HOW INHIBITORY LEARNING CHANGED OUR THERAPY

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INHIBITORY LEARNING

• Inhibit = prevent or interfere
• Because of the biological response to a thought we learn that “distress is bad”. We know that behaviors become compulsions as the sufferer learns the action will lower distress for a short time and then must be repeated.
• Inhibitory learning changes the brain by inhibiting the old learning and its reactions
Sheila believes spiders are dangerous, evil, and she can’t be around them.

Sheila runs out of the room, screams, and sometimes cries when she sees a spider in the house.

When Sheila does exposure therapy she LEARNS that she can hold a spider, she hasn’t been bitten, and while it doesn’t feel fantastic, she can be in the same room as a spider.

New information INHIBITS the old learning.
HABITUATION MODEL

Old Point of View

Old Learning

• Spiders are evil
• Spiders are dangerous
• Spiders must be avoided

New Learning using exposures

• I can be near a spider
• I can have a spider walk on my arm

New Life

Old Learning

• Spiders are evil
• Spiders are dangerous
• Spiders must be avoided
UNFORTUNATELY

• Many people experience habituation of anxiety but do not improve
• Some people have a good experience with ERP but relapse
• Some people improve in their OCD symptoms using ERP without habituation

WHAT’S GOING ON?
HABITUATION

• Treatment plan says: Eliminate fear of spiders
  • Does the person become accustomed and no longer afraid of spiders after prolonged exposure trials?
• What if our treatment plans say:
  INCREASE DISTRESS TOLERANCE
A NEW POINT OF VIEW

Old Learning
• Spiders are evil
• Spiders are dangerous
• Spiders must be avoided

New Learning using exposures

I just held a spider
I didn’t cry or pass out
I can do this, I don’t need to avoid spiders

New Life
WILLINGNESS

Which one has habituated?

This one?

This one?
THIS ONE?
“Traditionally, we have thought that ERP (which involves systematically confronting feared situations and resisting compulsive rituals) works by helping people “unlearn” or “erase” obsessional fears from memory. We also believed this to happen because of habituation — the process by which anxiety naturally declines over time during and between exposure sessions. Lastly, we assumed habituation to be an indicator that exposure was “working.” In other words, if anxiety declines during ERP, then we thought you were getting over your obsessional fear.”

*Jonathan Abramowitz, PhD*

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INSTEAD

Stop thinking habituation, and start thinking extinction
Or
Stop ONLY thinking habituation, but add extinction

“An alternative approach is to focus efforts on improving the short- and long-term outcomes of this otherwise effective intervention. In line with this latter option, Craske et al. (2008) have highlighted limitations of the long-standing and widely accepted idea that exposure therapy works by breaking conditioned fear responses via habituation.” ²
WHAT’S THE DIFFERENCE?

Habituation
A decline in fear responses, particularly the physiological responses, over repeated exposures to fear-provoking stimuli.
An unlearned temporary reaction

Extinction
Decrements in responding through repetition of unreinforced responding.
Anxiety reduction results from repeated encounters with anxiety-provoking situations without aversive consequences.
OCD EXTINCTION

<table>
<thead>
<tr>
<th>Unconditioned Stimulus (US)</th>
<th>Intrusive thought</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unconditioned Response (UR)</td>
<td>Distress</td>
</tr>
<tr>
<td>Conditioned Stimulus (CS)</td>
<td>Compulsion</td>
</tr>
<tr>
<td>Conditioned Response (CR)</td>
<td>Lowered distress</td>
</tr>
</tbody>
</table>

In classical conditioning the US and the CS are paired to create the CR. In extinction we unpair the US and the CS.
CAN WE HAVE EXTINCTION WITHOUT ACCEPTANCE?

**NO!**

- Helpful to study and introduce Acceptance & Commitment Therapy (ACT) into the clinicians’ repertoire.
- Create openness to anxiety & increase willingness to the personal experiences of OCD without so much focus on anxiety reduction.
- Anxiety reduction is not necessary for extinction.
- Willingness is the opposite of avoidance, resistance.
THREE CONSIDERATIONS OF INHIBITORY LEARNING

What does the client need to learn?

How are exposure trials conceptualized to maximize that learning?

Lowering distress during the exposure trial is not necessary as long as the learning continues and is maximized.
WHAT DOES THE CLIENT NEED TO LEARN?

- Willingness
- Distress tolerance
- Goal is habituation AND extinction
- “It’s the amygdala, stupid!”

One of the most helpful thing I’ve taught my clients is that this is not a character issue. When the amygdala is activated it is in charge. That means this is a biology issue. We train the amygdala through exposure.

Distress is safe, temporary, and manageable
HOW ARE EXPOSURE TRIALS CONCEPTUALIZED TO MAXIMIZE THAT LEARNING?

• Behavioral experiments?
  • Yes and no. We’re not proving their fear is illogical, but that reaction can be tolerated when the excitation is sparked.
  • Based on how the memory of the fear is formed
  • Not changing the original memory but adding a new memory and making it stronger than the old memory. (This is why we need to continue exposures even after remission. The old memory can create relapse when we discontinue enforcing the new memory.)
HOW ARE EXPOSURE TRIALS CONCEPTUALIZED TO MAXIMIZE THAT LEARNING?

- Expectancy Violation
  - The brain learns best when it is surprised
  - Before the exposure trial Downward Arrow is one good tool to note expectation
  - Cognitive restructuring is moved to after the exposure rather than before the exposure so the surprise firms the learning
- Talk about new learning during the exposure trial:
  - How are you able to do this?
  - What is it like for you right now?
  - Is your prediction coming true?
LOWERING DISTRESS DURING THE EXPOSURE TRIAL IS NOT NECESSARY AS LONG AS THE LEARNING CONTINUES AND IS MAXIMIZED

Fear reduction is not the goal during the exposure. It may happen but is not necessary.
EIGHT STRATEGIES

- Expectancy Violation
- Deepened Extinction
- Occasional Reinforced Extinction
- Removal of Safety Signals
- Variability
- Retrieval Cues
- Multiple Contexts
- Reconsolidation
• The heart of inhibitory learning
  • Example: Sheila believes touching money will make her sick. In the exposure trial Sheila and the therapist rub dollar bills and coins over their hands and faces. Sheila even decided to go big and put a penny in her mouth. Her SUDS rose to an 8 in session and then the session was over. She reported at her next session that she didn’t get sick over the next week.

• Surprise increases learning!
• Example: Rachel’s story

WHAT ARE SUFFERERS’ EXPECTATIONS?

- I’ll get sick
- My anxiety will be too awful
- I can’t handle a 10 (SUDS)
- I will have a panic attack
- I will freak out
- If I do try I could only do it for 30 seconds
- It is impossible, I can’t do it

High expectation of the distress
Low expectation of their capability
“A key aspect of an expectancy violation model is to facilitate ATTENTION to both the {conditioned stimuli} CS and the non-occurrence of the {unconditional stimuli} US. Error-correction models posit an important role for the salience of the CS such that any change in associative strength (e.g. extinction learning) will be directed to the cue that is most salient. Inasmuch as extinction learning represents the formation of a non-contingent relationship between CS and US, awareness of both the CS and the non-occurrence of the US are essential. THIS MAY BE ONE REASON WHY DISTRACTION IS SUCH A PERNICIOUS SAFETY BEHAVIOR.”
“Greater associative (inhibitory) learning derives from the absence of the aversive stimulus in the presence of multiple compared to single original predictors of that aversive stimulus."  

- Example: Intrusive thoughts of harming loved ones no longer bothers Sheila. Neither does her germ fear of sickening her family with raw chicken. Exposure trial has Sheila walking around her house with knives dirtied by cutting chicken. Her SUDS got to 8 and she cried while doing the exposure trial, but she stuck with it and ended when her phone rang after 23 minutes.
Occasional Reinforced Extinction

- Occasional CS-US pairings during extinction training
- Sheila will wash her hands for 20 seconds one time during a germ exposure trial
  - This would be introduced after Sheila has had progress in her extinction learning
- Sustains fear arousal during extinction but attenuates subsequent acquisition of fear
- Studies suggest the benefit comes from expectancy violations, but the expectation may not need to be articulated expressly before the strategy is implemented
REMOVAL OF SAFETY SIGNALS

Prevention or removal
Immediate if willing, or
Gradual to reduce attrition

Safety signals, safety behaviors
People (even the therapist)
Phones
Medications
Food or drink
Reduction of fear
Humor
VARIABILITY

- Sheila first does social fear exposures one-on-one daily
- She then attends small gatherings twice per week
- Next she goes to a big party on a weekend
- The next month she attends a huge wedding

Enhances retention of learned non-emotional material

Enhances the storage capacity of newly learned information

Pair with more retrieval cues making information more retrievable later
RETRIEVAL CUES

May be best employed as a relapse prevention skill

Use caution so as to not turn into a safety signal
A wrist band or coin in the pocket to remind client what they learned in exposure therapy, but not used to lower distress

Use sparingly
MULTIPLE CONTEXTS

<table>
<thead>
<tr>
<th>Context</th>
<th>Interoceptive</th>
<th>Imaginal</th>
<th>In vivo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alone</td>
<td>Straw breathing</td>
<td>Writing sentences</td>
<td>Cutting chicken</td>
</tr>
<tr>
<td>Unfamiliar place</td>
<td>Caffeine</td>
<td>Listening to script</td>
<td>Pulling trash from can</td>
</tr>
<tr>
<td>Varying time of day</td>
<td>Holding breath</td>
<td>Listening to script on loop</td>
<td>Not washing after bathroom</td>
</tr>
<tr>
<td></td>
<td></td>
<td>low volume</td>
<td></td>
</tr>
<tr>
<td>Varying time of week</td>
<td>Running in place</td>
<td>Randomly writing additional</td>
<td>Carrying dirty cloth in pocket</td>
</tr>
<tr>
<td></td>
<td>very quickly</td>
<td>scenes for script</td>
<td></td>
</tr>
</tbody>
</table>

The return of fear to a phobic stimulus when it is encountered in a context (internal or external) that differs from the context in which exposure therapy was conducted.\(^4\)
RECONSOLIDATION

• {Researchers found} brief presentation of the CS 30 minutes prior to sustained extinction trials significantly reduced spontaneous recovery.

• Just entering the treatment session can retrieve fear memories.

• Extinction during a reconsolidation window may weaken the fear memory itself.
New memories must be interleaved within a large network of relevant pre-existing knowledge.
Presentation of a reminder cue made a completely consolidated memory again labile to the same agents that would block consolidation. Presentation of the CS alone can have two opposing effects: it can act as a reminder to engage the original memory trace, and it can generate extinction, which involves development of a new and competing memory trace.⁶
AFFECT LABELING

- Asking clients to name their negative emotion during an exposure trial has been shown to produce greater reduction in physiological arousal. ³,⁵
- More effective than cognitive reappraisals
• Moving from typical talk therapy to CBT
  • Most of our clients have seen other therapists who used “talk therapy” before a proper diagnosis, or seeing a trained ERP therapist
• Finally finding a therapist who understands OCD and ERP
  • We started by using the gold-standard, ERP, and made strides, even obtained remission
### HOW A THERAPIST INTRODUCES INHIBITORY LEARNING TO CLIENTS

- Training through IOCDF and following the experts closely on what is being learned in the field of OCD treatment
- How to communicate changes or adjuncts to ERP
  - Giving the biological explanation of amygdala and finally understanding this is not a character concern or willpower issue
- Willingness
- Don’t over-explain inhibitory learning
  - Expectancy violations are critical
  - Once they see their expectations are invalid, they can generalize the learning to other fears, and then do our cognitive restructuring
- Then we can plan to do the other seven strategies
HOW A THERAPIST INTRODUCES INHIBITORY LEARNING TO CLIENTS

• Go back to basics. Because the key to recovery is WILLINGNESS

• Use ACT
  • “Instead of teaching patients to resist, control, or “fix” their fear, anxiety, or obsessional thoughts, these techniques promote open-mindedness towards these experiences given that they are universal, inevitable, and nonthreatening (i.e., fear tolerance).”

• Use Motivational Interviewing
  • Jonathan Grayson’s ERP Motivators

• Use Mindfulness as an acceptance tool and not a distraction or safety device
  • “One of the major obstacles people face in treating their OCD is the tendency to focus only on eliminating fear and anxiety. In fact, when we spend too much time in treatment trying to reduce anxiety, we actually play into the OCD’s lie about anxiety – that it is a toxin.”
1. Jonathan Abramowitz: article on inhibitory learning, IOCDF website


7. Freedom from obsessive disorder, Jonathan Grayson website: http://freedomfromocd.com/forms/
