

Spence Claimed That The Influence Of Reward On Instrumental Behavior Is Controlled By Establishment Of

Spence Claimed That The Influence Of Reward On Instrumental Behavior Is Controlled By Establishment Of a foundational principle in the field of learning and motivation psychology. This assertion, made by the renowned psychologist Edward C. Tolman and further developed by Robert M. Spence, emphasizes the critical role that the establishment or formation of associations plays in how rewards influence instrumental or operant behavior. Understanding this concept is vital for researchers, educators, and practitioners aiming to modify behavior through reinforcement strategies.

Introduction to Instrumental Behavior and Rewards

Instrumental behavior, also known as operant behavior, refers to actions that are performed to achieve specific outcomes or consequences. Unlike reflexive or instinctual responses, instrumental behaviors are voluntary and are heavily influenced by their consequences—namely, rewards or punishments.

Rewards serve as positive reinforcement, increasing the likelihood that a particular behavior will recur. However, Spence's theory underscores that the mere presence of a reward is not enough to influence behavior; the organism must have established an association between the behavior and the reward for it to effectively modify future actions.

Spence's Theory: The Establishment of Associations

The Role of Learned Associations

Spence proposed that the influence of rewards on instrumental behavior hinges on the establishment of specific cognitive and neural associations between stimuli, responses, and outcomes. These associations act as mental links that enable an organism to predict that a particular action will lead to a reward.

For example, if a rat learns that pressing a lever (response) results in food (reward), it forms an association that lever pressing leads to food. This learned link is essential for the reward to exert its influence effectively.

Types of Associations Involved

Spence emphasized that multiple forms of associations are involved:

- Stimulus-Response (S-R) Associations: Connecting a particular stimulus with a specific response.
- Response-Outcome (R-O) Associations: Linking a response with its consequent reward or outcome.

The strength and formation of these associations determine how effectively rewards influence instrumental behavior.

Mechanisms Underlying the Influence of Rewards

Establishment of Contingency

Contingency refers to the degree to which a reward is dependent on a specific response. Spence's theory highlights that:

- High contingency (the reward consistently follows the response) leads to strong associations.
- Low contingency (the reward occurs independently of the response) diminishes the influence of the reward.

Thus, establishing a clear contingency is critical for the reward to control behavior effectively.

Timing and Frequency of Reinforcement

The timing and frequency of reinforcement influence the establishment of associations:

- Timing: Immediate reinforcement after the response strengthens the association.
- Frequency: Consistent and frequent reinforcement consolidates the learned link.

Disruptions in these factors can weaken the association, reducing the reward's impact on behavior.

Factors That Affect the Establishment of Reward-Behavior Associations

Understanding what influences the formation of associations helps in designing effective reinforcement strategies.

1. Salience of Stimuli

More noticeable or salient stimuli are more likely to be associated with responses, thereby strengthening the impact of rewards.

2. Motivational State

An organism's motivational state (e.g., hunger, thirst) modulates the formation of associations. For instance, a hungry animal is more likely to form a strong association between food and a response.

3. Prior Learning History

Previous experiences can facilitate or hinder new association formation. A history of reinforcement with similar behaviors can enhance learning efficiency.

4. Context and Environment

The setting in which learning occurs influences association strength. Consistent contexts support stronger associations.

Implications of Spence's Theory in Behavioral

Modification

Designing Effective Reinforcement Strategies

Applying Spence's principles involves:

- Ensuring high contingency between response and reward.
- Timing reinforcement immediately after the desired behavior.
- Maintaining consistency in reinforcement schedules.
- Considering the motivational state of the learner.

Applications in Education and Therapy

- Behavioral Therapy: Reinforcing desired behaviors while extinguishing undesired ones.
- Education: Using immediate and consistent rewards to establish strong associations.
- Workplace Motivation: Recognizing the importance of clear contingencies and timely rewards.

Limitations and Considerations

While reinforcement is powerful, Spence's theory acknowledges that:

- Over-reliance on rewards can diminish intrinsic motivation.
- Associations may weaken if contingencies are broken.
- Individual differences affect the ability to form associations.

Experimental Evidence Supporting Spence's Claims

Numerous studies have validated the centrality of association formation:

- Operant Conditioning Experiments: Demonstrate that animals learn to associate specific responses with rewards only when contingencies are clear and timing is immediate.
- Cognitive Studies: Show that humans form mental links between actions and outcomes, influencing decision-making.
- Neuroscientific Research: Identifies neural pathways involved in

associating stimuli, responses, and rewards, such as dopaminergic systems.

Conclusion

Spence's assertion that the influence of reward on instrumental behavior is controlled by the establishment of associations underscores a fundamental principle in learning theory. The creation of strong, clear associations between responses and rewards—facilitated by contingency, timing, salience, and context—is essential for effective behavioral modification. Recognizing these factors allows psychologists, educators, and practitioners to design reinforcement strategies that effectively harness the power of rewards to shape desirable behaviors.

By understanding and applying Spence's principles, it becomes possible to foster meaningful learning experiences and promote behavioral change across various settings, from classrooms to clinical environments. The theory continues to influence contemporary approaches to motivation, reinforcement, and behavior modification, highlighting the enduring importance of association formation in instrumental learning.

Keywords: Spence, instrumental behavior, reinforcement, reward, association, contingency, operant conditioning, motivation, learning, behavioral modification

Frequently Asked Questions

What did Spence claim about the influence of reward on instrumental behavior?

Spence claimed that the influence of reward on instrumental behavior is controlled by the establishment of specific stimulus-response associations, where the presence of a reward strengthens certain behaviors.

How does Spence explain the role of reinforcement in shaping instrumental behavior?

Spence explains that reinforcement establishes a cue-response relationship, which then controls subsequent behavior by increasing the likelihood of responses in the presence of specific stimuli.

According to Spence, what is the key factor that determines how rewards influence behavior?

The key factor is the establishment of stimulus-response bonds through reinforcement, which guides and controls the instrumental behavior observed.

In what way does Spence's theory differ from other models of reinforcement and behavior?

Spence's theory emphasizes the importance of established stimulus-response associations in controlling behavior, whereas other models may focus more on motivational states or external stimuli without emphasizing the learning of specific bonds.

What experimental evidence supports Spence's claim about reward control in instrumental behavior?

Experimental evidence shows that animals and humans tend to respond more frequently in the presence of stimuli previously associated with rewards, indicating that established stimulus-response bonds are crucial for behavioral control.

How can understanding Spence's claim help in designing effective reinforcement-based training programs?

Understanding that reward influence is controlled by establishing specific stimulus-response bonds can help in designing training programs that focus on consistent reinforcement of desired responses in the presence of particular cues, leading to more effective learning.

Additional Resources

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In the realm of behavioral psychology, understanding the mechanisms behind how rewards influence human and animal actions has long been a subject of intense research and debate. One of the most influential figures in this domain, Edward C. Tolman, and later his colleagues, advanced theories emphasizing cognitive processes. However, the pioneering work of Robert M. Spence brought a nuanced perspective to this discourse, asserting that the extent to which rewards affect instrumental behavior is fundamentally governed by the establishment of specific psychological conditions. This assertion, encapsulated in Spence's theories, underscores the importance of internal cognitive and motivational factors in mediating the impact of external rewards on behavior.

This article delves into Spence's claim, exploring the theoretical foundations, experimental evidence, and practical implications of his ideas. By examining the core principles behind the "establishment of" mechanisms, we can better appreciate how rewards interact with internal states to shape instrumental behavior, paving the way for more effective behavioral interventions and a deeper understanding of motivation.

The Theoretical Foundations of Spence's Claim

Understanding Instrumental Behavior and Rewards

Instrumental, or operant, behavior refers to actions that are performed to achieve specific outcomes, often reinforced by rewards or punishments. The basic premise is that behaviors followed by favorable consequences are more likely to recur, a principle famously outlined by B.F. Skinner.

However, Spence's contribution was to emphasize that the influence of such rewards isn't solely about the external reinforcement but hinges on internal processes—specifically, whether certain psychological conditions are established to facilitate the association between the behavior and the reward.

The Central Role of Establishment

Spence proposed that the influence of reward on behavior depends critically on the establishment of certain internal states or expectations. These include:

- Expectancy Formation: The individual must develop an expectation that performing a particular behavior will lead to a reward.
- Motivational Readiness: The organism's internal motivational state must be aligned with the anticipated reward.
- Associative Learning Conditions: Proper pairing and timing of stimuli and responses are necessary to establish a robust mental link.

In essence, without the establishment of these psychological conditions, external rewards alone may have limited effect on behavior. The process of establishing these internal states acts as a gatekeeper, mediating the influence of external reinforcement.

The Mechanisms Behind Establishment of Reward Influence

Expectancy and Cognitive Mediation

Spence argued that instrumental behavior is mediated by expectancies—mental representations that link a behavior with its outcomes. When an individual or animal learns that a particular action leads to a reward, this creates an

expectancy that influences future behavior.

- Formation of Expectancies: Requires consistent pairing of the behavior with the reward.
- Strengthening of Expectancies: Achieved through repetition and reinforcement schedules.
- Impact on Behavior: Once established, these expectations can motivate behavior even in the absence of immediate reinforcement.

This cognitive mediation distinguishes Spence's view from purely stimulus-response models, emphasizing the importance of internal mental states.

Motivational States and Internal Conditions

Apart from expectancy, internal motivational states—such as hunger, desire, or curiosity—must be aligned with the reward for it to effectively influence behavior. Spence emphasized that:

- Rewards are most effective when they satisfy or enhance the organism's current motivational state.
- If an internal state is incompatible with the reward (e.g., a satiated animal), the influence diminishes.
- Establishing the right internal conditions involves both biological and psychological factors.

The Role of Timing and Contingency

Spence also highlighted that the timing and contingency of reinforcement are critical for establishing the influence of rewards:

- Contingency: The reward must be directly linked to the behavior.
- Timing: Delays between behavior and reward weaken the establishment process.
- Properly timed and contingent reinforcement fosters the internal conditions necessary for behavioral change.

Experimental Evidence Supporting Spence's Theory

Classical Conditioning Studies

Research studies have demonstrated that merely providing rewards does not guarantee behavioral change unless certain conditions are met:

- Expectancy Formation: Animals trained with consistent stimulus-response-reward pairings develop clear expectations, leading to more persistent behaviors.
- Variable Schedules: Variable reinforcement schedules often produce more resilient behaviors because they better establish expectations and internal motivation.

Cognitive and Motivational Manipulations

Experiments manipulating internal states have shown:

- Rewards are less effective when motivational states are altered (e.g., satiation).
- Internal cues or discriminative stimuli that signal reward availability are crucial, aligning with Spence's emphasis on establishing internal conditions.

Evidence from Human Behavior

In human studies, motivation and expectancy have been shown to influence the effectiveness of reward-based interventions:

- Educational settings where learners are motivated and expect success respond better to reward systems.
- Cognitive-behavioral therapies that focus on establishing internal expectations enhance treatment outcomes.

Practical Implications of Spence's Claim

Designing Effective Reinforcement Strategies

Understanding that the influence of reward depends on the establishment of internal conditions has significant practical consequences:

- Reinforcement Timing: Ensuring rewards are timely and contingent.
- Building Expectations: Using cues and signals to establish clear associations.
- Matching Rewards to Internal States: Tailoring rewards to current motivational states for maximum effectiveness.
- Repeated Pairings: Reinforcing the behavior-reward link to strengthen internal expectancy.

Behavior Modification and Therapy

In clinical settings, Spence's insights suggest that:

- Interventions should focus on establishing positive internal expectations.
- Reinforcement should be combined with cognitive strategies to foster internal motivation.
- Addressing internal states such as motivation or emotional readiness enhances treatment efficacy.

Educational and Organizational Applications

In education and workplace settings:

- Reward systems should aim to establish internal expectations of success.

- Clear communication and consistent reinforcement help build internal motivation.
- Recognizing that external rewards alone may not suffice without internal establishment processes.

Limitations and Ongoing Debates

While Spence's theory offers a compelling framework, it is not without limitations:

- Complexity of Internal States: Internal conditions are multifaceted and difficult to measure directly.
- Individual Differences: Variability in expectancy formation and motivation can influence outcomes.
- Integration with Other Theories: Modern behavioral science continues to integrate Spence's ideas with biological, cognitive, and social models.

Despite these challenges, his emphasis on internal conditions remains influential, shaping contemporary approaches to understanding behavior.

Conclusion: The Lasting Impact of Spence's Claim

Spence's assertion that the influence of reward on instrumental behavior is controlled by the establishment of internal conditions has profoundly shaped the understanding of motivation and reinforcement. Moving beyond simplistic stimulus-response paradigms, his focus on internal states, expectations, and motivational readiness underscores the complex interplay between external stimuli and internal psychology.

Today, this perspective informs a wide range of applications—from designing effective reinforcement schedules in education and therapy to understanding the nuanced mechanisms of motivation in everyday life. Recognizing that rewards only exert their influence when internal conditions are properly established enables practitioners and researchers to develop more targeted, effective interventions that harness the full power of reinforcement.

As behavioral science continues to evolve, Spence's foundational insights serve as a reminder of the importance of internal psychological processes in shaping human and animal actions—an enduring testament to his influence in the field.

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