

*Presentation to the
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Alcohol Use in the U.S.: A Behavioral Perspective

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Considerations:

- (For humans) Behavior is biology actively interfacing with social/cultural environment to maximize evolutionary fitness
- In Western World, culture of alcohol use is pervasive
- Culture of alcohol use has uniqueness, and associated large public health burden
- Scientific organization should intimately understand and reflect uniqueness

- Like Darwin: Encourage cultural variation (among institutes), optimized to public health problem addressed
- Create more interplay (e.g., program officers on extended assignment to other institutes; not just NIAAA and NIDA)
- Create multi-institute working groups to explore behavioral overlap (e.g., other drugs, eating, resistance to healthy behaviors, personality problems, etc.), and perhaps find common remedies

Contextual/Cultural Behavioral Issues Faced by NIAAA

- Legal (over 21); unique history (prohibition on/off)
- Encouraged in General Society (even <21)
- Legal industry exists, with extensive advertising
- Health and food benefits
- Social benefits (President's Beer Summit)

Use is **NORMATIVE**, and woven into the fabric of U.S. culture across all ages and ethnicities.

Problems emerge for some from general use based on **G/E interplay**

G/E interplay

- Interaction
- Correlation (passive, active)
- Evocation (can escalate behavioral pattern)

Unique G/E interplay patterns related to alcohol culture in U.S.

Influences Developmental Pathways Over Lifespan

- Different behavioral patterns**
- At different developmental periods**
- Vulnerability, Resilience**
- Oscillations, Exacerbations,
Persistence, Desistence**

**Epigenesis influenced
by unique U.S. alcohol
culture**

Walt Disney's

ILLUSTRATED EDITION

THE STORY OF

DUMBO



Example in one phase of development (Adolescence):

“...brain sculpting...(along with) certain adolescent-characteristic behaviors, including increases in risk-taking...and increased focus on social interactions with peers, are evident not only for human adolescents but also for their counterparts in other species.” (p. S245)

Masten et al. (2008), Pediatrics

Risk-taking (a personality characteristic):

increase(s) the probability of reproductive success for male individuals of a variety of species, including humans...

facilitate(s)...emigration of sexually maturing adolescents away from genetic relatives” (p.245)

Masten et al. (2008), Pediatrics

Alcohol Response (Pharmacology) in Adolescents:

↑ **social** facilitation.

↓ **aversive effects** of acute alcohol intoxication (sedation, hangover, ataxia).

Alcohol Use Increases Dramatically During Adolescence

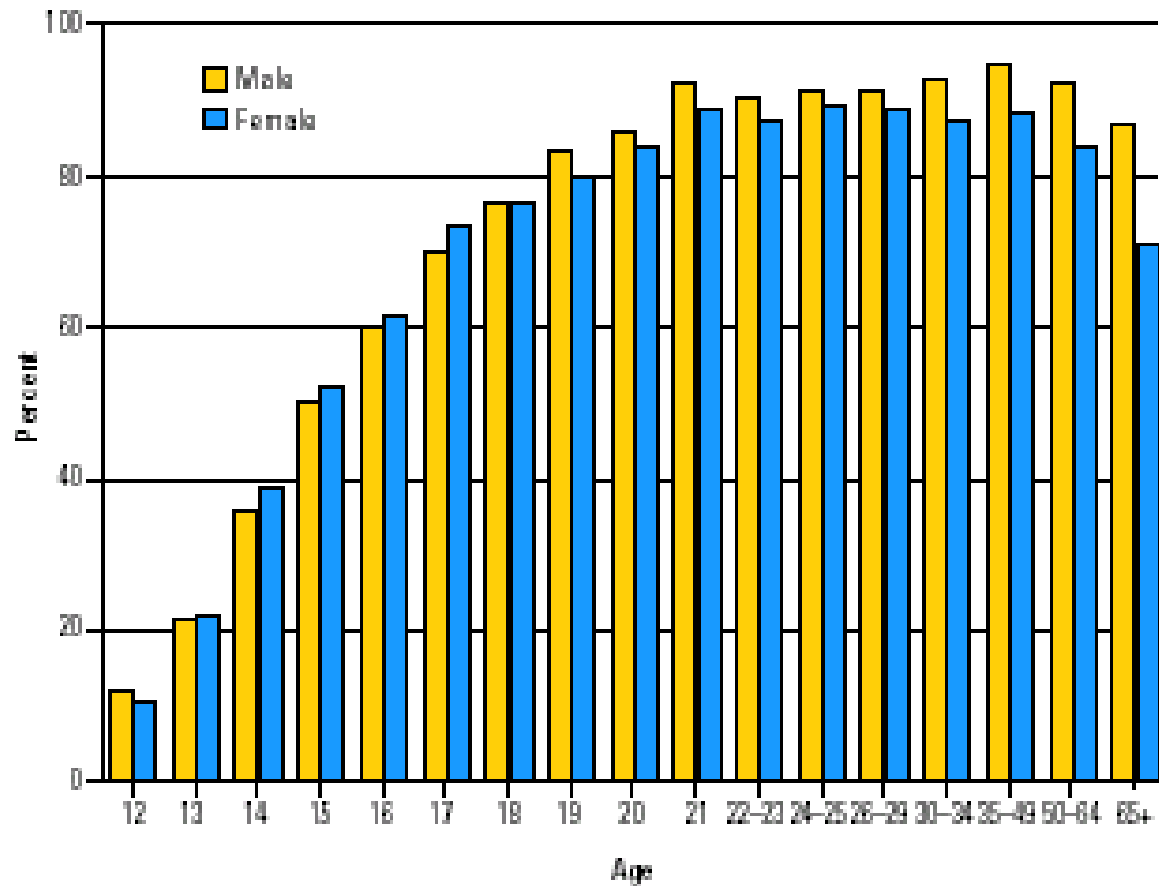


Figure 1: Percentage of Americans Who Have Ever Drunk Alcohol (A Whole Drink)

Source: SAMHSA data from 2005 National Survey on Drug Use and Health (NSDUH)

U.S. Drinking:

144 million Americans of all ages drink alcohol (65% of the U.S. adult population)

Of those, **126 million** do NOT have an Alcohol Use Disorder (**87.5% of drinkers**)

from **NESARC**

Among Adolescents Who Drink, the Number of Binge Drinking Days Increases With Age

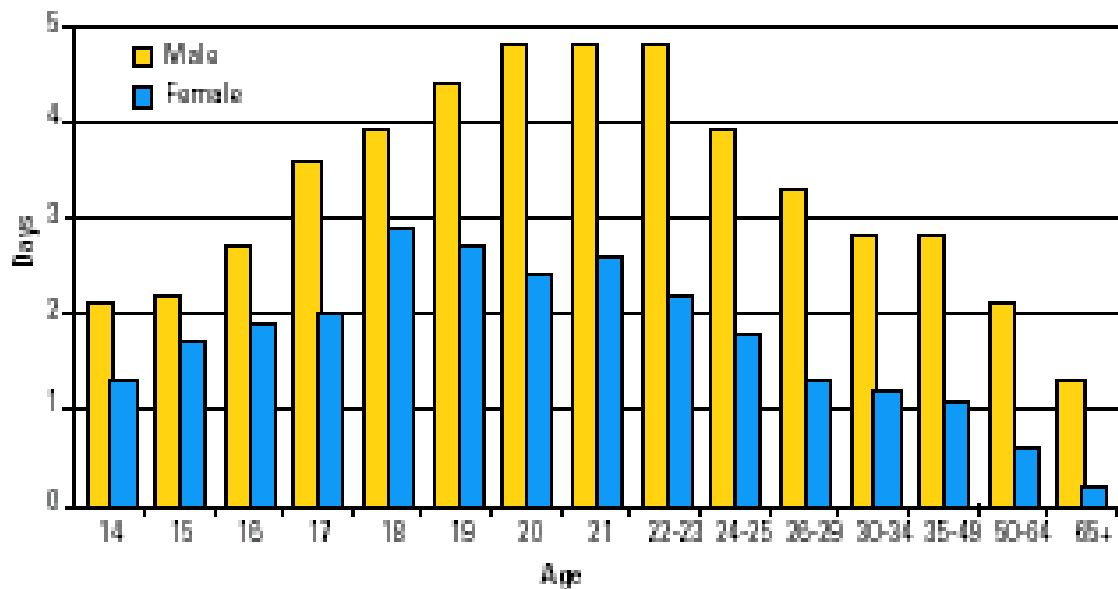


Figure 5: Number of Days in the Past 30 in Which Drinkers Consumed Five or More Drinks, by Age and Gender.

Source: SAMHSA data from 2005 NSDUH

**A Significant Proportion of
15- to 16-Year-Old Students in Many
European Countries Report Binge Drinking**

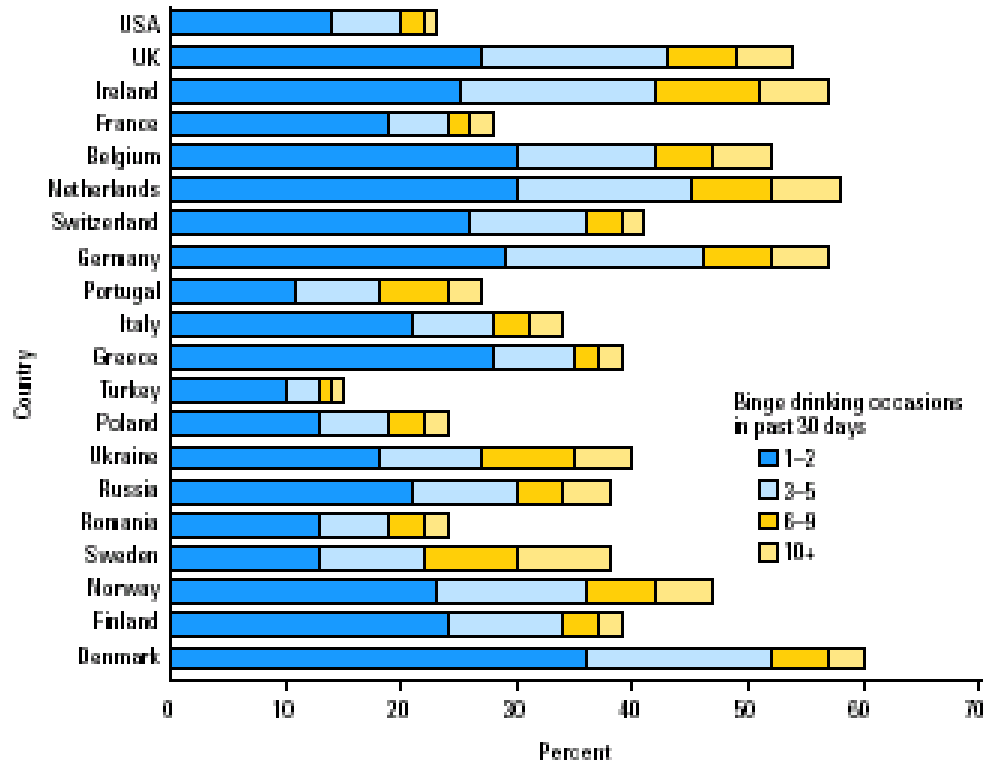


Figure 7: Percentage of European Students Ages 15–16 Who Have Engaged in Binge Drinking (5+ Drinks) Within the Past 30 Days.

Source: Hbell et al. 2004 (data from European School Survey Project on Alcohol and Drugs, 2003)

Despair grows over 'broken Britain'

Binge drinking teens, knife crime and teen pregnancies are signs "we've lost our way."

Associated Press

LONDON — Ahhh, Britain. The land of Shakespeare and the Beatles, Churchill and the Queen. Rolling green hills, groovy London shops, hip plaids splashed over raincoats and umbrellas.

Cut to the reality of 2009: the highest teen pregnancy rate in western Europe, a binge drinking culture that leaves drunken teens splayed out in the streets and rising knife crime that has turned some pub fights into deadly affairs.

Ahhh, Britain.

In the latest symbol of what some are calling "broken Britain," 13-year-old Alfie and his 15-year-old girlfriend Chantelle became parents last week. The news sparked a flurry of hand-wringing from the media — and even ordinary folk admitted



Associated Press

it didn't help that Alfie barely looked 10, let alone 13, as he cradled his newborn daughter.

Alfie's father, who reportedly has nine or 10 children of his own, gamely promised to have a "birds and the bees" chat with his son to prevent him from producing a second child before he grows facial hair.

Somehow that was not reassuring.

Sir Bernard Ingham, once press secretary to former Prime

Teens drink alcohol on a street corner in Hebburn, England, Friday. The problem of youthful binge drinking shows up in a rise in liver disease among Britons in their 20s.

drinking and youth violence reflect the same general fall in standards and discipline.

"I think in time there will be a swing against this permissiveness," he said, noting a shift from British debauchery in the 18th century to Victorian straight-laced standards 100 years later.

Binge drinking has produced a rise in liver disease among Britons in their 20s and the unpleasant reputation of British "lager louts" at holiday resorts across Europe.

On any given night, London residents can see drunken teens staggering through the Underground subway system. Usually their friends help them, but sometimes collapsed teens are left on their own until police or transit staff intervene.

The rise in knife crime harkens back to the 1950s *West Side Story* era in the United States. The number of robberies carried out with knives rose 18 percent for the third quarter of 2008 compared with the year before, according to government figures released in January.

Minister Margaret Thatcher, said people from across Britain's political spectrum are in despair over the country's social breakdown.

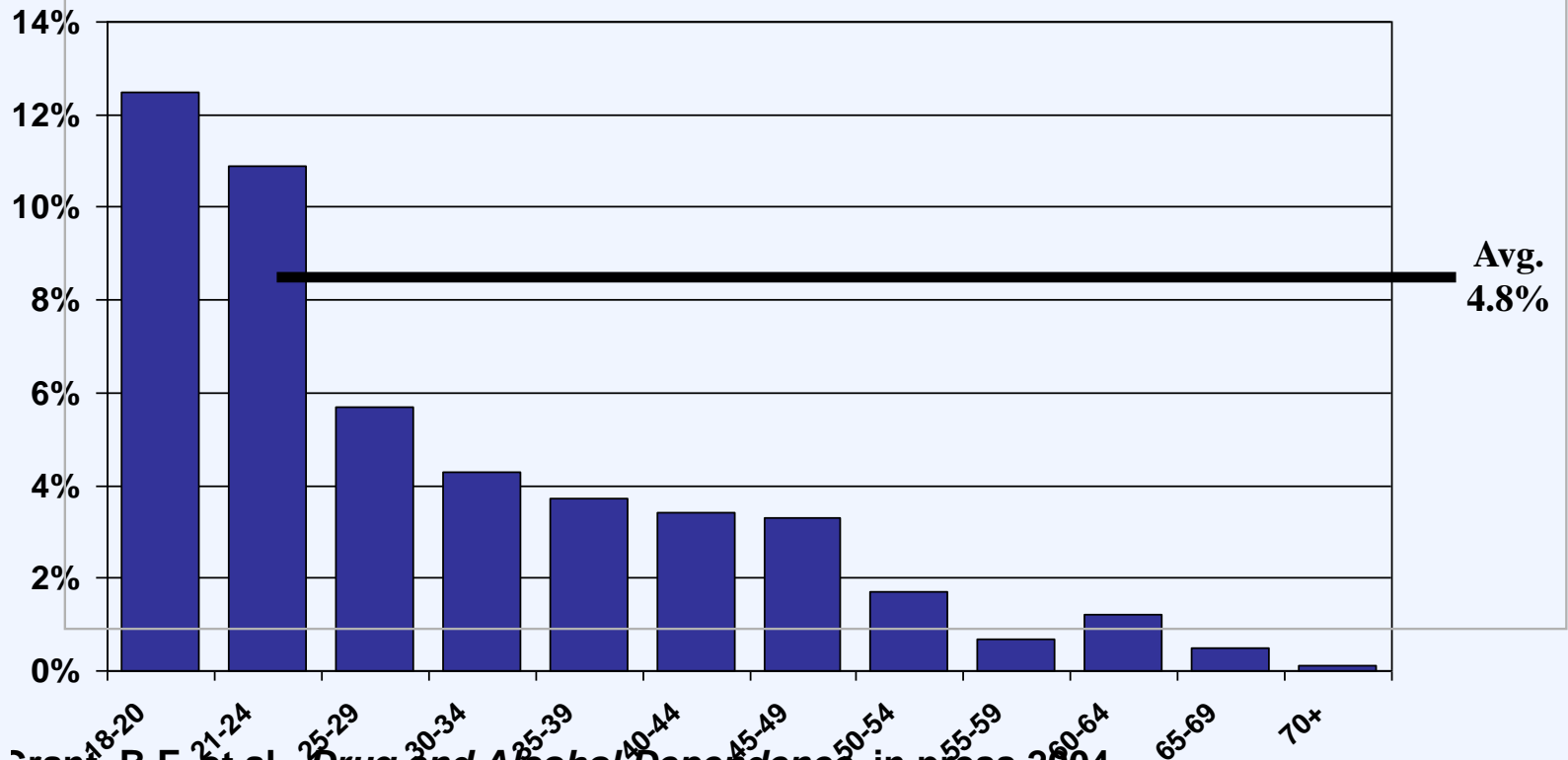
"It's an indication that we've lost our way, that people don't know the difference between right and wrong," he said of young Alfie. "The plain fact is society can't proceed on this basis. I think this is an indication of broken Britain."

Ingham said Britain's binge

In adolescents, direct effects specific to alcohol (in U.S.):

- Annually, about 5,000 youth under 21 die from alcohol-related injuries (79,000 deaths across all ages, 1/3 fatal car crashes, 1/2 suicides/murders, 30% hospital admissions)
- Often a factor in physical and sexual assault and unintended sexual activity.

Prevalence of Past-year DSM-IV Alcohol Dependence: United States, 2001-2002



Source: Grant BF et al. *Drug Alcohol Depend.* 2004. 74(3):223-34.

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The End

Thank you