Understanding the Course of Alcohol Involvement during Emerging Adulthood

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"If you are young and you drink a great deal, it will spoil your health, slow your mind, make you fat – in other words, turn you into an adult."

Emerging Adulthood

- Period from the end of secondary school through the attainment of "adult" status (age 18-25)
- Bridges adolescence and adulthood
- Marked by frequent change and exploration
- Assumption of adult roles and responsibilities

o Delay in marriage, parenthood

- Increases in education
- Changes in women's roles
- Birth control pill, standards of sexual morality
- Increased desire for independence, freedom

Many Developmental Tasks Occur During this Stage

- o Identity exploration & formation
- Freedom to choose new behaviors & lifestyles
- New social networks
- Separation from families & friends
- Education, intellectual growth

- Failure to master tasks → frustration and stress → alcohol use
- Alcohol use → failure to master tasks
 → frustration and stress
- Long-term effects on physical & psychological well-being; implications for attainment of traditional adult roles



- Describe normative trend in drinking
- Describe factors that explain normative trend
- Account for unexplained variability in change



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From 2003 National Epidemiologic Survey on Alcohol and Related Conditions (Grant et al., 2004)



From 2003 National Epidemiologic Survey on Alcohol and Related Conditions (Li et al., 2004)

Limitations of Cross-Sectional Designs

Cross-sectional designs

- Observe different cohorts at same point in time
- Confounds age with birth cohort
- Can't estimate variability in change

• Prospective designs

- Observe a single cohort over time
- Unconfounds cohort and age



Age-Specific Deaths from Tuberculosis





From 2005 Monitoring the Future data (Johnston et al., 2005)

Trends in Past 6-month Heavy Drinking



From Jackson, Sher, Cooper, & Wood, 2002. Adjusted for sex and ethnicity.



Describe normative trend in drinking

- o Describe factors that explain normative trend
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 Factors that Predict Increase in Normative Drinking

Leaving home

- Independence from parental restrictions
- New social environment
- Attainment of legal drinking age
- Stage-specific developmental correlates



Leaving Home Transition Depends on Where You Go

 \blacksquare Any HED $\blacksquare > 1X/mo$ HED $\blacksquare > 1X/wk$ HED



From 2001-2 National Epidemiologic Survey on Alcohol and Related Conditions (Chen et al, 2005)

College Students Show Greater Increase in Drinking



From 1997-1999 Monitoring the Future (O'Malley & Johnston, 2002)



From Missouri Adolescent Female Twin Study (Slutske et al., 2004)

College Students Don't Look
 Like their Non-College Peers

Higher rates of heavy use
Lower rates of daily drinking
Lower prevalence of past-year DSM-IV alcohol dependence
Power of the social environment Theories Behind the
 Drinking Increase in College

- Influence (socialization)
- Selection
- Differential socialization hypothesis

Transition to Adult Roles is
 Associated with the Decline

End formal education
Employment
Marriage
Parenthood

"Get up and dance, get up and smile, get up and drink to the days that are gone in the shortest while." -- Simon Fowler Role compatibility theory (Kandel)

Role socialization

- Individuals change substance use to be compatible with expectations from the social roles
- Role selection
 - Individuals with pre-existing traits (including low substance use) select into certain roles

End Formal Education

Leave social environment of college
Enter environments with different standards and reward structures
End of formal higher education "signals" a period of maturing out of one role into a role with greater responsibility and less freedom

Employment

Entry into the workforce
Different norms across type
full-time employment
unemployment
job stress
opportunity to drink on job

"Work is the curse of the drinking class." -- Oscar Wilde

Marriage

New responsibilities

- Change in social and recreational activities
- o Increased adult contacts
- o Engagement

Relationship Transitions and Heavy Drinking – Women



Relationship Transitions and Heavy Drinking – Men



• • Parenthood

o Pregnancy

- Impacts social life even more than marriage
 - Child care responsibilities
 - Change in social and recreational activities
- Prompts men to reduce drinking

Pregnancy and Heavy Drinking



From Monitoring the Future (Bachman et al., 1997)



- Describe normative trend in drinking
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A Prospective Approach to
 Studying Development

- Individuals change over time (intraindividual variability)
- There is inter-individual variability in intra-individual change
 - Stability versus instability
 - What predicts change?

History of Taking a Developmental Perspective

 Consider longitudinal course of a disorder when making a diagnosis

 Recent research in trajectory of change
Modeling Individual Change

• Not all individuals stay on same track

- Describe individual patterns of stability and change
 - stability
 - progression (worsen)
 - regression (recover)
- Are there individual differences?

- Young adult sample (N=489; 46% male)
- Prospectively assessed at Years 1, 2, 3, 4, 7, & 11 (~ ages 18 – 28)
- Past 30 day consumption
 - Drank alcohol
 - Felt high from alcohol
 - Felt drunk from alcohol
 - Had five or more drinks on a single occasion







Latent Transition Analysis

How many groups (classes)?
What do the classes look like?
How many in each class?
Do individuals change classes over time?





From Jackson, Sher, Gotham, & Wood (2001)





Abstainer n=62

Ltd Effect n=37

Mod Effect n=102

Lrg Effect n=241

Abstainer

Ltd Effect

Mod Effect

Lrg Effect

















What Patterns Do We See?

• Age 18 \rightarrow Age 21

- 261 remained stable
- 72 progressed to more severe use
- 108 regressed to less severe use
- Age 21 \rightarrow Age 24
 - 272 remained stable
 - 49 progressed to more severe use
 - 128 regressed to less severe use

• • Group Differences

o INITIAL STATUS: Influence likelihood of heavy drinking initially (at Year 1)

First you take a drink, then the drink takes a drink, then the drink takes you. -- F. Scott Fitzgerald

 TRANSITION: Shape persistence of, progression, or regression from heavy drinking throughout young adulthood Group Differences in
 INITIAL STATUS

- Women less likely to be large-effect drinkers at Year 1
- No effect for family history (FH) of alcoholism

Group Differences in TRANSITION

- Women more likely to mature out of large-effect drinking over time
- Having FH delayed transition from large-effect drinking status to a less severe status

Illustrative Example 2: Alcohol
 Dependence

- Alcohol dependence typically perceived as progressive and chronic
- National Longitudinal Sample of Youth
 - Drinkers only (N=4,003; 60% male)
 - Two waves (1989; 1994), corresponded to ages 24-32 / 29-37

Alcohol Dependence
 Symptoms (past-year)

• Tolerance

Withdrawal

- Using More or for Longer than Intended
- Desire to Quit/Failed Attempts to Cut Down or Quit
- Reduced Activities
- Continued Use Despite Consequences
- Great Deal of Time Spent Drinking or Getting Over Effects

How many classes? What do the classes look like?



From Jackson, O'Neill, & Sher (2006)

Stable Progress Recover

 No dependence (77%)
 89%
 11%
 -

 Mild dependence (20%)
 50%
 10%
 40%

 Sovere dependence (4%)
 45%
 55%
 55%

Severe dependence (4%) 45% -- 55%

From Jackson, O'Neill, & Sher (2006)

Group Differences in INITIAL STATUS

- Older participants more likely to be in non-dependent class
- Men more likely to be in affected classes
- No effect for race
- FH+ more likely to be in the mild or severe dependence groups

Group Differences in TRANSITION

- No effect for age
- Men more likely to progress from nondependence to mild dependence
- Non-dependent Whites were more likely to remain so & less likely to progress to mild dependence than Blacks
- No effect for FH

Multiple Trajectory Approach

- Alcohol use can take multiple dynamic trajectories
- Trajectories reflect individual differences in development
- GOAL: Identify distinct, homogeneous subgroups

"There are two types of alcoholism researchers: Those who believe in two types of alcoholism and those who don't." Illustrative Example 1: Heavy Alcohol Consumption

Monitoring the Future (MTF) panel data
Cohorts of high-school seniors
Data taken from Waves 2-5 (Times 1-4)

Ages 18-20; 20-22; 22-24; 24-26

Current study N=32,087 at Wave 1 (44% male; 82% White)



From Jackson, Sher, & Schulenberg (under review)

• • • Latent Growth Mixture Modeling

How many classes?
What do the classes look like?
How many individuals in each class?



From Jackson, Sher, & Schulenberg (under review)

- Young adult sample (N=489; 46% male)
- Prospectively assessed at Years 1, 2, 3, 4, 7, & 11 (~ ages 18 28)
- DSM III Alcohol use disorder (AUD)

Latent Trajectories of AUD Diagnosis



From Jackson & Sher (2005)

- Sex
- Family history of alcoholism
- Conduct disorder symptom count
- Novelty seeking
- Lifetime diagnosis with DSM-III depression or anxiety disorder
- Presence of suicidal thoughts in lifetime
- Affect-regulation reasons for drinking

Developmentally Limited vs. Non-diagnose



From Jackson & Sher (2005)




From Jackson & Sher (2005)

Chronic vs. Developmentally Limited



From Jackson & Sher (2005)







From Jackson & Sher (2005)





From Jackson & Sher (2005)

• • Considerations

• Take care not to over-reify these trajectories

- What if different measures?
- What if different developmental phase?
- What if different timespan (interval, number of waves)?
- Critical to use theory to guide research

• • • • Do trajectories based upon different measures...

Look the same?
Have the same prevalences?
Identify the same people?
Have the same correlates?

Indices of Alcohol Involvement

Alcohol use disorder (AUD)AUD symptom count

Interviewbased

Alcohol consequences

- Alcohol dependence
- Alcohol quantity-frequency
- Heavy drinking

Questionnairebased



From Jackson & Sher (2005)



From Jackson & Sher (2005)



From Jackson & Sher (2005)

Comparison of Trajectories (Cohen's κ)

AUD Alc Alc Alc qf Heavy depnd consq drink

AUD

Alc depend.26Alc conseq.30.54Alc quant-freq.32.31.32Heavy drinking.28.38.38.50

Developmentally Limited vs. Non-Diagnose



Alcohol Use Disorder

Alcohol Quantity-Frequency



Heavy Drinking



Chronic vs. Developmentally Limited

Alcohol Use Disorder



Alcohol Quantity-Frequency



Heavy Drinking



• • Chronic vs. Non-Diagnose





Alcohol Quantity-Frequency



Heavy Drinking



Should We Be Concerned?

• Similar courses were observed

- Predicted prevalences varied considerably
- Small to moderate agreement among trajectories based upon different indices
- BUT, roughly similar patterns of prediction across trajectories



 Individuals show dramatic change in alcohol involvement over emerging adulthood

• Factors such marriage, parenthood, school departure explain change

 We can account for unexplained variability in change by modeling inter-individual differences in intraindividual change

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