

# Phobia Anxiety Disorder: Etiology of Phobia

Xinyi Chang

Tsinglan School, 5238008 Shenzhen, China

**Abstract.** It has been thousands of years since psychology has been researched, but with the clearer distinguishment and conception, there are still many debates and confusion between psychologists to be clarified. Fear, as one of the most common emotion of people, have anyone think about the cause for the chilling feeling for their difficulties in facing the situations or objects? There are much debate of what is the leading cause for the intense fear generated by people which is deemed as a disorder and needed experiences in the past to conclude and summarize. This article mainly talks about phobia anxiety disorder, including its symptoms, categories, diagnoses and treatments. The author would discuss on the cause for different types of phobia disorder and give conclusions based on some studies. In this article, the author is going to select three of the most common types of phobia, that are social phobia, agoraphobia and specific phobia, and analysis the cause for phobia. The author states in the conclusion that though most psychologists deem that causes for phobia would be conditioning due to past experiences, genetic relationships can also be part of the reasons for phobia. With different specific kind of phobia, the influence of genetic relationships would be clear as well. Through discovering the etiology, it may be more convenient for psychologists to identify cases of individuals and improve the efficiency of diagnosis of phobia disorders, which is also beneficial to the mental health of patients.

## 1 Introduction

In general, the definition for anxiety disorder is: excessive anxiety and worry, occurring more days than not for at least 6 months, about a number of events or activities according to the definition given by DSM-5.

### 1.1 Phobia and fear

To be specific on phobia, it is an anxiety disorder that are persistent, excessive fear of an object or living things. Different from fear, Phobia is a more intense emotion and would have cause great impact on people's lives. People with phobia will usually do anything they can to avoid interacting or countering the object they are fear of. However, fear is only temporary, during which people can overcome more easily. For example, when being afraid of socializing, fear will only cause people to be anxious and speak unsmoothly or stiffly, but pretending to enjoy the conversation. However, when those people speak more to others and make friends, the symptom will be decreased. However, for phobia, people would experience large amount of anxiety, with symptoms including trembling hands, intensely quicker heartbeats and even nausea.

### 1.2 Classification of phobia

In this case, the type of phobia during socializing is called Social anxiety disorder, also called social phobia. For the general topic of Phobia, there are three main categories of Phobia, including specific phobia, social phobia and agoraphobia. Specific phobia is the most common type of phobia, including fear towards animals, like being afraid of spiders or snakes; certain occupations, such as dentists or clowns; or circumstances like height or speed. Social phobia is usually towards a social circumstance where they are afraid of being judged or criticized by others. They may have the sense of embarrassment during giving speeches and presentation, or more broadly, do any actions in public space. Agoraphobia is being afraid of a certain space. It is similar to social phobia because both of the disorders will experience embarrassment or fear on doing actions in places with people. However, agoraphobia is the fear towards the space itself and social phobia is towards socializing and people in the given space. According to the data concluded by verywell mind, which is an online platform providing all sorts of information of psychology, specific phobia was the commonest phobia, with 10% of people in the US, followed by social phobia with 7.1% and 0.9% have agoraphobia. In the present study due to the similarity between agoraphobia and social phobia and the less common diagnoses of agoraphobia, the author will only include the first two, which are social phobia and specific phobia.

### 1.3 Etiology of phobia

Corresponding author: [cindy.chang\\_25@tsinglan.org](mailto:cindy.chang_25@tsinglan.org)

For the cause of phobia, there are multiple potential reasons for people to be diagnosed this disorder, including past incidents or traumas, inherited traits or medical problems, described by the mayoclinic in their official websites. The specific cause of all phobias are still undiscovered, different kinds of phobias might have different causes. In this article, the author would conclude that some of the causes are due to inherited traits, which is because of genetic reasons and others of the causes is nurture, which is the conditioning and environmental impact. In different types of phobias, there will be different percentage and focus on nature and nurture aspects, and within these types, there will be a clear trend of which of the disorder types would be served by which types of etiology.

#### **1.4 Methodology**

This essay will summarize several formal essays and articles found on google scholar about the causes of phobia and some specific cases to support my points. The author is going to first write about the genetic and environmental etiology of social phobia separately, and then the specific phobia with the same two parts. After listing the two phobia types, the author will compare the two ones and give my final conclusion.

## **2 Social Phobia**

In social phobia, the author would say it is more nature than nurture.

### **2.1. Genetic factors**

For social phobia, evidence have shown the etiology is partially due to the genetic cause. According to Nicholas J. Coupland, there are studies showing the genetic factor of social phobia [1]. A case study of family members has shown parents who have social phobia might result in the same disorder on their children. To indicate it is not caused by genetic factors, the study also tried to find the relationship between parents who have social phobia and their adopted kids and found the kids are less likely to behave shyness. Also, in a women twins case study, researchers have found high assimilation of the chance for both kids to have an social phobia disorder, no matter whether they are monozygotic or dizygotic twins. To explain further on the genetic cause, close relatives with autism might have been contributing to the social phobia disorder, though this piece of information have not been clearly stated and investigated. What's more, fragile X syndrome that is caused by gene mutation in the Functional magnetic resonance imaging (fMRI) may reveal the cause social phobia. This syndrome symptom may contribute to the social anxiety disorder. By expanding the mutated gene, this fragile X syndrome might be big enough to pass on their children and generation to inherit the phobia disorder.

According to Deborah C. Beidel, his study listed a set of data to support the genetic etiology of phobia [2]. For kids of adults with social anxiety disorder, they are likely to double the possibility of having psychiatric disorders than the normal conditions where the parents do not obtain social phobia. According to different DSM criteria, at most 53% of children with parents with social anxiety disorder are diagnosed with social phobia. With these data and case study shown, genetic can be part of the etiology of phobia.

According to stein, murray B, the researchers conducted an experiement on 437 twin pairs, including monozygotic and dizygotic twins to find whether same genes would result in high percentage of coincide with each other on getting a social phobia disorder [3]. The results have shown 48% of the Brief Fear of Negative Evaluation Scale (BFNE) estimation of broad heritability, which is similar to the 50% of how twins would share their similarity on genes, showing there is an existing relationship between genes and social phobia.

### **2.2 Environmental factors**

From the other perspective, conditioning or past experiences might also influence the development on social anxiety disorder. According to Deborah C. Beidel, the paper also indicates that with the fear of social environment of kids, parent behaviors are essential as well, which may alleviate the situation or cause the social phobia [2]. When forcing kids to socialize among people to gain social skills, though some kids might have a better behavior through this training process, some may also react to avoid these situations, deeming them as a punishment. With more exposure to the environment, they will feel more uncomfortable and eventually cause the extensive fear towards socializing.

According to Sudipto Chatterjee, the paper implies that the experiences of patients may include their personal experiences and family environment [4]. According to the data, 58% of the patients of social phobia have the sense that they have experience something really bad for them to diagnose this disorder, showing the great stimuli or catastrophe may contribute to the etiology of social phobia. Also, by studying the behavior of parents or imitating their habits may contribute to the extensive fear towards an object. This can be explained by conditioning where the environment and people around the person showing fear towards a neutral stimulus for the kids, at last turning it into a conditioned stimulus, causing the kids to be really afraid of something that is less horrible for normal people in this repeating process and experience.

### **2.3 Conclusion and discussion**

The author would perceive that social phobia is more related to genetic factors. There is existing data showing twins and close relatives would appear the disorder together and scientific research on the biological characteristics also shows the possibility of passing the disease through generation. For the environment factors,

though the anxiety and force of parents might have caused conditioning for kids to socialize, the author think that the depending factor of whether it will push a kid to their limit is still depending on their personality, which is mostly nature. If a kid is born shy and quiet which will perform social anxiety disorder more commonly, they may experience an easy temperament where will not perform so many annoying actions. This is what kids are born with and appears in their early childhood like their emotion without their control. When responding to a shy kid that is less likely to react with others much, parents are more likely to appear anxiety towards their lack of ability to socialize, causing the conditioning towards the kids. If the kid is out-going and willing to socialize at a young age, parents will not force them to go to public places, diminishing the tiredness and sickness towards socializing. Thus, for social phobia, the author would think it is more nature rather than nurture.

### 3 Specific phobia

In specific phobia, the author would say it is more nurture than nature.

#### 3.1. Genetic factors

According to Abby J. Fyer, the present study concluded conditioning etiology of specific phobia [5]. With the extensive fear towards a specific item, Abby J Fyer concluded that when associating a normal item serving as a neutral stimulus with a horrible unconditioned stimulus for some time, the normal item will be converted into a conditioned stimulus, voluntarily respond to the performance of phobia. In John Watson's research on little Albert, it is a classical example and case study of specific phobia. By conditioning white rats which Albert used to like before the experiment with loud noises that would scare Albert, the examinee finally got extensively afraid of white rats and eventually leads to his death. This study shows how conditioning would contribute to the specific phobia and the severeness of this disorder. However, the author of the essay admitted that some people claim not remembering a horrible experience or conditioning contributing to their phobia. There are explanations for this situation. The environmental problems might have been forgotten by the patients due to the different pathways of sensory input. With the different pathways chosen to reach the amygdala in the brain. In the high road, the information will travel through thalamus, sensory cortex, prefrontal cortex and finally reach amygdala. This pathway chosen may form memories and involuntary respond. On the other hand, the low road will directly go to amygdala to ensure rapid and voluntary reactions towards danger and fear and will not form memory that is aware by people themselves. It is only a muscle reaction and reflex on the stimulus. Thus, while choosing the low road or accidents like loss of function of the hippocampus, the memory will be lost but still react and appear to show extensive fear. No matter whether the memory is stored or not, the

fear towards the specific items is both due to conditioning coming from the environment.

According to Tea Vucina, the study discussed about a thirteen years old girl that is afraid of sleeping alone and can hardly get to sleep [6]. In this scenario, the extensive fear of the girl is the mirror so she is classified as a specific phobia patient. When seeing the mirror in her room, she would think someone else is staring at her at night and her brother has told her about the bloody Mary in the mirror, causing her to show great fear towards mirrors in her room. It can be shown that the girl has received great horror that is associated with the mirror due to her past experiences, causing her to appear phobia towards a certain item.

According to Neil Mehta, the study is researching on a man with fear towards water [7]. The cause is due to his past experience of getting diseases in the lung which is malignant pleural effusion. This problem in his lung and the horrible treatment and illness caused him to get afraid of all aquatic activities. It also shows the relationship between past experiences and phobia towards a stimulus after great extent of fear.

#### 3.2. Environmental factors

On the genetic side, according to Harald Merckelbach, the present study stated that there are survey showing the prevalence of some specific types of items that most people will generate fear and phobia [8]. Thus, there are ideas that these types of fear is due to natural selection. People are tend to generate fear towards items like snakes and spiders to avoid being harm and getting alarmed.

According to Siyao Du, Tiina Jaaniste the paper included two inheritance etiology of specific phobia which are biological and genetic approaches [9]. Similar to the first article mentioned above, fear and phobia for some certain objects are a way for people to get alarmed and protect themselves similar to the way pain act on human and will grow greater with the maturation of human body and mind. For the genetic cause, there are researches showing similar data with the genetic etiology of social phobia, telling the higher contact ratio of monozygotic than dizygotic twins' ability to be diagnosed the same type of specific phobia. 25% of the twins may possess the same kind of specific phobia at most according to the data shown. However, the percentage is smaller than what the genetic etiology of social phobia shows which is 50%, indicating specific phobia would have been valid but is not the dominant indication. There are rare cases of the same type of specific phobia for the family with high levels of disgust-sensitivity genes, making them have a greater possibility to have the disorder. Moreover, researchers conduct genetic analyses on phobia including social phobia. The results reveal that significant familial and non-shared environmental over-lap between specific phobia and social phobia [10].

#### 3.3 Conclusion and discussion

The author think specific phobia is mostly environmentally dominated. As specific phobia must have a specific item that people are afraid on and this object can be any normal substance in daily lives even necessities, the stimulus must have been the result of past experiences and conditioning. Though other common stimulus might have been the result of genetic choices, how can some necessities for people become a source of phobia easily just by inheritance? Then there will be too many items for different people to be afraid of and how could people live peacefully considering anything people are carrying would be a potential source of phobia to others and would easily cause extensive symptoms for them? Thus, it cannot be concluded that all specific phobia is due to genetic factors but it may exist in some cases. On the internet and in daily lives, there are large number of examples for how past experiences would negatively affect people and form phobia. To refute the idea of genetic etiology of specific phobia, it is needed to be mentioned that phobia is different from fear that it has a serious extent with severe symptoms such as nausea and quick heart beats. Just as some researchers would say phobia towards some items are due to natural selection, it will only form fear instead of phobia if it really exists, as it is a way to protect people and generate fight or flight response quickly. How would the severe symptoms help to prevent harm for people? It may even have a negative effect and make people in a greater extent of danger and dilemma during certain emergencies. Also, in some special cases of people being afraid of necessities, it would not have been a result of genetic aspect or there will be plenty of people being afraid of simple and common items such as the mirror and water in the case studies mentioned above. The information mentioned in the text showing natural choice is one of the factors is conflicted with itself as well, because the past choices of ancestor can also be deemed as a past experience, by not for people themselves but their ancestors, summarizing the characteristic that would harm people and form the sense of danger for people in their later generations. Upon this point, the author thinks that future investigations can research further on the topic that whether ancestors would really affect the cognitive change on people in the future generation and even cause phobia for them. The genetic etiology can be part of the reference for diagnosing, but it will not cover all people and all stimulus.

## 4 Conclusion

To conclude, this article includes two of the most commonly seen kinds of phobia that are social phobia and specific phobia.

### 4.1 Social phobia

To be specific of the social phobia, the author think social phobia is mostly dependent on genetic factors. Some reasons of the investigation of social phobia are

fragile X syndrome in people's body that is able for the genes of to pass on to the generation by mutation. There are much research and data on the genetic etiology as well. Several twin experiments have shown the higher the conformation of the genes, the stronger tendency to share the same disorder. Admittedly, there are environmental factors of the etiology as well, but is rather low in percentage. Kids may appear social phobia due to the force of parents which may cause anxiety for themselves if they cannot adapt this situation. In general, the inability to adapt the environment is due to the difference in personality which is still classified as a nature cause. Associating with the case studies and biological features, the author concluded that social phobia is genetically based. To diagnose this disorder, people can look for their parenting case disorders that is related to anxiety to find the source for their symptoms. If close relatives does not appear any disorders, people can refer to kids personality since young and the impact of parents on them at last.

### 4.2 Specific phobia

For specific phobia, the author thinks it is mostly dependent on environmental factors. The extensive fear of a specific item that depends on different people is mostly due to conditioning or past experiences. For the problem of the loss of memory of an extensive conditioning, there are explanations that it is possible to forget the situation or the brain process on the high road, without involving the long-term memory and turns into a reflexion of body muscle. For the genetic reasoning, researchers think it is an instinct for people to respond and prevent danger. The author thinks though the genetic etiology is a valid reference, but it will not conclude all circumstances for the disorders. Combing with the large amount of case studies showing the environmental impact on patients and the theoretical researches, it should be the dominant etiology. For the diagnoses, people should refer to the past experiences first and then check the family members for the similar disorders present.

## References

1. N. J. Coupland. *J. Clin. Psychiatry*, 62, 25-35 (2001)
2. D. C. Beidel. *J. Clin. Psychiatry*, **59**(17), 27-32 (1998)
3. S. Chatterjee, & S. Khanna. *Indian J. Psychol. Med.*, **19**(2), 5-18 (1996)
4. M. B. Stein, K. L. Jang, & W. J. Livesley. *J. Nerv. Ment. Dis.*, **190**(4), 219-224 (2002)
5. A.A. J. Fyer. *Biol. Psychiatry*, **44**(12), 1295-1304 (1998)
6. T. Vučina. *Psychiatr. Danub.*, **33**(suppl 1), 46-48 (2021)
7. N. Mehta, & Z. Espinel. *Am. J. Geriatr. Psychiatry*, **29**(4), S139-S140 (2021)

8. H. Merckelbach, P. J. de Jong, P. Muris, & M. A. van Den Hout. *Clin. Psychol. Rev.*, **16**(4), 337-361 (1996)
9. S. Du, T. Jaaniste, G. D. Champion, & C. S. Yap. *Pediatr. Pain Lett.*, **10**(2), 13-17 (2008)
10. T. C. Eley, F. V. Rijsdijk, S. Perrin, T. G. O'Connor, & D. Bolton. *J Abnorm Child Psychol*, **36**, 839-848 (2008)