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

Priyanka Parikh
Overview

➔ Key Terms
  ♦ Social Anxiety
  ♦ Looming Vulnerability Model
  ♦ Looming Cognitive Style
  ♦ Social Anxiety and Threat Perception

➔ Knowledge Gap
➔ Previous Research
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
FIGURE 1. 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
<table>
<thead>
<tr>
<th>High Anxiety</th>
<th>Low Anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Threat Sensitivity</td>
<td>Lowest Threat Sensitivity</td>
</tr>
<tr>
<td>White Noise</td>
<td>Looming Noise</td>
</tr>
<tr>
<td>Highest Threat Sensitivity</td>
<td>Low Threat Sensitivity</td>
</tr>
</tbody>
</table>
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)
<table>
<thead>
<tr>
<th>Fear</th>
<th>Avoidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Mild</td>
</tr>
<tr>
<td>1. Telephoning in public.</td>
<td></td>
</tr>
<tr>
<td>2. Participating in small groups.</td>
<td></td>
</tr>
<tr>
<td>3. Eating in public places.</td>
<td></td>
</tr>
<tr>
<td>4. Drinking with others in public places.</td>
<td></td>
</tr>
<tr>
<td>5. Talking to people in authority.</td>
<td></td>
</tr>
<tr>
<td>6. Acting, performing or giving a talk in front of an audience.</td>
<td></td>
</tr>
<tr>
<td>7. Going to a party.</td>
<td></td>
</tr>
<tr>
<td>8. Working while being observed.</td>
<td></td>
</tr>
<tr>
<td>9. Writing while being observed.</td>
<td></td>
</tr>
<tr>
<td>10. Calling someone you don’t know very well.</td>
<td></td>
</tr>
<tr>
<td>11. Talking with people you don’t know very well.</td>
<td></td>
</tr>
<tr>
<td>12. Meeting strangers.</td>
<td></td>
</tr>
<tr>
<td>14. Entering a room when others are already seated.</td>
<td></td>
</tr>
<tr>
<td>15. Being the center of attention.</td>
<td></td>
</tr>
<tr>
<td>16. Speaking up at a meeting.</td>
<td></td>
</tr>
<tr>
<td>17. Taking a test.</td>
<td></td>
</tr>
<tr>
<td>18. Expressing a disagreement or disapproval to people you don’t know very well.</td>
<td></td>
</tr>
</tbody>
</table>
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