Unit 1

Text A

Behavioral Learning Theory

1. Introduction

Learning is the process leading to permanent or potential behavioral change. In other words, as we learn, we alter the way we perceive our environment, the way we interpret the incoming stimuli, and therefore the way we interact, or behave. John B. Watson[1] (1878–1958) was the first to study how the process of learning affects our behavior, and formed the school of thought known as Behaviorism. The central idea behind Behaviorism is that only observable behaviors are worthy of research since other abstractions such as a person's mood or thoughts are too subjective. This belief was dominant in psychological research for over 50 years.

Perhaps the most well-known behaviorist is B. F. Skinner[2] (1904–1990). Skinner followed much of Watson's research and findings, but believed that internal states could influence behavior just as external stimuli. He is considered a radical behaviorist because of this belief, although nowadays it is believed that both internal and external stimuli influence our behaviors.

Behavioral psychology is basically interested in how our behavior results from the stimuli both in the environment and within ourselves. They study, often in minute detail, the behaviors we exhibit while controlling for as many other variables as possible. It's often a grueling process, but the results have helped us learn a great deal about our behaviors, the effect our environment has on us, how we learn new behaviors, and what motivates us to change or remain the same.

2. Classical and Operant Conditioning

One important type of learning, classical conditioning, was actually discovered accidentally by

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1 John B. Watson：约翰·B. 华生，美国心理学家，行为主义心理学的创始人。

2 B. F. Skinner：B. F. 斯金纳，美国心理学家，新行为主义的代表人物。

Ivan Pavlov[1] (1849–1936). Pavlov was a Russian physiologist who discovered this phenomenon while doing research on digestion. His original research aimed at better understanding the digestive patterns in dogs. During his experiments, he put meat in the mouths of dogs to measure body responses. What he discovered was that the dogs began to salivate before the meat was presented to them. After that, the dogs began to salivate as soon as the person feeding them would enter the room. He soon began to gain interest in this phenomenon and abandoned his digestion research in favor of his now famous classical conditioning study.

Basically, the findings support the idea that we develop responses to certain stimuli that are not naturally occurring. When we touch a hot stove, our reflex pulls our hand back. It does this instinctually, no learning involved. It is merely a survival instinct. However, why now do some people, after getting burned, pull their hands back even when the stove is not turned on? Pavlov discovered that we make associations which cause us to generalize our response to one stimuli onto a neutral stimuli it is paired with. In other words, hot burner = ouch, stove = burner, therefore, stove = ouch.

To further explore this, Pavlov began pairing a bell sound with the meat and found that even when the meat was not presented, the dog would eventually begin to salivate after hearing the bell. Since the meat naturally results in salivation, these two variables are called the Unconditioned Stimulus (UCS) and the Unconditioned Response (UCR) respectively. The bell sound and salivation are not naturally occurring; the dog was conditioned to respond to the bell sound. Therefore, the bell sound is considered the Conditioned Stimulus (CS), and the salivation to the bell sound, the Conditioned Response (CR).

Many of our behaviors today are shaped by the pairing of stimuli. Have you ever noticed that certain stimuli, such as the smell of a cologne or perfume, a certain song, a specific day of the year, result in fairly intense emotions? It's not the smell or the song that are the cause of the emotion, but rather what the smell or song has been paired with—perhaps an ex-boyfriend or ex-girlfriend, the death of a loved one, or maybe the day you met your current husband or wife. We make these associations all the time and often don't realize the power that these connections or pairings have on us. However, in fact, we have been classically conditioned.

Another type of learning, very similar to the one discussed above, is called operant conditioning. The term "operant" refers to how an organism operates on the environment. It can be thought as learning due to the natural consequences of our actions. It is a method of learning that occurs through rewards and punishments for behavior. Behavior followed by pleasant consequences is likely to be repeated, and behavior followed by unpleasant consequences is less likely to be repeated.

The classic study of operant conditioning involves a cat who is placed in a box with only one way out; a specific area of the box had to be pressed in order for the door to open. The cat initially tries to get out of the box because freedom is reinforcing. In its attempt to escape, the area of the box is triggered and the door opens. The cat is now free. Once placed in the box again,

1 Ivan Pavlov：伊万·帕夫洛夫，苏联著名生理学家、心理学家。

the cat will naturally try to remember what it did to escape the previous time and will once again find the area to press. The more the cat is placed back in the box, the quicker it will press that area for its freedom. It has learned, through natural consequences, how to gain the reinforcing freedom.

We learn this way every day in our lives. Imagine the last time you made a mistake, you most likely remember that mistake and do things differently when the situation comes up again. In that sense, you've learned to act differently based on the natural consequences of your previous actions. The same holds true for positive actions. If something you did results in a positive outcome, you are likely to do that same activity again.

3. Reinforcement

The term "reinforcement" means to strengthen, and is used in psychology to refer to anything stimulus which strengthens or increases the probability of a specific response. For example, if you want your dog to sit on command, you may give him a treat every time he sits for you. The dog will eventually come to understand that sitting when told to will result in a treat. This treat is reinforcing because he likes it and will result in him sitting when instructed to do so.

This is a simple description of a reinforcer, the treat, which increases the response, sitting. We all apply reinforcers every day, most of the time without even realizing we are doing it. You may tell your child "good job" after he or she cleans his or her room; perhaps you tell your partner how good he or she looks when he or she dresses up; or maybe you got a raise at work after doing a great job on a project. All of these things increase the probability that the same response will be repeated.

There are four types of reinforcement: positive, negative, punishment, and extinction. The examples above describe what is referred to as positive reinforcement. Think of it as adding something in order to increase a response. For example, adding a treat will increase the response of sitting; adding praise will increase the chances of your child cleaning his or her room. The most common types of positive reinforcement are praise and rewards, and most of us have experienced this as both the giver and receiver.

Negative reinforcement can be thought as taking something negative away in order to increase a response. Imagine a teenager who is nagged by his mother because he does not take out the garbage week after week. After complaining to his friends about the nagging and suggested by them, he finally one day performs the task and to his amazement, his mother's nagging stops. The elimination of this negative stimulus is reinforcing and will likely increase the chances that he will take out the garbage next week.

Punishment refers to adding something aversive in order to decrease a behavior. The most common example of this is disciplining (e.g. spanking) a child for misbehaving. The reason we do this is that the child begins to associate being punished with the negative behavior. The punishment is not liked and therefore to avoid it, he or she will stop behaving in that manner.

When you remove something in order to decrease a behavior, this is called extinction. You are taking something away so that a response is decreased. For example, after Pavlov's dog was

conditioned to salivate at the sound of the bell, it eventually stopped salivating to the sound after the bell had been sounded repeatedly but no meat came.

Research has found positive reinforcement is the most powerful of any of these. Adding a positive to increase a response not only works better, but allows both parties to focus on the positive aspects of the situation. Punishment, when applied immediately following the negative behavior can be effective, but results in extinction when it is not applied consistently. Punishment can also invoke other negative responses such as anger and resentment.

New Words

perceive [pə'si:v] *v.* 理解，感知
interpret [ɪn'tɜ:prɪt] *v.* 解释，说明
stimuli ['stɪmjʊlaɪ] *n.* 刺激，刺激物（stimulus 的复数）
behaviorism [bɪ'heɪvjərɪzəm] *n.* 行为主义
abstraction [æb'strækʃən] *n.* 抽象，抽象概念
psychological [ˌsaɪkə'lɒdʒɪkəl] *adj.* 心理的，心理学的
radical ['rædɪkəl] *adj.* 激进的
variable ['veərɪəbl] *n.* 变量，可变因素
digestion [daɪ'dʒestʃən] *n.* 消化
salivate ['sælɪveɪt] *v.* 分泌唾液，流口水
reflex ['ri:fleks] *n.* 反射动作，下意识反应
instinct ['ɪnstɪŋkt] *n.* 本能，直觉
association [əˌsəʊʃɪ'eɪʃən] *n.* 关联，联想
eventually [ɪ'ventʃʊəli] *adv.* 最终，最后
shape [ʃeɪp] *v.* 塑造，形成
pairing ['peərɪŋ] *n.* 配对
cologne [kə'ləʊn] *n.* 古龙香水
initially [ɪ'nɪʃəli] *adv.* 最初；开始
reinforcement [ˌri:ɪn'fɔ:smənt] *n.* 强化，加强
treat [tri:t] *n.* 款待，招待
reinforcer [rɪ:ɪn'fɔ:sə] *n.* 强化刺激（物）；增强剂
extinction [ɪk'stɪŋkʃən] *n.*（心理学）消退
nag [næg] *v.* 唠叨
aversive [ə'vɜ:sɪv] *adj.* 厌恶的，反感的
discipline ['dɪsəplɪn] *v.* 管教，训导
spanking ['spæŋkɪŋ] *n.* 打屁股
misbehave [ˌmɪsbɪ'heɪv] *v.* 举止失礼，行为不端
invoke [ɪn'vəʊk] *v.* 引起，唤起
resentment [rɪ'zentmənt] *n.* 愤恨，怨恨

Phrases

Behavioral Learning Theory 行为主义学习理论
Behavioral Psychology 行为主义心理学
in minute detail 详尽无遗

classical conditioning 经典条件反射
aim at 针对，目的在于
in favor of 支持，有利于
be paired with 与……配对
operant conditioning 操作性条件反射
come up 发生，出现
positive reinforcement 正强化
negative reinforcement 负强化
in that manner 以那种方式

Abbreviations

Unconditioned Stimulus (UCS) 无条件刺激，非制约刺激
Unconditioned Response (UCR) 无条件反应，非制约反应
Conditioned Stimulus (CS) 条件刺激
Conditioned Response (UR) 条件反射

Exercises

Ex. 1 **Give the English equivalents of the following Chinese expressions.**

(1) 行为主义心理学 _____
(2) 经典条件反射 _____
(3) 操作性条件反射 _____
(4) 正强化 _____
(5) 无条件刺激 _____
(6) 详尽无遗 _____
(7) 针对；目的在于 _____
(8) 支持，有利于 _____
(9) 与……配对 _____
(10) 以那种方式 _____

Ex. 2 **Explain the following terminologies in English.**

(1) classical conditioning _____
(2) operant conditioning _____
(3) reinforcement _____
(4) positive reinforcement _____

(5) negative reinforcement _____

(6) extinction _____

Ex. 3 **Answer the following questions according to Text A.**

(1) What is learning in the perspective of behaviorists?

(2) How do internal state and external stimuli function upon us according to B. F. Skinner?

(3) How was classical conditioning discovered?

(4) Could you explain UCS, UCR, CS and CR with Pavlov's experiment as an example?

(5) Could you explain operant conditioning with examples from your life experiences?

(6) What are the four types of reinforcement? Which one is the most powerful type?

(7) Could you explain positive reinforcement with one example from real life?

(8) Could you explain negative reinforcement with one example from real life?

Ex. 4 **Fill in the blanks with the words given below.**

environmental	operant	differentiating	classical	natural
rewarding	observable	modified	molded	learned

Behaviorism is a learning theory that focuses on (1)_____ behaviors. It is broken into two areas of conditioning—(2)_____ and (3)_____. Most are familiar with operant conditioning, where one learns through (4)_____ the desired behavior. B. F. Skinner spent lots of time exploring operant conditioning through research with animals, which proved that behavior is a(n) (5)_____ response. Classical conditioning is a(n) (6)_____ reflex or response to stimuli. When a child feels apprehension at the thought of taking a test, he or she is exhibiting classical conditioning.

Skinner's research determined that the brain was not a part of conditioning, and learning was through (7)_____ factors, (8)_____ his ideas from others such as John Watson, and coining his theories as radical Behaviorism. All actions required a reaction, positive or negative, which (9)_____ behavior. With basic behaviorism theories, it is thought that the individual is passive and behavior is (10)_____ through positive and negative reinforcement. This means that a child's behavior can be changed and modified through reinforcement.

Text B

Behaviorism in Classroom

1. The Implications of Behaviorism

We already know behaviorists see learning as a change in behavior due to an external

stimulus. This, in fact, means that learning is nothing more than the acquisition of new information. We are born as blank slates and have no predispositions. The external stimuli we receive mold us into who we are.

Behaviorists are concerned primarily with the observable and measurable aspects of human behavior, and discount mental activities. That is, behaviorists assume that the only things that are real are the things we can see and observe. We cannot see the mind, the ID, or the unconscious, but we can see how people act, react and behave. The object of the behaviorist's study interest is what people do, but not what they think or feel. Likewise, behaviorists do not look to the mind or the brain to understand the causes of a particular behavior. They assume that the behavior represents certain learned habits, and they attempt to determine how the habits are learned. The behavioral researchers are interested in understanding the mechanisms underlying the behavior of learners.

Although there are many theories encompassed in behavioral belief, all share several common assumptions: the importance of focusing on observable behavior, the blank-slate nature of organisms, classical and operant conditioning, the use of drill and practice for teaching basic skills, and an attention to the consequences of student behaviors. In behaviorists' view, human behavior can be learned and unlearned. Therefore, when behaviors become unacceptable, they can be unlearned. The acceptable behaviors should be reinforced.

Behaviorism assumes a learner is essentially passive, and will be shaped through positive or negative reinforcement. Learning is, therefore, defined as a change in behavior. It is believed that behavior is a function of its consequences, i.e., learners will repeat the desired behavior if positive reinforcement is given. The behavior should not be repeated if negative feedback is given. Giving immediate feedback, whether positive or negative, should enable the learners to behave in a certain way.

Behaviorism learning theory stresses the importance of repetition. The more frequent a stimulus and response occur in association with each other, the stronger the habit will become. This focus on repetition is seen in the drill and practice tutorials often associated with students learning basic skills. B. F. Skinner is one of the best known psychologists in the behaviorist tradition. His theory of operant conditioning proposes that "a response followed by a reinforcing stimulus is strengthened and therefore more likely to occur again". Skinner urges educators to focus on reinforcing student success rather than on punishing student failure. Behaviorism as an educational learning theory led to the development of several aspects of instruction and learning production, some of which we still use in classrooms today, including direct instruction, lecture, behavioral objective as classroom management, behavioral reward system, positive reinforcement, and individualized instruction, among other notions.

Behaviorism teaching style in education is more common than we would like to believe. In fact, it is used in every aspect of education. This style of teaching believes that information passed from a teacher to a student is basically the correct response to specific stimulus. Therefore, the purpose of education is to ensure that a student has appropriate collection of responses to specific

stimuli and these responses are then reinforced. An effective reinforcement schedule requires consistent repetition of the material, small, progressive sequences of tasks, and continuous positive reinforcement. Without positive reinforcement, learned responses will quickly become extinct. This is because learners will continue to modify their behavior until they receive some positive reinforcement.

When applied to a classroom setting, Behaviorism focuses on conditioning student behavior with various types of behavior reinforcement and consequences called operant conditioning. There are four types of reinforcement: positive reinforcement, negative reinforcement, punishment and extinction, and each can be applied effectively to get the students to behave in the classroom. Positive reinforcement and punishment are easy to understand. Negative reinforcement occurs when the rate of a behavior increases because an aversive event or stimulus is removed or prevented from happening. For example, a child cleans his or her room, and this behavior is followed by the parent stopping "nagging" or asking the child repeatedly to do so. Here, the nagging serves to negatively reinforce the behavior of cleaning because the child wants to remove that aversive stimulus of nagging. Extinction is similar to punishment in that its purpose is to reduce unwanted behavior. It implies absence of reinforcement. In other words, extinction implies lowering the probability of undesired behavior by removing reward for that kind of behavior. Extinction can be seen when a child stops throwing tantrums when the parent wises up and stops giving into their demands (the reinforcer). If the child stops getting their demands, the tantrums will stop, or at the very least, decrease.

2. The Roles of Students and Teachers

Behaviorists hold the following assumptions about students:

- Everything a student does from thinking to feeling to acting should be regarded solely a behavior; the mind plays no role.
- Behaviors can be controlled simply by reinforced teaching of proper behaviors via the Stimulus, Response, and Reinforcement (S-R-R) process.

Behaviorism places students in a secondary role in the learning process. Behaviorists portray students as responders rather than actors. The students respond to stimuli. If their response is not the desired response, it is the role of the teacher to provide feedback that will discourage such response in the future or reprogram the students with a different response to the stimuli. Perhaps, one could argue it is the students' job to practice skills and behaviors, but taking behaviorism at its purest form it is the teacher who ultimately decides whether students will do the practice or work necessarily to learn a new skill or behavior.

According to behaviorists, the main objective of a teacher is to provide the correct stimuli to shape or condition the students into the desired end product. In layman terms the teacher provides the necessary inputs to get the desired output. Teachers are possessors of knowledge and it is their responsibility to impart facts and desired behaviors to students. Teachers control student behavior and learning with stimulus control via evaluation, repetition, and reinforcement techniques.

Behaviorists propose the following teaching process. First, a teacher must set a clear quantitative learning goal. In order to reach that goal, the teacher must evaluate the students to determine a starting point for instruction. This might take the form of a test to determine what students have already known. Once a goal has been set, the process must be broken down into small steps or stages. Each step or stage should be accompanied by repetition in the form of drill and practice, evaluation and reinforcement. Drill and practice with continuous reinforcement is necessary as per the law of exercise, which states the more a stimulus-response bond is practiced and feedback is provided, the stronger it becomes. What's inherent in this law then is the necessity for the teacher's constant feedback to student behavior and demonstration of acquired knowledge. Reinforcement should serve as a motivational tool. Once a skill is mastered, reinforcement should be reduced to a variable schedule. For example, once a math skill is mastered, instead of being covered on every test, it should be thrown into the mix intermittently. The reinforcement in this case is the grade the student receives on the test.

Manifestations of reinforcement take several forms. If the student studies the new skill and practices, they will hopefully receive a good grade, which reinforces their study habits. The opposite type of reinforcement is punishment. Punishment entails penalizing a student for their behavior by taking away some privilege like recess. Punishment creates a negative association for the student with that behavior thereby reducing the likelihood of its recurrence. Another type of reinforcement is extinction or non-reinforcement, which holds that responses that are not reinforced are not likely to be repeated. In other words, if a student interrupts without raising a hand, the teacher should ignore the student's comments or questions until the student follows the correct class rules.

It is worthwhile explaining the reinforcement in detail. The simplest way to apply positive reinforcement is to praise a student when he or she behaves well or successfully completes a task. We could employ a system of giving gold stars that result in a small prize when enough has been earned. We are encouraged to take advantage of the effectiveness of simple statements of praise. When offering praise, however, opt for a specific statement such as, "you really showed mature insight right there" as opposed to a vague statement such as "nice work". The fact is that students can sense when praise is generic or disingenuous. Reserve such comments when we really mean them, so our students won't take them as empty words. Meanwhile, saying nice things to our students will work fine for a while, but they might stop believing us unless we can show them exactly why their behavior warrants praise in the first place. Whenever possible, show them the proof, point out the specific act and explain why it is so important.

It is sometimes useful to utilize negative reinforcement. Negative reinforcement isn't punishment. Rather, it is a rewarding good behavior by taking away something your students see as negative. For example, our class clown always makes inappropriate comments during health lessons and disrupts the class. He also really doesn't like writing book reports because the writing is boring. We could offer to let him do his book report another way, perhaps as a diorama, on the condition that he behaves appropriately during health lessons. By removing something he sees as

negative, we reinforce a separate, positive behavior.

Sometimes punishment is necessary to discourage undesirable behavior, but we must be careful not to go too far and embarrass our students. Just as there are positive and negative reinforcement for good behavior, two methods are appropriate for applying punishment. Presentation punishment is the type we are most familiar with: a student misbehaves and we act by adding a punishment like a detention or time-out. Removal punishment is similar to negative reinforcement: we remove something students see as good because they have behaved badly. For example, if they refuse to stop encouraging the class clown's inappropriate comments, we could threaten to cancel an upcoming field trip, or an upcoming class party.

New Words

implication [ˌɪmplɪ'keɪʃən] *n.* 意义，启示，影响
slate [sleɪt] *n.* 石板
predisposition [ˌprɪ:dɪspə'zɪʃən] *n.* 倾向，癖好；预设
discount [dɪs'kaʊnt] *v.* 低估，忽视
assume [ə'sju:m] *v.* 假设；认为
unconscious [ʌn'kɒnʃəs] *adj.* 无意识的，潜意识的
likewise ['laɪkwaɪz] *adv.* 同样地；也
underlie [ˌʌndə'laɪ] *v.* 是……的原因；是……的基础
encompass [ɪn'kʌmpəs] *v.* 包含；环绕
assumption [ə'sʌmpʃən] *n.* 假定；设想
organism ['ɔ:gənɪzəm] *n.* 生物体；有机体
essentially [ɪ'senʃəli] *adv.* 本质上
define [dɪ'faɪn] *v.* 给……下定义；解释
consequence ['kɒnsɪkwəns] *n.* 后果，结果
propose [prə'pəʊz] *v.* 提出（某观点、方法等）
notion ['nəʊʃən] *n.* 概念；见解
consistent [kən'sɪstənt] *adj.* 一致的，持续不变的
progressive [prə'ɡresɪv] *adj.* 进阶性的，逐步的
tantrum ['tæntrəm] *n.* 发怒，发脾气
solely ['səʊlli] *adv.* 仅仅；单独地
portray [pɔ:'treɪ] *v.* 描绘，描写
ultimately ['ʌltɪmətli] *adv.* 最终，最后
objective [əb'dʒektɪv] *n.* 目的，目标
layman ['leɪmən] *n.* 外行，门外汉
impart [ɪm'pɑ:t] *v.* 传授；给予
quantitative ['kwɒntɪtətɪv] *adj.* 量化的，定量的
evaluate [ɪ'væljʊeɪt] *v.* 评估，评价
accompany [ə'kʌmpəni] *v.* 伴随，陪伴
inherent [ɪn'hɪərənt] *adj.* 固有的，内在的
motivational [ˌməʊtɪ'veɪʃənl] *adj.* 动机的；激发性的
variable ['veərɪəbl] *adj.* 可变的，多变的
intermittently [ˌɪntə'mɪtəntli] *adv.* 间歇地，断断续续地
manifestation [ˌmænɪfe'steɪʃən] *n.* 体现；表现
entail [ɪn'teɪl] *v.* 使必要；牵连
penalize ['pɪ:nəlaɪz] *v.* 处罚，惩罚
privilege ['prɪvəlɪdʒ] *n.* 特权；优待；好处
recess [rɪ'ses] *n.* 休息；休假
recurrence [rɪ'kʌrəns] *n.* 再发生；重现