Social learning and cognitive theories put the person in a central position

Strictly behavioral conditioning models, like those we looked at last week, assume that only observable responses and the environment are necessary for a scientific analysis of behavior.

In the 1950s Albert Bandura began to move beyond classical and operant conditioning by studying *observational learning* (also called modeling)*.*

Among his many discoveries was the fact that learning could take place simply by observing the actions of another, and that this learning occurred even if there was no observable response. He also noted that people could learn by observing the consequences that occurred to others – whether they were rewarded or punished for a certain response – a process often called "vicarious learning."

This was the beginning of what has come to be known as *Social Learning Theory (SLT)*, which emphasizes the social nature of learning. And because it assumes that learning is talking place even when there is no observable response, it brought attention back to mental processes: to people's thoughts, attitudes, beliefs, perceptions, expectations, mindsets, etc, which collectively involve what psychologists call **cognitive** processes, or simply **cognition**.

So the 1950s so not just the rise of SLT, but also more and more emphasis by many psychologists on trying to understand how people think and reason and make decisions and how these cognitive processes influence behavior:
- ✓ George Kelly was developing his *psychology of personal constructs*, which holds that people are influenced by their internal constructions of themselves and the world
- ✓ Albert Ellis was developing the techniques of *rational-emotive therapy (RET)*, which holds that between Activating events in our environment and the Consequences that these events cause are Beliefs (Ellis referred to this as the ABC model of analysis). He developed a new approach in psychotherapy that emphasized *disputation* – confronting clients about their irrational beliefs and challenging them to change their thinking – this D created the acronym of ABCD.

In contrast to the unconscious determinism of psychoanalysis and the environmental determinism of behaviorism -- both of which reduce the conscious, thinking person to a purely passive reactive entity -- both SLT and cognitive psychology put the person back in the equation, based on what Bandura called **reciprocal determinism**:

People are influenced by their environments but they also influence their environments, and people both influence and are influenced by their behavior, and our behavior can alter our environment.

In SLT it is assumed that the influence of the environment on behavior is mediated by cognitive processes:

- o   Which environmental influences are attended to? Which are ignored?
- o   How are these influences perceived and interpreted? (remember the cliché, "beauty is in the eye of the beholder"?)
- o   Which influences will be remembered? Which forgotten?
- o   Which influences are believed to be likely to occur in the future? What do people expect?

Humans are assumed to play an active role through the capacity for *self-regulation* -- drawing upon their history of observations and reinforcements, they develop internal standards by which they can reward and punish themselves.

Addiction can be thought of as related to self-efficacy and expectancies

Modeling

The work of Bandura and the emergence of SLT were the beginning of what some have called the *cognitive* revolution in psychology. The first cognitive theory of addiction was proposed in 1947 when Lindesmith argued that one can only become addicted if one *knows* that the substance both causes and can relieve withdrawal. In other words, it is not the pharmacology of the drug, it is what we *believe* about the drug that matters.

Within this perspective, addiction is viewed not as the *failure* of self-regulation (which is what most disease as well as psychodynamic and psychiatric theories say) but as a purposeful expression of self-regulation, albeit with harmful consequences (which might not be attended to or interpreted accurately or remembered or seen as likely to recur). In this view, addiction is seen as a form of adaptation, with cognitive factors such as self-concept, perceived alternatives, and values against intoxication all playing a part in the person's intentional and constantly changing efforts to adapt to internal needs and external pressures.

Thus, to understand why a person drinks alcohol or uses drugs (the Behavior), we must look at the Person and the Environment, as well as at the substance itself and its actual and perceived properties.

SLT says that **modeling** (observational learning) can influence alcohol and drug use (or any other behavior) in three ways:
1.   acquisition (starting to use): if you see others using, you become more likely to begin to use
2.   inhibition and disinhibition (strengthening or weakening the restraints against use): if you see others giving in to temptation or resisting temptation, you become more likely to giver in or resist
3.   response facilitation (being more likely to use): you are more likely to engage in the behavior when others around you are engaging in the behavior

SLT provides us an obvious basis for understanding the widely-acknowledged importance of **peer associations** and **peer influence**. It is well known that in the life histories of alcoholics and addicts, first use most often occurred in early or mid-

adolescence, and almost always in the company of same-age peers also using alcohol or other drugs. We imitate our peers (acquisition), we imitate their impulsivity (disinhibition), and we use when they use (response facilitation). And many natural histories of recovered/recovering addicts say that the turning point that leads away from alcohol and drugs is the decision to turn away from alcohol- and drug-using peers.

Self-Efficacy

In recent years, the concept of *self-efficacy* has become the unifying concept linking SLT and cognitive psychology -- it refers to the individual's judgment of his ability to carry out an action designed to deal with a situation.

Bandura has distinguished two components of self-efficacy: *outcome expectancies* and *efficacy expectancies*. What do I expect the outcome do be, and to what extent do I believe that I am able to have any influence on that outcome?

Rather than being a unitary trait, self-efficacy may vary according to the specific types of situations; with respect to alcohol and drug use, Alan Marlatt identifies five:

1. resistance self-efficacy (can I resist the pressures and temptations to use?)
2. harm reduction self-efficacy (can I regulate my use to minimize the possible harmful consequences that might occur?)
3. action self-efficacy (am I capable of carrying out the actions necessary to maintain my health and effective day-to-day functioning?)
4. coping self-efficacy (am I able to cope with the stresses and pressures of everyday living without resorting to alcohol or drugs?)
5. recovery self-efficacy (if I need to, am I capable of successfully recovering from my abuse of or dependence on alcohol or drugs?)

Over time, an individual's self-efficacy is influenced by successes and failures, vicarious experiences (that is, what we see happen to others), verbal persuasion, and emotional arousal.

In addictions, outcome expectancies are assumed to include a person's beliefs about what drinking or drugging will do, and these are regarded as more important than the actual pharmacological properties of the substance.

Expectancies Research

[As we saw last week, behaviorists use the term "expectancies" but are simply referring to the automatic associations learned through classical and operant conditioning. When cognitive psychologists talk about expectancies, they are talking about what people *think*.]

Given the central role of expectancies in cognitive psychology, it makes sense that there has been extensive research to determine their role in addictions; much of this research employs what is known as the "balanced-placebo" design:

	Given alcohol?	
	Yes	No
Expect alcohol? Yes	1	2
Expect alcohol? No	3	4

In these experiments, subjects are randomly assigned to one of the four conditions: participating in what they are told is a beverage tasting test, they are given a beverage to drink that they are told either does or does not contain alcohol (Expect Alcohol?), and the actual beverage they are given either does or does not contain alcohol (Given alcohol?). In examining the effects of drinking the beverage, the crucial comparison is between subjects in Condition 2 and 3 - can you figure out why this comparison is so important? The very robust finding in many studies is that the *belief* one has consumed alcohol often has *more effect* than alcohol itself! In other words, research participants in Condition 2 typically show a stronger alcohol-type reaction than those in Condition 3. Studies such as this have been conducted with both college students (presumably non-alcoholic) and with diagnosed alcoholics.

Survey research has also added support for the importance of expectancies.

The Alcohol Expectancies Questionnaire (AEQ) developed by Sandra Brown assesses six domains of alcohol's effects (global positive change, sexual enhancement, physical and social pleasure, increased social assertiveness, relaxation and tension reduction, and arousal with power).

Research with the AEQ shows that expectancies typically correlate with initial use, heavy use, and problem use in adolescents and in college students.

Brown and her colleagues have developed similar questionnaires for marijuana and cocaine and have found correlations with patterns of their use.

Of course, such correlations could be misleading, since expectancies might simply accompany use, but numerous prospective studies show clearly that expectancies have strong predictive value and are true antecedents (that is, people seem to have these expectancies *before* they start to use).

Expectancies are obviously linked to memory, and some studies suggest that heavy drinkers selectively remember positive outcomes while forgetting negative ones, and that this separation of memory can start at an early age.

Another method for studying expectancies can be examined by asking people to complete the phrase "drinking alcohol makes me.......": social drinkers come up with words like "relaxed," "sleepy," "dizzy," "stupid," whereas heavy drinkers come up with words like "happy," "talkative," "funny," and "horny."

Automatic Cognitive Processing

Central to most models of addiction, and especially to the disease models, is the emphasis on the addict's *craving* – the uncontrollable desire for the pleasure produced by the addiction and/or for the relief from the torments of withdrawal. But research by Tiffany suggests that a lot of the repetitive alcohol and drug use seen in addicts is not accompanied by much motivation at all; instead, the addict seems to be on "automatic pilot," mindlessly and effortlessly engaging in a familiar routine of obtaining and using the substance. (And remember, one DSM-IV criterion for dependence is that the person uses more than intended, and many alcoholics, when told how much they had to drink, often seem genuinely surprised—"I drank that much? I had no idea!")

Think about driving your car along a very familiar route, say from home to work. Have you noticed that often you will arrive at work but without any specific recollection of having passed through a certain intersection or passed by a certain landmark? Yet you did arrive safely! Apparently, we can engage in very intentional behavior without much thought, and this may be true for addicts as well.

Relapse

Relapse is a central concept in addictions. To disease model proponents, the frequent occurrence of relapse is seen as "proof" that addiction is a chronic disease.

Relapse has also been a major focus of cognitive theories, along with emphasis on relapse prevention techniques, but within this perspective relapse is simply viewed as another pattern of acquired behavior that can be modified.

Some cognitive theorists have suggested that the disease model actually creates an *expectancy of relapse,* which can turn minor slips into full-blown disasters.

In similar fashion, there is concern that an emphasis on "powerlessness" within the disease model sets up a self-fulfilling prophecy: if you are told that you are powerless over alcohol, then isn't it possible that the next time you drink you will drink to excess simply because you believe you have no control?

[As you probably know, Alcoholics Anonymous is known as a "12-step program," because it spells out 12 steps to recovery. Do you know what the first step is? Many

think that it is admitting to being an alcoholic, which is sort of right. But to be more precise, the first step requires that one admits to being "powerless" over alcohol.]

Stress is known to be a significant factor in relapse, and cognitive theories emphasize the appraisal of stress and the role of coping self-efficacy.

Another major focus is the thinking patterns and beliefs of addicts. If you perceive the stress in your life to be excessive or intolerable ("I can't stand it"), or if you see yourself as unable to cope with it ("I don't know what to do"), then the stress – even if minor by any objective standard – could "drive you to drink." And simply saying to yourself, "I need a drink" over and over can create a belief that you really really really have to have a drink to function.

Ellis has identified numerous dysfunctional and irrational beliefs that constitute what he calls the Low Frustration Tolerance pattern.

Various cognitive theorists have constructed chains of processes that culminate in problematic use: Ellis's beliefs, Marlatt's "apparently irrelevant decisions," and what Marlatt calls the "abstinence violation effect" represent significant links in the chain and are the focus of cognitive interventions.

There is widespread misinformation about how addiction occurs in infants and animals

A particular challenge to more psychological (behavioral, social learning, and cognitive) views of addiction comes from the widely-reported "evidence" of drug addiction in human infants and caged animals. It has been widely reported in the popular media that children born to drug-using mothers are often born addicted, and it has also been widely reported that lab animals offered cocaine or heroin become almost instantly addicted.

If taken at face value, such evidence would suggest that addiction can be explained almost entirely in pharmacological terms. The fetus or the lab animal is exposed to the drug and presto!, addiction occurs.

However, Stanton Peele argues that the actual evidence, if closely examined, does not justify the conclusions that most so-called experts have reached.

Drug-addicted Newborns

Regarding heroin and cocaine addicted babies, Peele points out that

- When observer bias is controlled, the number of confirmed cases of acutely distressed newborns is small
- Confirming that such distress actually represents withdrawal is impossible; the distress might be due to any number of factors (and it is common sense that drug-using mothers might very well present a wide range of unhealthy influences on their new-born: malnutrition, cigarette use, injury resulting from domestic violence, life stress, etc.

- It is also illogical to think that a newborn might be experiencing withdrawal given that several days or even weeks have probably passed since the mother used drugs

With respect to Fetal Alcohol Syndrome (FAS), Peele acknowledges that alcohol might have a damaging effect on the fetus, but
- such damage, while tragic, does not constitute an alcohol addiction
- no more than 2½% of babies born to mothers who consume alcohol during pregnancy are affected
- many other factors might be involved

Situational Factors in Addiction

Regarding addiction in animals, there is the widely-told story that when rats are allowed to self-administer stimulants or opiates, they will do so with such frequency that they starve to death. Such "evidence" is cited as proving just how incredibly addictive such drugs are.

Stanton Peele argues that while it is clear that such drugs often operate as powerful reinforcers (in the sense that they lead to high rates of responding), there are several reasons to be cautious in drawing conclusions:

- no specific physiological mechanism has been identified
- other reinforcers can be just as powerful
- drugs operate most powerfully as reinforcers for animals that are caged, restrained in harnesses, deprived of social contact, etc.
- and most important, an animal actually starving itself to death is a rare event

In contrast to the typical studies conducted in highly abnormal settings, Peele describes at length the study of drug use among rats in "Rat Park," a laboratory environment 200 times larger than the usual cage and with many more varied contents.

Under these more natural conditions, rats still displayed a tendency to respond to a morphine solution, but much less so than reported in other studies, and they required a fair amount of encouragement to initiate use.

In addition, Peele points out that use was almost entirely under the control of external factors rather than factors related to the morphine itself: housing (confined to cage or not), social contact, roaming space, added inducements (e.g., sweeteners), deprivation, etc.

Peele concludes that addiction must be understood as a uniquely human condition, one that is neither limited to nor explained by chemical substances; addiction is, in other words, an indication of how people experience and react to their environment. In this way of thinking, situational and contextual factors become the most important determinants of whether or not someone will develop an addiction.

Is it possible that someone would choose to be an addict?

For many people, subscribing to the belief that addiction is a disease seems to be simply a matter of common sense. After all, as many people think, no one would ever choose to be an addict, right? Addictions are so self-destructive, so harmful to those that the addict cares about, so dangerous, that no one would ever choose to go down this path. So it must be some form of disease, beyond the addict's control. Remember AA's first step, the admission of powerlessness? Or Jellinek's emphasis on loss-of-control as the key turning point from excessive use to disease?

One of the most controversial discussions of addiction in recent years is the work of Gene Heyman, who in 2009 published his seminal work, <u>Addiction: A Disorder of Choice</u> (Cambridge, MA: Harvard University Press). Though his arguments are not always easy to follow, at its simplest, his view is exactly what is stated in his title, that addicts have made a choice, that their addiction is voluntary.

And by exactly the same logic, he says that quitting an addiction is also simply a matter of choice, a choice that most addicts make, sooner or later, since most addicts become ex-addicts.

But wait a minute, you might say: alcoholism and other addictions are incurable, life-long—everyone knows that.

In response, Heyman cites study after study showing two well-documented—but among the general public and even among many healthcare professionals, largely unknown—facts:

1. The lifetime "remission" rate for substance use disorders is somewhere between 60 and 80%, based on national surveys conducted over the past 20 years looking at the experiences of thousand of subjects
2. These remission rates are among the highest for any psychological or behavioral disorder, which are often no higher than 40% (and other studies tell us that most of these remissions are "spontaneous," that is, occurring without benefit of any formal treatment)

Heyman draws extensively on the psychological study of how people make choices, which he says are primarily determined by:

- Information and beliefs regarding costs and benefits
- Personal and cultural values

With regard to information and beliefs, there is an extensive research literature in psychology to show that rational, healthy, "normal" people have a strong tendency to overestimate benefits and underestimate costs, and that many of the choices and decisions we make are driven by emotion (desire greed, fear, envy). How many bad decisions and poor choices have you made?

In addition, even very intelligence people have a very hard time calculating odds accurately, so when figuring out the odds of whether some potential cost or benefit will occur, we make mistakes all the time. Why do you get so much more anxious when

flying on an airplane than when riding in your car, when the odds of death at some point in your lifetime are 150 to 200 times greater in your car?

Or consider this. Imagine that you have just been tested for a rare disease that is always fatal. The test result comes backs positive, saying that you have the disease. You're understandably terrified, but you think to yourself, wait a minute, tests aren't always accurate. So you investigate the test used to check for this disease, and you discover that the test is 98% accurate.

OK, what are the odds that you in fact have this disease? Most people—including most doctors—will say if the test is 98% accurate and it says you have the disease, then the odds are 98 out of 100 that you have it. Simple, yes? Simple, but wrong. The odds are probably more like 30-40%, maybe lower.

How is this possible? The problem is that everyone focuses on one key fact, the accuracy of the test, while ignoring the other key fact, that the disease is rare. "Rare" means that with or without a test, most people don't have it. And the test can't give it to you. So a test result can only raise the very low odds to a limited degree.

We also know from research that people tend to focus much more on immediate rather than long-term costs and benefits. For addicts the immediate benefits are enormous, with minimal immediate cost, and the costs that might occur are in the future, and thus often get discounted.

And what about values? As you know from your reading, Peele puts a lot of emphasis on addiction as a reflection of a person's values (or lack of them, if you will). Remember Mulder's research showing the correlation with antisocial personality traits among alcoholics?

And what about cultural values? Do we live in a country where restraint and self-denial are prized? Or where excess is the norm (remember "greed is good!"?) What about fast food meals with their 2,500 calories? Why is obesity so rampant? Why do we need faster and faster Internet connections? What about the proliferation of McMansions? Do people really need 8,000 square feet of house to be happy?

How shall we evaluate these social learning and cognitive theories?

Although addictions treatment programs in the U.S. continue to be dominated by disease models, specific cognitive techniques have become an increasingly important adjunct to addictions treatment.

Alan Marlatt, for example, has described the importance of *self-regulation* in relapse prevention, and methods for self-monitoring, self-evaluation, self-reinforcement, and stimulus-control are often taught in alcohol and drug rehabilitation programs to help addicts become better able to prevent relapse, to improve their **recovery self–efficacy**.

Many cognitive techniques have now become commonplace in addictions/substance-abuse treatment: understanding high-risk situations, coping skills training, enhancing self–efficacy, and dealing with abstinence violations.

The social learning emphasis on modeling is viewed by many as a particularly powerful alternative to disease models and their emphasis on genetics. Given that addiction does seem to run in families, the idea that children learn by observing what they see growing up provides another way of understanding what this means. And dysfunctional families are often clustered in neighborhoods, with many dysfunctional peers who use alcohol and drugs, so the family's influence is compounded by peer influence.

As we've seen, there is a great deal of empirical support for the role that expectancies play in the initiation and continuation of alcohol and drug use. Also, there have been some promising studies of the link between expectancies and treatment outcomes.

Despite the strong empirical base for many cognitive theories, however, evidence so far has not yet indicated that cognitive approaches to treatment are consistently superior to more purely behavioral or even traditional disease-education and 12-step approaches.

[However, it is also possible to reframe 12-step programs such as AA in social learning and cognitive terms and to discuss the potential value of such programs as stemming from the exposure to more positive models and to a shift in attitudes and expectancies due to the 12-step teachings.]

The Tension Reduction Hypothesis Controversy

Another confusing area involves whether or not the Tension Reduction Hypothesis (TRH) is supported by the empirical evidence (see Thombs, pages 176-180). The TRH has been a cornerstone of social learning models since Conger first proposed it 50 years ago, and its argument is very simple: alcoholics drink because they believe that drinking will reduce their tension and help them to deal with life's stresses.

Sure enough, many studies show that alcoholics do indeed believe this, much more so than social drinkers. However, research also shows that most alcoholics experience increased stress as a result of their problem drinking. So if they experience more stress, how can they continue to believe that drinking will relieve their stress?

One promising finding involves the relationship between alcohol and the appraisal of stress: when alcohol is consumed before a stressor is appraised, there might be a *stress dampening* effect, and conversely, if alcohol is consumed after appraisal, the stress response might be greater.

In summary, based on what you now know about social learning and cognitive models of addiction, how would you rate them in each of the following areas we identified a few weeks ago as the formal attributes of a good theory or model?

Clarity: are the social learning and cognitive models clear, well-articulated, easy to understand?

Comprehensiveness: do the social learning and cognitive models deal with all, or at least most, of the major issues?

Explicitness: do the social learning and cognitive models use precise definitions in a way that allows for reliable measurement of key variables?

Parsimony: do the social learning and cognitive models provide a simple way to understand addiction?

Ability to generate useful research findings: are there good studies with strong scientific evidence to support these social learning and cognitive models?