Human Emotion

Psychology 3131
Professor June Gruber
Human Emotion

Emotion and Mental Health

Depression and Mania
Can emotion go awry?
Course Logistics

Depression

Mania

Take-Away Qs & Expert Interview
Course Logistics

None
Depression: Diagnostic Criteria

I. Sad mood and/or lack of pleasure.

II. Associated Symptoms
- Guilt or worthlessness
- Low self-esteem
- Suicidal ideation or intent
- Appetite/eating disturbance (appetite diminished/increased; weight gain/loss)
- Sleep disturbance (insomnia, hypersomnia)
- Psychomotor retardation/agitation
- Trouble concentrating
- Fatigue

III. Causes Impairment
## Emotion & Psychopathology

1. **Extremes**
   - Greater intensity of emotional displays, greater amplitude of emotional reactivity

2. **Absences**
   - Lower intensity of emotional displays (or absent); decreased amplitude of emotional reactivity (or absent)

3. **Disjunctions**
   - Emotion as a multi-component system (experience, behavior, physiology). Channels ideally cohere together. Disjunction involves mis-match between channel(s) of emotion with other channel(s).

Gruber & Keltner (2007)
Mood and Emotion in Major Depression

Jonathan Rottenberg

University of South Florida

ABSTRACT—Nothing is more familiar to people than their moods and emotions. Oddly, however, it is not clear how these two kinds of affective processes are related. Intuitively, it makes sense that emotional reactions are stronger when they are congruent with a preexisting mood, an idea reinforced by contemporary emotion theory. Yet empirically, it is uncertain whether moods actually facilitate emotional reactivity to mood-congruent stimuli. One approach to understanding mood-propensity is to examine mood-disturbed individuals. People who suffer from major depressive disorder, commonly known as major depression, have a markedly severe type of mood disturbance. Major depression is the leading cause of psychiatric hospitalization; it is estimated to affect one in four people over a lifetime. Mood-congruent emotional reactions may be a core psychological feature of depression.
ORIGINS of the DEPRESSION EPIDEMIC

Jonathan Rottenberg
4,137 likes · 238 talking about this

Author
Jonathan Rottenberg wrote The Depths: The Evolutionary Origins of the Depression Epidemic. His work has received widespread praise and recognition.
Tale of 2 Views

**NEGATIVE POTENTIATION**
- Exhibit increased (potentiated) responses to negative stimuli.
- Symptom: Sad Mood (increased negative emotion).
- Basis: Cognitive theories of depression posit negative distortions of world --> lead to negative emotions.

**POSITIVE ATTENUATION**
- Exhibit decreased (attenuated) responses to positive stimuli.
- Symptom: Anhedonia (decreased pleasure).
- Basis: Report less pleasure to pleasant photos (IAPS), positive films, and drink stimuli. Positive words evoke less neural reactivity.
Emotion Context Insensitivity in Major Depressive Disorder

Jonathan Rottenberg  
University of South Florida

James J. Gross and Ian H. Gotlib  
Stanford University

The present study tested 3 competing views of how depression alters emotional reactivity: positive attenuation (reduced positive), negative potentiation (increased negative), and emotion context insensitivity (ECI; reduced positive and negative). Normative and idiographic stimuli that elicited happy, sad, and neutral states were presented to currently depressed, formerly depressed, and healthy control individuals while experiential, behavioral, and autonomic responses were measured. Currently depressed individuals reported less sadness reactivity and less happiness experience across all conditions than did the other participants, and they exhibited a more dysphoric response to idiographic than to normative stimuli. Overall, data provide partial support for the positive attenuation and ECI views. Depression may produce mood-state-dependent changes in emotional reactivity that are most pronounced in emotion experience reports.

Keywords: depression, emotional functioning, reactivity
Experimental Procedure

WATCHED FILMS
(Neutral, Sad, Happy)

EMOTIONAL LIFE EVENTS INTERVIEW
(Neutral, Sad, Happy)

Rottenberg et al (2005)
Results

**POSITIVE ATTENUATION**
- Exhibit decreased (attenuated) responses to positive stimuli.
- Symptom: Anhedonia (decreased pleasure)
- Basis: Report less pleasure to pleasant photos (IAPS), positive films, and drink stimuli. Positive words evoke less neural reactivity.

**NEGATIVE POTENTIATION**
- Exhibit increased (potentiated) responses to negative stimuli.
- Symptom: Sad Mood (increased negative emotion)
- Basis: Cognitive theories of depression posit negative distortions of the world --> lead to negative emotions.
Emotion Context Insensivity (ECI)

- Depression flattens emotional landscape.
- Constricts reactions to differing contexts (even neutral or non-emotional ones).
- Emotions are not appropriate (or “insensitive”) to context.

Rottenberg et al (2005)
Mood and Emotion in Major Depression

Jonathan Rottenberg

University of South Florida

ABSTRACT—Nothing is more familiar to people than their moods and emotions. Oddly, however, it is not clear how these two kinds of affective processes are related. Intuitively, it makes sense that emotional reactions are stronger when they are congruent with a preexisting mood, an idea reinforced by contemporary emotion theory. Yet empirically, it is uncertain whether moods actually facilitate emotional reactivity to mood-congruent stimuli. One approach towards answering if moods do facilitates emotional reactivity is to examine mood-disturbed individuals. People who suffer from major depressive disorder, commonly known as major depression, have a markedly severe type of mood disturbance. Major depression is the leading cause of psychiatric hospitalization; it is estimated to affect as many as 4% of our population annually with...
Roadmap

Course Logistics

Depression

Mania

Take-Away Qs & Expert Interview
Mania: Diagnostic Criteria

I. Abnormally/Persistently Elevated Mood (may also be irritable)

II. Associated Symptoms
- Inflated self-esteem or grandiosity
- Decreased need for sleep
- Pressured Speech
- Increased physical activity and energy
- Racing thoughts
- Increase in goal-directed activity

III. Causes Impairment
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Gruber & Keltner (2007)
BIPOLAR DISORDER

Significant Impairment

- Highest suicide rate (up to 29%) of all psychiatric disorders
- 1/2 inpatient mental health care costs
- 6th leading cause of worldwide disability by World Health Organization
“When you’re high it’s tremendous. The ideas and feelings are fast and fleeting like shooting stars...feelings of ease, intensity, power, well-being, financial omnipotence, and euphoria pervade one’s marrow.”

Kay Jamison, Unquiet Mind (p. 67).
“For no reason, I started to feel incredibly good. I didn’t sleep much. I just walked around with this wonderful feeling. One day I was passing a diner and I knew how it felt to be a lion. I went into the diner and said ‘Bring me a steak, a raw steak, don’t cook it.’ I started eating it. The other customers made like they were revolted, watching me. So I began to see that maybe it was a little strange. I went to the Dean and said ‘Get me down off this.’”

ROETHKE (1908-1963), American Poet
Tale of Two Views (of Mania)

<table>
<thead>
<tr>
<th>“Positive-To-All”</th>
<th>“Positive-to-Positive”</th>
</tr>
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<tr>
<td>Increased response during presence and absence of emotional stimuli (e.g., “Tonic-Level”).</td>
<td>Increased response to positive emotional stimuli (e.g., “Affective-Reactivity”).</td>
</tr>
<tr>
<td>Mania heightened reactivity across positive, negative, &amp; neutral stimuli.</td>
<td>Mania heightened reactivity to positive stimuli only.</td>
</tr>
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</table>
Risk for Mania and Positive Emotional Responding: Too Much of a Good Thing?

June Gruber  
University of California, Berkeley

Sheri L. Johnson  
University of Miami

Christopher Oveis and Dacher Keltner  
University of California, Berkeley

Although positive emotion research has begun to flourish, the extremes of positive emotion remain understudied. The present research used a multimethod approach to examine positive emotional disturbance by comparing participants at high and low risk for episodes of mania, which involves elevations in positive emotionality. Ninety participants were recruited into a high or low mania risk group according to responses on the Hypomanic Personality Scale. Participants’ subjective, expressive, and physiological emotional responses were gathered while they watched two positive, two negative, and one neutral film clip. Results suggested that participants at high risk for mania reported elevated positive emotion and irritability and also exhibited elevated cardiac vagal tone across positive, negative, and neutral films. Discussion focuses on the implications these findings have for the diagnosis and prevention of bipolar.
Experimental Procedure

**BASELINE**

- Acclimation
  - Current Symptoms
  - (5 minutes)

**WATCHED FILM CLIPS**

- Sitting in Kitchen
  - NEUTRAL
  - (90 sec)
- Wins Gold Medal
  - HAPPY
  - (150 sec)
- College Symbols
  - PRIDE
  - (140 sec)
- Child’s Father Dies
  - SAD
  - (170 sec)
- Digging in Toilet
  - DISGUST
  - (60 sec)
Multi-Method Assessment of Emotion

Self-Reported Emotion


Negative Emotion: Sadness, Fear, Disgust, Anger, Shame, Embarrassment.

Emotional Behavior

(EMFACS; Ekman & Rosenberg, 1997)

Positive Emotion: Happy, Pride, Amusement.

Negative Emotion: Sadness, Fear, Disgust, Anger.

Peripheral Physiology

Heart Rate
Skin Conductance
Cardiac Vagal Tone (RSA)
Finger/ear pulse transit time
Finger/ear pulse amplitude
Systolic & diastolic blood pressure
Pre-ejection period
Stroke volume
Cardiac output
Gross somatic movement
Mania = Excess Positive Emotion & Vagal Tone?

![Image of bar graph showing self-reported positive emotion levels for Neutral, Happy, and Sad states with 'Mania' and 'Control' conditions compared.]

![Image of line graph showing vagal tone levels for Neutral, Happy, and Sad states.]

- Self-reported positive emotion levels:
  - Neutral: Mania vs Control
  - Happy: Mania vs Control
  - Sad: Mania vs Control

- Vagal tone levels:
  - Neutral: Mania vs Control
  - Happy: Mania vs Control
  - Sad: Mania vs Control
Mania = No Negative Emotion Extremes

- Negative Affect (NA)
- Heart Rate
- Skin Conductance
- Skin Temperature
## Extreme Positive Emotion Across Contexts

<table>
<thead>
<tr>
<th>CONTEXT</th>
<th>INCREASED POSITIVE EMOTION?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotion-Eliciting Films</td>
<td>✓</td>
</tr>
<tr>
<td>(Gruber, Oveis, Johnson, &amp; Keltner, 2008;</td>
<td></td>
</tr>
<tr>
<td>Gruber, Harvey, &amp; Purcell, 2012)</td>
<td></td>
</tr>
<tr>
<td>Self-Conscious Tasks</td>
<td>✓</td>
</tr>
<tr>
<td>(e.g., Gruber, Reeves, &amp; Sturm, under review)</td>
<td></td>
</tr>
<tr>
<td>Experience-Sampling</td>
<td>✓</td>
</tr>
<tr>
<td>(Gruber, Kogan, Mennin, &amp; Murray, under review)</td>
<td></td>
</tr>
<tr>
<td>Empathic Accuracy Tasks</td>
<td>✓</td>
</tr>
<tr>
<td>(Devlin, Zaki, &amp; Gruber, in prep)</td>
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</table>
Characterize differences in function and response profile among positive emotions (Ekman, 2004; Izard, 1977; Shiota, Keltner, & John, 2006)

<table>
<thead>
<tr>
<th>Emotion</th>
<th>Elicitor</th>
<th>Function(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Joy</strong></td>
<td>Reward signal</td>
<td>Reward acquisition behavior</td>
</tr>
<tr>
<td><strong>Pride</strong></td>
<td>Personal Achievement</td>
<td>Advertise elevated status</td>
</tr>
<tr>
<td><strong>Compassion</strong></td>
<td>Vulnerable/ weak (e.g., offspring)</td>
<td>Caregiving Behavior</td>
</tr>
</tbody>
</table>

Adapted from Keltner et al. (2008)
Differences Among Positive Emotions
Reward and Achievement

<table>
<thead>
<tr>
<th></th>
<th>BD (N = 32)</th>
<th>Control (N = 40)</th>
</tr>
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<tbody>
<tr>
<td><strong>Joy</strong></td>
<td>5.23 (0.97)</td>
<td>4.51 (1.15)</td>
</tr>
<tr>
<td><em>Pride</em></td>
<td>5.33 (1.27)</td>
<td>4.56 (1.24)</td>
</tr>
<tr>
<td><strong>Compassion</strong></td>
<td>5.61 (1.21)</td>
<td>5.32 (0.96)</td>
</tr>
</tbody>
</table>

Specificity Important!

- Reward and achievement, but not prosocial, emotions heightened.
- Consistent with work on reward seeking and ambitious goal setting in mania (e.g., Johnson, 2005; Urosevic et al., 2008).

**p < .01, *** p < .001
Can Feeling Too Good Be Bad? Positive Emotion Persistence (PEP) in Bipolar Disorder

June Gruber
Yale University

Abstract
Positive emotions are vital to attaining important goals, nurturing social bonds, and promoting cognitive flexibility. However, one question remains relatively unaddressed: Can positive emotions also be a source of dysfunction and negative outcomes? An ideal point of entry to understand how positive emotion can go awry is bipolar disorder, a psychiatric disorder marked by abnormally elevated positive emotion. In this review I provide an overview of recent experimental evidence from individuals at risk for, and diagnosed with, bipolar disorder. I present a novel account of positive-emotion disturbance, referred to as positive emotion persistence (PEP), and consider potential mechanisms. The central thesis guiding PEP is that persistent activation of positive emotion across contexts and not solely in response to positive or rewarding stimuli is a marker of emotion dysfunction associated with bipolar disorder.
Positive Emotion Persistence (PEP)

- Increased Degree (AMOUNT)
- Persists Across Contexts (TIMING)
- Difficulty Down-Regulating (WAY)

Gruber (2011)
The Years of SILENCE Are Past

AN UNQUIET MIND
A MEMOIR OF MOODS AND MADNESS
Kay Redfield Jamison

Madness
A Bipolar Life
Marya Hornbacher

Read by Tavia Gilbert
UNABRIDGED
“Not everything that steps out of line, and thus abnormal, must necessarily be inferior.”

-Hans Asperger (1938)
Roadmap

Course Logistics
Depression
Mania

Take-Away Qs & Expert Interview
Experts in Emotion

*EXTRA CREDIT OPPORTUNITY*
Experts In Emotion
Interview
Dr. Sheri Johnson
Professor of Psychology
University of California, Berkeley
Emotion and Bipolar Disorder
Experts In Emotion
Interview

Dr. Ian Gotlib

Professor of Psychology
Stanford University

Depression and Emotion: Adolescents
Dr. Jutta Joormann
Professor of Psychology
Northwestern University
Thank You!

Psychology 3131
Professor June Gruber