UNDERSTANDING ADDICTION IN OLDER ADULTS

Phoebe Institute on Aging, October 11, 2018

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OUTLINE

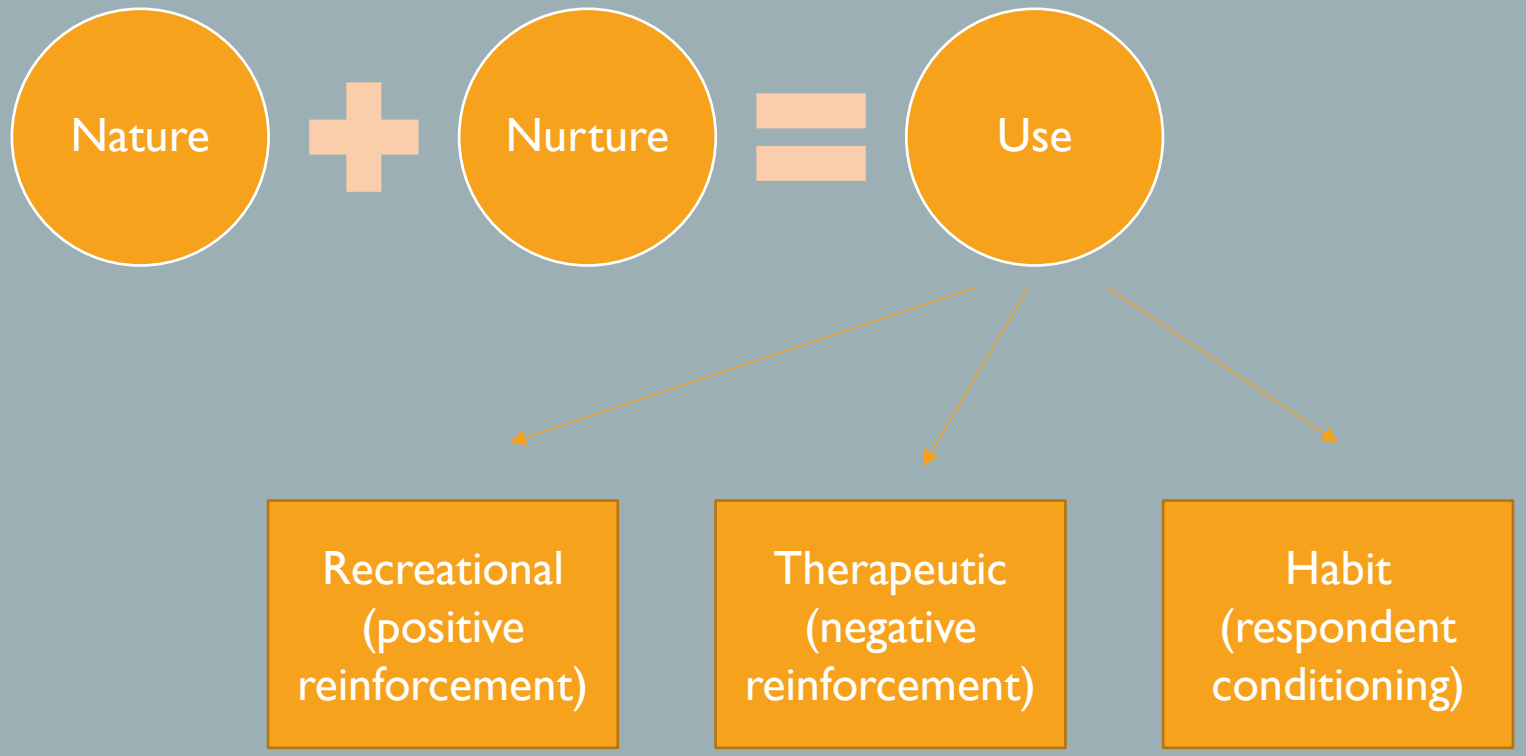
- Definition of ‘addiction’
  - DSM-V; Behavioral economics
- Genetic influences
  - What a gene does
  - Where an understanding of genetics leaves us
- Functional Behavior Analysis
  - Response classes: topography versus function
  - Drug-use response classes
- Where does this leave us
- Suggestions for stakeholders
- Further directions

OPTION B:

Addiction, Dependence, and the Role of Heredity

Jeff Rudski, Ph.D., Professor of Psychology, Muhlenberg College

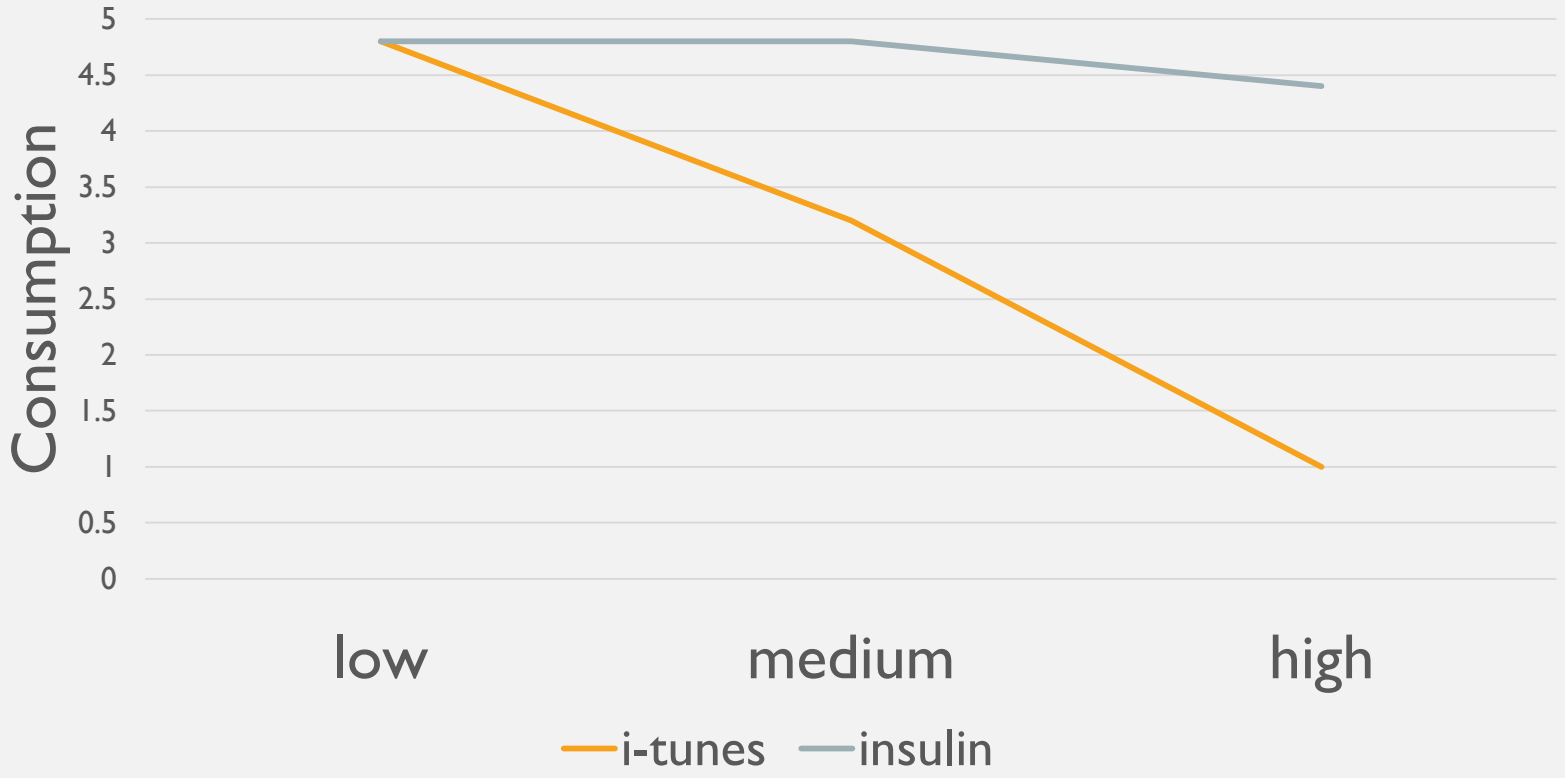
This session will focus on issues related to substance dependence and the etiology of addiction in older adults. Particular attention will be paid to the distinctions between substance use, substance abuse, and substance dependence. Additionally, Dr. Rudski will discuss when palliative care becomes concerning, and how that might affect physicians underprescribing or overprescribing potentially addictive agents.


Nature
Nurture
Use
Recreational (positive reinforcement)
Therapeutic (negative reinforcement)
Habit (respondent conditioning)

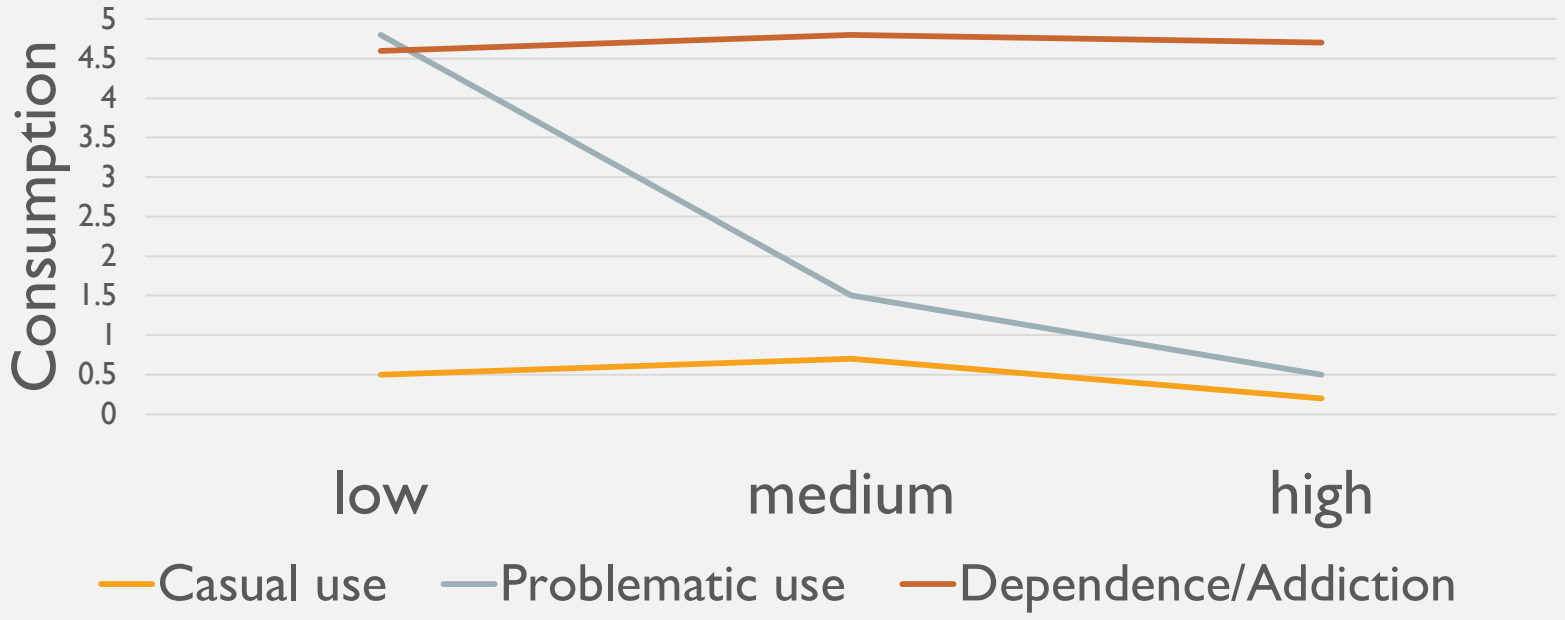
DSM-V

- Taking the substance in **larger amounts** or for **longer** than you're meant to.
- Wanting to **cut down** or stop using the substance but **not managing to**.
- **Spending a lot of time** getting, using, or recovering from use of the substance.
- **Cravings and urges** to use the substance.
- **Not managing** to do what you should at work, home, or school because of substance use.
- Continuing to use, even when it causes **problems in relationships**.
- **Giving up** important social, occupational, or recreational **activities** because of substance use.
- Using substances again and again, even when it puts you in **danger**.
- **Continuing to use, even when you know** you have a physical or psychological problem that could have been caused or made worse by the substance.
- **Needing more** of the substance to get the effect you want (tolerance).
- Development of **withdrawal** symptoms, which can be relieved by taking more of the substance.

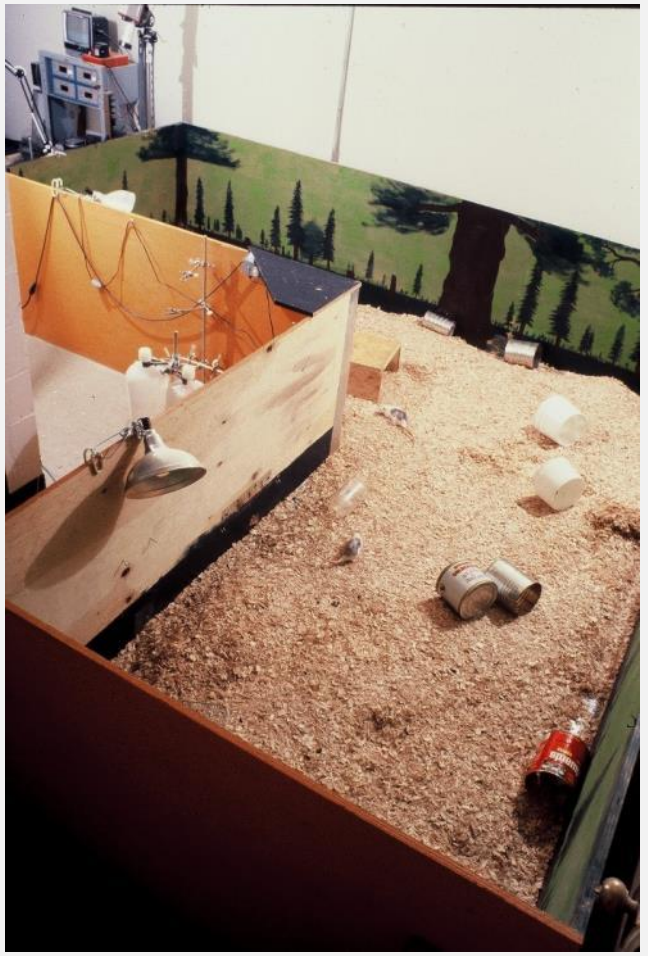
ELASTIC AND INELASTIC DEMAND



ELASTIC AND INELASTIC DEMAND (FOR DRUGS)



RAT PARK STUDIES (BRUCE ALEXANDER)
ALEXANDER, B.K., COAMBS, R.B., AND HADAWAY, P.F. (1978).



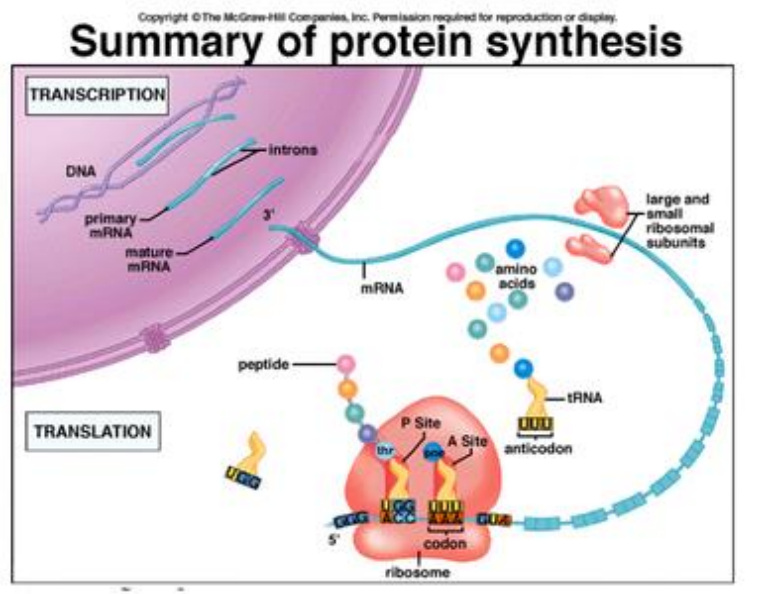
ALEXANDER'S CONCLUSIONS?

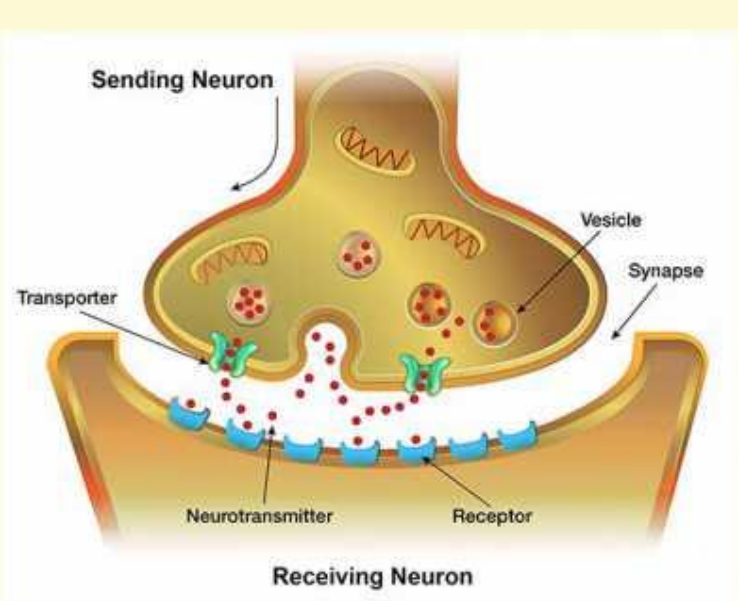
- Addiction is solely based on context….has nothing to do with actual drug.
- Currently influential study, but has some big holes:
  - Didn't look at all agents
  - No environment is perfect…what would happen if you add some stressors?
  - Genetic differences across rats

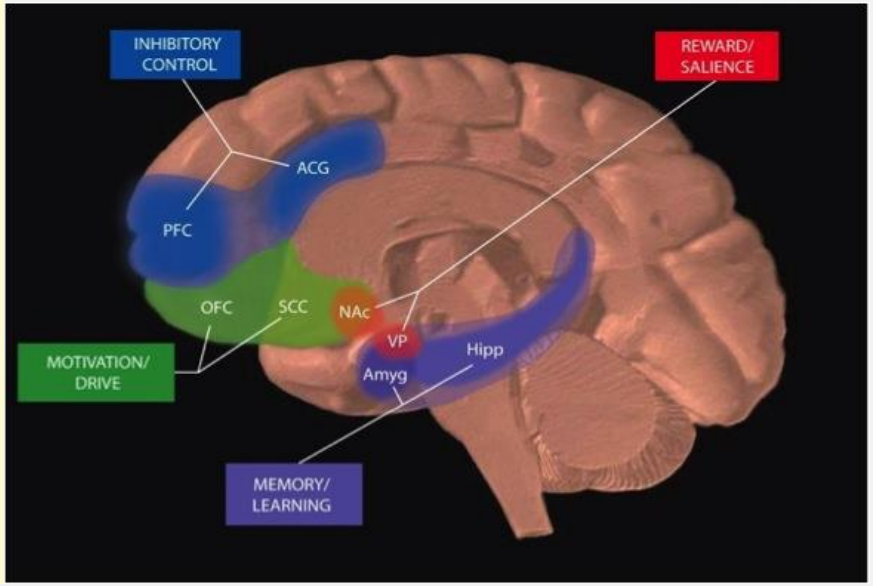
BEHAVIORAL GENETICS

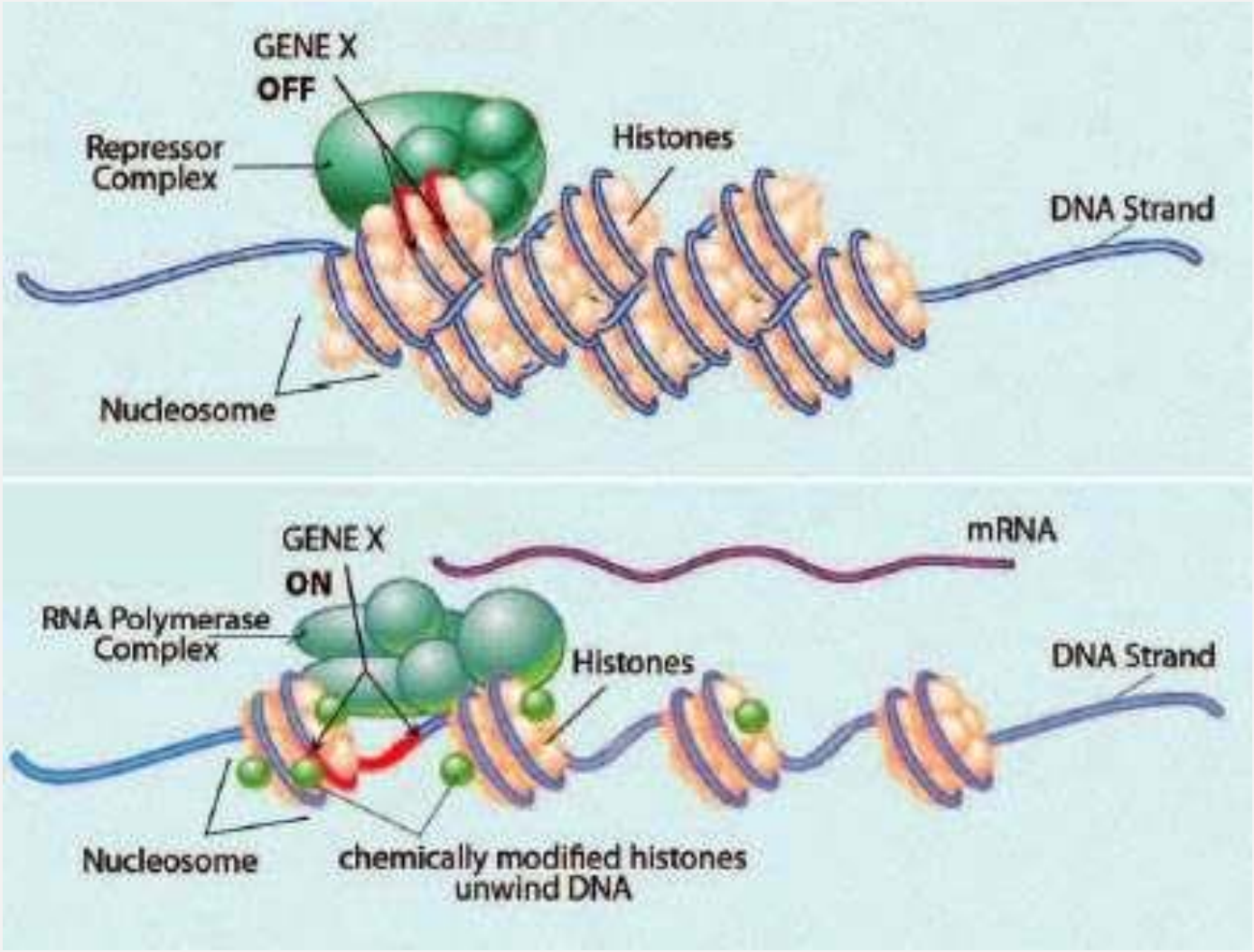
- Concordance studies, (MZ, DZ, siblings)
- Adoption studies (shared genes versus shared environments)
- Diathesis Stress Models
  - → Epigenetics
- Biopsychosocial model

WHAT DO GENES DO THAT CREATES A VULNERABILITY?








GENE X
OFF
Repressor Complex
Histones
DNA Strand
Nucleosome
GENE X
ON
mRNA
RNA Polymerase Complex
Histones
DNA Strand
Nucleosome
chemically modified histones unwind DNA

SO, WHERE DOES THIS BRING US TO THE IMPORTANCE OF GENETICS IN "ETIOLOGY OF ADDICTION IN OLDER ADULTS"?

- Genetic influences, but such influences don't occur in a vacuum.
- Epigenetic influences (e.g., DRD4-7R allele); many of these set in childhood (more important for public policy than immediate clinical implications)
  - 'Orchid' genes (plasticity alleles)
  - - However, drug use itself can trigger epigenetic changes (i.e., plasticity)… much more needed here
- Genes aren't destiny
- How does this help us deal with addiction in older adults?
  - Not going to change the past.
  - (Takes longer to 'learn' addictive behaviors, but takes longer to 'learn' sobriety as well)

MORE IMPORTANT THAN GENETICS IS….WHAT ROLE ARE DRUGS PLAYING IN A PERSON'S LIFE?

- Drug use isn't drug use isn't drug use!
  - Response topography versus response function

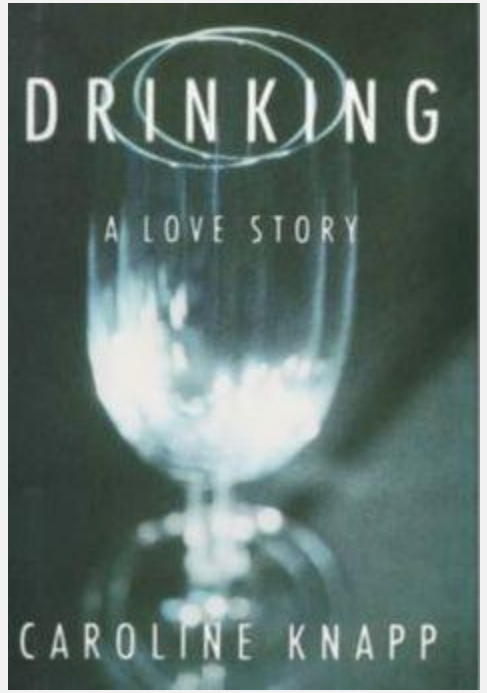
- →Why do people use drugs?

DIFFERENT POSSIBLE 'RESPONSE CLASSES' FOR DRUG USE.

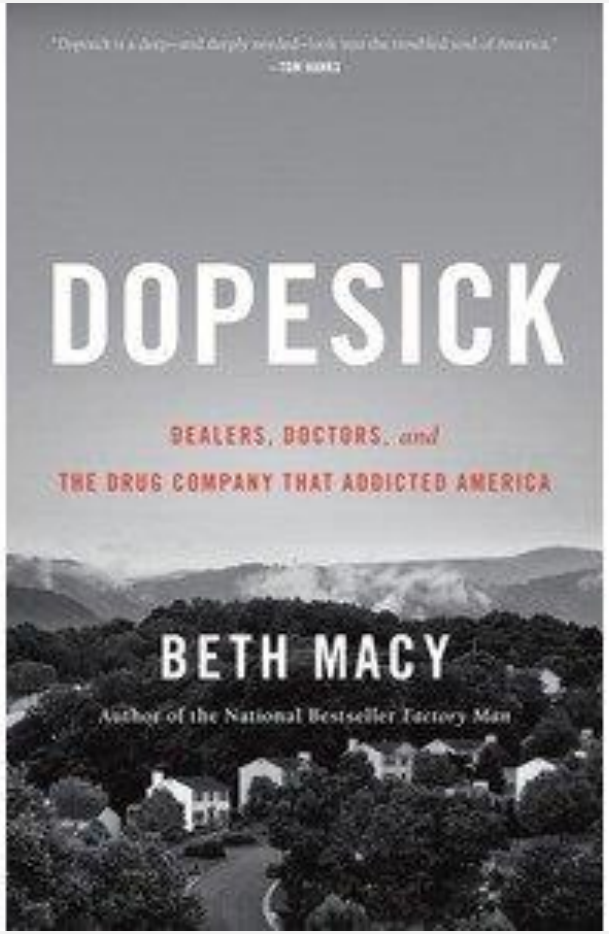
- Positive Reinforcement…early on, not different from any other enjoyed activity
  - Becomes problematic when the drug itself becomes the 'substitutable reinforcer' for other activities/relationships)
- Negative Reinforcement
  - For physical pain
  - To reverse withdrawal (dependence)
  - For psychological pain
  - For boredom (adjunctive behavior?)
- Self-medication
- Habit, and cue-elicited craving

POSITIVE REINFORCEMENT

- Drugs make you feel good.
- Why are we wired this way?
  - Drugs ***simulate*** neural activity involved in
    - Encouraging being well fed; repeat what is good
    - Encouraging social cohesion, friendship and inclusion
    - Encouraging love (family, romantic)
- ***Ephemeral***…drugs wear off much sooner
- Just as eating and love can go bad…(codependency, Desperation, impulsivity)
- Anhedonia (alas, not of concern for those lacking hope)



NEGATIVE REINFORCEMENT- PAIN



M

Martha

Arlington, Va | March 28

Times Pick

I am so weary of so-called experts lumping all patients who take pain-killers together. I am a 65 year old woman and I have taken OxyContin (the boogie man of opioids) for years to alleviate nerve pain caused by breast cancer and multiple surgeries. I am never "high". I do not take more than my usual dosage. I am not tempted to buy heroin. I do not contemplate selling my drugs on a street corner. In other words — I am boring. The nightly news programs don't want to profile people like me because I am a responsible, reasonable woman who has pain problems on a daily basis. And you know what? If I am "addicted", I do not care. This pain killer allows me to live a decent life.

137 Recommend Share Flag

NEGATIVE REINFORCEMENT

- To alleviate withdrawal (does use stop at that point?)
- TO COPE WITH LOSS AND ISOLATION
- To cope with boredom (this opens up additional possibilities of adjunctive behavior, something not yet really investigated)

- Stress and uncertainty

Johann Hari: 'The opposite of addiction isn't sobriety – it's connection'

The author of Chasing the Scream on his anxiety about writing a book, and the 30,000-mile journey of recognition and shared stories it took him on, from the drug war 'ground zero' in Baltimore to Colombia and Mexico

SELF-MEDICATION

- Stimulants and depression, ADHD
- Drug use in marginalized communities
- Smoking rates in people with various mental health challenges

HABITS- ADDICTION AS A LEARNING DISORDER

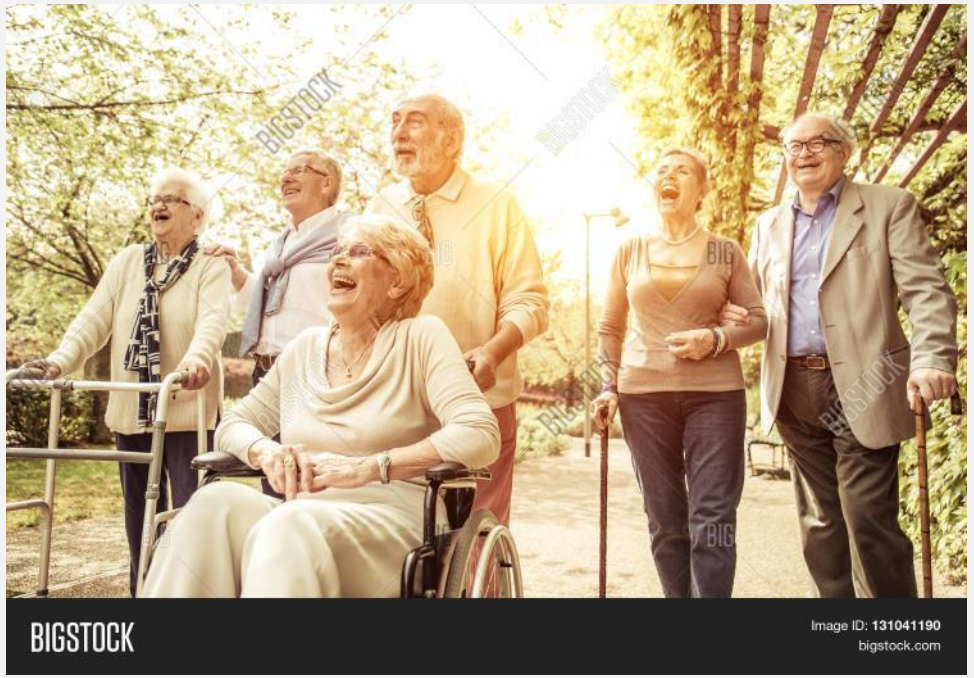
- Response becomes practiced…moves to subcortical control.
- Emotionally salient events may create habits more quickly
  - Compulsive behaviors start crowding out other ones
- Environmental context plays a huge role in eliciting craving
  - (Change the context, change the addictive behavior)!
- Stress can be a cue
- Stress also hones focus on immediate reinforcement (temporal discounting)
- There is an innate component to learning, and past learning can have lifelong effects.
- Harder to extinguish in older adults

WHERE DOES THIS LEAVE US?

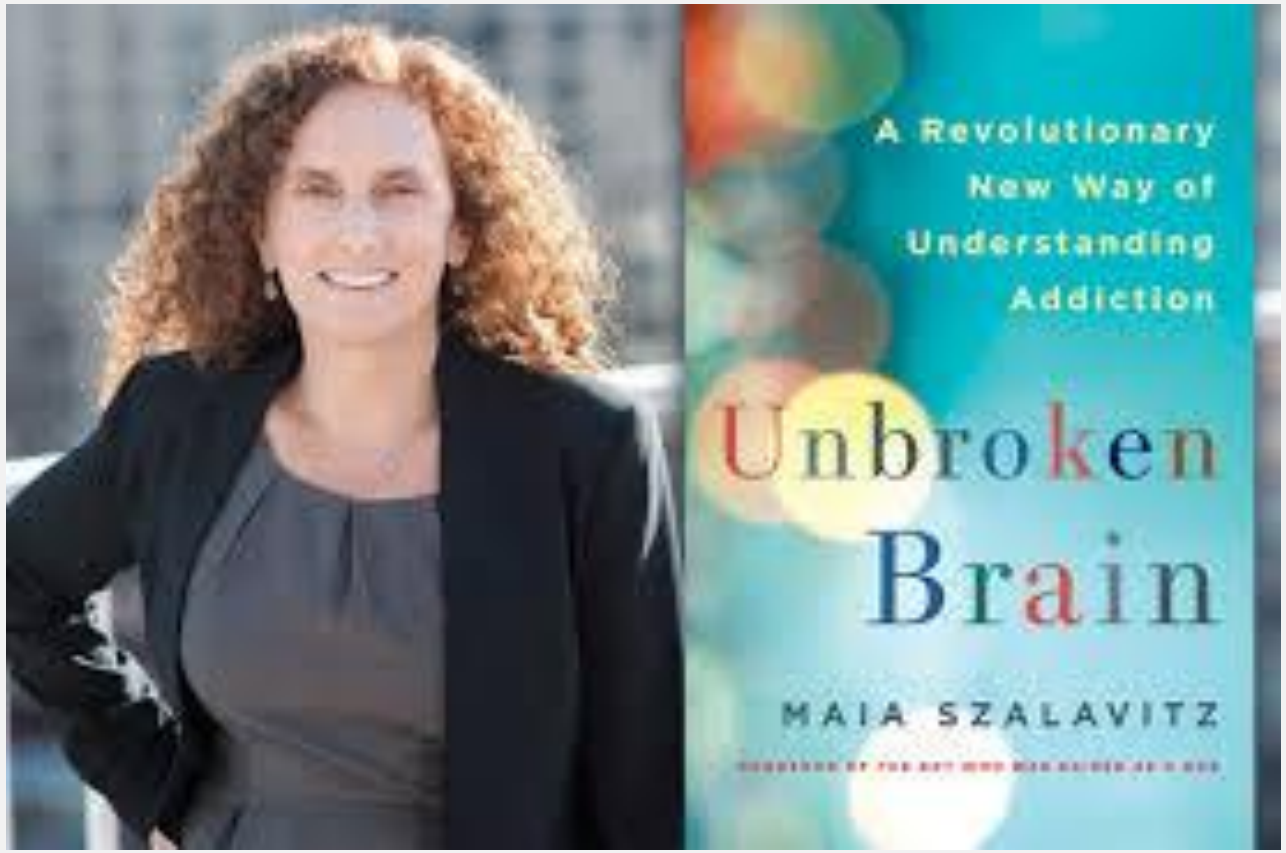
- People enjoy doing drugs. People also enjoy doing a lot of other things. The more 'concurrent reinforcers out there, the less need for drug use.
- For some people with severe pain, drugs permit them to engage in life. This may → physical dependence, but better than the alternative.
- If everything is fine in life, drug use does not usually result in addiction. For others, drugs become the main sources of reward.
- **For some of us, drug use will make everything else seem bland → anhedonia. Neurologically, their brains change so that they begin to 'want' more, while 'liking' less.**
- Ultimately, it may boil down to whether you see the world as a park or a cage.

SUGGESTIONS FOR STAKEHOLDERS

- It is crucial to understand the purpose behind drug use. Some of these functions might be benign…other insidious.
- When use becomes 'inelastic', addiction has set in, and negative consequences rarely diminish use. Use of 'substitute reinforcers becomes needed, but those tend to have become minimized. This is where connection becomes crucial.



- “Addiction is continues use, despite negative consequences.”



FUNCTIONAL BEHAVIOR ANALYSIS

- Know which response class(es) you are dealing with. Initial drug use is often a symptom, and only later becomes a self-sustaining problem in itself.
- Treating a habit component doesn't take care of the meaning/substitute provided by drugs that drove the addiction in the first place. Conversely, simply providing substitutes doesn't help with cue-elicited craving.
- Treating the 'disease' with anti-craving medication doesn't necessarily alter meaning for initial use either.
- Diminishing craving can people up to alternative avenues of reward/meaning by increasing interaction/engagement.
- Different drugs (e.g., Benzodiazepine and tapering) and different people require different strategies.

UNDERSTAND WHAT THE DISEASE MODEL DOES AND DOES NOT MEAN

- Just because something is mediated by the brain doesn't mean it's a disease. All learning depends upon brain plasticity! Addiction might best be thought of as a type of "deep learning" (Marc Lewis).
- Research on stigma has found that the disease model decreases blame, but increases social distance stigma, may result in more long-term stigma, and produces resignation (people perceive themselves as helpless, instead of immoral) in users leading to diminished abstinence.
- The most effective treatments involve behavioral/lifestyle components, yet those get short shrift due to the disease model.
- On the other hand, not fully embracing a disease model does not mean rejecting medication. Anxiolytics and antidepressants can help with underlying issues. Agonist substitution can decrease some craving and withdrawal.
  - *Some demonize agonist therapy, claiming it's just substituting one addiction with another. That is irrelevant if your goal is improved function (as opposed to sobriety)*
- I often liken to this of this as analogous to Type 2 diabetes.

POSSIBLE ROLE OF EDUCATION

- Demystify addiction by teaching people about how drugs work. Some people use them as tools to help them explore facets of the world. However, that is quite rare. Usually, their use is to simulate experiences of value (without actually providing any).
- Help people identify the role drugs play in their lives. Why did they start using them? When did use become compulsive? What role are drugs now playing. This will give them an individualized set of individual goals to address.
- Teach about habits and cue-elicited framing. This will allow people to recontextualize craving. Each episode can be reframed as an opportunity to assert control (and, in Pavlovian terms, a successful "extinction trial").
- Teach about brain plasticity. Habits can be unlearned as well! Older adults have done a lot of learning in their lives…they are experts at it!
- Teach about the medications used for addiction. Get people to look at them as possible tools to help them get the most out of life.

AND REMEMBER, EVERYBODY HAS AN OPINION AND AN AGENDA (EVEN I DO). PROBLEMS ARISE WITH 'ONE SIZE FITS ALL' BELIEFS. (IT'S NOT A DEBATE TO BE WON)

- Are you an addict "the first time you use"?

  - (depends upon what brought you to that point)

- Is it true that "once an addict, always an addict?"

  - Depends upon the individual. Which belief leads to best outcomes for them?

- Is addiction a disease?

  - Brains change from drugs, but brains change from all salient experiences
  - Advantages and Disadvantages of disease model: Stigma and blame, immorality versus weakness, and diminished abstinence.
  - Forces focus on medical interventions (which can be quite effective at reducing triggers for use)
  - If it is a disease, is it more like Type I or Type II diabetes

Sept. 1

OPINION

Addiction Doesn't Always Last a Lifetime

In fact, most people recover, often on their own. Here are some of their stories.

By Maia Szalavitz and Ryan Christopher Jones

M Styles Times Pick

New York | Sept. 1

I have used almost all of the drugs at some point, during my life. Cocaine, and it's counterpart, really got me though. I struggled with it for decades. Sometimes totally out of control, sometimes modified. One of my counselors did tell me, some people do grow out addiction as they age.

There are a lot of factors, in why some people become addicts, others do not, some quit, others can't, some OD. I believe we do it, to mask some pain, emotionally, physically, or spiritually. I take anxiety, anti depressant meds for many years now. CBT helped to a degree, what worked best for me was Harm Reduction. If I slipped, there wasn't as much pressure. I kept focusing on how much drugs cost me, financially, emotionally, spiritually, physically. And of course the negatives, far outweighed the perceived positives. I've come to realize what an addictive behavior I have in every aspect of my life. At first is was being a musician, still is. I have spent most of my waking hours playing music. I love it, and am grateful for it. But as I aged, I realized we all need to have variety in our life. Food, sex, TV binge watching, also very addictive to me..

Each persons journey to sobriety is different, find what works for you.

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Ed McLoughlin Times Pick

Brooklyn, NY | Sept. 1

I went to my first AA meeting in 1981. I have not relapsed since then and still attend AA meetings. In retrospect I had been stopping drinking since I was 17. For valid reasons. I could never stay stopped. This last time I was 39 and scared witless, not even safe in my own home, convinced i would die if I picked up another drink. Enter my wife. She connected me with an AA veteran and here I am an old man, sober and alive. I am convinced I would have died back in 1981. So, what I think is that there are as many ways to get sober/clean as there are substance abusers. We each need to find our own way. Just so happens that for me AA has given me the support and consistency that I've needed so far.

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