“The most beautiful thing we can experience is the mysterious. It is the fundamental emotion that stands at the cradle of true art and true science.”

- Albert Einstein
Human Emotion

Emotion Regulation

Can We Control our Feelings?
“The processes by which individuals influence which emotions they have, when they have them, and how they experience and express their emotions”

(Gross, 1998).
Experts In Emotion Interview

Dr. James Gross
Professor of Psychology
Stanford University

Emotion Regulation
Roadmap

Course Logistics

Emotion Regulation

Social Emotion Regulation

Take-Away Qs & Expert Interview
Course Logistics

Exam 2 - Review Sheet

Exam Review Sheet Handed Out
Course Logistics

Exam 2 - Review Opportunities

1 - OFFICE HOURS
Weds 2-3 (this week), Mon 2-3 (next week) : Email 24 hrs in advance

2 - EMAIL QUESTIONS
Email by 5pm Mon 2/19 - Plan in Advance
Ask Specific Questions (e.g., avoid the form of “what do I need to know”)

3 - GROUP REVIEW SESSION
Survey poll to class for one-hour slot. next Monday. Stay tuned :)
Course Logistics

Exam 2 - Special Accommodations

MUEN E212 (3:00 or 3:30-5:00pm) - Email preferred start time
Course Logistics

Exam 2 - Extra Credit Question Hint

Optional readings (pick at least 1)
Course Logistics

FTEP CLIP Interview :)

Invited FTEP to visit our class and observe teaching to gather feedback and improve course / teaching.

-Prof. Angela Bielefeldt here today.:

1. Observe our class ~15 minutes
2. Conduct class interview ~30 mins
3. Class break (10 mins)
4. Resume class lecture
Prof. Angela Bielefeldt
Professor
Civil, Environmental, & Architectural Engineering
University of Colorado Boulder
Roadmap

Course Logistics

Emotion Regulation

Social Emotion Regulation

Take-Away Qs & Expert Interview
“The processes by which individuals influence which emotions they have, when they have them, and how they experience and express their emotions”

(Gross, 1998).
Reactivity

The type, magnitude and duration of responses in response to internal and external environment and have significance for personal goals (Levenson, 2007).

Regulation

The processes by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions (Gross, 1998).

Understanding

Knowledge about whether we or other people are experiencing emotions (Levenson, 2007).

<table>
<thead>
<tr>
<th></th>
<th>Down-Regulation (Decrease)</th>
<th>Up-Regulation (Increase)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Negative</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Positive</strong></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>Down-Regulation (Decrease)</td>
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</table>
| **Negative**   | - Trying to calm oneself down when angry (Int)  
                 - Helping tearful child fix broken toy (Ext) |                          |
<p>| <strong>Positive</strong>   |                            |                          |</p>
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|                | - Helping tearful child fix broken toy (Ext)  |                          |
| **Positive**   |                             | - Sharing great news with close friends (Int)  
<p>|                |                             | - Telling someone a joke to cheer them up (Ext)  |</p>
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                       - Helping tearful child fix broken toy (Ext) | - Firing oneself up before a big game (Int)  
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| **Positive**         |                            | - Sharing great news with close friends (Int)  
                       - Telling someone a joke to cheer them up (Ext) |
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<td></td>
</tr>
<tr>
<td><strong>Positive</strong></td>
<td>- Wiping smile off face at funeral (Int)</td>
<td>- Helping giggling child calm down for bedtime (Ext)</td>
</tr>
</tbody>
</table>
OPRAH
Emotion Regulation:

In Class Exercise
You will be viewing a short film clip. Please try to adopt a detached and unemotional attitude as you watch the film. In other words, as you watch the film clip, try to think about what you are seeing objectively, in terms of the technical aspects of the events you observe. Watch the film clip carefully, but please try to think about what you are seeing so you don't feel anything at all.
Group B

You will be viewing a short film clip. If you have any feelings as you watch the film clip, please try your best not to let those feelings show. In other words, as you watch the film clip, try to behave in such a way that a person watching you would not know you were feeling anything. Watch the film clip carefully, but please try to behave so that someone watching you would not know that you are feeling anything at all.
Group C

You will now be viewing the film clip. Please watch the film carefully.
RATE EMOTION EXPERIENCE - POSITIVE

1 2 3 4 5 6 7

none at all  somewhat very much
RATE EMOTION EXPERIENCE - NEGATIVE

1. none at all
2. somewhat
3. very much

1 2 3 4 5 6 7
RATE EMOTION EXPRESSION - POSITIVE

FACS example

E.g., Action code: 1, 2, 4, 5, 7, 20,

1C  Inner brow raise
2C  Outer brow raise
4B  Brow lower
5D  Upper lid raise
7B  Lower lid tighten
20B Lip stretch
26B Jaw drop

1    2    3    4    5    6    7

none at all    somewhat    very much
RATE EMOTION EXPRESSION - NEGATIVE

FACS example

E.g., Action code: 1, 2, 4, 5, 7, 20,

1C Inner brow raise
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20B Lip stretch
26B Jaw drop

1  2  3  4  5  6  7

none at all  somewhat  very much
RATE PHYSIOLOGICAL AROUSAL - OVERALL

1. none at all
2. somewhat
3. much

1. very much
Emotion Regulation:
In Class Exercise
RATE EMOTION EXPERIENCE - POSITIVE

1 none at all
2 somewhat
3 very much

very much

1 2 3 4 5 6 7
RATE EMOTION EXPERIENCE - NEGATIVE

1  2  3  4  5  6  7

none at all  somewhat  very much
RATE EMOTION EXPRESSION - POSITIVE

FACS example
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1 2 3 4 5 6 7

none at all somewhat very much
RATE EMOTION EXPRESSION - NEGATIVE

FACS example

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26B Jaw drop

1  2  3  4  5  6  7

none at all  somewhat  very much
RATE PHYSIOLOGICAL AROUSAL - OVERALL

1. none at all
2. somewhat
3. very much
Process Model of Emotion Regulation

(Gross, 1998)

Event/Stimulus
ANTECEDENT-FOCUSED
Situation
Selection/Modification

Assessment of Event
Attentional Deployment
Cognitive Reappraisal

Response
RESPONSE-FOCUSED
Suppression

Situation
Attention
Appraisal
Response
Process Model of Emotion Regulation
(Gross, 1998)

Event/Stimulus
ANTECEDENT-FOCUSED

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Response
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Suppression

Response

Situation
Attention
Appraisal
Response
Process Model of Emotion Regulation
(Gross, 1998)
Emotion Regulation: In Class Exercise
Process Model of Emotion Regulation
(Gross, 1998)

Event/Stimulus
ANTECEDENT-FOCUSED

Situation
Selection/Modification

Situation
Imagine standing in a long line at a supermarket counter. A grumpy clerk slowly passes each item on the scanner glaring at you. A small child behind you emits a piercing scream. Your blood pressure rises and your fingers grip the cart tightly.

But, at that very moment, the thought crosses your mind that a scathing remark towards the clerk or child will make things worse. So you bite your tongue and put on a smile. Why?
# Antecedent-Focused Strategies

<table>
<thead>
<tr>
<th>STRATEGY</th>
<th>DEFINITION</th>
<th>EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Situation Selection</td>
<td>Taking actions that will make it more (or less) likely that you will end up in situation giving rise to desirable (or undesirable) emotions.</td>
<td>Move to a different checkout line at the grocery store.</td>
</tr>
<tr>
<td>Situation Modification</td>
<td>Directly modify a situation so as to alter its emotional impact.</td>
<td>Strike up friendly conversation with clerk.</td>
</tr>
</tbody>
</table>
Process Model of Emotion Regulation
(Gross, 1998)

Event/Stimulus
ANTECEDENT-FOCUSED

Situation
Selection/Modification

Assessment of Event

Attentional
Deployment

Cognitive
Reappraisal

Situation
Attention
Appraisal
## Assessment of Event

<table>
<thead>
<tr>
<th>STRATEGY</th>
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<th>EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attentional Deployment</strong></td>
<td>Directing one’s attention within a given situation in order to influence one’s emotions.</td>
<td>Remembering a happy memory.</td>
</tr>
<tr>
<td>(2 types: distraction,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>concentration)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cognitive Reappraisal</strong></td>
<td>Changing the way one appraises (i.e., thinks about or evaluates) a situation to alter its emotional impact</td>
<td>Thinking that the situation could be worse, you could have 10 screaming kids behind you in line!</td>
</tr>
<tr>
<td>(aka cognitive change)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Cognitive Reappraisal

• Defined as construing an emotion-eliciting situation in a way that alters its emotional impact (e.g., Lazarus & Alfert, 1962; Gross, 1998)

• Form of cognitive change common to existing CBT interventions (e.g., Beck, 1962)

• Associated with reductions in negative and positive affect and physiological response (e.g., Gross, 1998; Gross, 2002).
Process Model of Emotion Regulation (Gross, 1998)

Event/Stimulus
ANTECEDENT-FOCUSED
Situation
Selection/Modification

Assessment of Event
Attentional Deployment
Cognitive Reappraisal

Response
RESPONSE-FOCUSED
Suppression

Situation
Attention
Appraisal
Response
# Response Focused Strategies

<table>
<thead>
<tr>
<th>STRATEGY</th>
<th>DEFINITION</th>
<th>EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioral Suppression</td>
<td>Inhibiting ongoing emotion expressions</td>
<td>Suppress anger expression</td>
</tr>
</tbody>
</table>
Suppression

• Defined as attempting to suppress or inhibit outward displays of emotion (e.g., Gross, 1998)

• Associated with increased physiological response (e.g., Gross, 1998; Gross, 2002)
Process Model of Emotion Regulation
(Gross, 1998)

Event/Stimulus
ANTECEDENT-FOCUSED
- Situation
  - Selection/Modification

Assessment of Event
- Attentional Deployment
- Cognitive Reappraisal

Response
RESPONSE-FOCUSED
- Suppression

Situation
- Situation

Attention
- Attention

Appraisal
- Appraisal

Response
- Response
Process Model of Emotion Regulation
(Gross, 1998)

Event/Stimulus
ANTECEDENT-FOCUSED

Situation
Selection/Modification

Assessment of Event

Attentional Deployment

Cognitive Reappraisal

Response
RESPONSE-FOCUSED

Suppression

Situation

Attention

Appraisal

Response
Process Model of Emotion Regulation
(Gross, 1998)

Event/ Stimulus
ANTECEDENT-FOCUSED

Situation
Selection/ Modification

Assessment of Event

Attentional Deployment

Cognitive Reappraisal

Response
Suppression

Situation
Attention
Appraisal
Response
Experience
Expression
Physiology

Watch the film

Adopt detached and unemotional attitude

Supress

Watch the film
### Reappraisal & Suppression: Short-Term Consequences

*(Gross & Levenson, 1993)*

<table>
<thead>
<tr>
<th>Experience</th>
<th>Suppression</th>
<th>Watch</th>
<th>Reappraisal</th>
</tr>
</thead>
<tbody>
<tr>
<td>or ns.</td>
<td></td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

| Behavior   |             | *     |             |
| Physiology |             | *     |             |

The table above illustrates the short-term consequences of reappraisal and suppression. The experience of suppression is indicated by an arrow pointing down to the experience column, labeled "or ns." The watch column shows an asterisk (*) indicating a significant effect. The reappraisal column indicates a downward arrow, suggesting a relationship or effect based on the data presented.
## Reappraisal & Suppression: Long-Term Consequences

(Gross & Levenson, 1993)

<table>
<thead>
<tr>
<th>STRATEGY</th>
<th>LONG-TERM CONSEQUENCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reappraisal</td>
<td>Better social relationships</td>
</tr>
<tr>
<td></td>
<td>Better coping with stress</td>
</tr>
<tr>
<td></td>
<td>More positive emotion</td>
</tr>
<tr>
<td>Suppression</td>
<td>Feel less authentic in social life</td>
</tr>
<tr>
<td></td>
<td>Poorer coping with stress</td>
</tr>
<tr>
<td></td>
<td>Less positive &amp; more negative emotion</td>
</tr>
</tbody>
</table>
Emotion Regulation & Related Constructs

Emotion Regulation

Distinct from

Mood Regulation
- Subjective component
- Longer-term state

Coping
- Decreasing NA
- Longer time period

Defenses
- Aggressive/sexual impulses
- Unconscious
Cognitive Distancing
Cognitive Distancing Strategy

• Repetitive focus on the content, causes, and consequences of one’s affective state that is conducive to problem solving (Ayduk, Mischel, & Downey, 2002).

• 3rd-person perspective (“distanced-why”).

• Associated with reductions in negative affect and positive affect (Ayduk et al., 2002; Kross et al., 2005).
Remain seated quietly.

DISTANCING

“Watch the event from a distance”

(Ayduk et al, 2002; Kross et al., 2005)
“Please go back to the time and place of the same happy event you recalled earlier and see the scene in your mind’s eye. Take a few steps back, move away from the situation to a point where you can now watch the event from a distance. As you do this, focus on what has now become the distant you...”

“As you continue to watch the distant you, try to understand the emotions that the distant you experienced as the event unfolded. Why did he or she have those feelings? What were the underlying causes and reasons?”

Adapted from Kross et al. (2005)
Remain seated quietly.

**BASELINE**

**RECALL**

**DISTANCING**

“Watch the event from a distance”

(Ayduk et al., 2002; Kross et al., 2005)

**REGULATE**

**REPORT**

Affect

Physiology

Gruber et al. (2009)
## Cognitive Distancing & Rumination

### Long-Term Consequences

(Gruber et al., 2008; Kross et al., 2005)

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<th>STRATEGY</th>
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<td>Cognitive Distancing</td>
<td>Decreased negative affect</td>
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<tr>
<td></td>
<td>Decreased positive affect</td>
</tr>
<tr>
<td></td>
<td>Less physiological arousal</td>
</tr>
<tr>
<td></td>
<td><strong>(Soothes emotion intensity)</strong></td>
</tr>
<tr>
<td>Rumination</td>
<td>Increased negative affect</td>
</tr>
<tr>
<td></td>
<td>Increased positive affect</td>
</tr>
<tr>
<td></td>
<td>Greater physiological arousal</td>
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<td><strong>(Amplifies emotion intensity)</strong></td>
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Emotion Regulation & Related Constructs

Emotion Regulation

DISTINCT FROM

- **Coping**
  - Decreasing NA
  - Longer time period

- **Mood Regulation**
  - Subjective component
  - Longer-term state

- **Defenses**
  - Aggressive/sexual impulses
  - Unconscious
Roadmap

Course Logistics

Emotion Regulation

Social Emotion Regulation

Take-Away Qs & Expert Interview
Thought Exercise:
First Thing You Did After Major Emotional Event?
External Emotion Regulators

Other People Regulate Our Feelings By:
- Providing social support and comfort
- Empathy
- Assisting with cognitive strategies (e.g., reappraisal)
- Assist with attention strategies (e.g., distraction)

Diamond & Aspinwall, 2003
Social Baseline Theory
Social Baseline Theory

**Principle 1:** Humans are hardwired to seek social support and contact. Thus, social contact is a baseline strategy for emotion regulation.

**Principle 2:** Interpersonal factors (e.g., social interaction, social proximity) are a means through which we can regulate our emotions.
Social Baseline Theory

Social interactions regulate our emotions via:

1. Signal social resources are available
2. Reduce perceptions of risk and alarm
3. Alert individuals that less action is needed
4. Reduce cognitive and metabolic costs
5. Foster efficient coping

Coan, 2011
Social Baseline Theory

- We use social contact with others as a “baseline” emotion regulation strategy.

- A model of social emotion regulation which posits that we use social contact as a common and default strategy to regulate our emotions.

Coan, 2011
Roadmap

Course Logistics

Emotion Regulation

Social Emotion Regulation

Take-Away Qs & Expert Interview
Experts in Emotion

*EXTRA CREDIT OPPORTUNITY*
Experts In Emotion Interview

Dr. Kevin Ochsner

Professor of Psychology
Columbia University

Emotion Regulation and the Brain
Thank You!

Psychology 3131
Professor June Gruber