Desirable Difficulties:
Optimizing Exposure Therapy for Anxiety Through Inhibitory Learning

Jonathan S. Abramowitz

Ryan J. Jacoby

Shannon M. Blakey

Fear is...

- The body's response to the perception of threat
- Alarm/Fight-or-flight response
- Normal and highly adaptive
  - Protects us from harm
  - Without it, humans wouldn't have survived prehistoric times
  - Helps us cope or do our best
- Present in virtually all species of animals

Pathological Fear

- Triggered in response to an overestimate of perceived threat

- Results in excessive or inappropriate (but not immediately harmful) responding
  - Physiologic
  - Cognitive/affective
  - Behavioral

Exposure Therapy and the Treatment of Fear

‣ Exposure works, and it generally works well!

‣ However…

   ‣ Only about 55% achieve "normative functioning"

   ‣ Many individuals experience a *return of fear* between the end of exposure therapy and follow-up

Pavlovian Conditioning

Unconditioned Response
(Salivation)

Unconditioned Stimulus
(Food)

No Response

Neutral Stimulus
(Bell Ringing)

Unconditioned Response
(Salivation)

Neutral Stimulus
(Bell Ringing)

Unconditioned Stimulus
(Food)

Conditioned Response
(Salivation)

Conditioned Stimulus
(Bell Ringing)

Translating this to fear…

▸ **Pavlovian threat conditioning**

  ▸ A shock (US) elicits muscle tension and eye blink (UR)

  ▸ Neutral stimulus (CS; a tone) can be paired with an aversive stimulus (US; a shock)

  ▸ Following a number of pairings (tone → shock), the CS becomes a reliable predictor of the US

  ▸ As a result, when the tone (CS) is presented, it generates a CR (muscle tension, eye blink) that resembles the UR

A Real World Example

- Blake is walking around his neighborhood when he is surprised by, and bitten by, a German Shepherd

- Blake was previously unafraid of dogs, but after being bitten, he begins to fear all dogs
  - He has paired the frightening and painful experience of the bite (US) with dogs in general (CS), which now elicit fear (CR)

- Blake now avoids places where he might encounter dogs, and his fear causes significant distress and impairment

Fear Conditioning

▸ It is highly adaptive for fear to be easily conditioned

  ▸ One trial conditioning

▸ Three ways fear can be learned

  ▸ Direct conditioning

    ▸ Traumatic events (dog bite)

    ▸ *But, not everyone with clinical anxiety has had a traumatic experience*

  ▸ Observational learning

    ▸ Seeing someone respond fearfully (witnessing someone else get bitten)

  ▸ Informational transmission

    ▸ Hearing (being warned) about something scary (child hears about another child being bitten)

▸

Context and Fear Learning

▸ Insights from research on fear learning and extinction

  ▸ Fear acquisition ("learning fear") is *context-independent*

  ▸ Fear extinction ("learned safety") is *context-dependent*

Neurotic Paradox

- If clinical anxiety involves learned (conditioned) fears of situations and stimuli that are generally not dangerous, why doesn't the fear go away (extinguish) over time?

…Because of Safety Strategies

‣ Performed in response to a perceived threat

‣ Make the person feel safe in the context of the CS

‣ Keeps the person from having experiences that would extinguish the conditioned fear

‣ Reinforced by the immediate fear reduction it engenders

‣ Examples

 ‣ Phobic avoidance (e.g., dogs, social situations, public toilets)

 ‣ Compulsive rituals (e.g., hand washing, praying, checking)

 ‣ Safety behaviors (rehearse, take pulse, take medication)

 ‣ Safety cues (water bottle, pill bottle, safe person)

▶

Reducing Conditioned Fear

- Reducing the CR requires lessening the CS's ability to predict of the US
- Fear extinction (exposure)
  - Repeated presentation of the CS (dogs) without the US (bite)
  - Blake's fear of dogs is extinguished by repeated exposure to dogs without being bitten
  - The association between dogs and dog bites is dampened

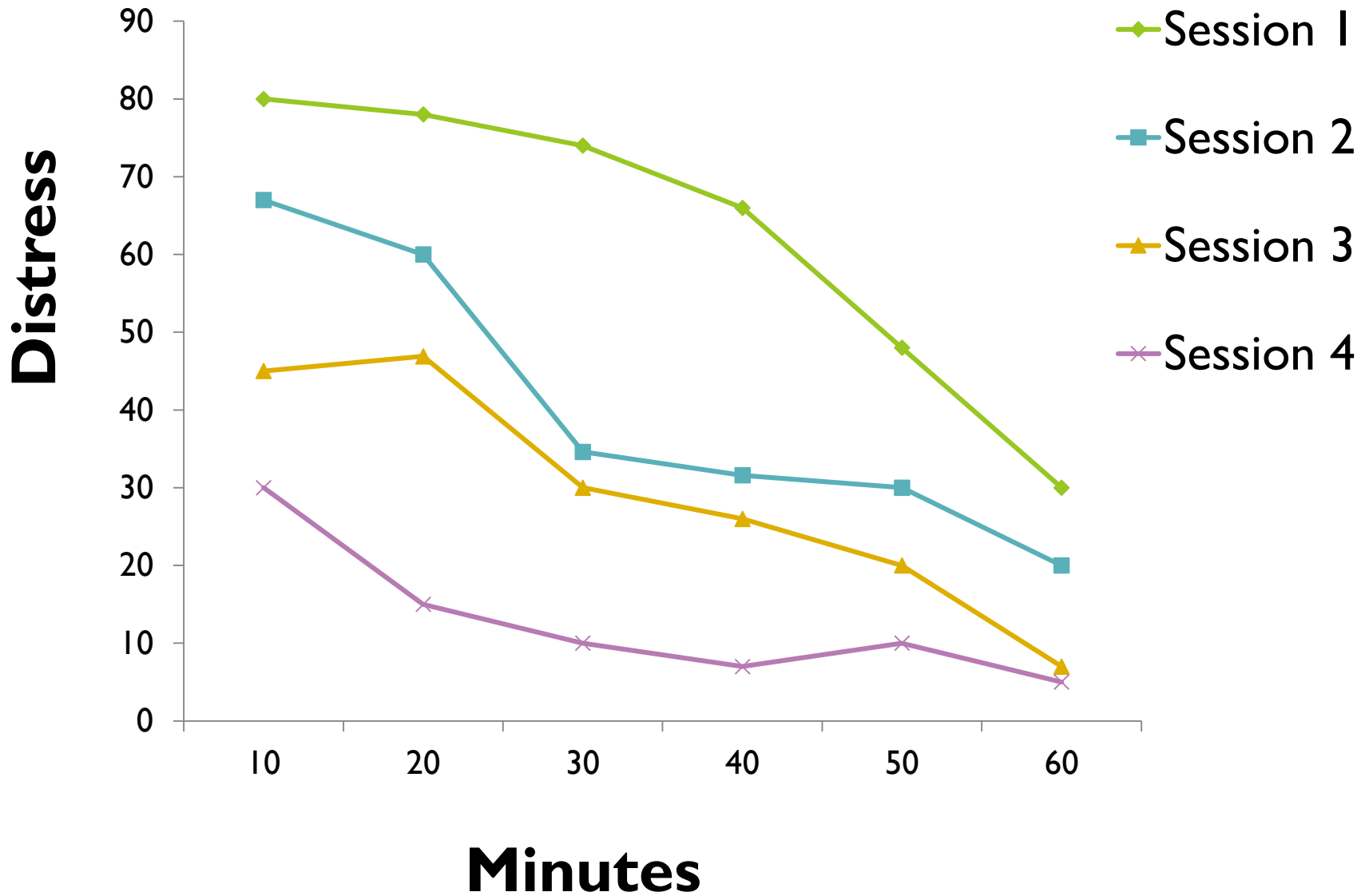# Emotional Processing Theory

Break the association between a conditioned stimulus ("trigger") and conditioned response (fear/anxiety)

- Activation of a fear structure
- Habituation
  - Within sessions
  - Between sessions

Does Habituation Matter?

- Habituation is *not* a reliable predictor of long-term outcome
- Successful outcomes occur *despite* lack of habituation
- Habituation is nice, not necessary
  - Can emphasizing habituation backfire?

Hijacking Habituation

- Exposure used to control anxiety
  - "It's okay because I know my anxiety will go down…"

- Implicit message that anxiety is unsafe or intolerable

- Inevitable future experiences of anxiety may be misinterpreted as a sign of danger or relapse

Fear Extinction Revisited

- During exposure/extinction, the original CS-US relationship is not *erased* per se

  - A secondary (CS → noUS) relationship develops

- After exposure to dogs, Blake has two learned associations in memory:

  - Threat-based: dog → bite

  - Safety-based: dog → no bite

- The hope is that with repeated exposure, the safety-based learning inhibits (extinguishes) the threat-based learning (*inhibitory learning*)

Return of Fear

- ## Spontaneous recovery
  - Re-emergence of a previously extinguished conditioned response after a delay

- ## Context renewal
  - Conditioned fear stimulus is encountered in a different context from which extinction took place

- ## Reinstatement and rapid re-acquisition
  - Adverse events can lead to the return of conditioned fear
  - Re-pairing of the CS and US following extinction (another dog bite)

Inhibitory Learning Theory

Develop safety-based associations that *inhibit* retrieval of fear-based associations

Emotional Processing vs. Inhibitory Learning: Critical Differences

- Goal of exposure
  - Remain in situation until anxiety naturally subsides
  - Remain in situation until patient no longer expects catastrophe
- Relation to anxiety
  - Anxiety is supposed to go down over time
  - Patient can *tolerate* anxiety, no matter the duration or intensity

"Desirable difficulties"

- Techniques that make short-term learning more difficult
  - Introduce challenges, slow the rate that fear declines

- But that enhance the long-term retention and generalization of learning
  - Real world settings
  - Strengthen fear tolerance

Craske et al. (2008)

Using Exposure to Foster Fear Tolerance

▶ If exposure can instill greater *fear tolerance*, return of fear (and relapse) can be avoided

  ▶ Opportunities to practice vs. signs of failure

  ▶ Lapse vs. relapse

▶ "Bring it on" attitude!

  ▶ Beliefs about exposure - self-efficacy to approach feared stimuli

▶ Be on the lookout for patients misusing exposure to control anxiety

▶

Pathways to Optimizing Inhibitory Learning During Exposure Therapy

▸ Frame exposures to violate threat-based expectations

▸ Introduce variability wherever possible

▸ Combine multiple fear cues and exposure media

▸ Put feelings into words (affect labeling)

▸ Focusing attention

▸ Reinstating memories of successful exposures

▸ Maximize surprise during exposure

▸ Eliminate (or judiciously use) safety behaviors

Threat Expectations in Clinical Anxiety

▸ Overestimates of the <u>likelihood</u> of danger

▸ Overestimates of the <u>severity</u> of negative outcomes

▸ Underestimates of <u>coping</u> ability

Threat Expectations in Clinical Anxiety

- Social anxiety
  - If I went to the party, I would be rejected by everyone
  - If I gave a wrong answer in class I would die of embarrassment
  - I couldn't manage feeling anxious in a social situation

- Panic attacks
  - If my heart beats rapidly, I will certainly have a heart attack
  - Anxiety is unmanageable

- Animal phobia
  - Dogs are dangerous and will certainly bite me

Maximizing Fear Extinction

▸ Requires that exposure be designed to violate elevated threat-based expectations about the

  ▸ probability of aversive outcomes

  ▸ severity or intensity of feared outcomes

  ▸ ability to manage anxiety itself

(Rescorla & Wagner, 1972)

Expectancy Violation

- The mismatch between expectation and outcome for a given situation is critical for new learning

- Development of alternate safety-based (inhibitory) expectations to compete with threat expectations

Implications for Exposure

▸ Design exposures to accommodate what the client "needs to learn"

▸ Tie exposure parameters directly to consciously stated expectations for aversive outcomes

▸ Maximize the discrepancy between prediction and outcome

▸ Importance of functional assessment

  ▸ Fear cues (CSs): Objects, situations, thoughts, body sensations

  ▸ Feared consequences (threat-based expectations): What will happen when?

  ▸ Safety cues and behaviors that predict safety

Example: Panic Attacks

▸ Ally predicts that maintaining a heart rate over 120 for 2 minutes or more during a panic attack will cause her to faint and injure herself

▸ She avoids caffeine and exercise, and takes benzodiazepine medication to keep from panicking

  ▸ What is the CS?

  ▸ What is the feared outcome?

  ▸ What is the safety behavior?

  ▸ What should Ally do for exposure?

Implications for Exposure

- Use exposure to test out the expectations
  - Did the expected aversive outcome happen?
  - Was it as severe as expected?
  - Was the associated anxiety manageable?

- Consolidate learning by asking clients about what they have learned
  - Discuss the discrepancy between what was predicted and what actually occurred

Clinical Application: Expectancy Tracking

▸ **Set up the exposure to violate expectations (not reduce SUDS)**

  ▸ Maximize the mismatch between expected and actual outcome

  ▸ Prioritize conditions under which the feared outcome is judged most likely to occur

▸ **Before exposure**

  ▸ Identify nature and strength (%) of negative expectancy

  ▸ Level of anticipated distress tolerance

  ▸ Length of time patient can persist and/or resist safety behaviors

Clinical Application: Expectancy Tracking

▸ **Tracking SUDS during expectancy tracking**

 ▸ Advantages

  ▸ Allows client to verbalize their feelings (we'll get back to this)

  ▸ Operationalize the point at which anxiety is predicted to become "intolerable"

  ▸ Fosters learning that anxiety is temporary

 ▸ Disadvantages

  ▸ Might suggest that the goal of exposure is to reduce anxiety

  ▸ Could reinforce the need to control anxiety

▸ **Consider**

 ▸ Client's beliefs about anxiety

 ▸ Will SUD ratings impact what is to be learned during exposure?

Clinical Application: Expectancy Tracking

▸ When does an exposure session end?

- ▸ When expectations have been violated as determined by
  - ▸ Conditions
  - ▸ Duration
- ▸ Habituation may or may not have occurred
  - ▸ What is learned if habituation occurs?
  - ▸ What is learned if habituation does not occur?

Clinical Application: Expectancy Tracking

‣ **After exposure**

- ‣ Consolidate new learning by asking patients to summarize what they learned
- ‣ Explicitly contrast predicted and actual outcome
- ‣ Point out that direct experience shows the client was mistaken with regard to the anticipated outcome
  - ‣ Not as likely as thought
  - ‣ Not as awful as thought
  - ‣ Anxiety/uncertainty are safe and tolerable

Expectancy Tracking for Different Presentations of Anxiety

- Straightforward implementation for social anxiety, panic, phobias, and some forms of OCD
  - Consequences are fairly immediate and indisputable
    - The dog didn't bite when I fed him
    - I didn't have a heart attack when I elevated my heart rate
    - Some people laughed at me when I said something weird, but I survived the situation
    - I didn't throw up when I ate three chicken tenders
    - Thinking about stabbing someone didn't make me stab anyone

Expectancy Tracking for Different Presentations of Anxiety

- Some presentations are even less straightforward
  - Feared consequences won't occur for a long time
    - What if I get cancer in 10 years because I entered a building that might have asbestos? (OCD contamination)?
  - "Unknowable" feared consequences
    - What if I go to hell for thinking too many sexual thoughts?
    - What if I have a serious illness that medical tests can't identify?
  - No apparent feared consequences
    - I just don't like feeling "germy", but I'm not afraid of getting sick
    - Disgust
    - "Not just right" experiences

Implementing Expectancy Tracking for Tricky Presentations

‣ **Re-frame threat-based predictions to be more immediate**

  ‣ I absolutely <u>can't let myself think about</u> harming my child

  ‣ I <u>can't tolerate</u> not knowing whether I'm developing cancer

  ‣ I <u>will be paralyzed</u> from the intense anxiety

  ‣ I <u>can't bear</u> to feel disgusted

  ‣ I'll <u>lose my mind</u> if things aren't arranged "just right"

‣ **Help patients exceed their predictions about being able to continue exposure (or not use safety behaviors)**

  ‣ Can you function the rest of the day without assurance of whether you are going to heaven or hell?

  ‣ How long do you think you can last with feelings of disgust?

Expectancy Tracking for Different Presentations of Anxiety

▸ **But some feared consequences are ambiguous**

  ▸ What does *social rejection* mean?

  ▸ How will we know if you *go crazy* or *lose your mind*?

▸ **Make sure to clearly operationalize the feared outcome**

  ▸ Decide on pre-defined indicators

  ▸ How would you operationalize

    ▸ Social rejection?

    ▸ Going crazy?

    ▸ Unable to function?

  ▸ Consider duration – how long until the feared outcome would have occurred?

Theorized Benefits of Variability

▸ Variability can be thought of as a "desirable difficulty":

   1. More opportunities for surprise

   2. Fluctuating fear → generation of more retrieval cues

   3. Higher order learning to develop a common strategy despite the variation

      ▪ Preparation for "real world" settings

▸ What ways could variability be introduced?

▸ "Bring it on" attitude!

(Bjork & Bjork, 2006)

Clinical Application 1:
Vary the Exposure Context

‣ Extend inhibitory associations to new contexts by de-contextualizing

  ‣ Stimuli and locations

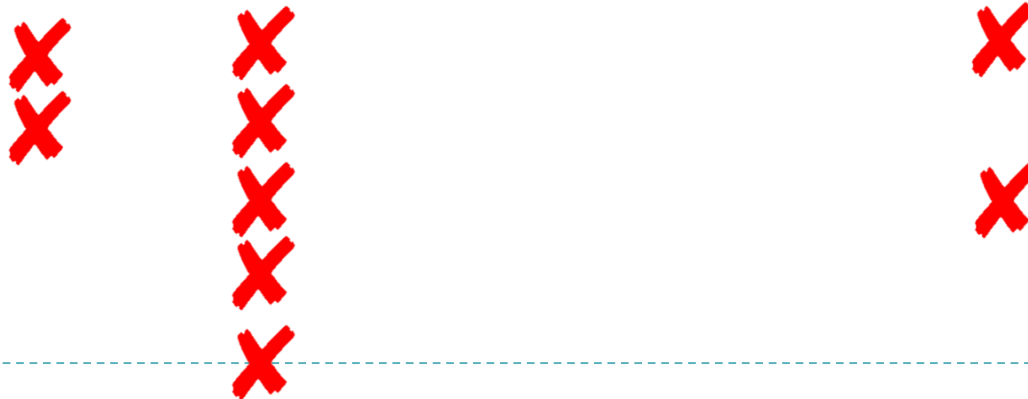 ‣ Alone vs. others present

  ‣ Session time

  ‣ Internal state

Clinical Application 2:
Vary the Practice Interval

▸ Spacing out learning trials over time enhances retention

▸ More opportunities to strengthen inhibitory associations by forgetting and re-learning associations

▸ Expand therapy sessions near end of treatment

Clinical Application 3:
Vary Exposure Intensity

▸ **What are some limitations of traditional "hierarchy" (gradual approach)?**

  ▸ Over-reliance on habituation

  ▸ Sets up expectation that lower anxiety is safer/easier than high anxiety

  ▸ Anticipation of high items reinforces fear of anxiety

Exposure Hierarchy

Create a list of anxiety-producing situations, beginning with the *most* distressing, and ending with the *least* distressing. Rank how distressing each item is on a scale of 1 to 10.

	Anxiety, Obsession, or Compulsion Trigger	Distress Level (1 – 10)
1		
2		
3		
4		

Clinical Application 3:
Vary Exposure Intensity

- An alternative: The exposure "to-do list"
  - **Option 1:** Select at random (pulling pieces of paper from a container)
  - **Option 2:** Can modify to meet patient where they are at (feasibility)
    - First half of treatment follows hierarchy…
    - Subset of variable exposure items
  - **Option 3:** Select exposures on the basis of life interference / goals

- Pros/cons of this approach?

Research on variability

▸ Experimentally manipulating exposure intensity

  ▸ Gradual vs. variable exposure
  ▸ Higher levels of fear during exposure, but better outcomes at FU

▸

Combine Multiple Fear Cues

- Inhibitory learning is greater when anticipated negative outcomes do not occur despite *multiple* fear cues present
  - "Deepened extinction"
  - Can also be thought of as increased (additive) negative expectancies
- Fear cues to consider
  - External (contaminants, other people, animals)
  - Mental (obsessive thoughts, trauma memories)
  - Physiological (racing heart, dizziness, trembling)

Augment Learning with Affect Labeling

- Linguistic processing
  - Verbally expressing the emotions one is experiencing facilitates the development of new associations
    - Does it augment associative inhibitory processes?
    - Does it work in an independent way (a form of exposure itself?)

  - Different from cognitive restructuring, in which appraisals are challenged

Clinical Application: Put Feelings into Words

▸ Have patients include "emotion words" when describing their experience

 ▸ "I'm <u>afraid</u> that reading about pedophiles will cause me to want to molest children"

 ▸ "I'm <u>fearful</u> that the elevator I'm riding in will get stuck and we will run out of air"

 ▸ "I feel <u>terrified</u> that my dizziness and racing heart symptoms mean that I'm actually having a heart attack"

Attentional Salience of Fear Stimuli

▸ Conspicuous and attention-grabbing fear stimuli enhance inhibitory learning

Focused Exposure

- Deliberately paying attention to
  - External features of the feared stimulus (movement, faces)
  - Arousal-related body sensations (racing heart, dizziness)
  - Mental experiences (fear predictions, unwanted thoughts)
- Full engagement
  - Visual
  - Auditory
  - Cognition
- Allows non-threatening information about fear stimuli to be noticed and processed
- Helps optimize development of new safety learning

Distracted Exposure

▸ Diverting attention away from the fear cue

▸ Functions as avoidance or safety behavior

▸ Prevents the encoding of new safety learning

  ▸ Visual distraction (looking at something else)

  ▸ Cognitive distraction (thinking of something else)

▸ Examples:

  ▸ Doing something else (e.g., TV, phone) while conducting an exposure

  ▸ Mental distraction from intrusive thoughts or body sensations

Clinical Application: Attending to the Fear Stimulus

▸ **Keep the client focused on the concrete indicators of the non-occurrence of the predicted outcome**

  ▸ Attend to the associations (or lack thereof) between the fear stimulus and feared outcome

  ▸ Either the outcome does not occur or is more manageable than predicted

▸ **No *deliberate* distraction during exposure**

▸ ***Unintentional* "distraction" might be ok**

  ▸ Show the client s/he can be flexible in the presence of the fear stimulus

  ▸ Remind the client of this (fear tolerance)!

Retrieval Cues

▸ Use of a cue to bring back memories of safety learning

  ▸ Tangible stimulus (e.g., wrist band)

  ▸ Memory of the exposure trial

▸ May help optimize long-term fear extinction

  ▸ Serve as a reminder of successful safety learning

  ▸ Reduce fear expectancy during exposure in a new context

  ▸ Prevent return of fear and relapse
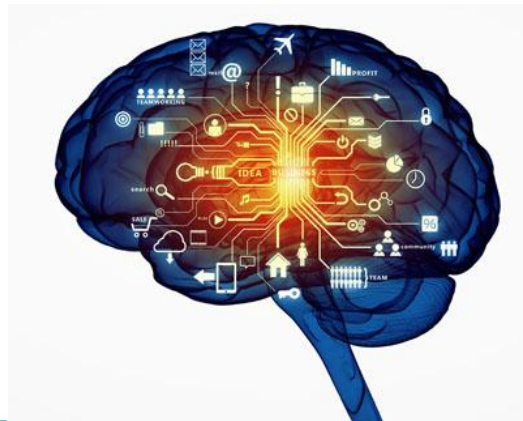
Clinical Application: Bring it Back

‣ Reinstatement

- ‣ Use a cue that was present during a successful exposure
- ‣ Recall memories of successful exposure trials
- ‣ Use in new or unfamiliar situations post-exposure therapy
- ‣ Introduce toward the end of exposure therapy
- ‣ Use sparingly!

‣ Retrieval cues vs. Safety aids

- ‣ RCs function to retrieve safety learning
- ‣ SAs predict the non-occurrence of a feared outcome

No Cognitive Restructuring!?

‣ What's the goal of CR when used with exposure?

  ‣ Challenge and correct mistaken beliefs about exposure stimuli
  ‣ Typically introduced prior to exposure to "tenderize" beliefs

‣ Why is this inconsistent with inhibitory learning?

  ‣ It spoils the surprise (minimizes violation of expectancies)
  ‣ Instead…affective labeling during an exposure and consolidate what was learned following an exposure

‣ But what about too much anxiety?

  ‣ Anxiety is safe and manageable
  ‣ We're teaching fear tolerance over fear reduction

I learned that...

	With cognitive restructuring	**Without cognitive restructuring**
Social anxiety: Supermarket	"I'm just mindreading. I don't know what others think."	"I was really surprised that when I spent 5 minutes struggling with my debit pin that people were more likely to help me than stare at me."
Panic disorder: Drinking coffee	"I'm overestimating the likelihood of having a heart attack"	"Even though I drank a large Starbucks coffee, ran up and down the stairs, and my heart was racing, I didn't drop dead from a heart attack like I thought I would."
OCD: Magical thinking	"Thoughts don't equal actions. Just because I have a thought about harm coming to my family doesn't mean it will happen."	"Even though it's not possible to always know if my family is safe, I can tolerate the uncertainty much better than I expected."

Elimination of Safety Behaviors (Response Prevention)

- Absorb attentional resources

- Cause misattributions of safety

- Interfere with inhibitory learning?

  - Attenuate negative expectancies

  - Contextualize inhibitory associations

  - Prevent development of distress tolerance

The "Judicious Use" of Safety Behaviors

‣ Increase treatment tolerability/acceptability

‣ Promote behavioral approach

‣ Facilitate inhibitory learning?

  ‣ Violate negative expectancies

  ‣ De-contextualize inhibitory associations

  ‣ Increase distress tolerance *via* greater self-efficacy

Prevent or Permit?

▸ Depends on case conceptualization

    ▸ What does the patient need to learn?

    ▸ Is the behavior likely to attenuate negative expectancy?

    ▸ Is the behavior needed for patient to *test* negative expectancy?

    ▸ Can the safety behavior help generalize inhibitory learning?

    ▸ Other considerations

        ▸ Safety misattributions

        ▸ Disrupt attentional focus

        ▸ Increase self-efficacy

        ▸ Prevent dropout

ACT for Anxiety

- Basic techniques
  - Experiential metaphors to address core processes
    - Acceptance
    - De-fusion
  - Learn to respond differently even if stimuli's meaning doesn't change
  - Emphasis on moving toward what one values despite anxiety-related private experiences
- Enhances psychological flexibility

ACT & Exposure: Similarities & Differences

▸ **How are they similar?**
  - ▸ Focus on changing behavior
  - ▸ Broaden patient's engagement with feared stimuli
  - ▸ Goal: Be able to live your life even if anxiety occurs

▸ **How is ACT different from traditional exposure?**
  - ▸ Explicit focus on values
  - ▸ Not concerned about levels of anxiety/fear
  - ▸ No explicit focus on cognitive change
  - ▸ Less directive (no instructions to confront fears or resist rituals)
  - ▸ Relies more on the use of metaphors

Desirable Difficulties to Foster Fear Tolerance

▸ ILT techniques move exposure further away from "fixing" anxiety

- ▸ Promote open-mindedness toward anxiety (fear tolerance) since anxiety is a normal and safe experience
- ▸ Focus on learning
  - ▸ Changes in cognitions about anxiety and fear stimuli underlie extinction

Expectancy Tracking: What's the Empirical Support?

- ## Only one study in humans (Deacon et al. 2013)
  - Individuals with high anxiety sensitivity (fear of fear) received:
    1. Three 60-sec interoceptive exposure trials with breaks between
    2. Three 60-sec interoceptive exposure trials without breaks
    3. "Intensive interoceptive exposure" trials without rest until the participant was past the point at which they expected a feared outcome (fainting, heart attack)
    4. Expressive writing (control)
  - Intensive IE was most effective
    - Changes in threat-based expectations and in fear tolerance mediated differences between groups
  - Limitation: Intensive IE group also received <u>more</u> exposure

What's the Difference Between Expectancy Tracking and Behavioral Experiments?

▸ Perhaps not much

▸ Lingo: Extinction vs. cognitive change

  ▸ Although extinction is a cognitive process that involves changes in expectations

▸ Maybe you are already doing expectancy tracking?

Considerations

▸ Important to give a strong rationale for this approach

▸ Many patients expect that exposure will result in habituation

Variability: Things to Consider

‣ Been primarily studied with circumscribed fears (e.g., phobias)
  ‣ Ex: OCD is complex and heterogeneous

‣ Some patients still may not be willing
  ‣ Gradual exposure is still better than no exposure!

‣ Do the purported mechanisms of change actually mediate outcome?
  ‣ Measurement of participant surprise
  ‣ Variability of fear predicts outcome in some studies but not others

▶

Future directions

▸ Being able to "prescribe" gradual vs. variable exposure depending on baseline measures

  ▸ Intolerance of uncertainty

  ▸ Anxiety sensitivity

▸ Between session variability

  ▸ Ecological momentary assessment

Combining Fear Cues: How Systematic Does It Need to Be?

- Do we *need* to extinguish each CS independently before combining?

- Does the type of exposure stimuli combination matter?
  - 2 in-vivo
  - 1 interoceptive + 1 in-vivo

- Do you have to combine 2, then 3, then 4, etc., stimuli?

Affective Labeling: Empirical Research

- ## Niles et al (2015)

  - Compared exposure alone vs. exposure with affect labeling for public speaking anxiety

  - Participants in the affect labeling exposure group (especially those who used more labels) showed greater reduction in physiological activation

- ## Kircanski et al. (2012)

  - At follow-up participants who completed exposure with affect-labeling for spider phobia had lower skin conductance responses while viewing a spider and moved closer to the spider compared to exposure alone

Affect Labeling vs. Cognitive Therapy

- Cognitive therapy
  - I'm feeling very anxious and my heart is pounding right now
  - OK, what are you telling yourself that's leading to anxiety?
  - I'm afraid the elevator is going to get stuck and I'll run our of air
  - OK, let's look at the probability of an elevator getting stuck. How often does that happen? And if it was to get stuck, how likely is it that you'll run out of air?

- Affect labeling
  - I'm feeling very anxious and my heart is pounding right now
  - Ok, tell me more about the thoughts, feelings, and body sensations you're having.
  - I'm afraid the elevator is going to get stuck and I'll run our of air
  - Great job! Let yourself notice those thoughts and feelings…

Attentional Focus: Empirical Support

▸ Many studies with different presentations of anxiety suggest that distracted exposure is not as effective as when attention is focused on the fear stimulus

Considerations

▸ Don't let attentional focus become a safety cue

  ▸ If I closely attend, my anxiety will go down

▸ Allow the client to learn that it's OK to attend to other things as long as they keep in mind that they are in the presence of the fear stimulus

  ▸ i.e., they are tolerating the fear stimulus

▸ Purposeful distraction vs. acting with anxiety

Reinstatement: Empirical Evidence

‣ In a clinical analog anxious sample, the effects of a retrieval cue (distinctive pen and clip board) on return of fear were very weak in one study (Culver et al., 2011)

‣ Instructions to mentally reinstate what was learned during exposure had robust effects in reducing return of fear in a new context in another study (Mystkowski et al., 2006).
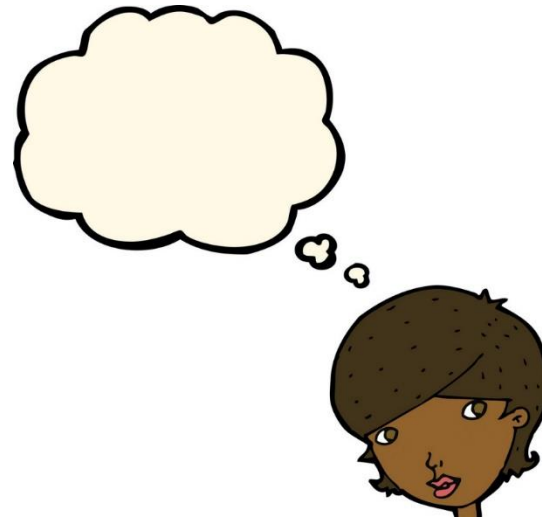
Limitations and Cautions

▸ This cue can become a safety aid (counterproductive!)

  ▸ How to discriminate between the two?

    ▸ Function more than topography

    ▸ Would removing the stimulus increase patient anxiety?

    ▸ Does the item get "credit" for non-catastrophe?

▸ Using retrieval cues early in therapy, while the focus is on the acquisition of safety learning, may negatively impact progress as these cues can reduce the expectancy of the aversive event

  ▸ Mitigate expectancy violation effects

▸ Use this strategy late in treatment for relapse prevention

▸ Use retrieval cues sparingly to reduce the likelihood that they become a conditioned inhibitor or safety aid.

Safety Behavior Research

- ▸ **Methodologically limited**
  - ▸ Analogue or nonclinical samples
  - ▸ Minimal (or no) rationale
  - ▸ Single-session design
  - ▸ Reliance on SUDS as indicator of success
- ▸ **Mixed results (at symptom reduction level)**
  - ▸ What about at the process level?

▸

"Judicious Use of Safety Behaviors" RCT

▸ Community sample of adults with spider phobia (N = 60)

▸ 4 twice-weekly, hour-long sessions of exposure therapy

  ▸ With safety behavior elimination (n = 30)

  ▸ With "judiciously used" safety behaviors"

"Judicious Use of Safety Behaviors" RCT

- Session-by-session assessments
  - Negative expectancies prior to exposure (0-100%)
  - Exposure goal met (Y/N)
- Assessment at baseline, post-treatment, 1-mo follow-up
  - Behavioral approach (0-13)
  - Distress tolerance (0-10)

- Results
  - Negative expectancies differed
  - Rate of exposure goal completion differed
  - Behavioral approach NS
  - Distress tolerance NS

Strategies for Enhancing Inhibitory Learning

Strategy	Description	Catch phrase
Expectancy tracking	Design exposures to violate specific expectations	*Test it out*
Maximizing variability	Vary stimuli and contexts	*Vary it up*
Combining multiple fear cues	Present multiple fear cues	*Combine it*
Affect labeling	Describe the emotional experience	*Talk it out*
Attentional focus	Maintain attention on the fear cue	*Stay with it*
Reinstatement	Use a cue present during extinction to reinstate previous successful exposures	*Bring it back*
Reduce safety behaviors	Decrease the use of safety signals and behaviors	*Throw it out*

Craske et al. 2014