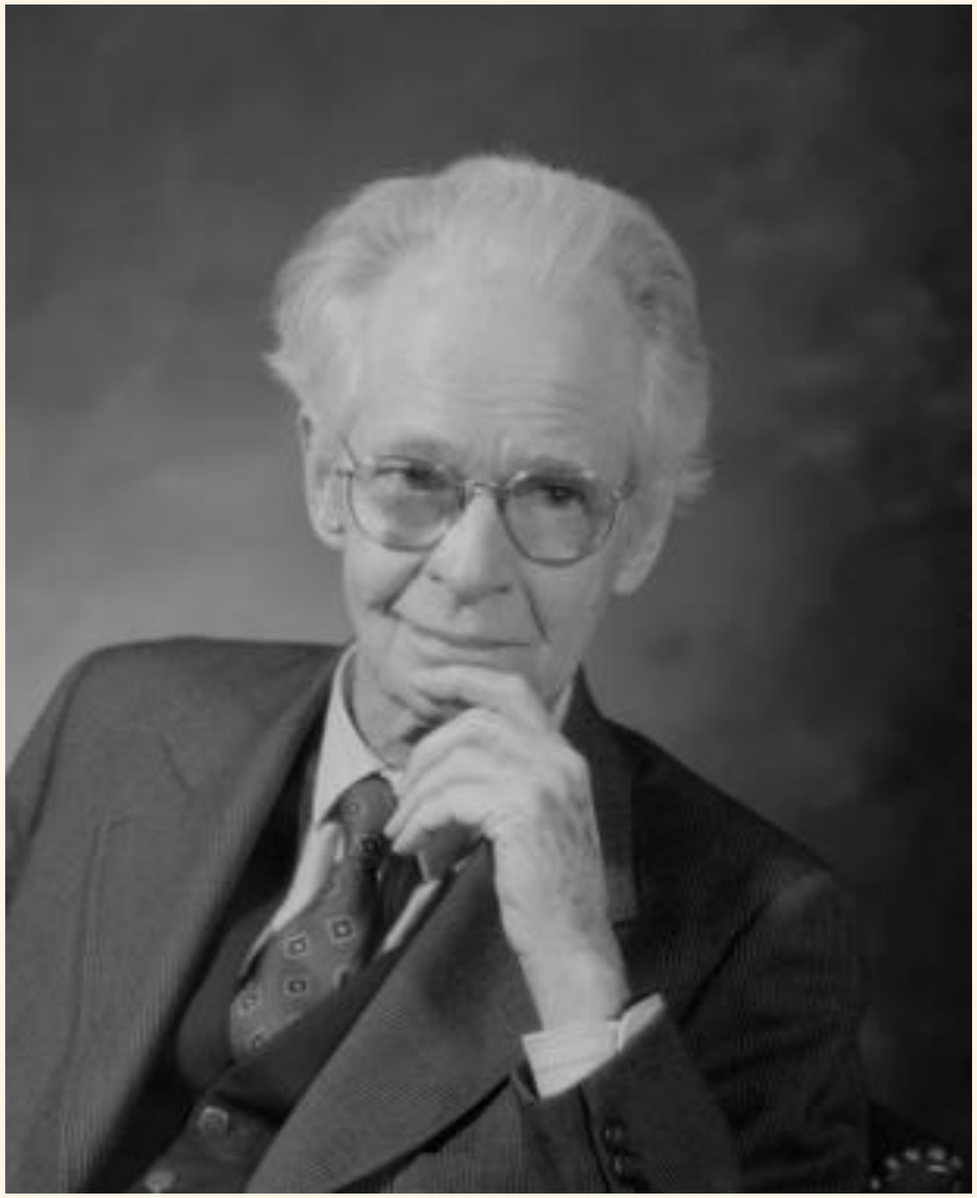


Skinner: Behavioral Analysis

Exploring the revolutionary approach that transformed psychology through observable behavior and scientific rigor.

Chapter Overview

Understanding Behavioral Analysis

01

Scientific Foundation

Philosophy of science and characteristics of behavioral research

02

Conditioning Principles

Classical and operant conditioning mechanisms

03

Human Organism

Natural selection, cultural evolution, and complex behavior

04

Practical Applications

Personality development, psychotherapy, and behavior control

The Dark Year

At age 23, Fred returned home with an English degree, determined to become a writer. His father reluctantly agreed to support him for one year.

Every morning, Fred climbed to his attic study. But nothing happened. After 3 months, he realized his work was poor quality.

> *"I remained absolutely motionless in a kind of catatonic stupor."*
>
> *— B.F. Skinner, reflecting on his failed writing career*

This identity crisis—what Erikson would call identity confusion—lasted 18 months. Fred blamed his parents, his hometown, and literature itself for his failure.

From Writer to Behaviorist

1904

Born in Susquehanna, Pennsylvania to upper middle-class Presbyterian family

1

2

Graduated Hamilton College with English degree, attempted writing career

1926

1928

After "Dark Year," discovered Watson and Pavlov, decided to become behaviorist

3

4

1931

Completed PhD at Harvard despite never taking undergraduate psychology course

Skinner's total dedication to radical behaviorism was typical of someone resolving an identity crisis through extreme ideology.

Career Milestones

1936-1945

University of Minnesota: Published The Behavior of Organisms, developed Project Pigeon and baby-tender

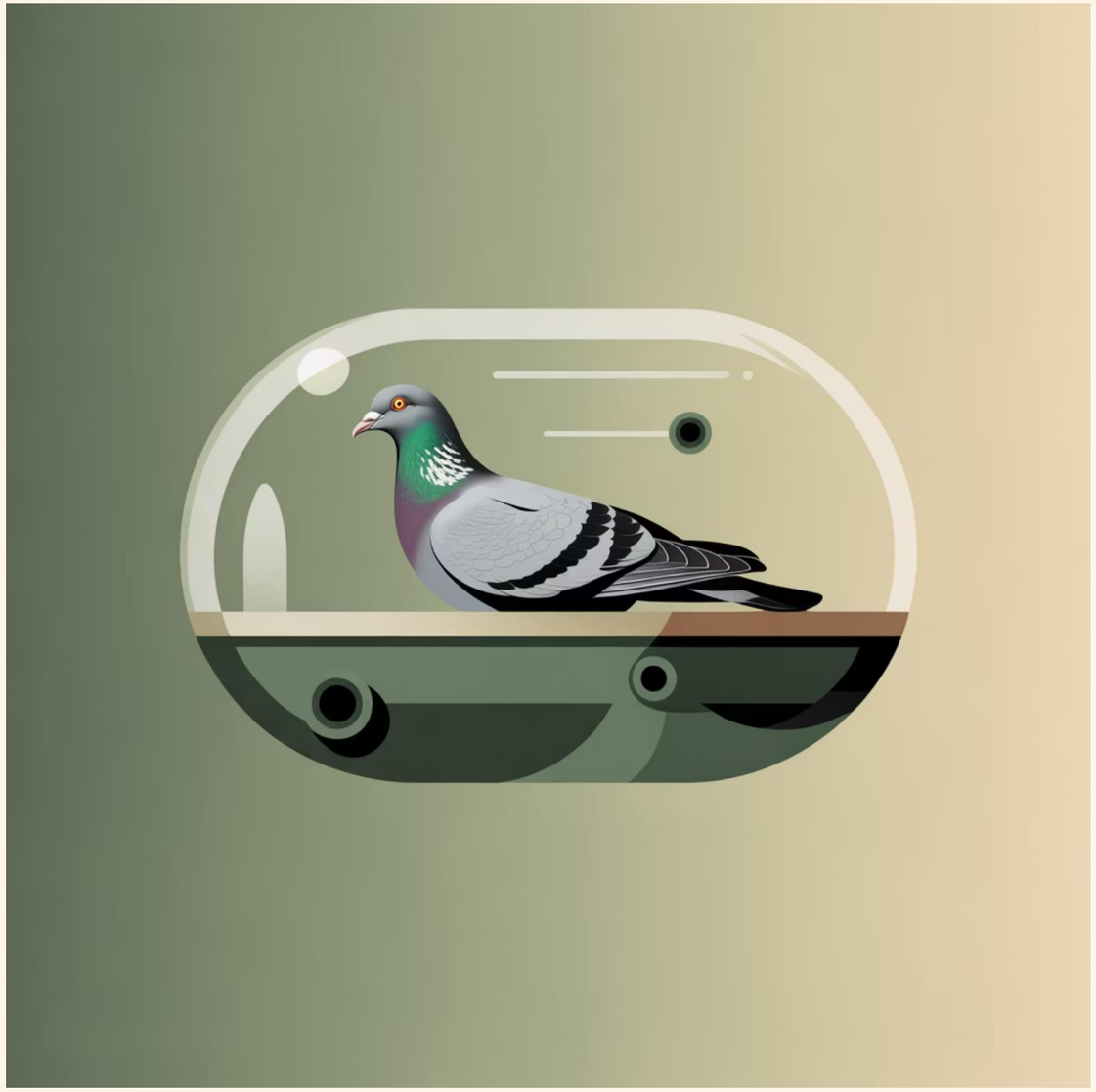
1945-1948

Indiana University: Wrote Walden Two, resolving second identity crisis through literary catharsis

1948-1990

Returned to Harvard: Became America's best-known psychologist, received unprecedented APA Lifetime Achievement Award

Project Pigeon: Innovation and Frustration



Before U.S. entered WWII, Skinner trained pigeons to guide missiles by pecking controls toward moving targets.

Despite spectacular live demonstrations, government officials remained skeptical. After 4 years of work—over 2 full-time—funding was discontinued.

The project's failure contributed to Skinner's midlife identity crisis at age 40.

The Baby-Tender Controversy

Skinner designed an enclosed crib with fresh warm air for his daughter Debbie—a safe, healthy environment that freed parents from tedious labor.

Public Reaction

After Ladies' Home Journal published an article, Skinner received both condemnation and praise from parents nationwide.

Commercial Failure

Patent difficulties and an incompetent business partner led to abandonment of the venture.

Final Fate

When Debbie outgrew it at 2½ years, Skinner unceremoniously converted it into a pigeon cage.

Walden Two: Literary Redemption

> *In summer 1945, Skinner wrote Walden Two—a utopian novel portraying a society where problems were solved through behavioral engineering.*

Personal Catharsis

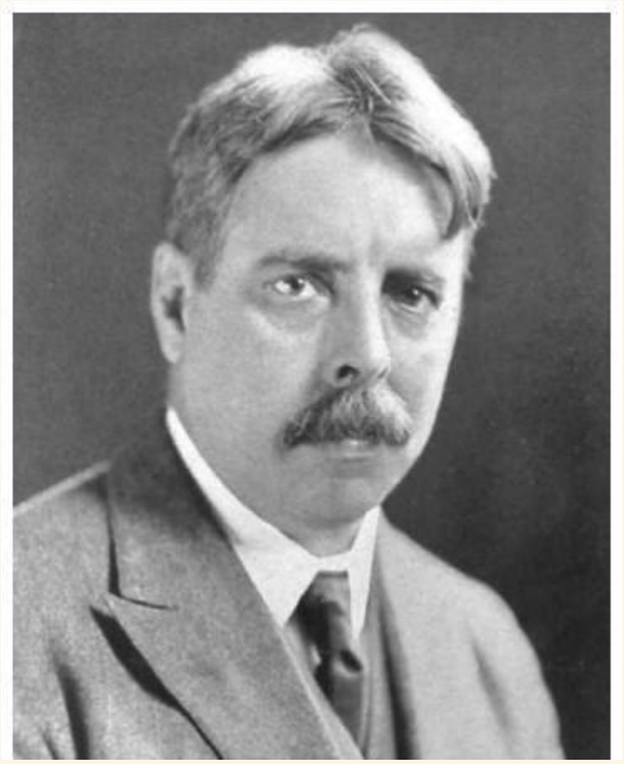
The book provided immediate emotional therapy. After nearly 20 years, Skinner finally accomplished what he failed to do during his Dark Year—become a creative writer.

Professional Turning Point

No longer confined to laboratory rats and pigeons, Skinner would now apply behavioral analysis to shaping human behavior and society.

The two main characters, Frazier and Burris, represented Skinner's attempt to reconcile separate aspects of his own personality.

Precursors to Scientific Behaviorism



Edward L. Thorndike

Law of Effect: *Responses followed by satisfiers are "stamped in"; those followed by annoyers are not necessarily "stamped out." Rewards strengthen behavior more predictably than punishments.*

John B. Watson

Argued human behavior can be studied objectively without reference to consciousness, introspection, instinct, or mental states. Goal: prediction and control through stimulus-response connections.

Core Principles of Scientific Behaviorism

Observable Behavior Only

Study behavior without reference to needs, instincts, or internal motives. People don't eat because they're hungry—hunger is unobservable. They eat because deprivation increases eating probability.

Environmental Focus

Internal states exist but don't explain behavior. Using them as explanations limits scientific advancement and relegates psychology to philosophy.

Interpretation vs. Explanation

Scientists can interpret behavior by generalizing from simple to complex conditions, but should not claim to explain why people behave as they do.

Three Characteristics of Science

1

Cumulative Knowledge

Science advances progressively. Today's high school students know more physics than ancient Greeks, unlike humanities where Plato's wisdom remains unmatched.

2

Empirical Attitude

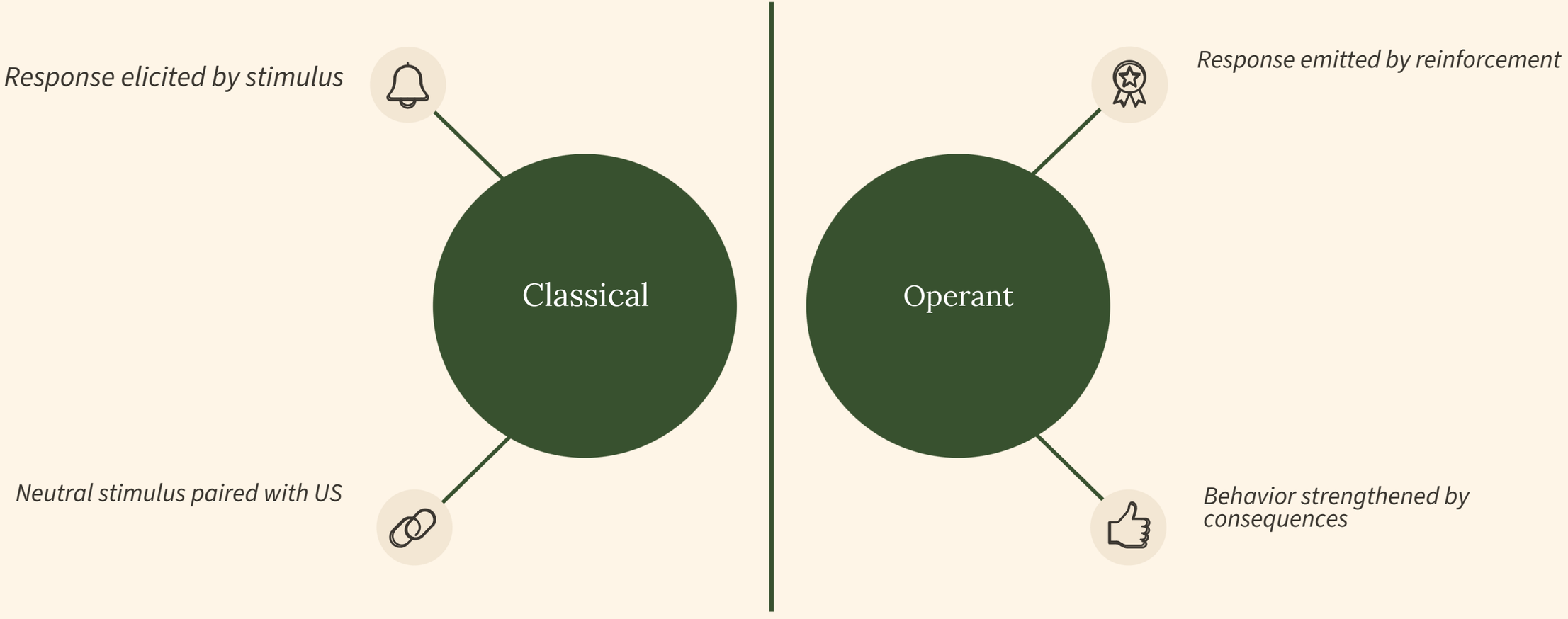
Values observation above authority, demands intellectual honesty, and suspends judgment until clear trends emerge. Scientists deal with facts, not what someone said about them.

3

Search for Order

Seeks lawful relationships through prediction, control, and description. Behavior is determined and follows discoverable principles, not free will.

Classical vs. Operant Conditioning



Classical (Respondent)

*Response is **elicited**—drawn out by specific stimulus. Neutral stimulus paired with unconditioned stimulus until it produces conditioned response.*

Operant (Skinnerian)

*Response is **emitted**—simply appears. Behavior made more likely to recur through immediate reinforcement. Organism operates on environment.*

Little Albert: Classical Conditioning

Watson and Rayner's 1920 experiment demonstrated how fears are learned through classical conditioning.

1. **Baseline**

   11-month-old Albert showed no fear of white rat, rabbit, dog, or monkey

2. **Conditioning**

   White rat paired with loud sudden sound behind Albert's head

3. **Result**

   Albert learned to fear rat alone and generalized fear to rabbit, dog, fur coat, wool, Santa mask

Key Finding: *Infants have few innate fears but can learn them through association. Fear generalizes to similar objects but not dissimilar ones like wooden blocks.*

Shaping Through Successive Approximation

Complex behaviors are shaped by reinforcing successive approximations toward the target behavior.

Example: *Teaching a mentally challenged boy to dress himself*

1. *Reward positioning left hand near sleeve*
2. *Reward placing hand into sleeve*
3. *Reward putting arm through sleeve*
4. *Repeat for right sleeve, buttons, trousers, socks, shoes*

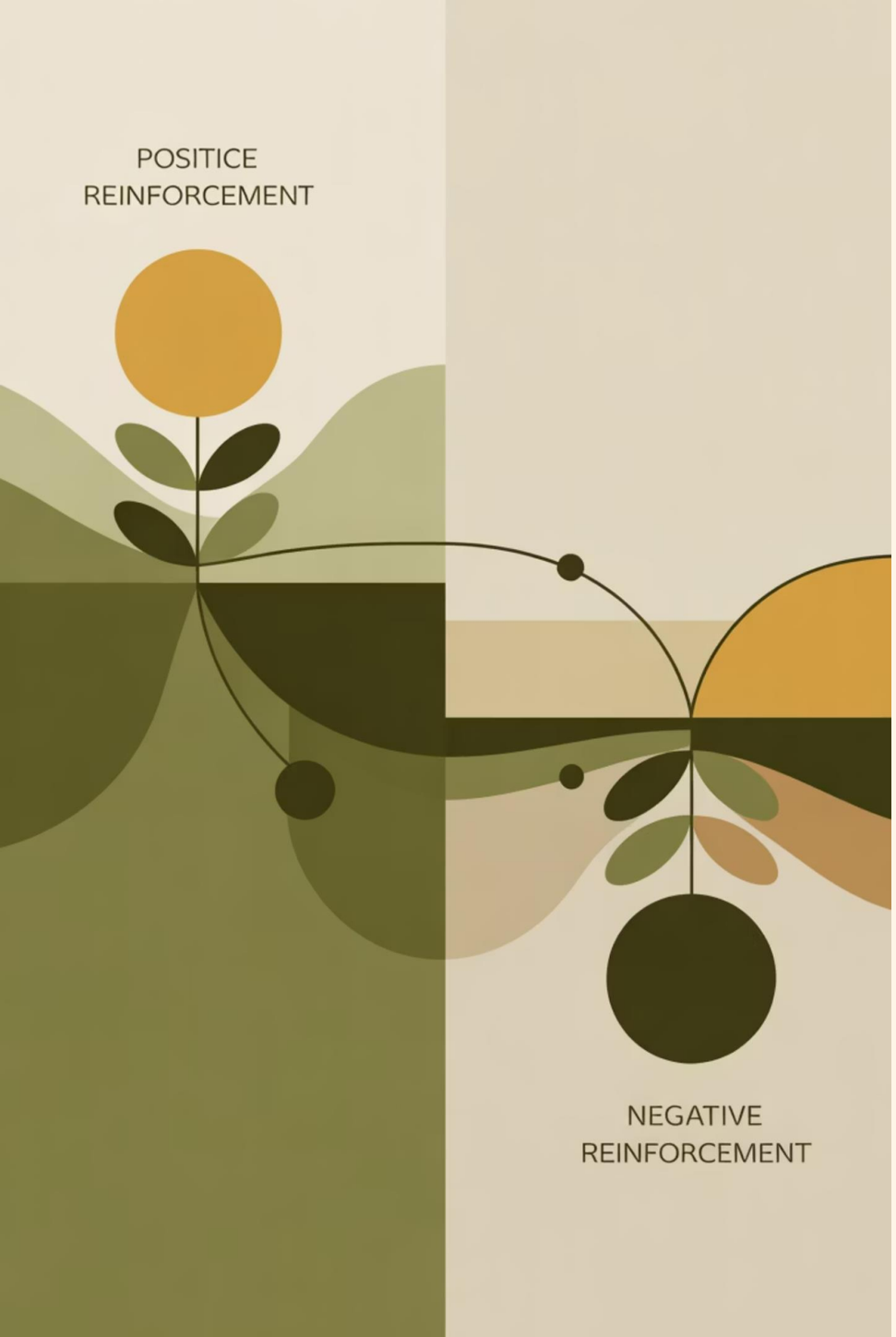
Behavior is continuous, not discrete—organisms move slightly beyond previously reinforced responses, enabling gradual shaping.

The ABC Model of Operant Conditioning

A: Antecedent	B: Behavior	C: Consequence
The environment or setting where behavior occurs	*The response within organism's repertoire, unimpeded by competing behaviors*	*The reinforcement that increases probability of behavior recurring*

Operant discrimination results from differential reinforcement history. We come to dinner not because we "discern" food is ready, but because similar reactions were previously reinforced.

Stimulus generalization *occurs when we respond to new situations similarly to previous ones because they share identical elements.*



Understanding Reinforcement

Two Effects

Reinforcement strengthens behavior AND rewards the person. Not synonymous—work is reinforced but often unrewarding.

Positive Reinforcement

Adding beneficial consequence increases behavior. Examples: food, water, sex, money, social approval, physical comfort.

Negative Reinforcement

Removing aversive consequence increases behavior. Examples: reducing loud noises, shocks, hunger pangs, anxiety.

Not Punishment

Punishment adds negative or removes positive to decrease behavior. Effects less predictable than reinforcement.

Why Punishment Fails

Suppresses, Doesn't Guide

Punishment stops undesirable behavior but doesn't teach what to do instead. Boy spanked for teasing sister stops temporarily but disposition doesn't improve.

Conditions Negative Feelings

Strong aversive stimulus creates fear, anxiety, guilt, or shame through classical conditioning. Offers no positive instruction.

Effects Spread

Any stimulus associated with punishment may be avoided. Child avoids sister, parents, paddle, or location—leading to maladaptive behavior.

Skinner recognized Freudian defense mechanisms as effective means of avoiding pain: fantasy, projection, rationalization, displacement.

Generalized Reinforcers

Conditioned reinforcers become satisfying through association with primary reinforcers like food, water, sex, or physical comfort.

Attention

Associated with food and physical contact during feeding and holding

Approval

Paired with primary reinforcers across multiple situations

Affection

Becomes reinforcing through repeated pairing with comfort

Submission of Others

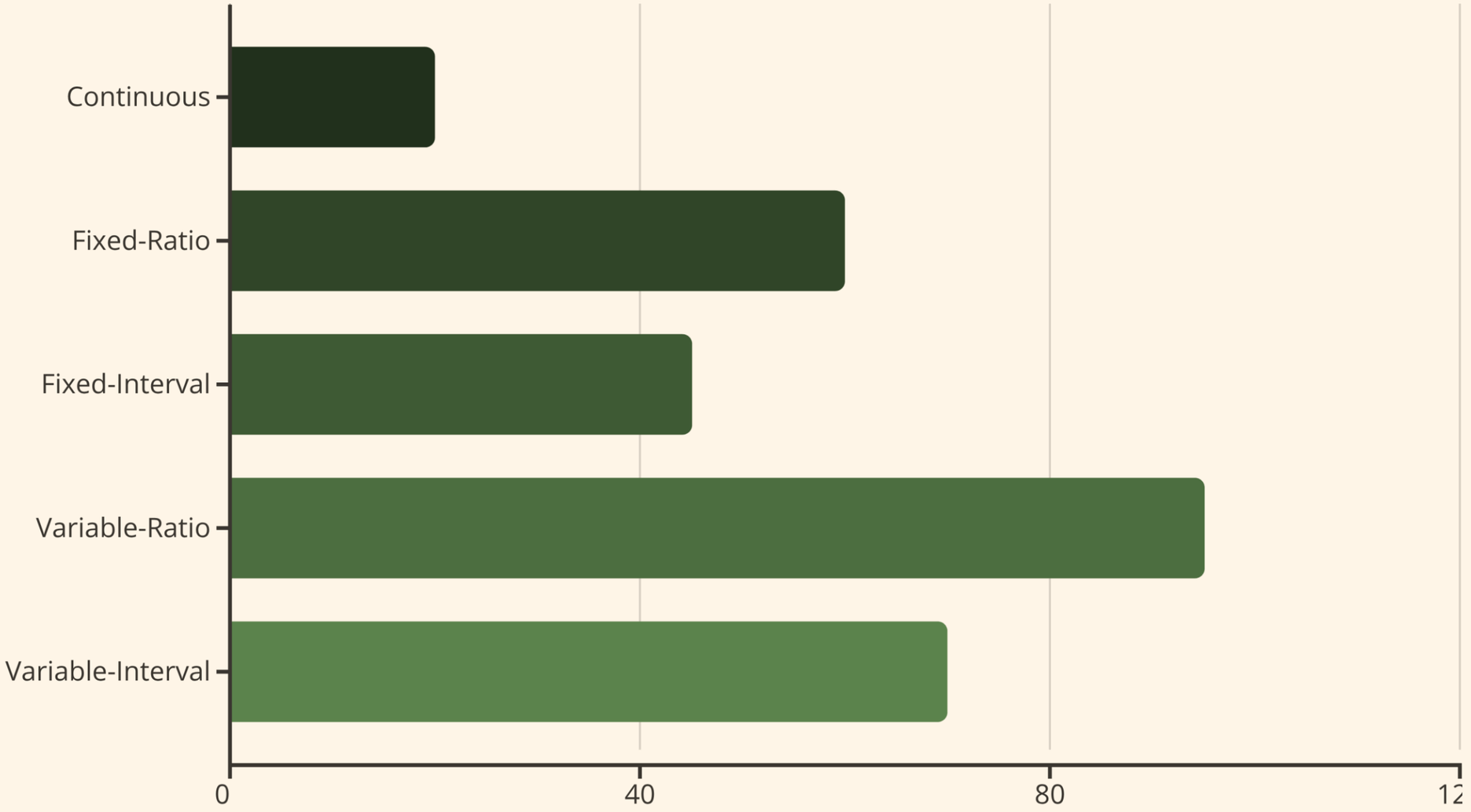
Associated with control over resources and safety

Tokens (Money)

Exchangeable for variety of primary reinforcers

These five generalized reinforcers sustain much of human behavior and can shape responses with no expectation of primary reinforcement.

Schedules of Reinforcement



Intermittent schedules produce responses more resistant to extinction than continuous reinforcement. Variable-ratio schedules (like slot machines) create extremely persistent behavior.

Extinction and Behavior Persistence

Learning Occurs

Behavior reinforced on intermittent schedule

Reinforcement Stops

Systematic withholding of previously given reinforcement

Gradual Weakening

Response probability diminishes to zero over time

Behavior Persists

Up to 10,000 nonreinforced responses observed with intermittent schedules

Key Principle

Higher rate of responses per reinforcement = slower extinction. Fewer responses or shorter time between reinforcers = faster extinction.

Practical Implication

Praise and reinforcers should be used sparingly in training children. Most human behaviors persist because they're intermittently reinforced in unpredictable environments.

The Human Organism

Can principles learned from rats and pigeons truly explain human behavior? Skinner believed yes—just as physics interprets outer space and genetics explains evolution, animal studies illuminate human psychology.

Three Forces Shaping Behavior

What Makes Us Who We Are

Natural Selection

Evolutionary history shapes our genetic composition and survival-oriented reflexes.

Cultural Practices

Social contingencies and cultural evolution mold behavior patterns across generations.

Personal History

Individual reinforcement experiences create unique behavioral repertoires.

Natural Selection's Role

Survival Mechanisms

Throughout millennia, behaviors beneficial to species survival persisted while others disappeared. Pupillary reflexes, rooting responses, and sexual arousal all evolved because they enhanced survival and reproduction.

Some reflexes remain adaptive today, while others have lost their survival value in modern environments.

Overeating once helped humans survive food scarcity. Now, with continuous food availability, this evolutionary remnant contributes to obesity—a behavior that lost its survival value.

Cultural Evolution

Cultural practices like toolmaking and language began when individuals were reinforced for specific behaviors. Eventually, these evolved into group practices with survival value.

> *"People do not observe particular practices in order that the group will be more likely to survive; they observe them because groups that induced their members to do so survived and transmitted them."*

Not all cultural remnants remain adaptive—division of labor increased productivity but created unrewarding work, while warfare evolved from beneficial to existentially threatening.

Inner States

Skinner didn't deny internal experiences like love, anxiety, or fear. He simply insisted these private events can be studied scientifically as behaviors—observable within limits.

Self-Awareness

1

Consciousness

Humans possess awareness of their environment and experiences.

2

Meta-Awareness

We're aware of being conscious—observing ourselves observing.

3

Private Events

Internal thoughts and feelings exist "within the skin" as observable behaviors.

A worker saying "I was so frustrated I almost quit" reports verbal behavior and private events—both scientifically analyzable despite being internal.

Drives and Emotions

Drives as Explanatory Fictions

Drives don't cause behavior—they describe effects of deprivation and satiation. Food deprivation increases eating probability; satiation decreases it.

Emotions and Contingencies

Emotions exist subjectively but don't cause behavior. Throughout evolution, individuals strongly disposed toward fear or anger survived dangers better, passing these characteristics forward.

Pleasant emotions reinforce behaviors, increasing their recurrence in individual lives.

Purpose and Intention

Purpose and intention exist within the skin but aren't directly observable. A felt purpose can itself be reinforcing—believing jogging improves health reinforces the behavior, especially during difficult moments.

> *"The consequences of operant behavior are not what the behavior is now for; they are merely similar to the consequences that have shaped and maintained it."*

Intentions are physically felt stimuli within the organism, not mentalistic events causing behavior.

Complex Behavior

Higher Mental Processes

Thinking, problem-solving, and recall are covert behaviors within the skin—not inside a hypothetical "mind"—subject to reinforcement contingencies.

Creativity

Like mutations in evolution, random behavioral variations are selected by reinforcing consequences. Creative behavior results from accidentally rewarded responses.

Dreams

Dreams are covert, symbolic behaviors subject to reinforcement. They allow expression of repressed stimuli without punishment.

Unconscious Behavior

Nearly all behavior is unconsciously motivated because people rarely observe relationships between genetic/environmental variables and their actions.

Behavior becomes "unconscious" when suppressed through punishment. A child severely punished for sexual play may suppress both behavior and memories, eventually denying the activity occurred.

Such denial avoids aversive stimulation—a negative reinforcer rewarding the child for not thinking about certain behaviors.

Social Behavior

Groups don't behave—only individuals do. People form groups because such behavior is reinforced through protection, resources, and social benefits.

Why People Stay

- *Some group members provide reinforcement*
- *Lack means to leave (especially children)*
- *Intermittent reinforcement outweighs occasional abuse*

The Fromm Example

Skinner shaped Fromm's arm-waving through selective attention during a debate about conditioning. Fromm unconsciously increased the behavior—demonstrating social control in action.

Control of Human Behavior

Behavior is controlled by environmental contingencies—erected by society, others, or oneself. The environment, not free will, determines behavior.

01

Operant Conditioning

Positive reinforcement, negative reinforcement, and punishment techniques.

02

Describing Contingencies

Using language to inform people of behavioral consequences—threats, promises, advertising.

03

Deprivation and Satiation

Controlling behavior by manipulating access to reinforcers.

04

Physical Restraint

Preventing behavior through physical barriers or confinement.

Self-Control Techniques

Physical Aids

Using tools, machines, or financial resources to alter environment.

Environmental Change

Turning off distractions to increase desired behavior probability.

Escape Arrangements

Setting alarms requiring specific responses to stop aversive stimuli.

Drug Use

Taking substances like tranquilizers to modify behavior patterns.

Substitution

Doing something else to avoid undesirable behaviors or thoughts.

All self-control techniques ultimately depend on environmental variables, not inner strength or willpower.

The Unhealthy Personality

Counteracting Strategies

When social control becomes excessive, people employ three defensive strategies:

- ***Escape:*** *Physical or psychological withdrawal, leading to mistrust and lonely noninvolvement*
- ***Revolt:*** *Active counterattack through vandalism, verbal abuse, or overthrowing organizations*
- ***Passive Resistance:*** *Stubborn undermining—most subtle and irritating to controllers*

Inappropriate Behaviors

Excessively Vigorous Behavior

Actions that make no sense currently but were reasonable given past reinforcement history.

Excessively Restrained Behavior

Avoiding aversive stimuli associated with punishment through extreme caution.

Reality Blocking

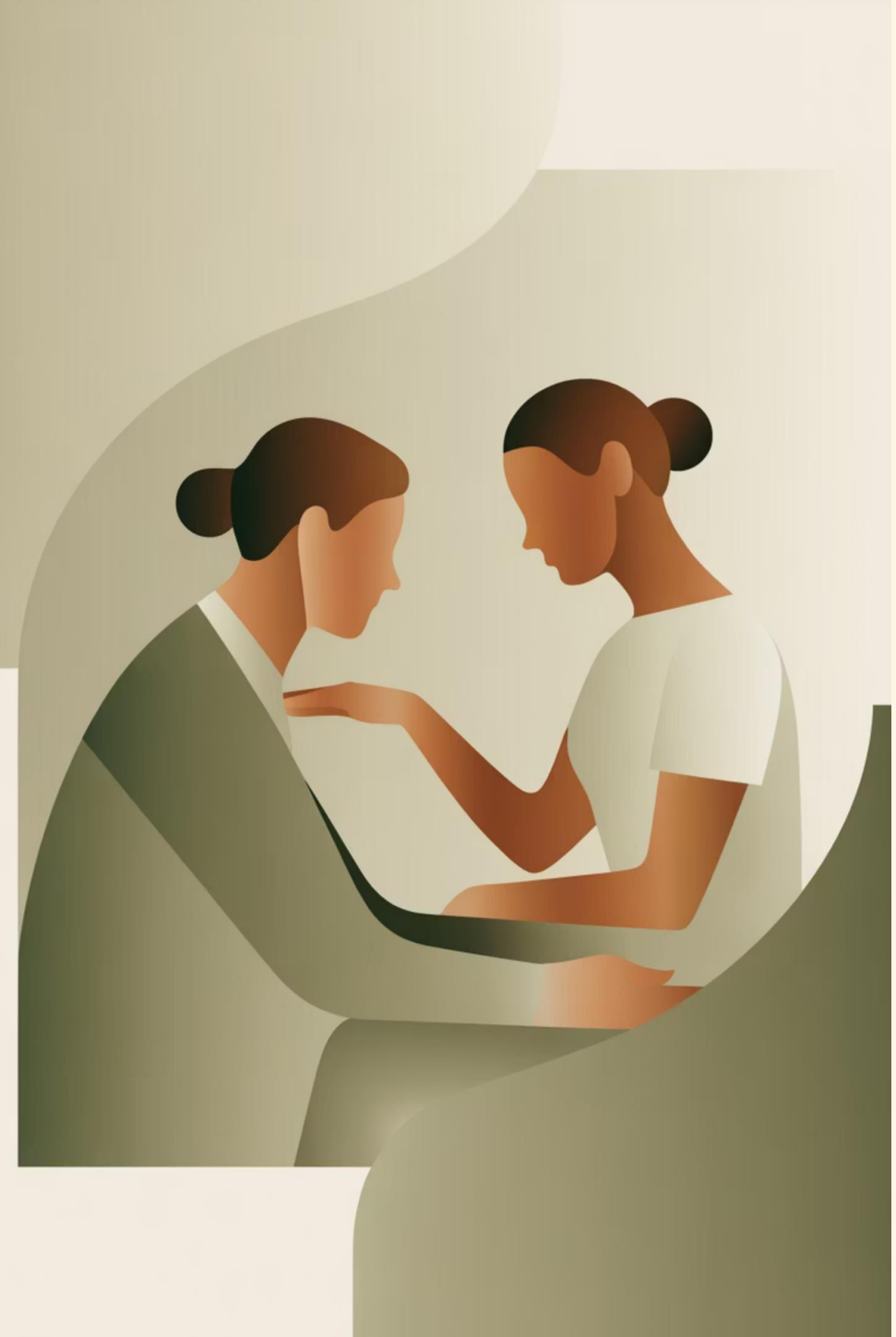
Ignoring aversive stimuli by paying no attention to uncomfortable realities.

Defective Self-Knowledge

Boasting, rationalizing, or grandiose claims that avoid thoughts of inadequacy.

Self-Punishment

Directly punishing oneself or arranging environmental variables for punishment by others.



Psychotherapy

Therapists are controlling agents—but not all control is harmful. Patients must learn to discriminate between punitive authority figures and permissive therapists.

Behavioral Approach

Behavior therapists actively point out consequences, suggest rewarding behaviors, and shape responses through reinforcement—skipping fictional constructs to address learning history directly.

Shaping Takes Time

Therapists mold desirable behavior by reinforcing slightly improved changes. Traditional therapists may affect behavior unknowingly; behavioral therapists do so intentionally.

Research: Conditioning Affects Personality

Token economies demonstrate how conditioning changes stable behavior patterns—potentially altering personality itself.

1

Token Economy System

Students receive tokens for desired behaviors (participation, group work), tradeable for meaningful rewards.

2

Behavioral Changes

Target behaviors increased significantly. Students became more active participants in their learning.

3

Performance Improvements

Exam scores and group grades improved. Students reported greater effort, interest, and enjoyment.

4

Personality Shift?

From passive to active learners—a fundamental change in who they are.

Research: Personality Affects Conditioning

Different people respond differently to the same reinforcers. Personality provides clues about individual differences in conditioning responses.

10

Responders

Worked harder for cigarettes under D-amphetamine, reporting feeling high and good effects.

8

Nonresponders

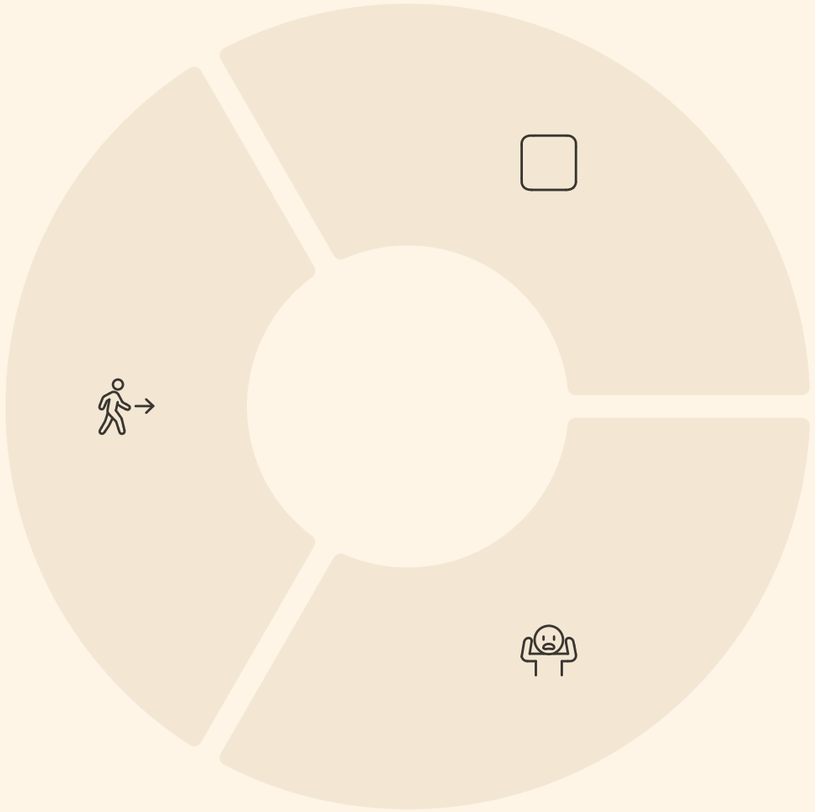
Showed no change in smoking behavior despite drug administration.

Individual differences in dopamine sensitivity—a biological personality basis—affect conditioning responses. Personality influences how people respond to reinforcement.

Mutual Influence: Reinforcement Sensitivity Theory

BAS: Behavioral Approach

Responsive to rewards, impulses, and pleasurable experiences. Associated with positive emotions.



BIS: Behavioral Inhibition

Responsive to punishments and anxiety. Associated with negative emotions and caution.

FFFS: Fight-Flight-Freeze

Responsive to fear and threat. Activates survival-oriented defensive responses.

These systems explain how conditioning shapes personality while personality affects conditioning—a bidirectional relationship supported by research on perfectionism and psychopathy.

Concept of Humanity

Deterministic Yet Optimistic

Humans aren't free but controlled by environmental forces. Yet this view is optimistic—behavior is adaptable, shaped by reinforcement toward satisfying outcomes.

Neither Good Nor Evil

Within genetic limits, people flexibly adapt to environments. Altruistic or cowardly behavior reflects reinforcement history, not inherent morality.

Caused by History

Behavior results from reinforcement history, survival contingencies, and cultural evolution. Complex environmental contingencies operate beyond awareness.

Uniquely Shaped

Each person's singular reinforcement history and genetic differences create unique individuals—emphasizing distinctiveness over similarity.