Caution:

Work in progress
Inadvertently, Roy dooms the entire earth to annihilation when, in an attempt to be friendly, he seizes their leader by the head and shakes vigorously.
EXPECTANCY:

ANTICIPATION OF A SYSTEMATIC RELATIONSHIP BETWEEN EVENTS OR OBJECTS IN SOME UPCOMING SITUATION...

BASED ON PRIOR EXPERIENCE (MEMORY)
...4 PART PROCESS—NOT JUST LIST OF OUTCOMES:

Cue (context) >

Decision/memory process >

Response >

Outcome
Expectancy Correlational Evidence

Correlate with drinking - Up to 50% variance with error attenuated

e.g., Goldman, Greenbaum, & Darkes, 1997; Leigh & Stacy, 1993
Can be found in children before drinking begins (Cross-sectional & Longitudinal)

e.g., Christiansen, Goldman & Inn, 1982; Miller, Smith & Goldman, 1990; Zucker, Kincaid, Fitzgerald & Bingham, 1996; Newcomb, Chou, Bentler & Huba, 1988
Predict drinking prospectively

e.g., Smith, Goldman, Greenbaum & Christiansen, 1995; Sher, Wood, Wood & Raskin, 1996
Increase and decrease in parallel with drinking
e.g., Smith & Goldman, 1990; Sher, Walitzer, Wood & Brent, 1991; Henderson, Goldman, Coover & Carnevalla, 1994; Darkes, Greenbaum & Goldman, 1996; Finn, Sharkansky, Brandt & Turcotte, 2000
EXPECTANCY TEMPLATES

AS A BUFFER THAT STORES INFORMATION ON DISTAL INPUTS

DISTAL INFLUENCES

FAMILY HISTORY (GENETICS)
PHARMACOLOGICAL EFFECTS
METABOLISM & SENSITIVITY
AFFECTIVE & PERSONALITY FACTORS
FAMILY & CULTURAL ENVIRONMENT
PEER INFLUENCES

PROXIMAL BEHAVIOR

USAGE PATTERNS
“…ALDH2 status may protect against drinking by lowering positive expectancies and reducing the expectancy-drinking relationship.”

Explicit and Implicit Measures of Expectancy and Related Alcohol Cognitions: A Meta-Analytic Comparison

- 16 studies using both explicit and implicit measures
- Explicit and implicit measures were weakly related
- Explicit measures outpredicted implicit (unreliability?)
- Implicit measures contributed uniqueness
- For prediction, use both
- For understanding memory operation--???

Reich, Below, & Goldman (2010). Psychology of Addictive Behaviors, 24, 13-25
IT SAYS, "THE AILING OPERA STAR LIP-SYNCED THE TENOR PART WHILE HIS UNDERSTUDY SANG OFFSTAGE."

THE AUDIENCE DIDN'T KNOW THEY'D GOTTEN A PLACEBO DOMINGO!
Efficacy of Expectancy Challenge Interventions to Reduce College Student Drinking: A Meta-Analytic Review

• 14 studies (19 EC interventions)
• Experiential and Didactic
• Lower Alcohol Use and Expectancies
• Limited to 4 weeks

• Not unique to alcohol and drugs

• Scientific convergence (consilience)
The brain is an “anticipatory machine...”

“Neural networks that match sensory input with learned expectations help explain how humans see, hear, learn and recognize information.”

“...infants...[between 9 and 14 weeks]...develop expectancies...”

“... experimental study of anticipatory responding... is called Pavlovian (or classical) conditioning.”

“Existing models of operant learning are relatively insensitive to historical properties of behavior…

The contingent reinforcement is represented by learning expectancy…”

...dopaminergic neurons encode expectations about external rewards.”

“...mere expectation of ethanol availability enhances the efflux of DA in the Nac of the P, but not the Wistar rat...”

Expectancy and ...

Fear  
Nancy E. Schoenberger

Pain Reduction  
Donald D. Price and James J. Barrell

Sexual Dysfunction  
Eileen M. Palace

Asthma  
Samantha C. Sodergren and Michael E. Hyland

Drugs  
M. Vogel-Sprott and Mark T. Fillmore

Alcohol Use and Alcoholism
Mark S. Goldman, Jack Darkes and Frances K. Del Boca

Smoking
Thomas H. Brandon, Laura M. Juliano, and Amy Copeland

Nocebo Phenomena
Robert A. Hahn

Psychotherapy
Joel Weinberger and Andrew Eig

Hypnosis
James R. Council
• Behavior controlled by processes—not circles and arrows

• Our view of these processes is fuzzy and simplified—so, more work needed

• Will evolve with advances in behavioral neuroscience
Appreciation is expressed to the National Institute on Alcohol Abuse and Alcoholism for their support for portions of this work:

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The End
Thank You