

## Week 3: Human Learning

### ■ Theories of Learning

- Ivan Pavlov and B. F. Skinner (behavioristic viewpoint)
- David Ausubel (rational/cognitive viewpoint)
- Carl Rogers (constructivist viewpoint)

### 1. Pavlov's Classical Behaviorism

- Ivan Pavlov, Russian psychologist, is the best known classical behaviorist.
- trained a dog to salivate to the tone of a tuning fork through a procedure that has come to be labeled classical conditioning.
- For Pavlov the learning process consisted of the formation of associations between stimuli and reflexive responses.
- In the classical experiment he trained a dog, by repeated occurrences, to associate the sound of tuning fork with salivation until the dog acquired a **conditioned response**: salivation at the sound of the tuning fork. A previously neutral stimulus (the sound of the tuning fork) had acquired the power to elicit a response (salivation) that was originally elicited by another stimulus (the smell of meat).
- Drawing on Pavlov's findings, John B. Watson (1913) coined the term behaviorism. Watson contended that human behavior should be studied objectively, rejecting mentalistic notions of innateness and instinct. He adopted classical conditioning theory as the explanation for all learning: by the process of conditioning, we build an array of stimulus–response connections, and more complex behaviors are learned by building up series or chains of responses.
- Pavlov's and Watson's emphasis on the study of overt behavior and rigorous

adherence to the scientific method had a tremendous influence on learning theories for decades. Language teaching practices likewise for many years were influenced by a behavioristic tradition.

## 2. Skinner's Operant Conditioning

– Skinner followed the tradition of Watson, but other psychologists have called Skinner a neobehaviorist because he added a unique dimension to behavioristic psychology.

– The classical conditioning of Pavlov was, according to Skinner, a highly specialized form of learning utilized mainly by animals and paying little part in human conditioning. Skinner called Pavlovian conditioning **respondent conditioning** since it was concerned with respondent behavior – that is, behavior that is *elicited* by a preceding stimulus.

– Skinner's operant conditioning attempted to account for most of human learning and behavior. Operant behavior is behavior in which one "operates" on the environment; within this model the importance of stimuli is de-emphasized. For example, we cannot identify a specific stimulus leading a baby to rise to a standing position or take a first step; we therefore need not be concerned about that stimulus, but we should be concerned about the consequences – the stimuli that follow the response.

– According to Skinner, the events or stimuli – the reinforcers – that follow a response and that tend to strengthen behavior or increase the probability of a recurrence of that response constitute a powerful force in the control of human behavior.

– Reinforcers are far stronger aspects of learning than is mere association of a prior stimulus with a following response, as in the classical conditioning model. We are governed by the consequences of our behavior, and therefore Skinner felt we ought, in studying human behavior, to study the effect of those consequences. And if we wish to control behavior, say, to teach

someone something, we ought to attend carefully to reinforcers.

– **Operants** are classes of responses. They are sets of responses that are emitted and governed by the consequences they produce. In contrast, **respondents** are sets of responses that are elicited by identifiable stimuli.

--- Crying can be respondent or operant behavior. Sometimes crying is elicited in direct reaction to a hurt. Often, however, it is emitted response that produces the consequences of getting fed, cuddled, played with, comforted, and so forth. Such operant crying can be controlled.

– If parents wait until a child's crying reaches a certain intensity before responding, loud crying is more likely to appear in the future. If parents ignore crying (when they are certain it is operant crying), eventually the absence of reinforcers will extinguish the behavior. Operant crying depends on its effects on the parents and is maintained or changed according to their response to it.

– While many of Skinner's experiments were performed on lower animals, his theories had an impact on our understanding of human learning and on education.

– The impact of Skinnerian psychology on foreign language teaching extended well beyond programmed instruction. Skinner's *Verbal Behavior* (1957) described language as a system of verbal operants, and his understanding of the role of conditioning led to a whole new era in language teaching around the middle of twentieth century.

– A Skinnerian view of both language and language learning dominated foreign language teaching methodology for several decades, leading to a heavy reliance in the classroom on the controlled practice of verbal operants under carefully designed schedules of reinforcement. The popular Audiolingual Method was a prime example.

– There is no doubt that behavioristic learning theories have had a lasting impact on our understanding of the process of human learning. There is much in the theory that is true and valuable.

– There is another side to the coin, however. We have looked at the side that claims that human behavior can be predicted and controlled and scientifically studied and validated. We have not looked at the side that views human behavior as essentially abstract in nature, as being composed of such a complex of variables that behavior, except in its extreme abnormality, simply cannot be predicted or easily controlled.

※ We turn next to two representatives of this side of the coin – David Ausubel's meaningful learning theory and Carl Rogers's humanistic psychology.

### 3. Ausubel's Meaningful Learning Theory

– David Ausubel contended that learning takes place in the human organism through a meaningful process of relating new events or items to already existing cognitive concepts or propositions – hanging new items on existing cognitive pegs.

– Ausubel's cognitive theory of learning is perhaps best understood by contrasting rote learning and meaningful learning.

– Ausubel described **rote learning** as the process of acquiring material as "discrete and relatively isolated entities that are relatable to cognitive structure only in an arbitrary and verbatim fashion, not permitting the establishment of meaningful relationships". That is, rote learning involves the mental storage of items having little or no association with existing cognitive structure. Most of us, for example, can learn a few necessary phone numbers and ZIP codes by rote without reference to cognitive hierarchical organization.

– **Meaningful learning**, on the other hand, may be described as a process of relating and anchoring new material to relevant established entities in cognitive structure. As new material enters the cognitive field, it interacts with, and is appropriately subsumed under, a more inclusive conceptual system. The very fact that material is subsumable, that is, relatable to stable elements in cognitive structure, accounts for its meaningfulness.

– If we think of cognitive structure as a system of building blocks, then rote learning is the process of acquiring isolated blocks with no particular function in the building of a structure and no relationship to other blocks. Meaningful learning is the process whereby blocks become an integral part of already established categories or systematic clusters of blocks.

– The distinction between rote and meaningful learning may not at first appear to be important since in either case material can be learned. But the significance of the distinction becomes clear when we consider the relative efficiency of the two kinds of learning in terms of retention, or long-term memory. --- We can remember an unfamiliar phone number, for example, long enough to dial the number, after which point it is usually extinguished by interfering factors. But a meaningfully learned, subsumed item has far greater potential for retention.

- **Systematic Forgetting**

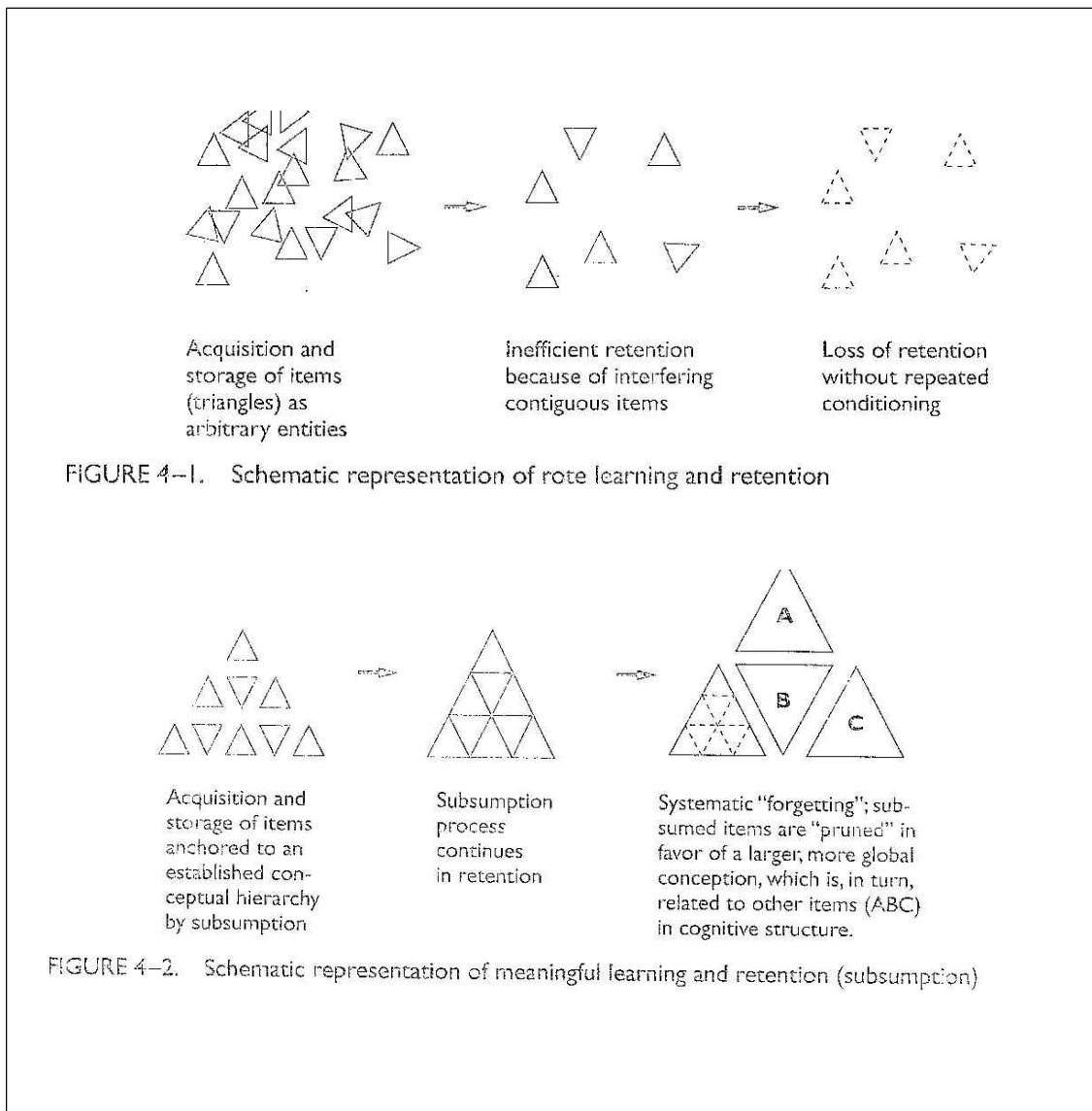
– Ausubel provided a plausible explanation for the universal nature of forgetting. Since rotely learned materials do not interact with cognitive structure in a substantive fashion, they are learned in conformity with the laws of association, and their retention is influenced primarily by the interfering effects of similar rote materials learned immediately before or after the learning task (commonly referred to as **proactive** and **retroactive** inhibition).

– We cannot say, of course, that meaningfully learned material is never forgotten. But in the case of such learning, forgetting takes place in a much more intentional and purposeful manner because it is a continuation of the very process of subsumption by which one learns; forgetting is really a second or "obliterative" stage of subsumption, characterized as "memorial reduction to the least common denominator".

– Because it is more economical and less burdensome to retain a single inclusive concept than to remember a large number of more specific items, the importance of a specific item tends to be incorporated into the generalized

meaning of the larger item.

– It is this second stage of subsumption that operates through "cognitive pruning" procedures. Pruning is the elimination of unnecessary clutter and a clearing of the way for more material to enter the cognitive field, in the same way that pruning a tree ultimately allows greater and fuller growth.



#### 4. Rogers's Humanistic Psychology

– During the 1950s, humanistic psychology began as a reaction to psychoanalysis and behaviorism, which dominated psychology at the time. Psychoanalysis was

focused on understanding the unconscious motivations that drive behavior while behaviorism studied the conditioning processes that produce behavior.

- Humanist thinkers felt that both psychoanalysis and behaviorism were too pessimistic, either focusing on the most tragic of emotions or failing to take into account the role of personal choice.

- Humanistic psychology was instead focused on each individual's potential and stressed the importance of growth and self-actualization. The fundamental belief of humanistic psychology is that people are innately good and that mental and social problems result from deviations from this natural tendency.

- Carl Ransom Rogers (January 8, 1902 - February 4, 1987) was an influential American psychologist and among the founders of the humanistic approach to psychology.

- Rogers is widely considered to be one of the founding fathers of psychotherapy research and was honored for his pioneering research with the Award for Distinguished Scientific Contributions by the American Psychological Association in 1956.

- The person-centered approach, his own unique approach to understanding personality and human relationships, found wide application in various domains such as psychotherapy and counseling (client-centered therapy), education (student-centered learning), organizations, and other group settings.

- Rogers's humanistic psychology has more of an affective focus than a cognitive one, and so it may be said to fall into the perspective of a constructivist view of learning. Certainly, Rogers and Vygotsky share some views in common in their highlighting of the social and interactive nature of learning.

- Rogers felt that inherent in principles of behavior is the ability of human beings to adapt and to grow in the direction that enhances their existence.

– Given a nonthreatening environment, a person will form a picture of reality that is indeed congruent with reality and will grow and learn. "Fully functioning persons," according to Rogers, live at peace with all of their feelings and reactions; they are able to reach their full potential.

– Rogers's position has important implications for education. The focus is away from "teaching" and toward "learning." The goal of education is the facilitation of change and learning.

– Learning how to learn is more important than being taught something from the "superior" vantage point of a teacher who unilaterally decides what shall be taught.

– What is needed, according to Rogers, is for the teachers to become facilitators of learning through the establishment of interpersonal relationships with the learners.

– Teachers, to be facilitators, must first be real and genuine, discarding masks of superiority and omniscience. Second, teachers need to have genuine trust, acceptance, and a prizing of the other person – the student – as a worthy, valuable individual. And third, teachers need to communicate openly and empathetically with their students and vice versa.

– Teachers with these characteristics will not only understand themselves better but will also be effective teachers, who, having set the optimal stage and context for learning, will succeed in the goals of education.

– We can see Rogers's humanism quite a departure from the scientific analysis of Skinnerian psychology and even from Ausubel's rationalistic theory.

– Rogers is not as concerned about the actual cognitive process of learning process because, he feels, if the context for learning is properly created, then human beings will, in fact, learn everything they need to.

– Rogers's theory is not without flaws. The educator may be tempted to take

the nondirective approach too far, to the point that valuable time is lost in the process of allowing students to "discover" facts and principles for themselves. Also, a nonthreatening environment might become so nonthreatening that the facilitative tension needed for learning is absent.

- There is ample research documenting the positive effects of competitiveness in a classroom, as long as that competitiveness does not damage self-esteem and hinder motivation to learn.

- The work of Rogers has contributed significantly in recent years to a redefinition of the educational process. In adapting Rogers's ideas to language teaching and learning, we need to see to it that learners understand themselves and communicate this self to others freely and nondefensively.

- Teachers as facilitator must therefore provide the nurturing context for learners to construct their meanings in interaction with others. When teachers rather programmatically feed students quantities of knowledge, which they subsequently devour, they may foster a climate of **defensive learning** in which learners try to protect themselves from failure, from criticism, from competition with fellow students, and possibly from punishment.

- Classroom activities and materials in language learning should utilize meaningful contexts of genuine communication with students engaged in the process of becoming "persons."

#### ■ **Learner-centered teaching**

- The application to education has a large robust research tradition similar to that of therapy with studies having begun in the late 1930s and continuing today (Cornelius-White, 2007).

- Rogers described the approach to education in Client-Centered Therapy and wrote *Freedom to Learn* devoted exclusively to the subject in 1969. *Freedom to Learn* was revised two times.

– The new Learner–Centered Model is similar in many regards to this classical person–centered approach to education. Rogers had the following five hypotheses regarding learner–centered education:

1. “A person cannot teach another person directly; a person can only facilitate another's learning” (Rogers, 1951). This is a result of his personality theory, which states that everyone exists in a constantly changing world of experience in which he or she is the center. Each person reacts and responds based on perception and experience.

– The belief is that what the student does is more important than what the teacher does. The focus is on the student (Rogers, 1951). Therefore, the background and experiences of the learner are essential to how and what is learned. Each student will process what he or she learns differently depending on what he or she brings to the classroom.

2. “A person learns significantly only those things that are perceived as being involved in the maintenance of or enhancement of the structure of self” (Rogers, 1951). Therefore, relevancy to the student is essential for learning. The students' experiences become the core of the course.

3. “Experience which, if assimilated, would involve a change in the organization of self, tends to be resisted through denial or distortion of symbolism” (Rogers, 1951). If the content or presentation of a course is inconsistent with preconceived information, the student will learn if he or she is open to varying concepts. Being open to concepts that vary from one's own is vital to learning.

– Therefore, gently encouraging open–mindedness is helpful in engaging the student in learning. Also, it is important, for this reason, that new information be relevant and related to existing experience.

4. “The structure and organization of self appears to become more rigid under threats and to relax its boundaries when completely free from threat” (Rogers, 1951). If students believe that concepts are being forced upon them, they might become uncomfortable and fearful. A barrier is created by a tone of threat in the

classroom.

– Therefore, an open, friendly environment in which trust is developed is essential in the classroom. Fear of retribution for not agreeing with a concept should be eliminated. A classroom tone of support helps to alleviate fears and encourages students to have the courage to explore concepts and beliefs that vary from those they bring to the classroom.

– Also, new information might threaten the student's concept of him– or herself; therefore, the less vulnerable the student feels, the more likely he or she will be able to open up to the learning process.

5. “The educational situation which most effectively promotes significant learning is one in which (a) threat to the self of the learner is reduced to a minimum and (b) differentiated perception of the field is facilitated” (Rogers, 1951).

– The instructor should be open to learning from the students and also working to connect the students to the subject matter. Frequent interaction with the students will help achieve this goal. The instructor's acceptance of being a mentor who guides rather than the expert who tells is instrumental to student–centered, nonthreatening, and unforced learning.