

The Effect of Looming Auditory Biases on Threat Sensitivity in Social Anxiety

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Priyanka Parikh

Overview

- Key Terms
 - ◆ Social Anxiety
 - ◆ Looming Vulnerability Model
 - ◆ Looming Cognitive Style
 - ◆ Social Anxiety and Threat Perception
 - Knowledge Gap
 - Previous Research
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Social Anxiety (SA)

- Affects 6.8% of U.S. population (Anxiety and Depression Association of America, 2017)
- Intense fear of social performance situations
 - ◆ Fear of being judged or rejected
 - ◆ Invokes anxiety or distress
 - ◆ Anxiety or Avoidance of situation may interrupt daily life
- Threat and Threat Perception is distorted

Looming Vulnerability Model (LVM)

- Cognitive model (Riskind, Rector, Cassin, 1997)
 - ◆ Threats are rapidly rising in risk as one projects self into future
- **Dynamic**
 - ◆ Static threats inaccurately explain anxious individual's experience
- Sensitizes anxious individuals to perceived danger

Looming Cognitive Style (LCS)

- LVM as a cognitive trait pattern (Riskind, Rector & Taylor, 2012)
 - ◆ Internally generate scenarios
 - ◆ Danger schema
 - ◆ Self confirming feedback loops
- Ideation of social rejection is amplified

A. Learning History

Parenting, Attachment
& Developmental
Experiences



B. Distal Cognitive Vulnerability

Looming Maladaptive
Cognitive Style



C. Proximal Processes

Information Processing Biases

Attentional
Biases for
Threat



Memory
Biases for
Threat

Biased Estimates of
Intensifying Danger



Automatic
Thoughts,
Images

Fear, Urgency,
Imperative Need for
Action



D. Self-Protective & Compensatory Responses

Cognitive & Behavioral
Avoidance



FIGURE1. Etiological model of the Looming Maladaptive Style as a cognitive vulnerability to anxiety.

Auditory Looming Bias

- Approaching sounds are perceived to be closer
- Anxiety further distorts this
- High LCS, High Auditory Looming bias

Social Anxiety and Threat Perception

- Inherent biases in processing unfamiliar stimuli
 - ◆ Recognize hostile or anxious faces faster (Preschard and Phillippot, 2017)
 - ◆ Associate neutral faces to be negative
- Dynamic Images
 - ◆ Earlier threat detection (Joormann and Gotlib, 2017)

Knowledge Gap

- Lack of research examining relationship between social anxiety, threat perception, and looming biases
- Riskind et al. (2013):
 - ◆ Individuals overestimate looming sounds
 - ◆ Anxiety is a strong predictor of auditory looming biases
 - ◆ Looming biases independent from other cognitive biases

Motivations for Research

- Develop further understanding on the cognitive biases associated with SA
 - ◆ CBT

Methods

Hypothesis

Variables

Stimuli

Participants

Measures

Method

Outcomes

Hypothesis

- As degree of social anxiety increases, sensitivity to threat increases
- Individuals with high LCS and high social anxiety will detect threat faster when looming auditory stimuli is presented

Variables

- Independent Variables:
 - ◆ White Noise vs. Looming Noise
 - ◆ Degree of Anxiety
- Dependent Variable:
 - ◆ Threat Sensitivity

White
Noise

Looming
Noise

High
Anxiety

High Threat
Sensitivity

Highest Threat
Sensitivity

Low
Anxiety

Lowest Threat
Sensitivity

Low Threat
Sensitivity



Facial Morphing Stimuli

- Neutral and Angry images of white men selected from:
 - ◆ Karolinska Directed Emotional Faces database
 - ◆ Chicago Facial Database
 - ◆ Pictures of Facial Affect (Ekman)
 - ◆ Warsaw Set of Emotional Facial Expression Pictures
- Images converted to black and white
- Images generated on Fantamorph
 - ◆ 3 second morph (135 frames)
- Qualtrics

Auditory Stimuli

- 1s Looming Sound
 - ◆ Riskind
- 1s White noise generated from looming sound
 - ◆ Audacity

Measures

- Liebowitz Social Anxiety Scale (LSAS)
 - ◆ 24 question measure (13 questions pertaining to performance anxiety and 11 questions regarding social situations)
 - ◆ consistent internal validity and reliability (Heimberg et al., 1999)

The Liebowitz Social Anxiety Scale

0-54: Mild Social Anxiety

55-65: Moderate Social Anxiety

66-80: Marked Social Anxiety

81-95: Severe Social Anxiety

95+: Very Severe Social Anxiety

Measures

- Looming Maladaptive Style Questionnaire (LMSQ; Riskind, Williams, & Joiner, 2006)
 - ◆ 6 vignettes
 - Threats in social situations and threats of physical injury
 - developing heart palpitations while talking to someone about a financial problem
 - hearing a strange engine noise from your car as you are driving on the expressway in heavy rush-hour traffic
 - the risk of getting into an accident
 - speaking in front of a large audience of strangers
 - inviting an extremely popular person to a party in front of a group of people
 - the possibility of a romantic relationship breaking up
 - ◆ Questions
 - In this scene are the chances of your having difficulty decreasing or expanding with each moment?
 - Is the level of threat in the encounter staying fairly constant or is it growing rapidly larger with each passing moment?
 - How much do you visualize your problem as in the act of becoming progressively worse?"

Participants

- Students at University of Texas at Austin
 - ◆ 18+
- Recruitment methods
 - ◆ Facebook Groups
 - ◆ Peers

Design

- LSAS and LMSQ
- Block 1: 40 trials
 - ◆ Neutral to Angry
 - ◆ Looming vs. White Noise
- Block 2: 40 trials
 - ◆ Angry to Neutral
 - ◆ Looming vs. White Noise

Data Analysis

- Social Anxiety Index: $AN-NA / (AN+NA)$
- Regression Analysis: Threat Sensitivity vs White Noise and Looming

Expected Outcomes

→ Social Anxiety and Auditory stimuli will influence sensitivity to threatening stimuli

Alternative Outcomes

- There is no relationship between social anxiety, threat perception, and auditory looming stimuli