devoid of mice. Even though the concept of mice causes marked distress and impairment within the individual, because the individual does not encounter mice in the environment no actual distress or impairment is ever experienced. Proximity and the degree to which escape from the phobic stimulus should also be considered. As the sufferer approaches a phobic stimulus, anxiety levels increase (e.g. as one gets closer to a snake, fear increases in Ophidiophobia), and the degree to which escape of the phobic stimulus is limited and has the effect of varying the intensity of fear in instances such as riding an elevator (e.g. anxiety increases at the midway point between floors and decreases when the floor is reached and the doors open). Finally, a point warranting clarification is that the term phobia is an encompassing term and when discussed is usually done in terms of specific phobias and social phobias. Specific phobias are nouns such as arachnophobia or acrophobia which, as the name implies, are specific, and social phobia are phobias within social situations such as public speaking and crowded areas.

Clinical phobias

Psychologists and psychiatrists classify most phobias into three categories and, according to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV), such phobias are considered to be sub-types of anxiety disorder. The three categories are:

Social phobia- fears involving other people or social situations such as performance anxiety or fears of embarrassment by scrutiny of others, such as eating in public. Overcoming social phobia is often very difficult without the help of therapy or support groups. Social phobia may be further subdivided into
Generalized social phobia (also known as social anxiety disorder or simply social anxiety) and
Specific social phobia, in which anxiety is triggered only in specific situations. The symptoms may extend to psychosomatic manifestation of physical problems. For example, sufferers of paruresis find it difficult or impossible to urinate in reduced levels of privacy. This goes far beyond mere preference: when the condition triggers, the person physically cannot empty their bladder.
Specific phobias - fear of a single specific panic trigger such as spiders, snakes, dogs, water, heights, flying, catching a specific illness, etc. Many people have these fears but to a lesser degree

than those who suffer from specific phobias. People with the phobias specifically avoid the entity they fear.
Agoraphobia - a generalized fear of leaving home or a small familiar 'safe' area, and of possible panic attacks that might follow. It may also be caused by various specific phobias such as fear of open spaces, social embarrassment (social agoraphobia), fear of contamination (fear of germs, possibly complicated by obsessive-compulsive disorder) or PTSD (post traumatic stress disorder) related to a trauma that occurred out of doors.

Phobias vary in severity among individuals. Some individuals can simply avoid the subject of their fear and suffer relatively mild anxiety over that fear. Others suffer full-fledged panic attacks with all the associated disabling symptoms. Most individuals understand that they are suffering from an irrational fear, but they are powerless to override their initial panic reaction.

Specific phobias

As briefly mentioned above, a specific phobia is a marked and persistent fear of an object or situation which brings about an excessive or unreasonable fear when in the presence of, or anticipating, a specific object; furthermore, the specific phobias may also include concerns with losing control, panicking, and fainting which is the direct result of an encounter with the phobia. The important distinction from social phobias are specific phobias are defined in regards to objects or situations whereas social phobias emphasizes more on social fear and the evaluations that might accompany them.

Diagnosis

The diagnostic criteria for 300.29 Specific Phobias as outlined by the DSM-IV-TR:

Marked and persistent fear that is excessive or unreasonable, cued by the presence or anticipation of a specific object or situation (e.g., flying, heights, animals, receiving an injection, seeing blood).
Exposure to the phobic stimulus almost invariably provokes an immediate anxiety response, which may take the form of a situationally bound or situationally predisposed panic attack. Note: In children, the anxiety may be expressed by crying, tantrums, freezing, or clinging.
The person recognizes that the fear is excessive or unreasonable. Note: In children, this feature may be absent.
The phobic situation(s) is avoided or else is endured with intense anxiety or distress.
The avoidance, anxious anticipation or distress in the feared situation(s) interferes significantly with the person's normal routine, occupational (or academic) functioning, or social activities or relationships, or there is marked distress about having the phobia.
In individuals under the age of 18, the duration is at least 6 months.
The anxiety, panic attack, or phobic avoidance associated with the specific object or situation are

not better accounted for by another mental disorder, such as Obsessive-Compulsive Disorder (e.g., fear of dirt in someone with an obsession about contamination), Posttraumatic Stress Disorder (e.g., avoidance of stimuli associated with a severe stressor), Separation Anxiety Disorder (e.g., avoidance of school), Social Phobia (e.g., avoidance of social situations because of fear of embarrassment), Panic Disorder With Agoraphobia, or Agoraphobia Without History of Panic Disorder.

Social phobia

The key difference between specific phobias and social phobias is social phobias include fear of public situations and scrutiny which leads to embarrassment or humiliation in the diagnostic criteria. In social phobias, there is also a generalized category which is included as a specifier below.

Diagnosis

The diagnostic criteria for 300.23 Social Phobia as outlined by the DSM-IV-TR:

A marked and persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others. The individual fears that he or she will act in a way (or show anxiety symptoms) that will be humiliating or embarrassing. Note: In children there must be evidence of the capacity for age-appropriate social relationships with familiar people and the anxiety must occur in peer settings, not just in interactions with adults.
Exposure to the feared social situation almost invariably provokes anxiety, which may take the form of a situationally bound or situationally predisposed Panic Attack. Note: In children the anxiety may be expressed by crying, tantrums, freezing, or shrinking from social situations with unfamiliar people.
The person recognized that the fear is excessive or unreasonable. Note: In children this feature may be absent.
The feared social or performance situations are avoided or else are endured with intense anxiety or distress.
The avoidance, anxious anticipation, or distress in the feared social or performance situation(s) interferes significantly with the person's normal routine, occupational (academic) functioning, or social activities or relationships, or there is marked distress about having the phobia.
In individuals under age 18, the duration is at least 6 months.
The fear of avoidance is not due to the direct physiological effects of a substance (e.g. a drug of abuse, a medication) or a general medical condition and is not better accounted for by another mental disorder (e.g. Panic Disorder With or Without Agoraphobia, Separation Anxiety Disorder, Body Dysmorphic Disorder, a Pervasive Developmental Disorder, Schizoid Personality Disorder).
If a general medical condition or another mental disorder is present, the fear in Criterion A

(Exposure to the social or performance situation almost invariably provokes an immediate anxiety response) is unrelated to it, e.g., the fear is not of Stuttering, trembling in Parkinson's disease, or exhibiting abnormal eating behavior in Anorexia Nervosa or Bulimia Nervosa.

Specify if:

Generalized: if the fears include most social situations (also consider the additional diagnosis of Avoidant Personality Disorder).

Notice the severe overlap between specific and social phobias which is indicative of the nature between the two. The differences from specific phobias unanimously lay only in the word "social".

Etiology

Environmental

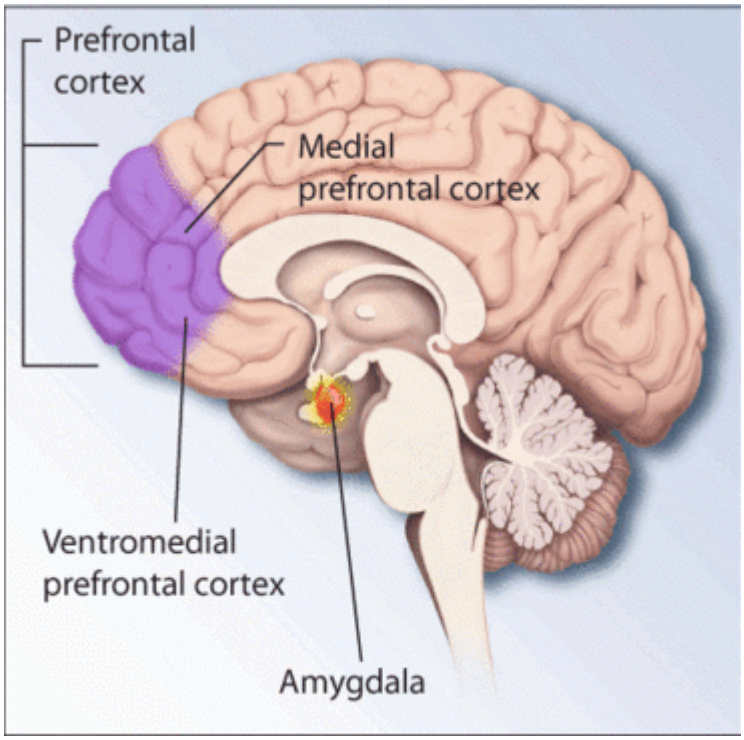
Much of the progress in understanding the acquisition of fear responses in phobias can be attributed to the Pavlovian Model which is synonymous with Classical Conditioning. Myers and Davis (2007) describe the acquisition of fear as when a conditioned stimulus (e.g., a distinctive place) is paired with an aversive unconditioned stimulus (e.g. a electric shock) to an end result in which the subject exhibits a conditioned feared response to the distinctive place (CS+UCS=CR). For how this model works in the context of phobias, one simply has to look at the fear of heights, or acrophobia. In this phobia, the CS is heights such as the top floors of a high rise building or a roller coaster. The UCS can be said to originate from an aversive or traumatizing event in the person's life such as being trapped on a roller coaster as a child or in an elevator at the top floor of a building. The result of combining these two stimuli leads to a new association called the CR (fear of heights) which is simply the CS (heights) transformed by the aversive UCS (being trapped on a roller coaster or elevator) leading to the feared conditioned response. This model does not suggest that once you have a conditioned feared response to an object or situation you have a phobia. As listed above, to meet the criteria for being diagnosed with a phobia one also has to show symptoms of impairment and avoidance. In the example above, for the CR to be classified as a phobia it would have to exhibit signs of impairment due to avoidance. Impairment, which can be considered along the same lines as a disability from a clinician's standpoint, is defined as being unable to complete tasks in one's daily life whether it be occupational, academical, or social. In the recent example, an impairment of occupation could result from not taking on a job solely because its location happens to be at the top floor of a building, or socially not participating in a social event at a theme park. The avoidance aspect is defined as behavior that results in the omission of an aversive event that would otherwise occur with the goal of the preventing anxiety. The above direct conditioning model, though very influential in the theory of fear acquisition, should not suggest the only way to acquire a phobia. Rachman proposed three main pathways to acquire fear conditioning

involving direct conditioning, vicarious acquisition and informational/instructional acquisition.

As experimentation with the aforementioned direct conditioning modeling continued, it became increasingly evident that more that just classical conditioning can influence the onset of a phobia. Rachman (1978) proposed that vicarious acquisition was a critical component to the etiology of phobias, so it was decided to include information and instruction from the parent and family members to better understand its onset. Of the research conducted in this area, one of the best examples of how vicarious conditioning, more specifically modeling, effects the acquisition of a phobia can be said to have come from Cook & Mineka's (1989) work on rhesus monkeys. In this experiment, Cook & Mineka, through the use of video, appraised 22 rhesus monkeys on their fear to evolutionary relevant stimuli (e.g. crocodiles and snakes), and evolutionary irrelevant stimuli (e.g. flowers and artificial rabbits) to see if fear conditioning using the direct conditioning model (Pavlov's model) leads to fear acquisition (or more specifically the conditioned fear response). The results of the research showed that after 12 sessions the rhesus monkeys acquired a fear to the evolutionary relevant stimuli and not to the evolutionary irrelevant stimuli; furthermore, the experiment also revealed that when they exposed monkeys to other monkeys that interacted with snakes without showing fear, this group did not acquire the fear which supports the theory of vicarious conditioning through modeling. According to Pavlov's theory of classical conditioning, the experimenters should have been able to condition a feared response within the rhesus monkeys to the evolutionary irrelevant stimuli because the Pavlovian model posits that any UCS can elicit a CR. The result show the necessary augmentation of the Pavlov model with the vicarious acquisition model.

Neurobiology

Phobias are generally caused by an event recorded by the amygdala and hippocampus and labeled as deadly or dangerous; thus whenever a specific situation is approached again the body reacts as if the event were happening repeatedly afterward. Treatment comes in some way or another as a replacing of the memory and reaction to the previous event perceived as deadly with something more realistic and based more rationally. In reality most phobias are irrational, in that the subconscious association causes far more fear than is warranted based on the actual danger of the stimulus; a person with a phobia of water may admit that their physiological arousal is irrational and over-reactive, but this alone does not cure the phobia.



Region of brain associated with phobia

Phobias are more often than not linked to the amygdala, an area of the brain located behind the pituitary gland in the limbic lobe. The amygdala may trigger secretion of hormones that affect fear and aggression. When the fear or aggression response is initiated, the amygdala may trigger the release of hormones into the body to put the human body into an "alert" state, in which they are ready to move, run, fight, etc. This defensive "alert" state and response is generally referred to in psychology as the fight-or-flight response.

Treatments

Various methods are claimed to treat phobias. Their proposed benefits may vary from person to person.

Some therapists use virtual reality or imagery exercise to desensitize patients to the feared entity. These are parts of systematic desensitization therapy.

Cognitive behavioral therapy (CBT) can be beneficial. Cognitive behavioral therapy allows the patient to challenge dysfunctional thoughts or beliefs by being mindful of their own feelings with the aim that the patient will realize their fear is irrational. CBT may be conducted in a group setting. Gradual desensitisation treatment and CBT are often successful, provided the patient is willing to endure some discomfort. In one clinical trial, 90% of patients were observed with no longer having

a phobic reaction after successful CBT treatment.

Eye Movement Desensitization and Reprocessing (EMDR) has been demonstrated in peer-reviewed clinical trials to be effective in treating some phobias. Mainly used to treat Post-traumatic stress disorder, EMDR has been demonstrated as effective in easing phobia symptoms following a specific trauma, such as a fear of dogs following a dog bite.

Hypnotherapy coupled with Neuro-linguistic programming can also be used to help remove the associations that trigger a phobic reaction. However, lack of research and scientific testing compromises its status as an effective treatment.

Antidepressant medications such SSRIs, MAOIs may be helpful in some cases of phobia. Benzodiazepines may be useful in acute treatment of severe symptoms but the risk benefit ratio is against their long-term use in phobic disorders.

There are also new pharmacological approaches, which target learning and memory processes that occur during psychotherapy. For example, it has been shown that glucocorticoids can enhance extinction-based psychotherapy.

Emotional Freedom Technique, a psychotherapeutic alternative medicine tool, also considered to be pseudoscience by the mainstream medicine, is allegedly useful.

These treatment options are not mutually exclusive. Often a therapist will suggest multiple treatments.

Epidemiology

Phobias are a common form of anxiety disorders. An American study by the National Institute of Mental Health (NIMH) found that between 8.7% and 18.1% of Americans suffer from phobias. Broken down by age and gender, the study found that phobias were the most common mental illness among women in all age groups and the second most common illness among men older than 25.

Non-psychological conditions

The word phobia may also signify conditions other than fear. For example, although the term hydrophobia means a fear of water, it may also mean inability to drink water due to an illness, or may be used to describe a chemical compound which repels water. It was also once used as a synonym for rabies, as an aversion to water is one of its symptoms. Likewise, the term photophobia may be used to define a physical complaint (i.e. aversion to light due to inflamed eyes or excessively dilated pupils) and does not necessarily indicate a fear of light.

Non-clinical uses of the term

It is possible for an individual to develop a phobia over virtually anything. The name of a phobia generally contains a Greek word for what the patient fears plus the suffix -phobia. Creating these terms is something of a word game. Few of these terms are found in medical literature. However, this does not necessarily make it a non-psychological condition.

Terms for prejudice or discrimination

A number of terms with the suffix -phobia are used non-clinically but have gained public acceptance, though they are often considered buzzwords. Such terms are primarily understood as negative attitudes towards certain categories of people or other things, used in an analogy with the medical usage of the term. Usually these kinds of "phobias" are described as fear, dislike, disapproval, prejudice, hatred, discrimination, or hostility towards the object of the "phobia". Often this attitude is based on prejudices and is a particular case of most xenophobia. These non-clinical phobias are typically used as labels cast on someone by another person or some other group.

Below are some examples:

Chemophobia - prejudice against artificial substances in favour of "natural" substances.
Ephebiphobia - fear or dislike of youth or adolescents.
Homophobia - fear or dislike of homosexuals or homosexuality.
Xenophobia - fear or dislike of strangers or the unknown, sometimes used to describe nationalistic political beliefs and movements. It is also used in fictional work to describe the fear or dislike of space aliens.