Psychology Extended Essay

Mental imagery in social anxiety disorder

To what extent does mental imagery serve a negative role in social anxiety disorder?

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Introduction:

Social anxiety disorder (SAD) is defined as an intense, persistent fear of being watched and judged by others (National Institute of Mental Health, n.d.). It is the third most common mental health disorder after depression and post-stress traumatic disorders, which has a lifetime prevalence of about 7% of the population worldwide (Social Anxiety Disorder, 2022). Furthermore, according to a prevalence study (Jefferies & Ungar, 2020), 1 out of 3 young people meet the criteria for SAD. Individuals with social anxiety disorder often report experiencing distorted and negative imagery of themselves in social situations. Mental imagery refers to perceptual representations in one's mind that resemble an actual experience without direct external stimulus (Pearson et al., 2015).

One of the key characteristics of the disorder is that anxious individuals experience negative images of themselves from the observer´s side as opposed to healthy individuals, whose imagery is likely to be more positive and see events from their side (Hackmann et al., 1998). People with SAD genuinely believe their reflections to be true, which results in them maintaining the anxiety disorder and affects their social interactions negatively (Hofmann, 2007). The negative self-images tend to trigger both anxious and safety behaviors. Examples of these are blushing, hiding one's face, or not participating in social conversations to avoid failure they have predicted for themselves (Schneier, 2003). An unsuccessful experience of social interplay will only strengthen the patient's beliefs of being evaluated in a negative light by others in the future.

Investigating the role of mental imagery in mental health disorders had been challenging due to its intimate and abstract nature as well as behavioristic ideas in the second part of the last century (Pearson et al, 2015). This meant that it is hard to translate phenomena to mechanistic research and that studying internal representations such as mental imagery was rejected because the focus was on theoretical explanations of behavior rather than on internal representations (Pearson et al, 2015). Later,

however, the realization that social anxiety disorder is heavily manifested by negative imagery coming from memories has led to a proposal to attempt to take advantage of working directly with memory and images and help SAD patients (Lloyd & Marczak, 2022). The idea relies on rescripting the memories and images encountered by individuals with SAD into more positive and realistic ones (Wild & Clark, 2014). This way, as images, the main drivers behind maintaining SAD are worked through, the disorder is likely to be treated. Imagery rescripting has already been practiced earlier in treating some mental disorders, such as PTSD, but has not yet been tried enough in social anxiety disorder (Bosch & Arntz, 2021), which is one of the reasons for investigating mental imagery in a positive light within the realms of SAD.

This essay focuses on looking into how mental imagery impacts SAD divided into two perspectives: positive and negative. This paper argues that mental imagery acts as a strong factor behind developing and manifesting social anxiety disorder, referred to as a negative role. The counter-argument is that mental imagery can serve as a therapeutic tool and help individuals with SAD, referred to as a positive role. Thus, the research question of this essay is: **To what extent does imagery serve a negative role in social anxiety disorder?**

The role of mental imagery in social anxiety disorder will be examined through seven studies. The first four studies will examine the argument of this essay. They will focus on mental imagery's negative role in SAD in terms of causality and manifestation. These are quasi-experiments conducted by Hirsch et al (2006) relying on self-reported measures and Morrison et al. (2009) relying on behavioral measures, as well as a correlational study conducted by Moriya (2018) and a semi-structured interview conducted by Hofmann (2007). The following two studies will examine the counter-argument of this essay. They will focus on the positive role of mental imagery in SAD in terms of treating the mental

disorder. These are the experiments conducted by Wild and Clark (2014) and by Frets et al. (2014) testing a technique known as imagery rescripting, as a part of cognitive behavioral therapy and as a stand-alone respectively. The last piece of literature to be examined will be on biological evidence researchers have to help to see the differences in mental imagery used in positive versus negative light from their distinct neurological pathways to back up both of the arguments on the anatomical level.

Exploration of literature:

The first step in exploring the role of imagery in SAD is to test whether it initiates the disorder. A study conducted by Hirsch et al. (2006) recruited low anxiety volunteers and randomly allocated them to negative, positive, or control imagery conditions. A negative imagery group was asked to imagine the worst-case scenario and a positive one to generate an ideal self-image in the same situation. After the speech task, anxiety levels, beliefs about how they gave their speech, and negative thoughts as well as independent assessor's evaluations were measured.

Negative imagery conditions were found to score higher on the self-reported anxiety questionnaires, such as Liebowitz Social Anxiety Scale, and be more critical of their performance and report more negative thoughts. The findings supported the hypothesis that negative imagery is a factor that can provoke social anxiety symptoms. Notably, as the study was conducted with normally confident individuals, it allowed for exploring the role of negative imagery in the development of SAD as opposed to maintenance of it in already diagnosed individuals. Therefore, the study supports imagery having a triggering role in SAD development.

Demand effects may have been present in the self-reported results of this study as there were some differences in assessing SAD scores compared to independent assessors´ scores. The conducted debrief with overall comments from participants, however, added to the reliability of their answers. Someone

told for instance, that they believed they felt more poorly or were feeling more anxious as a result of negative imagery. Another consideration of the study is whether the findings can be generalized to SAD populations as there may be unfamiliar differences between studying individuals who scored on a spectrum on a social anxiety scale as in the study vs individuals with a proper diagnosis.

The study relied on self-reported measures to assess SAD, and that is the case for most of the research conducted on mental imagery. A rare study by its methodology, however, conducted by Morrison et al. (2009) found a way to test the role of imagery in social anxiety disorder through behavioral measures. The researchers investigated the ability to generate images in individuals with social anxiety compared to non-anxious controls. The procedure had participants with SAD visualizing whether a block letter would cover an X mark showcased on the screen. Image generation ability was defined by the length of a response.

The findings were that individuals with SAD tended to respond later than those without the disorder. This finding can be explained by socially anxious individuals being disadvantaged by their ability to form mental images from neutral stimuli. This study allowed for focusing not on the content of imagery in SAD, but on the process of creating a self-image. The research was the first to look into non-emotional imagery in social anxiety disorder rather than emotional (i.e., negative self-imagery). That is, the ability to generate images is what distinguishes socially anxious individuals from others, no matter the content of an image.

One clear strength of the study is that it used behavioral measures to explore the manifestation of imagery in SAD. That is, a specific measure was worked through to measure mental imagery generation in SAD. However, due to the uniqueness of operationalizing image generation ability to evaluate SAD, and the lack of similar studies to this one, there is a limited possibility of comparing findings with previous research, to increase the validity of findings. The novel procedure behind the

study brings up several questions for future investigations, such as whether imagery ability changes based on the emotional valence of the imagery and whether socially anxious people can be trained to generate harmless images.

Thus far mental imagery acting behind SAD was considered generally as one concept. To get a deeper understanding of what exact characteristics of mental imagery make up SAD, a correlational study is helpful. Such a study conducted by Moriya (2018) had 231 participants completing five questionnaires evaluating their fear of negative evaluation (BFNE), the vividness of imagery (VVIQ), preference for using imagery over verbal strategies (VVQ), the level of object and spatial imagery (VISQ) and the ability to control behavior, emotion, and cognition (EC). After, descriptive and correlational statistics were applied to the five scores.

The key finding was that social anxiety was reinforced by preferring the use of visual mental imagery and object mental imagery over verbal techniques, which is consistent with fear being processed visually in anxious individuals. They also found that the better spatial mental imagery, the less was the score on a fear of negative evaluation - SAD. Social anxiety disorder was also found to be disturbing one's ability to control their cognitive processes. Other types of imagery were not correlated with the degree of anxiety.

The correlational nature of the study was able to determine the factors of imagery that are associated with maintaining social anxiety disorder and to what extent. A limitation of this study is not only the inability to infer causality of different features of imagery for strengthening social anxiety disorder due to the study´s correlational nature but also the statistical correlations were, even though significant, small. This way, potentially existing 3rd variables cannot be canceled out. An example of this is

avoidant behaviors that were not measured here, which could be potentially more at play behind the scores on SAD instead of imagery-related features, such as vividness of imagery, or object imagery. With more correlational studies bigger samples would be achieved to provide stronger evidence of whether extraneous variables were significant.

Though correlational research was able to look into different qualities of the imagery in SAD, to reach the answers on why and how the imagery exists in SAD in the first place, qualitative studies are needed. A study conducted by Hackmann et al. (2000) utilized semi-structured interviews to explore the characteristics of mental imagery present. Some of the qualitative hypotheses were that images tend to be recurrent, most are visual, and are related to traumatic social experiences. The questions were related to recalling anxious feelings in social situations, describing imagery experienced and answering whether it is present on multiple occasions, and/or if a specific memory has triggered it.

The findings were in line with all of the three assumptions. All of the participants could recall experiencing imagery in social situations and 100% identify them as a recurrent type originating from years back. All images were negative and tended to have images from a third-person perspective observing oneself. The results included 87% reporting that the imagery is visual and 96% reporting that there was a memory component in the creation of their images. The similarity between the content of imagery and personal memories was key in many cases.

Overall, the study implies that unpleasant experiences in a social context early on are what are likely to activate negative imagery of themselves that then maintains the social anxiety disorder. The study also calls for exploring why the self-images of SAD patients are so persistent over time. Moreover, it has helpful implications for working directly with memories, undertaking behavioral practices of realizing what is real and what is imagery, or shifting the focus from observing oneself externally to experiencing the event from the first-person perspective. Despite being useful for establishing overall

patterns on how mental imagery and memories work in SAD patients, it remains quite abstract for implementing specific tools based on the findings in the future. It also does not provide clear-cut answers on why or how those work the way they are found to be.

All discussed studies so far have been considering the negative role of imagery in terms of implications for SAD patients, in developing and maintaining SAD. Through the evidence from true experiments, it is implied that imagery can be a causal or a maintaining factor in SAD, and through the other correlational or qualitative pieces of research, imagery is investigated in more depth. As a counterargument, however, despite the role of imagery overall being indeed harmful at the inception and development of SAD, after, it can serve as a therapeutic tool and help people to recover from SAD. A way in which the role of mental imagery is turned from negative to positive in SAD is a treatment developed known as imagery rescripting.

The idea behind imagery as a treatment tool is to turn negative mental imagery into neutral or positive mental images, while still being associated with a memory that provokes anxiety. A pilot study conducted by (Wild et al., 2007) was aiming to assess the therapeutic impact of rescripting unpleasant memories on social anxiety disorder. The study was experimental following an independent sample design. In the study the control group did not have their images and memories modified, in the experimental condition, they underwent an imagery rescripting procedure.

The experimental condition led to significant improvement in negative beliefs, images, and memory distress, reducing anxieties along with fears. This study, thus, suggests that imagery rescripting (IR) may be useful in the treatment of the social disorder. The study implies that just one session of

memory rescripting is enough to have a substantial impact in lowering anxiety and negative valence of memory levels, as well as altering beliefs into positive tones.

Overall, the study proposes imagery rescripting can be used at least as a part of cognitive behavioral therapy (CBT) as an addition to enhance the treatment. One of the weaknesses of the study is the small sample of the study. Changing the valence of imagery was for example found to be working with different effectiveness for various patients in the study. There is then a possibility that this group of participants had some demographic features, such as the severity of SAD, and the type of memory attached to the image in common that allowed them to produce significant results, but this would not generalize to other SAD samples. In other words, the study did not allow for insight into how each of the essential parts of the therapy contributed to the changes. This is one of the directions future studies could focus on to make therapy more effective by utilizing its key parts of it.

Recently, most research attempts to include imagery rescripting (IR) as a part of CBT. This makes it hard to argue whether imagery as a treatment alone is responsible for positive findings, and if so, how big of an impact it makes. A study by Frets et al. (2014) was able to provide answers to that since for the first time, they tested the imagery technique as a standalone treatment tool for social anxiety disorder. This study was a case study series with having 6 patients undergoing no treatment intervention during the first 3 weeks followed by 6 weeks of IR treatment. Widely used standardized self-reported measures assessing various dimensions of social anxiety disorder were taken evaluating altering imagery as a treatment method by the end of using IR as well as three and six months after that as a post-check-up.

The findings were positive, indicating that employing imagery's capacity to turn into positive or neutral valence was able to make substantial reductions in social anxiety measures at post-treatment as well as at the later check-up compared to the initial SAD-related ratings during the baseline. Another

finding was that the pace at which working with imagery as treatment was effective in reducing the symptoms of SAD differed greatly across the patients.

The study, similarly to the previous one, did not allow for establishing the clinical characteristics of patients that influenced the rate of the therapy but made a clear point of imagery rescripting being an effective treatment tool for SAD. One issue with utilizing IR is that patients have to be willing to be exposed to negative memories. This can be especially challenging for those who are high in avoidant coping and choose not to discuss their painful memories. This is one of the reasons CBT has to be sometimes added as a prior period before applying an imagery component to it, for the patients to get more gradually into disclosing their memories. Another consideration for the study is potential placebo effects as since there was not any treatment for the participants for a long time, and now there is, the expectation alone of this change improving their health, could have produced a positive effect of the therapy tool.

In such abstract concepts as mental imagery, getting biological evidence is highly valuable as it establishes some concrete findings on a physiological level. What is known from general research is that the amygdala is a part of the brain triggered by fear (Ressler, 2010). Parallel to this research it is known that fear is often initiated by mental imagery (Ressler, 2010). A study conducted by Johnston et al. (2010) united the two lines of research together and looked into the neurology behind positive and negative imagery to see if there is any difference. The goal was to apply negative vs. positive imagery and examine the brain.

The patterns activated in the brain indeed differed depending on the use of either positive or negative imagery. They also found that people who were engaged in positive imagery, could undergo emotion regulation, i.e. being in control of their imagery better. This can be associated with the therapeutic impact of positive imagery for SAD patients and overall better consequences in social interactions

when using positive images for non-SAD individuals as well. Physiological evidence of positive and negative imagery function increases the trust and validity in utilizing positive imagery, as a treatment tool, which can ease SAD symptoms.

Although this study does not directly deal with SAD individuals, it can be assumed that the nature of neurological path works of negative and positive imagery keep the relevance. Especially positive imagery being found to complement emotion regulation and it being the case in SAD research, a lot of the findings from this study can be corresponded and looked into when investigating SAD individuals. To further increase the chance of generalization to SAD samples, future studies should focus on examining the brain patterns of SAD individuals, not only as a pattern in undergoing cognitive treatment but also at the stage of developing or maintaining anxiety disorder.

Discussion:

One of the most occurring issues that are encountered when exploring abstract constructs, like mental imagery, is the need to rely on self-report measures. This is because mental imagery is experienced differently and there is no one universal manifestation of it. Reporting feelings, and thoughts concerning one's anxiety levels, or beliefs are key to exploring SAD and are available only for that person's knowledge. Thus, researchers get the most relevant info only from first-hand witnesses themselves. As a problematic consequence, researchers cannot test the validity of what is reported by patients. The subjectiveness of an experience makes it also hard to translate it into behavioral measures with some exceptions, such as the study conducted by Morrison et al. (2009), who managed to construct a mechanistic approach to look into the imagery generation process.

Moreover, not only do the participants interpret their experiences subjectively, but they often used scales, and questionnaires are also perceived differently. For example, the Liebowitz Social Anxiety

Scale has people evaluating certain scenarios on a scale from 0-3. In these cases, rating a scenario with 1 can be very different from another person´s same number. The phrasings of scenarios themselves which are to be answered by an individual are also prone to be ambiguous. The matter is both in demand characteristics, an individual's desire to give the “right” answers on the questionnaires to appear desirable, and an inability to have a collective understanding of questions or ratings asked.

Behavioral measures bring up the factor of subjectiveness to the minimum via mechanistic measures of phenomena or through independent assessors from outside. However, self-reported measures are still challenging to replace with only behavioral as the former brings on significantly more insight because it comes from a person who knows their experiences the best. It is troublesome to find a middle ground between the two, so the solution is to continue making measuring constructs more and more clear and appropriate as well as finding methods to present tasks to participants in a manner that will not have variety in perception.

Building up the methodology for both behavioral measures and self-reported measures suffers from the danger of low construct validity. What this means is that when a researcher is intending to look at specific features within the topic of imagery they make decisions on what they take as an indication and/or definition of such. What is taken as the manifestation of imagery or its consequences can be vague and directly tied up to the quality of the constructed study and the competency of the researcher. Construct validity challenges often come up in the methodology of the study. It is possible that the speech task, often seen in SAD studies, was taken to the extreme of provoked stress, so it was not actually exactly imagery at play, but something else. Construct validity can put entire findings into question if scientists do not collectively come up with clear definitions of concepts.

Another problem when looking into mental disorders is the very high level of participant variability. The cases are unique: mental disorders manifest differently in people, are caused by different sources, and are fed up by different factors as well. In research, something is often found to be true, but only for

a part of the sample. Most of the studies concluded that they found a difference between the findings within the participants, but none could identify what key demographics are. Often it gets too complicated to include too many different measures and researchers end up not being able to tell if there was no third variable involved that could have caused or affected the results.

As another discussion point, most of the studies had a small, limited, or consisting of non-diagnosed individuals sample. In other words, most of the studies take non-diagnosed SAD participants and only divide them into falling under a more socially anxious or less socially anxious category according to the SAD scale. There is a chance, however, that there is an unknown difference between those who score higher on SAD questionnaires to those who are officially diagnosed with SAD. So, for generalizing findings of non-diagnosed SAD samples to diagnosed patients, researchers have to make sure the two samples can be assessed the same way.

Conclusion:

By evaluating the research, it can be concluded that in recent years the impact of mental imagery on anxiety and mental health disorders has been strongly evidenced. Mental imagery has been contributing to the development and manifestation of SAD, affecting individuals with social anxiety negatively. It does so through patients actively using negative imagery before social encounters, preferring to think visually, being skillful at generating imagery, and likely having experienced a triggering earlier memory. Mental imagery has also been witnessed to make a positive influence on SAD individuals by serving as a treatment tool. This is achieved when SAD individuals practice rescripting the content and emotion attached to their imagery, both as a part of cognitive therapy and as a standalone.

The issues that challenge the findings on imagery´s role in SAD mainly arise from the abstract and subjective nature of mental imagery. These lead to the question of the trustworthiness of self-reports, the difficulty of coming up with clear definitions and measurable concepts related to mental imagery, and the extent of the findings' generalizability further. Due to the novelty of the research focus, they often lack explanations on why there was variability in findings between the participants and what potentially demographic factors make up for that. By conducting more research on mental imagery, especially through neurological studies and studies with a wider range of demographics included, firm findings will help social anxiety disorder to be increasingly understood and treated.

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