PSYC1022: The Psychology of Addiction
Topic 3: Population entry & exit from drug taking (II)
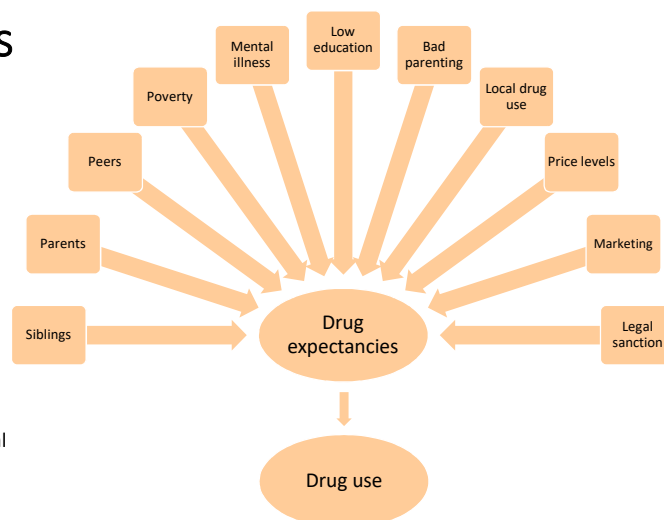Dr. Helena Pacitti

Outline
- Factors that predict drug use
  - Expectancies
  - Early onset
  - Drug liking
- Drug use trajectories
- Gateway hypothesis
- Exit from drug use

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Expectancies

- It has been argued that all the risk factors function to increase positive drug expectancies & decrease negative expectancies (Leventhal, 2006)
- One can see how sibling, peer & parental drug use would increase a child's beliefs about the value of drugs & thereby increase their tendency to initiate drug use.
- Expectancies may explain the strong intergenerational transfer of addictive behaviour (Campbell & Oei 2010).

Mental illness · Low education · Bad parenting · Poverty · Local drug use · Peers · Price levels · Parents · Marketing · Siblings · Legal sanction

Drug expectancies

↓

Drug use

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Expectancies

Shen et al. (2001) interviewed children/adolescents aged 8 to 18:
- Heavy alcohol using families (high-risk) vs. low alcohol using families (low-risk).
- alcohol expectancies & alcohol use behaviour measured at 2 time points 3 years apart.
    - High-risk offspring > expectations that alcohol would improve social behaviour & relaxation, drank more frequently & initiated alcohol drinking at an earlier age compared to low-risk offspring.
    - Alcohol expectations at time 1 predicted both the age of onset of regular drinking & the frequency of alcohol consumption.

- Results indicate that transmission of positive parental beliefs about alcohol to young adolescents confers a risk for the early onset of alcohol use & higher drinking frequency, which may confer a risk for the subsequent formation of alcohol dependence in adulthood.

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Early onset

Earlier age of drug use onset associated with increased risk of drug dependence
- due to increased number of years spent taking the drug? Or are young people more sensitive to the dependence forming effect of drugs?

Anthony et al. (1995): 1525, 18–24 year olds
- Age of onset & age drug dependent
1. Probability of dependence increases with number of years spent using
2. Young users more sensitive to developing dependence than older users
- Early age of onset increases risk for dependence
- Parental transmission of positive expectancies may confer a particular risk for their offspring developing drug dependence in adulthood, specifically by causing the earlier initiation of drug use.
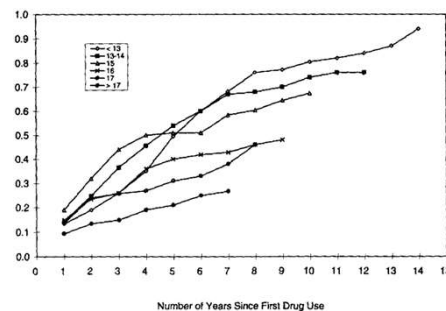

Number of Years Since First Drug Use

Fig. 2. Estimated probability of developing drug problems versus time since first drug use, separately for subgroups defined by age at first drug use.

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Drug liking

Drug liking is another predictor of whether drug use is adopted

Haertzen et al. (1983):

- Interviewed male opiate addicts about their liking of the initial experience of different drug classes & subsequent lifetime dependence
- significant positive correlations between first liking & lifetime dependence
- For those drugs that showed no significant correlation between first liking and dependence one may assume that the initial aversive experience disappeared with time allowing liking to emerge & determine uptake.

Correlations between self-reported liking of first drug experience and lifetime dependence	First liking
	r
Alcohol	0.44
Cigarettes	not sig
Cocaine	0.50
Glue	0.60
Barbiturates	0.74
Heroin	not sig
Minor tranquilizers	0.60
Stimulants	0.76
Marijuana	0.45
Opiates	0.69
Major tranquilizers	not sig
Hallucinogens	0.65
Coffee	not sig

Haertzen et al. 1983, Drug Alcohol Depend 11: 147-

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Drug liking

Initial drug liking is recorded closer to its time of occurrence & followed up over years to see if liking predicts whether they become dependent.

- Experience of early cannabis use recorded in 198, 14-16 year olds. 2 years later they were assessed for dependence.
  - those who said they did *not* get really high during initial experience, 12.4% became dependent two years later
  - 34.1% became dependent from those who said they did get really high in early experience.
  - Similar increased risk of becoming dependent was predicted by other positive reactions to early cannabis use
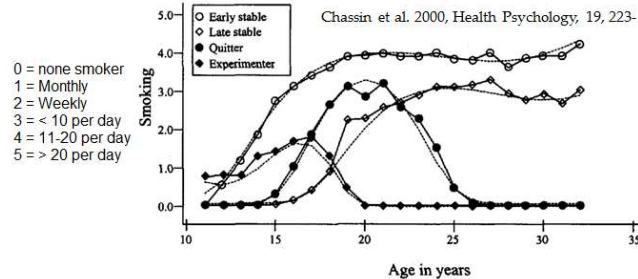 - Negative experiences did not modify risk of later dependence

Table 1. Rates of Cannabis Dependence (at Age 16-21 Years) by Subjective Responses to Cannabis (at Age 14-16 Years)

Symptom	Total No. of Subjects	Subjects Who Were Cannabis Dependent (at Age 16-21 y), %	OR (95% CI)	*P* Value
Positive symptoms				
Got really high				
No	113	12.4	1.0	
Yes	85	34.1	2.8 (1.6-4.9)	<.001
Felt happy				
No	57	5.3	1.0	
Yes	141	28.4	7.1 (2.1-24.1)	<.001
Felt relaxed				
No	52	7.7	1.0	
Yes	146	26.7	4.4 (1.5-12.9)	.004
Did silly things				
No	138	16.7	1.0	
Yes	60	33.3	2.5 (1.2-5.0)	.009
Laughed a lot				
No	62	8.1	1.0	
Yes	136	27.9	4.4 (1.6-11.9)	.002
Negative symptoms				
Felt ill, dizzy				
No	150	19.3	1.0	
Yes	48	29.2	1.7 (0.8-3.6)	.15
Felt frightened				
No	170	21.2	1.0	
Yes	28	25.0	1.2 (0.5-3.1)	.65
Passed out				
No	190	21.1	1.0	
Yes	8	37.5	2.3 (0.5-9.8)	.27

Fergusson et al. (2003)

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Developmental trajectories

0 = none smoker
1 = Monthly
2 = Weekly
3 = < 10 per day
4 = 11-20 per day
5 = > 20 per day

Chassin et al. 2000, Health Psychology, 19, 223-

Chassin et al., (2000): 2711 smokers reported their level of smoking at different ages.
- Early stable smokers, late stable smokers, experimenters & quitters.
- early stable trajectory was associated with parents & peers who smoked
- Note that the asymptotic level of smoking is higher in the early stable compared to the late stable group, indicating the importance of early onset in determining final frequency of smoking.
- The existence of quitter & experimenter groups confirms earlier evidence that only a sub-group of people who try drugs become dependent.

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Chippers

People who maintain a low level of drug use over an extended period of time (Zinberg & Jacobson, 1976).
- Contradicts the notion that *extended* drug use leads to an escalation of drug consumption & suggests that *'controlled'* drug use can be maintained over protracted period of time.
- Some argue that chippers are defined by having established proscribed rituals of drug use, which prevent escalation of dose (e.g. I only do MDMA at Raves)
- others have argued that chippers are simply stable drug users who prefer a low dose (e.g. I only smoke one pipe per night, never more) (Brauer et al 1996)
- Chippers are an understudied group, because they are uncommon & there is no accepted metric upon which to distinguish them from other drug users.
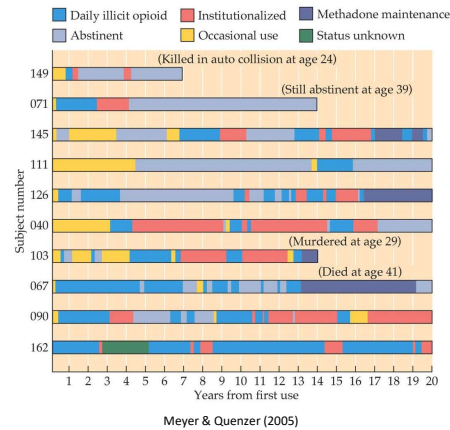

"Disco Sally"
Studio 54

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Life history

Stable patterns of drug use may be more common with the legal drugs. Patterns of illicit drug use tend to be more unstable over time.
- Life history of 10 opiate addicts as they transition between occasional use, daily use & abstinence.
- Individuals show bouts of use followed by abstinence, then relapse, then abstinence, etc.
- Note that often protracted abstinence is followed by relapse.
- Supports the view that addiction is a chronically relapsing disorder. However, such chronic relapsing must be overlaid on the progressive increase in permanent abstinence as individuals age from 30-65 years

Legend: Daily illicit opioid | Institutionalized | Methadone maintenance | Abstinent | Occasional use | Status unknown

(Killed in auto collision at age 24)
(Still abstinent at age 39)
(Murdered at age 29)
(Died at age 41)

Subject number: 149, 071, 145, 111, 126, 040, 103, 067, 090, 162
Years from first use: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Meyer & Quenzer (2005)

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Gateway hypothesis

Experimentation with alcohol and/or tobacco normally proceeds the use of marijuana, which proceeds pills, then the 'harder' routes of administration, snorting then injecting (Kandel & Logan 1984; Welte & Barnes 1985).
- An atypical order of entry into drug use may be seen in very serious adolescent drug users, perhaps due to peer or family introduction (Mackesy-Amiti et al. 1997).
- Early onset of initial alcohol or tobacco use is associated with a higher risk of progressing to polydrug use (Stein et al. 1987).

Why would taking one drug increase the probability of progressing to another?
1. Different drugs might compliment one another
2. A drug may be used to counteract the withdrawal phase of another drug
3. Substitution of one drug might occur when the primary drug is unavailable.
4. There may be cross-sensitization wherein experience of one drug renders other drugs more rewarding by sensitizing brain reward systems.
5. 'common syndrome' wherein drug use renders individuals more prone to sensation seeking which predisposes them to try other drugs as well as risky sex, criminality, violence, etc. (Donovan & Jessor 1985)
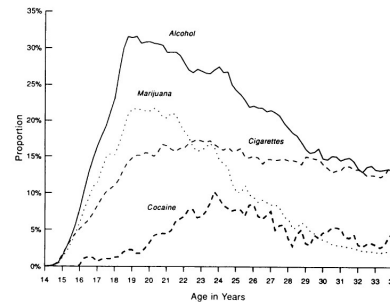- Probably all these factors contribute to the progression from one drug to another.

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Exit from drug use

Natural recovery: where an individual chooses to quit without formal help or treatment
- the bulk of quitting across drug classes (≈80%)
- largely undertaken by individuals aged 30-40, following about 5-15 years of use (Sobell et al. 2000; Price et al. 2001).

Chen & Kandel (1995): frequency of drug use during adolescence & early adulthood
- Use of alcohol, cigarettes & marijuana started earlier (19-22 years) compared to cocaine (~24 years)- consistent with gateway hypothesis.
- cigarette usage was unique in remaining stable into adulthood- consistent with the shallower age dependent decline in smoking & compared to illicit drugs
- NB: this is heavy alcohol use, not daily use seen at the start of this topic.

Note. For cigarette smokers, criterion is quantity of cigarettes smoked daily. For alcohol, n = 1130; cigarettes, n = 764; marijuana, n = 696; cocaine, n = 244 (weighted).
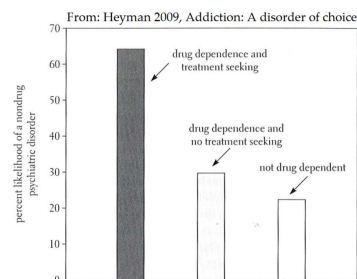
FIGURE 3—Periods of highest individual frequency of use for alcohol, cigarettes, marijuana, and cocaine, by age, as a proportion of those who had used each drug class at least 10 times by ages 34–35.

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Exit from drug use

A smaller proportion of quit attempts occur within a treatment setting (≈10-20%)
- Key factors: availability & acceptability of the treatment service (Babor et al. 2008), legal referral from courts or criminal sanctions & prior experience of treatment (Siegal 2002).
- Treatment-seekers are also characterised by a higher incidence of psychiatric symptoms (Rounsaville 1985; Carroll & Rounsaville 1992; Regier et al. 1990)
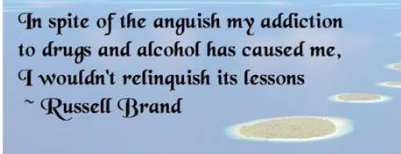

From: Heyman 2009, Addiction: A disorder of choice

4-7 The relationships between addiction, treatment, and additional psychiatric disorders. Individuals who met the criteria for a drug disorder were more than twice as likely to seek treatment if they also met the criteria for an additional psychiatric disorder. Data are from the ECA survey; Regier et al., 1990.

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Summary

- Knowledge of global and national prevalence rates and trends of drug use.

- Learned that drug use is generally initiated in adolescence and there appear to be specific risk factors associated with the development of drug abuse.

- Learned about some factors that predict drug use and how drug use develops across time.

- Gained an understanding of approaches to quitting and factors that can influence treatment choice.

In spite of the anguish my addiction to drugs and alcohol has caused me, I wouldn't relinquish its lessons
~ Russell Brand

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