

Date: April 2025

To: The Registry Team ClinicalTrials.gov U.S. National Library of Medicine National Institutes of Health Bethesda, MD, USA

Subject: Submission of Study Protocol and Informed Consent Form for Registration

Study Title: The Effectiveness of Proactive Thought Control in Modification of Negative Core Beliefs and Cognitive Biases in Individuals with Social Anxiety: A Pilot RCT Study

Unique Protocol ID: GIFT/HSS/2025/PSY/1025 **NCT Number:** To be assigned

Dear Registry Team,

I am writing to submit the study protocol and informed consent form for the above-mentioned clinical trial for registration on ClinicalTrials.gov.

This study is a pilot randomized controlled trial (RCT) conducted at the Department of Humanities and Social Sciences, GIFT University, Gujranwala, Pakistan. The study examines the effectiveness of a proactive thought control intervention — delivered through modified computerized Free Association and Sentence Completion Tasks — in reducing negative core beliefs, cognitive biases, and anxiety symptoms among university students with social anxiety disorder. Participants were randomly assigned to either a Proactive Thought Control group or a Reactive Control group, with pre- and post-intervention assessments conducted using standardized psychometric and computerized behavioral measures.

The study has been reviewed and approved by the Institutional Review Board and the Ethical Review Committee of GIFT University under Protocol ID:

GIFT/HSS/2025/PSY/1025. Informed consent was obtained from all participants prior to their participation.

The following documents are enclosed with this submission:

1. **Study Protocol with Statistical Analysis Plan** covering research design, objectives, hypotheses, sample, measures, intervention description, procedure, and data analysis plan
2. **Informed Consent Form** approved by the Ethical Review Committee, March 2025

All documents are submitted in PDF/A format as required. Participant identifiers have been removed from all uploaded materials in accordance with data protection requirements.

Please do not hesitate to contact me if any additional information or clarification is required.

Yours sincerely,

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ABSTRACT

The present study investigated the effectiveness of a single-session of proactive thought control intervention in reduce negative core beliefs and cognitive biases in individuals with Social Anxiety Disorder (SAD). Focusing on keeping goal directed information, the intervention aimed to train participants to keep neutral or positive association in mind while rejecting threat-related or negative associations. A randomized controlled design was employed with participants ($N = 37$; age range 18–24) assigned to either a proactive thought control group or a reactive control group. Pre- and post-intervention assessments included the CBQ for core beliefs, STAI for anxiety, WSAP for interpretation biases and Dot Probe Task for attentional biases. To examine group differences, a 2×2 mixed ANOVA, independent-samples t-tests, and paired-samples t-tests were conducted. Results indicated that participants in the intervention group demonstrated significantly greater reductions in negative core beliefs, interpretation biases and trait anxiety as compared to controls. However, no significant changes were observed in attentional bias or state anxiety. Additionally, ANCOVA analyses revealed that, when controlling for pre-test scores, the intervention produced significant effects on negative core beliefs, interpretation biases and trait anxiety. These findings suggest that proactive control mechanisms may play a crucial role in modifying maladaptive cognitive patterns underlying social anxiety. The study contributes to cognitive models of social anxiety by highlighting the potential of brief, targeted interventions to disrupt automatic threat-processing patterns and foster adaptive belief change.

Method

Ethics Statement

The study was conducted following the approval and oversight of the Institutional Review Board and the Ethical Review Committee. Informed consent was obtained from all participants prior to their participation, ensuring that they were fully aware of the study's purpose, procedures, and their rights. Participant confidentiality and the right to withdraw at any time were strictly maintained throughout the study.

Research Design

This study employed a parallel-group randomized controlled trial (RCT) with a repeated-measures design to examine the impact of a proactive thought control task, delivered through a modified free association paradigm, on reducing negative core beliefs and cognitive biases in individuals with social anxiety. A true experimental design was chosen because it provides the strongest basis for causal inference while minimizing threats to internal validity (Shadish et al., 2002). The repeated-measures design allowed for the assessment of change across time (pre-intervention, post-intervention), thereby enhancing statistical power and controlling for inter-individual variability. Participants were randomly assigned to either the proactive thought control group or the reactive control group (sham condition) using the fishbowl technique, which ensured transparency and reduced allocation bias. The inclusion of an active control group provided an additional safeguard against expectancy effects and placebo responses. In this condition, participants completed the same free association task without feedback designed to guide positive associations, thereby controlling for nonspecific factors such as task engagement, the Hawthorne effect, or demand characteristics (Kazdin, 2017). Because repeated-

measures designs are vulnerable to drawbacks such as practice effects, fatigue effects, and attrition (Field, 2018; Suresh, 2011), several strategies were implemented to minimize these risks. Counterbalancing was systematically applied to address order-related threats in pre and post assessment of Word Sentence Association Paradigm (WSAP) and the Dot Probe Task. The presentation order of stimuli in pre and post assessment varied across participants. It ensures that improvements could not be attributed to repeated exposure or attentional decline. The order of intervention trials was also counterbalanced to mitigate sequence effects. To manage potential attrition across multiple assessment points, participants were provided with scheduling flexibility and e-certificate, thereby improving retention and reducing missing data.

Objectives

Objectives of research were

1. To examine the effectiveness of a proactive thought control intervention in reducing negative core beliefs among individuals with social anxiety.
2. To assess changes in cognitive biases by the application of the proactive thought control task.
3. To examine the effectiveness of proactive thought control training in reducing anxiety symptoms
4. Comparing pre-test and post-test scores on core belief and cognitive bias measures between proactive thought control and reactive control groups.

Hypothesis

The hypothesis of study was

H1: Individuals in the proactive thought control group will show a significant reduction in negative core beliefs after undergoing the proactive thought control intervention compared to the reactive control group.

H2: Individuals in the proactive thought control group will exhibit a significant decrease in cognitive bias scores compared to those in the reactive control group post-intervention.

H2 (a): Individuals in the proactive thought control group will exhibit a significant decrease in interpretation bias scores compared to those in the reactive control group post-intervention.

H2 (b): Individuals in the proactive thought control group will exhibit a significant decrease in attentional bias scores compared to those in the reactive control group post-intervention.

H3: Individuals who receive proactive thought control training will exhibit significantly reduced anxiety levels compared to those in reactive control groups.

H4: There will be a significant difference between the pre-test and post-test scores of the proactive thought control group in terms of negative core beliefs and cognitive biases.

H5: Free Association Task and Sentence Completion Task will not differ significantly in their effect on post-intervention outcomes.

Sample

Participants were recruited from a university student population using a purposive sampling through Liebowitz Social Anxiety Scale (LSAS). Although random sampling is often considered ideal, it was not feasible in this context due to practical and ethical constraints. As participation was voluntary, and only students meeting the LSAS cutoff were eligible. Internal validity was maintained through random assignment of participants into proactive thought control and reactive control groups using block randomization, along with standardized procedures and baseline equivalence checks. A total of 204 individuals were initially screened for eligibility in the study using the LSAS. Of these, 149 scored above the clinical cutoff of 30, indicating significant symptoms of social anxiety disorder (SAD). From this pool, 20 individuals declined to participate further, 60 did not respond to study invitations, and 20 could not be contacted for scheduling reasons. The remaining 54 individuals were randomized into the proactive thought control group and the reactive control group, as outlined in the CONSORT diagram. The study ultimately included 37 participants (aged 18–24 years) who met full inclusion criteria and completed baseline assessments. 15 participants were dropped due to mechanical issues such as electricity failures and unstable internet connectivity, which made it infeasible for them to complete study tasks. As this was a pilot trial, the sample size was guided by established recommendations suggesting that 15–30 participants per group are sufficient to assess feasibility and obtain preliminary effect size estimates for future studies (Kunselman, 2024). Thus, the final sample of 37 participants falls within this acceptable pilot study range.

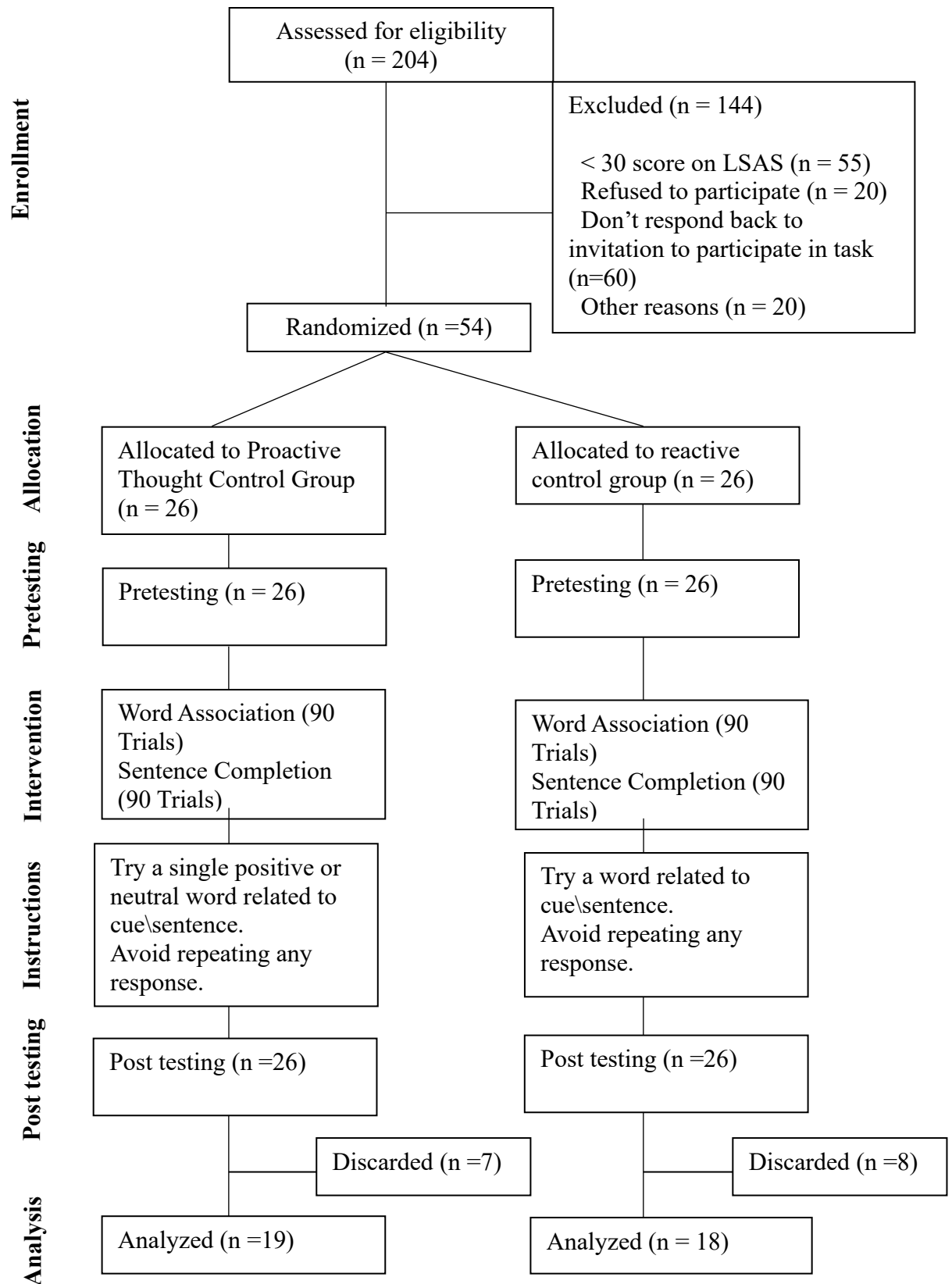
Inclusion Criteria

- being 18-24 years old
- not taking any additional psychological treatments during the trial
- If taking medication for depression or anxiety, the dosage had to remain consistent for one month before the start of therapy.
- Cut off score above 30 in LSAS
- Consent to participate in the study and complete all tasks.
- Proficiency in English
- Regularly computer user

Exclusion Criteria

- Age below 18 or above 24 years
- Currently receiving psychological treatment
- Failure to provide consent or complete the study tasks
- Have any other medical condition
- Have any other psychiatric condition
- Taking medicine

CONSORT Diagram



Operational Definitions

Social Anxiety

Social anxiety disorder is characterized by worry of unfavorable evaluation, leading to avoidance or anxiety during social activities (American Psychiatric Association, 2013).

State Anxiety

State anxiety is a temporary emotional state that includes sensations of tension and apprehension, as well as increased autonomic nervous system activity (Spielberger, 1970).

Trait Anxiety

Individual differences in anxiety proneness, or the propensity to react to potentially dangerous situations by increasing the level of state anxiety, are referred to as trait anxiety (Spielberger, 1970).

Negative Core Beliefs

Core beliefs are cognitive structures created from previous experiences. These beliefs shape how individuals organize personal and environmental information, as well as their basic assumptions about themselves, others, and the world. Early life events shape core ideas, which are reinforced by further experiences and learning throughout life (Beck, 1979)

Interpretation Biases

Amir et al. (1998) defined interpretation biases as assigning negative meaning to ambiguous or neutral stimuli.

Attentional Biases

When people concentrate more on certain types of stimuli, it's a phenomenon called attentional bias. It is the tendency to pay attention to certain parts of our surroundings while ignoring others (MacLeod & Mathews, 1988).

Proactive Thought Control

In order to optimally bias attention, perception, and action systems in a goal-driven manner, the proactive control mode can be thought of as a type of early selection, where goal-relevant information is actively maintained in a sustained manner before cognitively demanding events occur (Braver, 2009)

Research Instrument

Liebowitz Social Anxiety Scale-Self Reported (LSAS-SR)

The LSAS-SR (Liebowitz, 1987) was used to assess the presence and severity of SA symptoms among participants. It consists of 24 items. Each item is rated separately for both fear and avoidance, using a 4-point Likert scale ranging from 0 to 3. 0 indicates none/never, while 3 mean severe/usually. The total score reflects the overall severity of social anxiety. The LSAS-SR has been validated in both clinical and non-clinical populations. It is considered a reliable and psychometrically sound measure for identifying individuals with symptoms of SAD. In the present study, the scale was used as a screening tool, with scores above 30 indicating elevated social anxiety, in line with existing literature (Beard et al., 2011; Enock et al., 2014; Podina et al., 2020).

Depression Stress Anxiety Scale (DASS)

DASS-12 was used to measure depression, anxiety, and stress. DASS-12 is the short version of DASS-21, 42. It consists of 12 items total, has three subscales of

depression, anxiety, and stress, and each consists of 4 items. It consists of a 4-point Likert scale ranging from 0 to 3. 0 means did not apply to me at all while 3 indicates Applied to me very much or most of the time. Participants were asked to rate the Likert scale on the basis of whether they experienced symptoms throughout the past week in order to complete the DASS. Total score was calculated by summing score across each item. High scores mean high levels of depression, anxiety and stress, while low scores indicate levels of depression, anxiety and stress (Monteiro et al., 2023). While DASS-12 was not used to diagnose participants, it provided valuable information about baseline levels of distress. This allowed us to ensure that the proactive thought control and reactive control groups were comparable in terms of general emotional functioning and to control for the potential influence of broader distress on the intervention outcomes (Krans et al., 2019).

Core Belief Questionnaire (CBQ)

Wong et al. (2017) developed CBQ to measure the core beliefs among SA individuals. It has three versions: trait CBQ (person beliefs about self), contingent CBQ (person beliefs about self, when others thought low of them), and other CBQ (and how a person sees others). It has 20 items on each scale. On each scale, items 6, 13, and 17 were dropped due to the high correlation between item 5 and 6; item 12 and 13; and item 17 and 18. So in each scale there is a total of 17 items. It measures beliefs on a six-point Likert scale, 1 representing strongly disbelief and 6 representing strongly belief. Total score ranges from 17 to 102. High scores indicate high negative core beliefs, and lower scores indicate lower negative core beliefs. In this scale, CBQ trait and others were used to determine core beliefs.

Spielberger State-Trait Anxiety Inventory (STAI)

Zsido et al. (2020) developed the short form of STAI. It consists of 10 items and has two subscales. STAI-state consists of 5 items and STAI-trait consists of 5 items. It consists of 4 points Likert-scale, ranging from 0 (not at all) to 3 (very much so). Its scores range from 5 to 20. Higher score indicates higher anxiety, and lower scale indicates lower anxiety. The Cronbach's alpha for STAI-state is 0.91 and STAI-trait is .86.

Word Sentence Association Paradigm for Interpretation Biases

The Word-Sentence Association Paradigm (WSAP) was employed to assess interpretation bias in response to ambiguous stimuli. This computerized task presents participants with word-sentence pairs to measure their tendency to interpret ambiguous scenarios in a threatening or benign manner (Beard & Amir, 2009). Each trial followed a standardized sequence. A fixation cross was presented at the center of the screen for 500 milliseconds (ms) to orient the participant's attention. Subsequently, a prime word (either threatening or benign in valence) was displayed for 500 ms. Following this, an ambiguous sentence appeared on the screen and remained visible until the participant provided a response. Participants were instructed to judge whether the word and sentence were meaningfully related by pressing the "Y" key (Yes) if they believed the word was related to the sentence or the "N" key (No) if it was not.

For example, participants might see the word "embarrassing", followed by the sentence "People laughed after something you said." Endorsing this pair as related would indicate a threatening interpretation. In contrast, if the benign word "funny" were paired with the same sentence and endorsed, it would reflect a non-threatening interpretation.

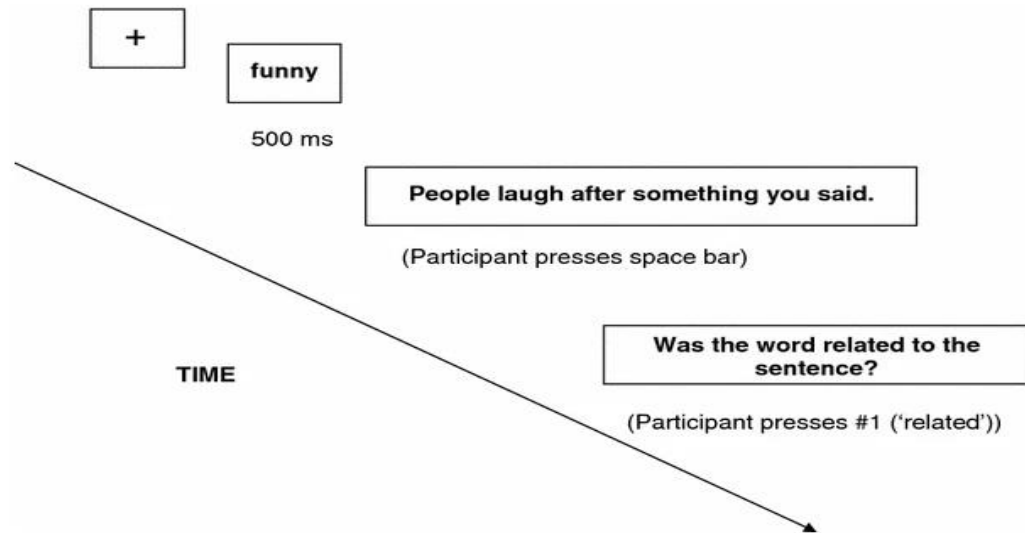
The task comprised a total of 30 trials, including stimuli relevant to both SA and generalized anxiety disorder (GAD). Each ambiguous sentence was paired with both a threatening and a benign interpretation word, presented across different trials in randomized order. As this task has been used both in pre and post testing, so to manage practice effect, counter balancing was done. All participants have been shown random order of trials both in pre assessment and post assessment. A modified version of this task, known as Cognitive Bias Modification for Interpretation (CBM-I), is used as a therapeutic intervention. In CBM-I, participants receive feedback that reinforces benign interpretations. For instance, if a participant selects a positive interpretation (e.g., “funny” instead of “embarrassing”), they are told their response is “correct” (Beard, 2011). Over time, this feedback mechanism is designed to train individuals to interpret ambiguous social situations in a more positive or neutral manner.

WSAP has demonstrated good psychometric properties. Research indicates that it has acceptable to high internal consistency and moderate test–retest reliability, making it a more stable and trustworthy tool for measuring interpretation biases (Dryman & Heimberg, 2015; Jones & Sharpe, 2017).

Interpretation bias was measured by calculating the proportion of trials in which participants endorsed a threatening interpretation, i.e., responded “Yes” when a threatening word was paired with an ambiguous sentence. A higher proportion of threatening endorsements indicated a stronger negative interpretation bias. This scoring method is consistent with prior research using the WSAP and has demonstrated acceptable reliability in assessing interpretation tendencies (Beard & Amir, 2009; Dryman & Heimberg, 2015).

Figure 9

Word Sentence Association Paradigm Trial Structure



Note. Each trial presents a word cue followed by an ambiguous sentence. Participants judge whether the sentence is related to the cue. Response patterns indicate interpretation bias (Beard & Amir, 2009)

Dot Probe Task for Attentional Biases

The Dot Probe Task is commonly used to measure attentional bias, particularly in individuals with social anxiety. In this task, two stimuli, typically one threatening (e.g., an angry face or critical word) and one neutral, are simultaneously presented in the upper and lower regions of a computer screen. After a brief fixation cross (usually 500 milliseconds), the word pair appears for 500 milliseconds. Following this, both stimuli disappear, and a small probe (such as a dot) appears in the location of one of the previous stimuli (usually after 1500 milliseconds). The participant was instructed to respond as quickly as possible by pressing a key, "up" arrow for probes in the upper position and the "down" arrow for probes in the lower position (MacLeod et al., 1986). If participants

respond faster when the probe replaces the threatening stimulus, this may indicate an attentional bias toward threat.

In the present study, 30 pairs of words were used across 30 trials to assess attentional biases (MacLeod et al., 2019). Each trial involved an initial 500 ms fixation, a 500 ms word pair presentation (one threat-related, one neutral), and the appearance of a dot that participants responded to using directional arrow keys. As this task has been used both in pre and post testing, so to manage practice effect, counter balancing was done. All participants has been shown random order of trials both in pre assessment and post assessment.

Its mechanism is different from the modified version of Attention Bias Modification task (ABM), that has been developed to reduce attentional bias toward threat. In ABM, the probe consistently appears in the location of the neutral stimulus, thereby training individuals to divert attention away from threatening stimuli and toward neutral cues (Amir et al., 2009).

Despite its widespread use, the Dot Probe Task has faced criticism for its poor psychometric properties. Several studies have reported low test–retest reliability and poor internal consistency, suggesting that the task's outcomes may not be stable or consistent over time (Rodebaugh et al., 2016; Schmukle, 2005). Trials with incorrect responses or extremely fast or slow reaction times (e.g., <200 ms or >1500 ms) were excluded from analysis, consistent with standard procedures (MacLeod et al., 1986; Schmukle, 2005).

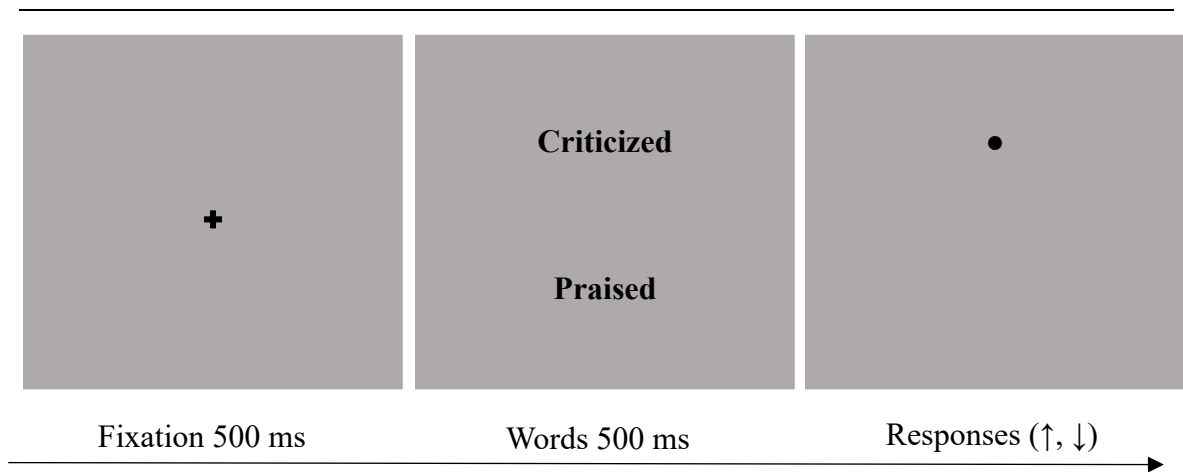
Attentional bias scores were calculated using the following formula:

$$\text{Attentional Bias Index (ABI)} = \text{mean RT}_{\text{Threat Incongruent}} - \text{mean RT}_{\text{Threat Congruent}}$$

where threat congruent trials refer to probes replacing threatening stimuli and threat incongruent trials refer to probes replacing neutral stimuli. Positive ABI scores indicate vigilance toward threat, negative scores reflect avoidance of threat, and scores near zero suggest no reliable attentional bias (MacLeod et al., 1986).

Figure 10

Dot Probe Task Trial Structure



Note. Each trial begins with a fixation cross, followed by the brief presentation of two stimuli (e.g., threatening and neutral words). A probe then appears in the location of one of the stimuli. Participants respond to the probe's position. Faster responses to probes replacing threat stimuli indicate attentional bias toward threat.

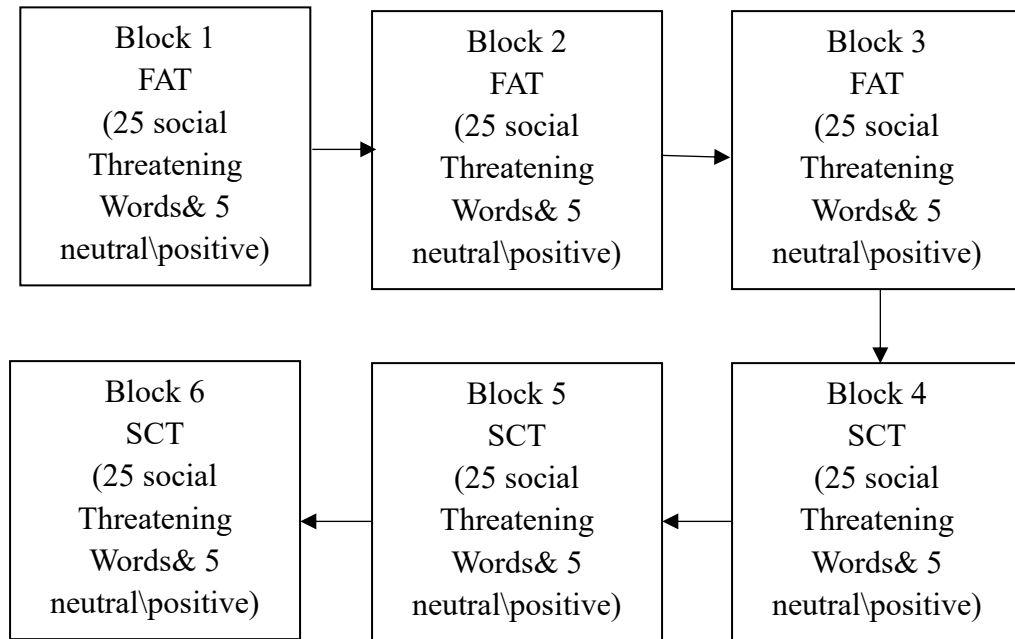
Intervention

The intervention comprised two computerized tasks: the Free Association Task (FAT) and the Sentence Completion Task (SCT), both administered in modified versions tailored for this study. In total, the intervention included 180 trials, divided into six blocks of 30 trials each. Each block was framed as a game level. Upon completion of a block, participants received encouraging progress feedback (e.g., You have completed Level 1 ... Level 2 ...), which helped sustain engagement and motivation. Participants also

accumulated points during the tasks, providing an additional layer of gamification and reinforcement. Within every block, 25 socially threatening cues or scenarios and 5 positive/neutral items were presented. To minimize order effects and ensure variability, trials were randomly sequenced for each participant, with a unique presentation order generated at every run. Across both tasks, a feedback system powered by DistilBERT was integrated to automatically evaluate responses. Feedback was limited to response quality (e.g., repetition, spelling, invalid input), with sentiment-based feedback provided only in the experimental (proactive) group to encourage positive or neutral associations, while the control (reactive) group received only neutral response validation.

Figure 11

Intervention Task Structure



Note. Participants completed two tasks *FAT* and *SCT* across six randomized blocks, each containing 25 threat and 5 positive/neutral trials. *FAT*= Free association task, *SCT* = sentence completion task.

Free Association Task. The Free Association Task (FAT) is a well-established cognitive paradigm used to examine spontaneous semantic processing. In this task, participants are presented with single-word cues and asked to provide the first word or thought that comes to mind. Because responses are immediate and unfiltered, it is particularly valuable for capturing automatic associations that reflect underlying cognitive or emotional biases. Previous studies employing the FAT in clinical and cognitive psychology have generally presented cues without strict restrictions on how participants could respond. Responses were analyzed in terms of their emotional valence (negative, neutral, or positive), and response times were recorded as indicators of processing speed. In these traditional versions, participants were essentially free to associate in any way they wished, with minimal instruction beyond producing a response.

In this task, 90 word cues were used, including 75 socially threatening words (e.g., criticized, embarrassed, awkward) and 15 positive or neutral words (e.g., praised, confident, included). These stimuli were drawn from prior work that validated word lists on dimensions of dominance, arousal, and valence among socially anxious individuals (Mujitaba & Riaz, 2025). The cues were divided into three blocks, each containing 25 threatening and 5 positive/neutral words, and were presented in randomized order for each participant. Unlike previous studies, where responses were unrestricted, two key modifications were introduced. First, in the Proactive Thought Control group, participants were instructed to generate only positive or neutral associations to each cue and to avoid repeating responses across trials as shown in Figure 13. This ensured that participants remain involved in goal directed thinking despite presenting with social threatening scenario. Second, in the Reactive group, participants responded freely, but

they are instructed to avoid repeated associations as shown in Figure 12. This mirrored natural cognitive processing without intervention, thereby providing a contrast with the proactive training condition.

Figure 12

Free Association Task Trial Structure for Reactive Control Group

Points: 8 | Responses: 70

Misjudged

Type a single word related to 'Misjudged':

Note. Control group task with instructions to try a single word related to cue.

Figure 13

Free Association Task Trial Structure for Proactive Thought Control Group

Points: 0 | Responses: 0

Insulted

Type a single positive/neutral word related to 'Insulted':

Press Enter to apply

Note. Experimental group task with instructions to try a single positive or neutral word related to cue.

Sentence Completion Task. The Sentence Completion Task is a projective technique in which individuals are asked to complete unfinished sentence stems, allowing researchers to examine underlying thoughts, emotions, and self-referential processes. Its origins trace back to Carl Jung's early work on word association (1905), later formalized into standardized assessment tools (Holaday et al., 2000). Traditionally, SCTs have been used in personality assessment and clinical evaluation, with participants providing open-ended completions that reflect personal meanings, beliefs, or affective states. In the present study, a modified SCT was implemented to capture socially evaluative and neutral cognitive responses. Ninety sentence stems were constructed, including 75 socially threatening scenarios (e.g., They stared, and I felt ____) and 15 neutral contexts (e.g., I was reading a book when ____). These were divided into three blocks, each containing 25 social-threat stems and 5 neutral stems, with randomized presentation to minimize order effects. Unlike traditional SCTs that permit unrestricted responses, two modifications were introduced. In the Proactive Thought Control group, participants were instructed to generate only positive or neutral completions and avoid repetition across trials as shown in Figure 15. In contrast, the Reactive group completed stems freely but also avoided repeated responses as shown in Figure 14. This adaptation allowed direct comparison between natural response patterns and structured cognitive training.

Sentence stems were developed from established social anxiety literature, and standardized measures, while neutral scenarios were drawn from everyday contexts. Drafts were refined to remain concise, grammatically consistent, and include a single blank prompting self-referential or emotional completions. To ensure threat-relevance, stems were rated by clinical experts and AI models. Only sentences consistently


identified as socially evaluative were retained, ensuring both ecological validity and experimental standardization. This task was administered online using a custom interface distil-bert that allowed for typed responses, feedback display, and response time recording.

Figure 14

Sentence Completion Task for Reactive Control Group

Points: 17 | Responses: 91

My classmates think I am _____.

 **Already used! Please try a different word.**

Type a single word related to 'My classmates think I am _____':

quirky

Note. Control group task with instructions to try a single word related to cue.

Figure 15

Sentence Completion Task for Proactive Thought Control Group

Points: 180 | Responses: 90

My role at home is _____.

Type a single positive/neutral word related to 'My role at home is _____':

Note. Experimental group task with instructions to try a single positive or neutral word related to cue.

Feedback. Feedback was incorporated in this task by distil-bert, an AI model. For each repeated response “Already used! Please try a different word” would appear for both groups as shown in Figure 18(a) and Figure 19 (c). For use of preposition or articles, “Invalid input, please try a single word” would appear as shown in Figure 18(c) and Figure 19 (b). For any misspelled word “Misspelled, Did you mean “*correct spellings*”” would appear as shown in Figure 18(b). While no feedback would be given for sentiments in reactive control group, but in experimental group for every positive words “Correct | +2 Score” would appear as shown in Figure 15. For negative word, “Negative or unrelated! Try a positive\neutral word related to cue would appear as shown in Figure 19(a). In addition to these quality checks, a points-based reinforcement system was integrated to enhance motivation and shape responses. Participants received +2 points for producing positive or neutral words and incurred a –1 point penalty for negative or unrelated words. This gamified scoring system tied into the block structure, reinforcing the “game level” experience and motivating participants to progress with accuracy.

Crucially, group-specific rules differentiated the intervention conditions. Participants in the reactive control group only received neutral validation messages related to response quality, without any sentiment-based reinforcement as shown in Figure 16. By contrast, those in the experimental proactive group not only received both quality and sentiment based feedback but also had a rule. They could not advance a trial until positive or neutral response. For example, after entering a positive word, the system displayed “Correct | +2 Score” as shown in Figure 17, whereas negative responses are responded back with corrective guidance such as “Negative or unrelated! Try a positive/neutral word related to the cue.” This design ensured that the proactive group

was repeatedly encouraged and generate positive /neutral associations before moving forward.

Figure 16

Intervention Task Feedback for Reactive Control Group

Points: 0 | Responses: 0

Unwanted

Type a single word related to 'Unwanted':

measure

Note. No feedback for positive or neutral word for Control Group

Figure 17

Intervention Task Feedback for Positive or Neutral Response for Proactive Thought Control Group

Points: 0 | Responses: 0

Insulted



Welldone! Correct | Score +2

Type a single positive/neutral word related to 'Insulted':

humor


Note. Experimental group feedback for positive or neutral word.

Figure 18

Intervention Task Feedback for Unrelated or Repeated Word for Reactive Control Group

Points: 15 | Responses: 18

Rejected


 **Already used! Please try a different word.**

Type a single word related to 'Rejected':

(a)

Points: 19 | Responses: 26

Hesitant


 **Misspelled! Did you mean 'special' Try again.**

Type a single word related to 'Hesitant':

(b)

Points: 32 | Responses: 34

Lightheaded

 **Invalid input! Please enter a single word.**

Type a single word related to 'Lightheaded':

(c)

Note. (a) feedback for repeated words. (b) feedback for misspelled words. (c) feedback for preposition/articles or unrelated words.

Figure 19

Intervention Task Feedback for Unrelated, Negative or Repeated Word for Proactive Thought Control Group

Points: 26 | Responses: 13

Judged

✗ Negative or unrelated! Try a positive/neutral word related to the cue.

Type a single positive/neutral word related to 'Judged':

(a)

Points: 70 | Responses: 35

Lightheaded

✗ Invalid input! Please enter a single word.

Type a single positive/neutral word related to 'Lightheaded':

(b)

Points: 162 | Responses: 81

Troubled

⚠ Already used! Please try a different word.

Type a single positive/neutral word related to 'Troubled':

(c)

Note. (a) feedback for negative words. (b) feedback for preposition/articles or unrelated words. (c) feedback for repeated words.

Distilbert-Base-Uncased-Finetuned-SST-2-english for English Sentiment

Analysis. It is an AI model that is used to test sentiments in intervention task. It is lightweight and efficient transformer-based architecture, fine-tuned on the Stanford Sentiment Treebank (SST-2) dataset. It is specifically for binary sentiment classification in English. As a distilled version of BERT, it is computationally less demanding, making it highly suitable for real-time applications (Gupta et al., 2024). The model is widely recognized for its ability to classify text as either positive or negative with a high degree of accuracy. It has become a standard baseline in sentiment analysis research.

The model consistently demonstrates strong performance in English sentiment analysis tasks, with reported accuracy ranging between 85% and 91% depending on the dataset and evaluation criteria (Gupta et al., 2024; Sudirman & Setiawan, 2024; Ng et al., 2023). For example, it achieved 85.37% accuracy on Amazon product reviews, 86.59% on customer review datasets, and 85.41% on IMDB reviews (Ng et al., 2023). The model has been successfully applied to a wide range of English-language sentiment analysis tasks, including social media monitoring, product review analysis, customer feedback evaluation, and public opinion tracking (Gupta et al., 2024; Wu et al., 2024). Beyond conventional domains, it has also demonstrated potential in privacy-sensitive applications, where it can be integrated with encrypted neural network frameworks while maintaining a high level of predictive accuracy (Florencio et al., 2025).

This model was selected because it offers an optimal balance of accuracy, efficiency, and feasibility. Unlike larger large language models (LLMs), which require significant computational resources, DistilBERT is resource-efficient yet retains strong predictive performance. Its binary classification output was used directly onto our

research to evaluate whether participants' sentence completions reflected positive or negative sentiment. This made it ideally suited to capture sentiments in real time within the intervention framework.

To ensure the reliability and feasibility of the model prior to its integration into the intervention task, the model was pre-tested multiple times. These pilot tests evaluated its speed and efficiency, ensuring that the task operated smoothly without delays or lag. The model's outputs were also examined for consistency, confirming that repeated runs produced stable and reproducible sentiment classifications. During pre-testing, it was observed that the model occasionally crashed when executed online. Therefore, it was run via a local host environment to enhance stability and performance. In addition, the pre-testing phase assessed participant experience, including the clarity of instructions, the time required to complete the task, and the overall acceptability of the procedure. This preliminary evaluation provided assurance that the model could be effectively embedded within the intervention framework without technical disruptions, while also maintaining participant engagement and comfort.

In the current research, this model was used in its original form as provided by Hugging Face, without additional fine-tuning or parameter modification as it was pretrained. Because the model weights are publicly available and fixed, the outputs are reproducible across studies and unaffected by other researchers' tasks or usage. This integration of natural language processing into the intervention framework allowed for the systematic evaluation of whether participants' completions of word and sentence cues reflected positive or negative sentiment. As such, the use of the distilbert-base-uncased-

finetuned-sst-2-english model contributed to capturing subtle cognitive shifts in real time, complementing the self-report and behavioral measures of SA and core beliefs.

Procedure

Participants were recruited in two ways. In person, by approaching teachers who assisted in administering paper-based questionnaires during class time, and online, through a Google Form link. Both recruitment formats included an informed consent form, basic demographic questions, and LSAS, a screening tool and DASS, a baseline levels of distress. A total of 204 participants were initially screened. Of these, 149 scored above 30 on the LSAS, indicating clinically significant levels of social anxiety. From this subgroup, 20 declined further participation, 60 did not respond to study invitations, and 20 could not be contacted for follow-up. Thus 54 participants were remained and enrolled in study. These participants were randomly assigned to either the proactive thought control group or the reactive control group, as illustrated in the CONSORT diagram.

Prior to the intervention, all enrolled participants were scheduled to complete a pre-assessment battery consisting of the CBQ, STAI), WSAP, and the Dot Probe Task. Pre and post assessment was delivered through OpenSesame software.

The intervention consisted of two computerized tasks: the Free Association Task (FAT) and the Sentence Completion Task (SCT). Together, these tasks included 180 trials, divided into six blocks (framed as game levels to enhance engagement). The first three blocks presented word cues, and the last three presented incomplete sentence cues. Each block contained 25 socially threatening stimuli and 5 positive or neutral stimuli. Participants were instructed to respond with the first single word that came to mind,

while avoiding meaningless entries such as articles or prepositions. Repeated or invalid responses temporarily halted task progress until corrected.

A real-time feedback system was embedded within the tasks, powered by DistilBERT-base-uncased-finetuned-SST-2-english, a lightweight transformer model fine-tuned for English sentiment analysis. All participants received quality-based feedback (e.g., for repetitions, invalid entries, or spelling errors). In addition, participants in the proactive thought control group received sentiment-based reinforcement. For every positive or neutral words participants earned +2 points and the message “Correct | +2 Score”, whereas negative or unrelated responses prompted corrective guidance such as “Negative or unrelated! Try a positive/neutral word related to the cue.” Importantly, participants in this group could not advance within a trial until they generated a positive or neutral response. In contrast, the reactive control group received only neutral validation feedback unrelated to sentiment. Reaction times were recorded for all trials to examine potential differences in cognitive processing between conditions.

After the intervention, participants completed the same post-assessment battery (CBQ, STAI, WSAP, and Dot Probe Task), enabling pre–post comparisons of outcomes. Of the 54 randomized participants, 39 completed both pre- and post-assessments, resulting in an attrition rate of 28%. Attrition was due to non-completion of post-tests, and in some cases, missing pre-test data caused by incomplete task trials in OpenSesame. As a result, participants with incomplete data were excluded, and only those with full pre- and post-assessments were retained for analyses.

Data Analysis

Data was cleaned using excel and R software. In R library jsonlite was used to extract data from json files of open sesame in to excel. Further excel files were cleaned participants wise. To make the data more readable and to calculate scores of WSAP and dot probe, libraries readxl, dplyr, tidyr, stringr, writexl was used. This data then recoded, computed and analyzed using SPSS. For statistical analysis, attrition rate was analyzed by chi square. While descriptive statistics summarized participant demographics and response characteristics. Mixed Method ANOVA was run to examine main and interaction effects between groups. For follow up analysis paired-sample t-tests were used changes in beliefs, cognitive biases and anxiety ratings from pre- to post-intervention within groups. Between groups comparisons (e.g., control vs. proactive thought control condition) was tested using independent sample t-tests. ANCOVA was run to determine whether the changes from pre to post scores are due to intervention or not.

Appendices

Appendix A

Informed Consent Form

Study Title: The Effectiveness of Proactive Thought Control in Modification of Negative Core Beliefs and Cognitive Biases in Individuals with Social Anxiety: A Pilot RCT Study

Protocol ID: GIFT/HSS/2025/PSY/1025, **NCT Number:** *(To be assigned)* **Institution:** GIFT University, Gujranwala, Pakistan **Document Date:** April 2025

Purpose

This study examines whether a proactive thought control intervention delivered through computerized tasks can reduce negative core beliefs, cognitive biases, and anxiety in university students with social anxiety.

What Participation Involves

Total time: approximately **1.5 to 2 hours**, involving:

- **Screening:** LSAS and DASS-12 questionnaires
- **Pre-Assessment:** CBQ, STAI, WSAP, and Dot Probe Task via OpenSesame
- **Intervention:** 180 trials of computerized Free Association and Sentence Completion Tasks across six levels
- **Post-Assessment:** Same battery as pre-assessment

You will be randomly assigned to either the Proactive Thought Control group or the Reactive Control group.

Risks and Benefits

- **Risks:** Minimal. Some tasks involve socially threatening word cues that may cause mild temporary discomfort. You may stop at any time.
- **Benefits:** Personal insight into thought patterns and an e-certificate upon completion.

Confidentiality

- All data will be de-identified using participant ID codes
- Data stored securely for 5 years then destroyed
- Results may be published but you will never be personally identifiable

Voluntary Participation

Participation is entirely voluntary. You may withdraw at any time without penalty or consequence to your academic standing.

Contact Information

Role	Name	Email
Researcher	Saba Ahmad	211520014@gift.edu.pk
Supervisor	Mr. Ather Mujitaba	ather.mujitaba@gift.edu.pk

Consent

By signing below, I confirm that I have read and understood this form, had the opportunity to ask questions, and voluntarily agree to participate.

- I understand participation is voluntary and I may withdraw at any time
- I understand how my data will be stored and used
- I agree to participate

Participant Name: _____

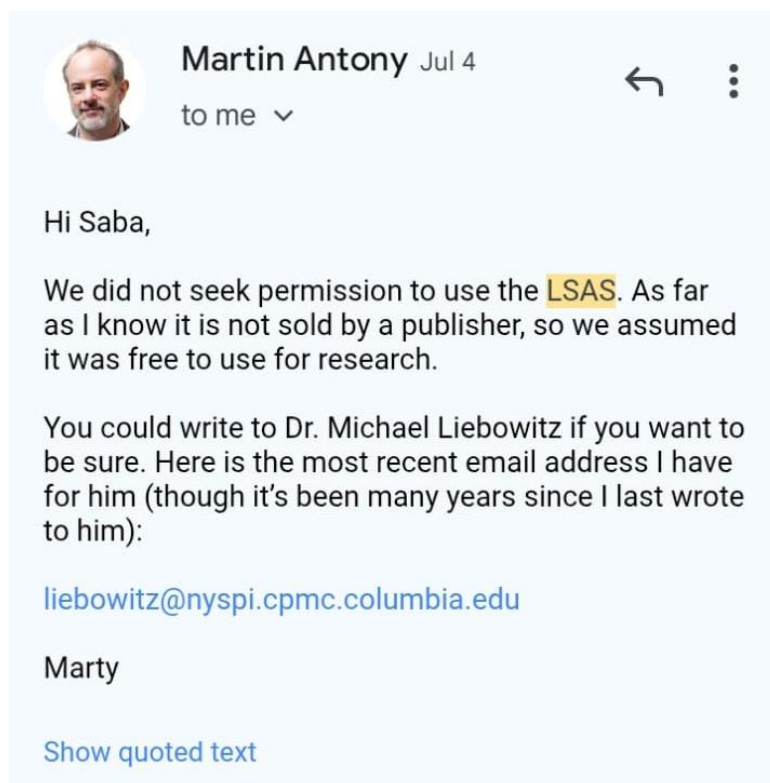
Signature: _____

Date: _____

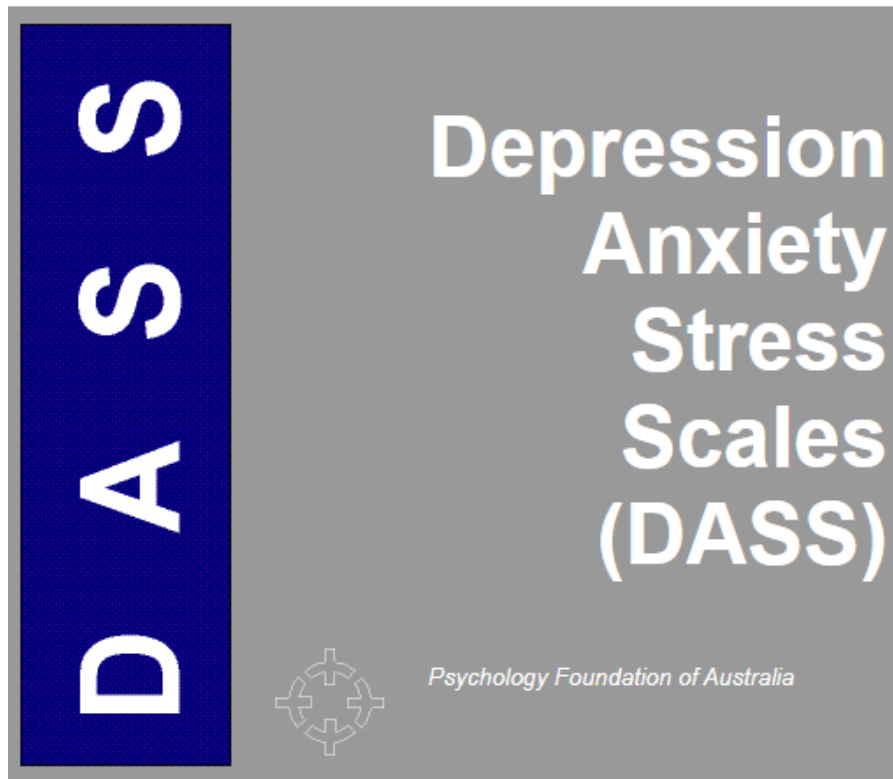
Researcher Signature: _____

Date: _____

LSAS Permission



DASS Permission



The DASS is a 42-item self-report instrument designed to measure the three related negative emotion
The DASS questionnaire is in the public domain, and may be downloaded from this website.
The DASS manual contains more detailed information about the DASS, and may be ordered for a no

CBQ Permission



Quincy Wong <Q.Wong@westernsydney.edu.au>

to me ▼

Dear Saba,

Thank you for your email and interest in using the CBQ.

Yes please feel free to use the CBQ and I wish you all the best with your thesis.

Kind regards,

Quincy

Quincy Wong

PhD/MPsychol (Clinical) | Senior Lecturer in Psychology

Psychology 4th year Academic Program Adviser

Elected Workload Committee Representative

School of Psychology

Kingswood campus, located on Darug Country

westernsydney.edu.au

WASP Permission

courtneybeardphd.com/wsap

The **Word Sentence Association Paradigm (WSAP)** is a task that can be used to both (1) measure and (2) modify interpretation bias in emotional disorders. Interpretation Bias (IB) refers to a tendency to interpret ambiguous situations in a negative or threatening way. IB has been implicated in the development and maintenance of a variety of emotional disorders.

Original WSAP Procedure

1. Fixation cross appears on the screen for 500ms to ready the participant for the trial
2. A prime word (e.g. "embarrassing" or "funny") appears for 500ms
3. A sentence describing an ambiguous situation (e.g. "People laugh after something you said") appears and remains until the participant presses the space bar, acknowledging they have finished reading. *More recent versions of the task do not require the space bar press; rather, participants immediately indicate their relatedness judgment (see #4)
4. Participant selects "yes" or "no" indicating whether or not they think the word is related to the sentence

The WSAP yields indicators of relatively "on-line" and "off-line" interpretations. "Online" interpretations are made immediately at the moment an individual encounters ambiguity, whereas "off-line" interpretations are made after a period of reflection. In the WSAP, researchers have used both reaction time to make relatedness decisions (online) and the actual relatedness decisions (offline) as indicators of interpretation bias.

A systematic review (Gonsalves, Whittles, Weisberg, & Beard, 2019) of the WSAP found that it has excellent psychometric properties across a range of populations, including good internal consistency and validity. WSAP variables effectively distinguish interpretive styles between clinical groups and healthy control groups. A recent study found good internal consistency across ethnoracial groups (Ferguson et al., 2024).

Researchers have modified the WSAP to induce a benign interpretive style (i.e., Cognitive Bias Modification) by adding corrective feedback. Specifically, participants are "correct" when they reject a negative interpretation or endorse a benign interpretation. One example of this type of intervention is Dr. Beard's [HabitWorks](#) smartphone app.

Researchers interested in using the WSAP may use the below link to access the stimuli and should cite the original 2009 paper as well as the 2019 review.

[WSAP Stimuli Excel Sheet](#)

The Word Sentence Association Paradigm (WSAP) is a measure of interpretation bias.

A systematic review (Gonsalves, Whittles, Weisberg, & Beard, 2019) of the WSAP found that the endorsement rates (% negative, % positive; total accuracy) have excellent psychometric properties across a range of populations, including good internal consistency and validity. WSAP variables effectively distinguish interpretive styles between clinical groups and healthy control groups. Finally, researchers have modified the WSAP to induce a benign interpretive style (i.e., Cognitive Bias Modification) by adding corrective feedback. Specifically, participants are "correct" when they reject a negative interpretation or endorse a benign interpretation.

Researchers interested in using the WSAP should cite the original 2009 paper as well as the 2019 review (see below). They should also describe any deviations from the original task in their publication.

Beard & Amir (2009). Interpretation in Social Anxiety: When meaning precedes ambiguity. Cognitive Therapy and Research, 33, 406-415.

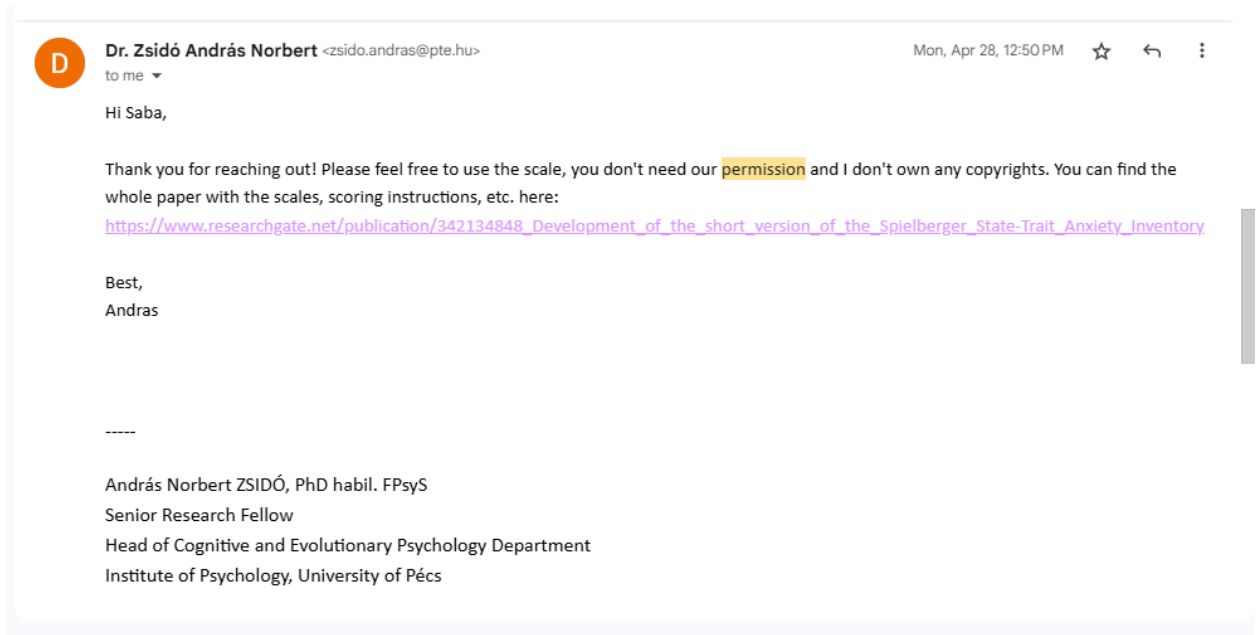
Gonsalves, M., Whittles, R. L., Weisberg, R. B., & Beard, C. (2019). A systematic review of the word sentence association paradigm (WSAP). Journal of behavior therapy and experimental psychiatry.

A note about stimuli

It is important to evaluate each word-sentence pair before using with your specific population to make sure it is culturally relevant and appropriate for your study. Since developing these stimuli sets, we conducted a systematic review and revised several of them to be more inclusive regarding sociodemographic identities (see Narine et al 2021 ABCT tab). We encourage you to do the same before

Appendix F

STAI Permission



Appendix G

Liebowitz Social Anxiety Scale

Read each situation carefully and answer two questions about that situation. The first question asks how anxious or fearful you feel in the situation. The second question asks how often you avoid the situation. If you come across a situation that you ordinarily do not experience, imagine “what if you were faced with that situation,” and then, rate the degree to which you would fear this hypothetical situation and how often you would tend to avoid it. Please base your ratings on the way that the situations have affected you in the last week. Fill out the following scale with the most suitable answer provided below.

	None	Mild	Moderate	Severe
Fear	0	1	2	3
Avoidance	0	1-33%	34-66%	67-100%

	Situation	Context
1	Telephoning in public	P
2	Participating in small groups	P
3	Eating in public places	P
4	Drinking with others in public places	P
5	Talking to people in authority	S
6	Acting, performing, or giving a talk in front of an audience	P
7	Going to a party	S
8	Working while being observed	P
9	Writing while being observed	P
10	Calling someone you don't know very well	S
11	Talking with people you don't know very well	S
12	Meeting strangers	S
13	Urinating in a public bathroom	P

14	Entering a room when others are already seated	P
15	Being the center of attention	S
16	Speaking up at a meeting	P
17	Taking a test	P
18	Expressing a disagreement/disapproval to people you don't know very well	S
19	Looking at people you don't know very well in the eyes	S
20	Giving a report to a group	P
21	Trying to pick up someone	P
22	Returning goods to a store	S
23	Giving a party	S
24	Resisting a high pressure salesperson	S

Depression Anxiety Stress Scale

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

- 0 Did not apply to me at all
- 1 Applied to me to some degree, or some of the time
- 2 Applied to me to a considerable degree or a good part of time
- 3 Applied to me very much or most of the time

1. I felt I was close to panic. (s)
2. I found it difficult to work up the initiative to do things. (a)
3. I felt down hearted and blue. (s)
4. I was intolerant of anything that kept me from getting on with what I was doing.
(a)
5. I felt that I had nothing to look forward to. (d)
6. I felt scared without any good reason. (s)
7. I tended to over react to situations. (s)
8. I was worried about situations in which I might panic and make a fool of myself.
(d)
9. I found it difficult to relax. (d)
10. I couldn't seem to experience any positive feelings at all. (a)
11. I felt annoyed by people that criticised my drinking or drug use (mark not at all if not applied). (a)
12. I have thoughts of ending my life. (d)

Core Belief Questionnaire

CBQ -Trait

Instructions: People frequently hold a range of both positive and negative beliefs about themselves. Below is a list of common negative beliefs that people may hold in varying degrees. Please rate the extent to which you personally believe each statement accurately describes how you generally feel about yourself. Please try to be as honest as you can when responding to these items. Remember that your answers will remain completely confidential.

1	2	3	4	5	6
Strongly disbelieve	Moderately disbelieve	Slightly disbelieve	Slightly believe	Moderately believe	Strongly believe

1. I am unlikeable
2. I am foolish
3. I am inadequate
4. I am inferior
5. I am uninteresting
6. I am boring
7. I am dumb/stupid
8. I am a weak person
9. I am incompetent
10. I am unacceptable
11. I am not a worthwhile person
12. I am a weird person
13. I am odd/peculiar
14. I am unimportant
15. I am physically unattractive
16. I am inept
17. I am undesirable
18. I am unlovable
19. I am a failure
20. I am defective

CBQ – Others

Instructions: People frequently hold a range of both positive and negative beliefs about how they are perceived by other people. Below is a list of common negative beliefs that people may hold in varying degrees. During social situations, to what extent do you believe that others will think the following about you? Social situations include those where you have to interact with other people (e.g. social gatherings, work meetings), or perform in front of other people (e.g. giving a presentation).

1. Others think I am unlikeable
2. Others think I am foolish
3. Others think I am inadequate
4. Others think I am inferior
5. Others think I am uninteresting
6. Others think I am boring
7. Others think I am dumb/stupid
8. Others think I am a weak person
9. Others think I am incompetent
10. Others think I am unacceptable
11. Others think I am not a worthwhile person
12. Others think I'm a weird person
13. Others think I'm odd/peculiar
14. Others think I'm unimportant
15. Others think I'm physically unattractive
16. Others think I am inept
17. Others think I am undesirable
18. Others think I am unlovable
19. Others think I am a failure
20. Others think I am a defective

Appendix J

Word Sentence Association Paradigm

cue	sentence	category	group	correct
Mocked	A coworker begins saying the same phrases you do	negative	SA	n
Disrespected	A friend does not respond when you wave hello	negative	SA	n
Strange	Colleagues found your views unusual	negative	SA	n
Disrespected	In an interview the people do not smile	negative	SA	n
Stupid	People believe you have to think about stuff for a long time	negative	SA	n
Embarassing	People laugh after something you said	negative	SA	n
Pity	Someone introduces themselves to you	negative	SA	n
Awkward	Someone you do not know asks you to play	negative	SA	n
Disrespected	While returning a form the clerk is in a hurry	negative	SA	n
Foolish	You ask for assistance from your professor	negative	SA	n
Awkward	You carry a tray of food at a party	negative	SA	n
Disliked	You have to throw a party for the office	negative	SA	n
Rejection	You receive a call from a company you interviewed with	negative	SA	n
Foolish	You share an idea with someone	negative	SA	n
Embarassing	You spill a little water on your shirt at dinner	negative	SA	n
Insults	Your boss calls you into his office	negative	SA	n
Criticize	Your teacher wrote many comments on your essay	negative	SA	n
Panicky	Your picture is going to be in the newspaper	negative	SA	n
Jealous	Your classmates are surprised by your project	negative	SA	n
Disappointed	Your friend opens your present and makes a face	negative	SA	n
Celebration	A loud noise is heard at night	benign	GAD	y
Robbers	A loud noise is heard at night	negative	GAD	n
Fog	The air is not clear and it is hard to see	benign	GAD	y
Fire	The air is not clear and it is hard to see	negative	GAD	n
Operation	The chest was opened slowly	negative	GAD	n
Fish	The chest was opened slowly	benign	GAD	y
Paintball	The guns are really loud	benign	GAD	y
Terrorist	The guns are really loud	negative	GAD	n
Cheap	The plumber sends you the bill	benign	GAD	y
Expensive	The plumber sends you the bill	negative	GAD	n

Appendix K

Dot Probe Task

word1

Criticized

Embarrassed

Inadequate

Failure

Stupid

Pathetic

Foolish

Inferior

Indecisive

Inept

Lonely

Hated

Humiliated

Terrified

Incompetent

Worthless

Ignored

Insecure

Ashamed

Mocked

Unseen

Unheard

Misunderstood

Overlooked

Neglected

Unliked

Unnoticed

Excluded

Neglected

Outcast

word2

Praised

Confident

Capable

Achiever

Intelligent

Admirable

Wise

Respected

Decisive

Skilled

Connected

Loved

Proud

Brave

Competent

Valuable

Acknowledged

Secure

Honored

Appreciated

Greeted

Appreciated

Understood

Recognized

Cared

Liked

Valued

Supported

Remembered

Connected

State Trait Anxiety Inventory

Not at all	Somewhat	Moderately so	Not at all
1	2	3	4

STAI-State

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the number at the end of the statement that indicates **HOW YOU FEEL RIGHT NOW**, that is, at this moment. 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 your present feelings best. Thank you.

1. I feel upset.
2. I feel frightened.
3. I feel nervous.
4. I am jittery.
5. I feel confused.

STAI-Trait

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the number at the end of the statement that indicates **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. Thank you.

1. I feel that difficulties are piling up so that I cannot overcome them.
2. I worry too much over something that really doesn't matter.
3. Some unimportant thoughts run through my mind and bothers me.
4. I take disappointments so keenly that I can't put them out of my mind.
5. I get in a state of tension or turmoil as I think over my recent concerns and interests.

Appendix M

Free Association Task

cues

Block_1

Criticized
Embarrassed
Humiliated
Ridiculed
Mocked
Rejected
Shamed
Judged
Avoided
Insulted
Degraded
Devalued
Offended
Dismissed
Neglected
Misunderstood
Blamed
Outcast
Unwanted
Forgotten
Overlooked
Neglected
Exhausted
Hesitant
Doubtful
Proud
Included
Worthy
Valued
Kind

Block_2

Pathetic
Weak
Sweating
Trembling
Choking
Tense
Shivering
Restless
Faint
Lightheaded
Palpitations
Sweat
Anxious
Weakness
Lonely
Isolated
Ignored
Unseen
Unheard
Inadequate
Tired
Frustrated
Alarmed
Vulnerable
Disrespect
Admiration
Confident
Strong
Brave
Unique

Block_3

Confused
Shaken
Bothered
Stressed
Regret
Discomfort
Terror
Embarrassment
Troubled
Uncertain
Misjudged
Reluctant
Judgment
Foolish
Self-judgment
Confusion
Self-critical
Self-doubt
Self-conscious
Guilt
Doubting
Shy
Clumsy
Imperfect
Worthless
Friendly
Praised
Active
Resilient
Wise

Appendix N

Sentence Completion Task

Block_4	Block_5	Block_6
People see me as quite ...	Family expectations make me feel...	In public, I appear too ...
Friends usually find me very ...	People always notice when I'm ...	People usually find me quite ...
I am seen as very ...	My family believes I am ...	I am known as very ...
My community sees me as...	In gatherings, I feel very ...	Others often think I'm ...
I feel respected when I'm ...	My opinions are often called ...	I handle attention feeling very ...
In groups, I am often _____	My role in the family is ...	I usually appear to be ...
People stare when I am ...	I'm included for acting too ...	People smile at me feeling ...
Classmates often see me as ...	My Urdu accent sounds quite ...	I'm seen as someone very ...
I am judged for being ...	My friends say I act ...	During presentations, I usually look ...
Group projects make me feel...	At family dawat, I'm usually ...	I stand out for being ...
My classmates think I am ...	I'm remembered as someone ...	Others notice me because I'm ...
Relatives talk about me being ...	In class activities, I'm usually ...	I feel exposed when people ...
My role at home is ...	When answering questions, I look .	Others judge me when I'm ...
Family gatherings make me feel ...	Visiting relatives, I tend to ...	People think I am really ...
They will think I'm _...	When I ask questions, I'm ...	Speaking to elders feels like ...

It's obvious I am too _...	When I share ideas, they're ...	In social situations, I become ...
During viva, I am usually	When others laugh, I feel ...	My role in teams is ...
Guests compliment makes me feel	People might think I'm too ...	In family gatherings, I feel ...
Interruption of others make me	My silence is seen as ...	Among friends, I'm known as ...
Talking to strangers is often ..	I stand in crowds feeling ...	Most people see me as ...
People watch me like I'm ...	When I make mistakes, I'm ...	In study groups, I'm usually...
In gatherings, I often feel.....	When people stare, I feel ...	During group projects, I am...
When teachers comment, I feel .	I assume people think I'm ...	I am often remembered as...
During family photos, I look ...	When people disagree, I felt ...	In group settings, I am...
I feel joy in being ...	Being seen makes me feel ...	My silence is often seen as...
I believe the world is ...	My values guide me to be ...	I am often described as ...
I consider myself to be ...	My purpose is becoming more ...	I want to be more ...
I am a person who's ...	I enjoy being around the ...	I feel calm when I'm ...
I view myself as very ...	I am grateful for every ...	I trust myself when I...
Often my thoughts are very	I am happiest when I'm ...	I appreciate myself for being...