Substance Abuse

Causes and Treatments
Causes of Substance-Related Disorders

• Once thought to be *moral weakness*

• Combination of factors
  – Biological
  – Psychological
Childress: Science of Relapse
Causes – Biological Dimensions

• Family and Genetic Influences
  – Twin, family, and adoption studies
  – **Use = environmental influences**
  Vs.
  – **Abuse and dependence = polygenetic vulnerability**
Neurobiological Influences

- **Pleasure or reward centers**
  - **Dopaminergic system**
    - Midbrain
      - Nucleus Accumbens
    - Frontal cortex
  - **GABA**
    - Blocking GABA leads to less Inhibition which yields more dopamine activation
- **Predisposition to rewards**
  - Study of sons of alcoholics, who were more sensitive to the immediate, euphoric effects of alcohol and less sensitive to the later, negative effects
Causes: Psychological Dimensions

Positive Reinforcement
- Repeated pairings with rewards

Negative Reinforcement
- Escape from unpleasantness
  - Cope with unpleasant feelings
  - Anxiolytics
- Self-medication
- Tension reduction
- Coping mechanism for negative affect
Causes: Psychological Dimensions

Opponent-Process Theory
– Increase in positive feelings followed by increase in negative feelings
  • Mechanism is strengthened with use and weakened with disuse
– Remedy is to use more of same drug
– Motivation shifts from euphoria seeking to alleviating an unpleasant crash

Expectancy Effects
– Beliefs about drugs and effects

Cravings triggered by:
– the availability of drugs
– specific moods
– places and objects associated with drug taking
Causes: Social Dimensions

• **Exposure to Drugs**
  – Prerequisite for use
  – Media
  – Peers
  – Family
    • Monitoring
    • Peer groups

• **Societal Views**
  – Moral weakness
  – Disease model
Causes: Cultural Dimensions

• **Contextual normative framework**
  – Expectations about use
  – Gene-environment interactions
  – Values

ALDH2, change in 80s
Treatment - Biological

- **Agonist Substitution**
  - Safer drug
  - Similar chemical composition
    - Ex: methadone (*adolphine*) and nicotine gum or patch

- **Antagonistic Treatment**
  - Block or counteract pleasurable effects
    - Ex: naltrexone for opiate and alcohol
Treatment - Biological

- **Aversive Treatment**
  - Make use of drugs extremely unpleasant
    - Ex: **Antabuse for alcoholism**
      - Must be motivated to keep taking the pill…
        » So, only works on the most committed

- **Subjunctive Medication**
  - Cope with withdrawal symptoms
    - **Benzos (valium)**
      - Reducte accompanying anxiety
    - **Clonidine and opiate withdrawal**
      - Treats hypersensitive symptoms

- **Efficacy**
  - Limited when used alone
  - Better with psychosocial tx
Aversion Therapy in Russia

- Clash of culture, medicine, and psychosocial elements
- 60% of Russians use this treatment
- Disulfiram
Treatment - Psychosocial

• Dual Diagnosis

• **Inpatient Facilities**
  – Expensive
  – Efficacy is equal to outpatient
    • Removes people from cues but they eventually have to return!

• **Al-Anon & Ala-Teen**

• **Alcoholics Anonymous (12 step)**
  – Most popular
  – Social support
  – Limited research
  – Effective for highly motivated
• God grant me the serenity
to accept the things I cannot change;
courage to change the things I can;
and wisdom to know the difference.

• Living one day at a time;
Enjoying one moment at a time;
Accepting hardships as the pathway to peace;
Taking, as He did, this sinful world
as it is, not as I would have it;
Trusting that He will make all things right
if I surrender to His Will;
That I may be reasonably happy in this life
and supremely happy with Him
Forever in the next.
Amen.

• --Reinhold Niebuhr

Even though there is no data, courts and jobs force people to do this!
• **Step 1** - We admitted we were powerless over our addiction - that our lives had become unmanageable
• **Step 2** - Came to believe that a Power greater than ourselves could restore us to sanity
• **Step 3** - Made a decision to turn our will and our lives over to the care of God as we understood God
• **Step 4** - Made a searching and fearless moral inventory of ourselves
• **Step 5** - Admitted to God, to ourselves and to another human being the exact nature of our wrongs
• **Step 6** - Were entirely ready to have God remove all these defects of character
• **Step 7** - Humbly asked God to remove our shortcomings
• **Step 8** - Made a list of all persons we had harmed, and became willing to make amends to them all
• **Step 9** - Made direct amends to such people wherever possible, except when to do so would injure them or others
• **Step 10** - Continued to take personal inventory and when we were wrong promptly admitted it
• **Step 11** - Sought through prayer and meditation to improve our conscious contact with God as we understood God, praying only for knowledge of God's will for us and the power to carry that out
• **Step 12** - Having had a spiritual awakening as the result of these steps, we tried to carry this message to other addicts, and to practice these principles in all our affairs
Treatment - Psychosocial

AA Does not condone this!!!!

• Controlled Use
  – Moderation
  – Possible benefits
    • Change in lifestyle is too extreme or unrealistic.
  – Limited research
Treatment Psychosocial

- **Component Treatment**
  - Comprehensive
  - Individual and group therapy
  - Aversion therapy
    - Counteract positive associations (shock)
  - Covert sensitization
    - Imagining negative associations (associating cocaine with vomit)
  - Contingency management
    - Clinician and client together select the behaviors that the client needs to change and decide on reinforcers that will reward reaching certain goals (e.g., money, small retail items)
Treatment - Psychosocial

• **Relapse prevention**
  – Learned aspects of dependence
  – Address distorted cognitions (“nothing is as good as a __ high”)
  – Identify negative consequences
  – Increase motivation to change
  – Identify high risk situations
  – Reframe relapse
    • failure of coping skills, not person
Treatment Psychosocial

- **Intervention**

- **Prevention approaches**
  - Did Prohibition work?
  - Education-based (DARE)
    - Limited efficacy

  - Comprehensive (skills training)
    - Promising preliminary results

  - Cultural change
    - Media
Peer Group Intervention

Steamfitters Local Union 638

Directed by Barbara Kopple