

MOWRER'S TWO FACTOR LEARNING THEORY AND LEARNING DISABILITIES

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ÖZET

Mowrer'in İki Faktörlü Öğrenme Kuramı ve Öğrenme Güçlükleri

Davranış değişikliğinin nasıl olduğu sorusuna cevap aranmaktadır. Bu soruyu cevaplamak için Mowrer, Pavlov'un Klasik Koşullanma ve Thorndike'in alışkanlıkların kazanılması ya da problem çözmesinden yararlanır. Öğrenmeleri açıklamada tek tek bu kuramların yeterli olmadığını, ancak iki kuramın birlikte düşünülmesi, öğrenmelere gerekli açıklamaları getireceği düşüncesiyle iki faktörlü öğrenme kuramı ortaya çıkmıştır.

Revizyondan geçirilmiş iki faktörlü öğrenme kuramında korku duygusunun en önemli koşullanabilir tepki olduğu vurgulanmıştır. Kaçınma davranışı açıklanmıştır. Ancak alışkanlıkların kazanılması üzerinde etkili şekilde durulmamıştır. Uyarının yer değiştirmesi ve tepki iki ayrı öğrenme biçimi olarak görülmüştür.

Bu kuramın son versiyonunda ise sadece tek bir öğrenme süreci fakat iki ayrı pekiştirmenin olduğu kabul edilmiştir. İkincil dürtüler olarak duygusal reaksiyonlar korku ve umut koşullanabilir tepkilerdir. Öğrenmeleri temsil eden davranış değişikliklerinde duygusal reaksiyonların merkezi rolü bulunmaktadır. Bu reaksiyonlara bir kez koşullu uyarın özelliği kazandırıldığında öğrenmelere ya da davranışlara yön verir ve kontrol ederler.

Bu kuramdan öğrenme güçlüğü gösteren çocuklarla ilgili olarak, bu çocukları güdüleme ve güdülemenin kontrol edilmesi çerçevesinde yararlanılabilir.

ABSTRACT

In order to find an answer how behavior changes come about Mowrer utilized Pavlov's concept of reflex conditioning and Thorndike's habit formation. The first version of two factor learning theory came into existence because of the conviction that neither Thorndike's habit formation nor the Pavlov's concept of reflex conditioning, taken, alone, could provide a universal paradigm for learning but that, taken together, they were sufficient.

The revised two factor learning theory stressed the emotion of fear as the most important conditionable response. And the avoidance behavior was adequately explained. However, the habit formation was not dealt effectively. Stimulus

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substitution and response substitution were recognized as two different forms of learning in this revised edition.

The last version of this theory assumed that only one learning process but two different reinforcements namely incremental and decremental reinforcement. The emotional reactions, fear-hope, which are called secondary drives are conditionable responses. It was believed that these motional reactions are once conditioned to respondent stimuli they guide and control the performance or behaviors.

In regard to learning disabled children, this theory could be utilized in motivating these children.

Theoretical Construct

Behavior is clearly and manifestly subject to modification change. How, precisely, does this come about? That was the question.

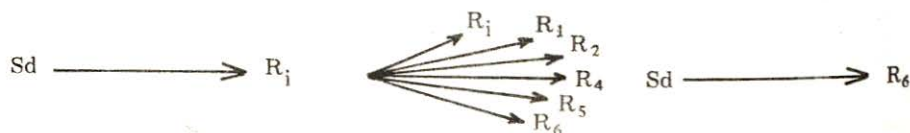
In order to answer that question, Mowrer puts into operation works of I.P. Pavlov's classical conditioning, and Thorndike's habit formation or problem solving.

The work of I.P. Pavlov- a Russian psychologist who, in studying certain "digestive reflexes", became impressed with their modifiability - showed one way (for Pavlov the only way) in which behavior can be modified by so called conditioning. If a formerly neutral stimulus is paired a few times with a stimulus that dependably (reflexly) produces a given response, soon the erstwhile neutral (ineffective) stimulus will be capable, alone, of eliciting this response. The response is then called by Thorndike as a new stimulus.



Pavlov averred this was the basis of behavior flexibility and adaptability. But these responses which had been thus conditioned were still reflexes, "condition reflexes". Conditioning reflex enables individuals to anticipate forthcoming events and to make more intelligent, more adaptive reactions. However, one of the most palpable difficulties was the fact that the so called conditioned reflexes, instead of being exact replicas of their unconditioned prototypes, are perceptively and sometimes radically different. Thus, clearly the paradigm of learning offered by Pavlov has serious limitations and does not provide a master formula for the interpretation and prediction of all behavior.

The other early attempt to account for behavior modifiability was that made by E.L. Thorndike with the concept of "habit". This concept was strong precisely where condition reflex idea was weak in that it accounted for response variability. The basic notion here is that living organisms have drives, such as hunger thirst, and cold and that the response first made to a given drive in a given situation may not achieve the desired ends. Therefore, living organism must have provisions for response substitutions, a given source of stimulation can be replaced by a more effective one. This was the gist of habit formation.



This type of behavior change or modification is usually called response substitution or selective learning.

The first version of two factor learning theory came into existence because of the widespread conviction that neither Thorndike's habit formation (law of effect) nor the Pavlov's concept of reflex conditioning, taken alone, could provide a universal paradigm for learning but that, taken together, they were sufficient.

The second version of two factor theory, like the first one, assumed that both conditioning and trial and error (habit formation) learning are real, and different, phenomena; but, unlike the first version, it made important changes in the way Pavlov and Thorndike identified and explained them. It was assumed that Thorndike (and Hull) had been right in positing that trial and error learning (problem solving) is contingent upon drive reduction; but the conception of drive was extended to include fear, in addition to such primary drives as hunger and thirst. And it was further assumed that Pavlov had been right in holding that instances of learning occur, through sheer contiguity of stimulation, without drive reduction; but whereas the reflexologist had been interested only in strictly observable responses, the revised two factor position stressed the emotion of fear as the most important conditioned, or conditionable, response which then motivates and when reduced reinforces behavioral acts which Pavlov and others had tried to interpret as examples of simple, direct conditioning. Moreover, in the second version of two factor theory, stimulus substitution and response substitution were recognized as two different types of reinforcement, drive reduction and drive induction, respectively.

Before I go on to the third revision of two factor learning theory I would like to present the original and the last two revision of two factor theory schematically on the following table.

Two-factor learning theory, original version

Conditioning (Pavlov)	Habit formation (Thorndike)
Positive and negative unconditioned stimuli	Reward and punishment
Stimulus Substitution	Response substitution

Two-factor learning theory, version two

Sign learning (fear conditioning)	Solution learning (habit formation)
Autonomic nervous system and visceral and vascular tissue	Central Nervous system and skeletal musculature

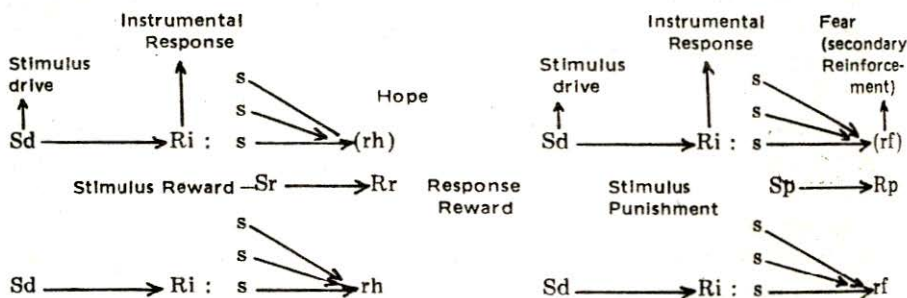
This version showed that avoidance behavior, to be adequately explained, must involve both sign learning and solution learning. Theory did not, however deal adequately with secondary reinforcement or the concept of habit.

Present Version of two-factor theory

Incremental reinforcement (punishment)	Decremental Reinforcement (reward)
Primary reinforcement	Primary reinforcement
Secondary reinforcement	Secondary reinforcement
Danger signal on (fear)	Danger signal off (relief)
Safety signal off (disappointment)	Safety signal on (hope)

Here it will be noted that all learning is conditioning, so that the theory remains "two factored" only with respect to the forms of reinforcement involved, as incremental and decremental.

The third version of two factor of learning theory assumed that habit formation is a matter of conditioning no less than is punishment. Therefore, it did not assume that there is two different learning process but it assumed that there is two different reinforcement. If a stimulus-drive S_d produces a given response R_i and if this R_i is followed by reward S_r , then it is assumed that a part of total response R_r which is produced by S_r will become conditioned to the stimuli S_d inherently connected with R_i . Here the conditionable component of R_r (Response reward) is rh (response hope), the hope reaction; and it becomes connected to the stimuli, s, s, s , just as fear does in punishment. The result is that whenever R_i starts to occur, it is facilitated rather than blocked. This is essence of habit, as opposed to inhibition. Present day version of two factor theory can be diagrammed as follows and this diagram can make above formulation clearer.



Here the changes produced in behavior by reward, as well as those produced by punishment, are derived from conditioning plus the feedback principle.

The present version of two factor theory was two factored in only one way as opposed to the first revision of two factor theory being two factored in two different ways. Those two factors of present version of the theory are, with respect to the two types of reinforcement, incremental and decremental. With respect to the other principle of classification employed in the second version, the theory is now decidedly one factored; that is, it assumes that all learning is sign learning and that solution learning is a derivative thereof.

In short, then, as far as types of learning concerned, the revised version is one factored; but it only implies two different kinds of reinforcement. So, it is questionable to call this theory as two factored learning theory on the basis of two different reinforcement. Mowrer does not also deny this situation and he thinks that it is a weak basis to call this theory as two factored learning theory, however he did not make any attempt to make changes about the title for the time being.

Mowrer calls these two different reinforcements as incremental reinforcement (punishment) and decremental reinforcement (reward). He then separates and sees incremental reinforcement as active and passive avoidance learning. Moreover, there are three ways in which active avoidance and three ways in which passive avoidance,

learning can occur. Active avoidance learning can occur on the basis of ordinary punishment (infliction of pain), threat (warning), or disappointment. And if response correlated stimulation is followed by any of these three incremental reinforcement, passive avoidance will ensue. Through incremental reinforcement the subject learns to keep away from things.

If an independent, environmentally produced stimulus is followed by primary drive decrement, by secondary drive decrement (relief type) or by secondary drive decrement (hope type), then that stimulus will acquire the capacity to attract and hold the subject to or near it.

Response inhibition is not dependent upon a weakening of some stimulus response relation, but it depends upon the conditioning of fear to the stimuli which response arouses. Moreover, habit formation is not dependent upon the strengthening of some stimulus response connection, but it depends upon the conditioning of a different type of feedback, namely hope, to the stimuli which response arouses.

Therefore, on the present version of the two factor learning theory, metabolic (or primary) drives differentiated from secondary drives that those are conditionable reactions which Mowrer calls emotions which play a central role in those changes in behavior or performance which are represent learning. The emotions are involved what is learned. Fear, hope, relief and disappointment conditionable; and once conditioned, to independent and/or respondent stimuli, they then guide and control performance in a generally sensible and adaptive manner. The revised two factor theory assumes that responses, in the sense of evert, behavioral acts are never learned and that all learning is in the nature of stimulus substitution, an other way to say, would be that all learning is in sign learning. Furthermore, the behavior changes occur, when emotions get conditioned to response correlated stimuli.

Two factor theory does not exclude the notion of cognition perception, knowledge; it simply makes these intellectual phenomena part and parcel of a more inclusive type of reaction, which importantly involves emotional and therefore motivational factors. The emontions seem to Mowrer, a high order of intelligence.

Theoretical Implications for Learning Disability

Mowrer's two factor learning theory or one factor two different reinforcement theory does not bring anything new except that we may be able to utilize this theory in motivating learning disabled kids, since it has been stated by many of people that learning disabled children lack of motivation. However, it is not explicit how to determine hope, fear, disappointment or relief from theory.

Evaluation of The Theory

Evaluation of Mowrer's theory brings me to the conclusion that there is very limited applicability to the learning disabled children. He only offers stimulus pairing-sign léarning-in terms of increasing or decreasing of occurence of the behavior.

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