The 3B Behavior Modification Model: A Framework for Understanding and Reshaping Bias-Driven Behavior

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Abstract: Behavior modification has long been a subject of study across psychology, neuroscience, and leadership development, yet traditional models often fail to account for the emotional underpinnings that sustain cognitive biases and behavioral patterns. The 3B Behavior Modification Model addresses this gap by proposing a hierarchical framework in which emotion drives bias, bias drives belief, belief drives behavior, and behavior drives outcomes. This model challenges conventional approaches that focus solely on modifying behavior or belief without addressing the foundational role of bias formation and emotional reinforcement.

This study explores the theoretical foundation of the 3B Model, its conceptual mechanisms, and its practical applications in leadership, therapy, and decision-making. A qualitative study involving 31 participants from a leadership development program assessed the model's long-term effectiveness. Findings indicate that 100% of respondents reported continued behavioral progress, with 87% fully integrating the new mindset and 94% perceiving lasting emotional and cognitive benefits. These results suggest that interventions targeting emotional biases can lead to more sustainable behavioral changes.

The 3B Model contributes to the field by integrating cognitive science, emotional regulation, and behavioral psychology into a cohesive framework for change. Its implications extend beyond leadership development to education, mental health, and organizational transformation. Future research should further refine and empirically test the model in diverse populations to strengthen its applicability and theoretical robustness. This article provides a structured analysis of the 3B Model, demonstrating its value as a comprehensive, scalable, and effective approach to behavior modification.

Introduction

Context and Background

Understanding human behavior has long been a central focus of psychology, leadership studies, and behavioral economics. Numerous theories have sought to explain how individuals develop, reinforce, and change behaviors, from classical conditioning and cognitive-behavioral models to social learning theory and neuroscience-driven approaches. Despite these advancements, a persistent gap remains: existing models often fail to account for the deep entrenchment of biases and the emotional mechanisms that sustain them. Traditional behavioral modification frameworks assume that rational interventions, incentives, or environmental shifts are sufficient to drive meaningful change. However, these approaches frequently neglect the role of emotional underpinnings in shaping bias, belief, and, ultimately, behavior. Behavior change efforts are often superficial, temporary, or outright ineffective without addressing the core emotional drivers of bias.

This article introduces the 3B Behavior Modification Model, a novel framework designed to address this limitation. It posits that emotion drives bias, bias drives belief, belief drives behavior, and behavior drives outcomes. By recognizing the hierarchical nature of this process, the model offers a structured approach to behavioral change that goes beyond surface-level interventions.

Purpose and Relevance

The significance of the 3B Model lies in its ability to integrate psychological, cognitive, and emotional factors into a cohesive framework for behavior modification. Unlike traditional models that focus primarily on behavior or belief alteration, the 3B Model emphasizes the critical role of bias formation and emotional reinforcement in sustaining behavioral patterns. By doing so, it provides a robust mechanism for achieving long-term behavioral change, particularly in leadership development, education, and therapeutic contexts.

The relevance of this theory extends beyond academic discourse; it has practical applications in various domains, including organizational leadership, psychotherapy, conflict resolution, and public policy. Addressing

bias at its emotional root enables individuals and organizations to implement more effective interventions that lead to sustainable change rather than temporary compliance.

Research Question

This study seeks to answer the following central question:

- How can long-term behavioral change be effectively achieved by addressing the emotional and cognitive biases that drive belief formation?

Thesis Statement

The 3B Behavior Modification Model offers a comprehensive framework for understanding and modifying behavior by recognizing the sequential relationship between emotion, bias, belief, behavior, and outcomes. The model presents a structured yet adaptable approach to long-term behavior modification by integrating cognitive biases, emotional reinforcement, and neuroplasticity. This article explores the theoretical foundation, empirical validation, and real-world applications of the 3B Model, demonstrating its value as a tool for overcoming entrenched biases and fostering meaningful change.

Literature Review

Overview of Existing Theories

Behavior modification and cognitive restructuring have been extensively studied in psychology, neuroscience, and leadership development. While many texts were examined for this review, the discussion focuses on the most relevant works that inform the development of the 3B Model, particularly in understanding how biases form, beliefs are reinforced, and behaviors change. Existing theories offer valuable insights, yet their limitations underscore the need for a more integrated approach, such as the 3B Behavior Modification Model.

Behaviorism and Conditioning Models

Behavioral theories, notably those advanced by Pavlov and Skinner, emphasize conditioning as a primary mechanism of behavior change (Akpan, 2020; Skinner, 1971). Classical conditioning explains how

associations between stimuli and responses are formed, while operant conditioning details how reinforcement and punishment shape behaviors (Henton & Iversen, 2012; Kirsch et al., 2004). Though highly effective in controlled environments, these theories often fail to account for internal cognitive processes, such as motivation and belief formation, which influence long-term behavioral change (Bouton & Nelson, 1998; Martin & Levey, 1988; Verplanken & Orbell, 2022; Zinbarg, 1993).

Cognitive and Social Learning Theories

Piaget's Cognitive Development Theory suggests that individuals actively construct their understanding of the world through schemas, which evolve as new experiences challenge existing knowledge structures (Block, 1982; Hanfstingl et al., 2021). Vygotsky's Sociocultural Theory extends this by emphasizing the role of social interaction in learning (Holbrook & John-Steiner, 2012; Polly et al., 2017; Scott & Palincsar, 2013). Meanwhile, Bandura's Social Learning Theory highlights observational learning and self-efficacy as critical components of behavior change (Bandura, 1985). While these theories acknowledge cognitive processes, they lack an explicit mechanism for addressing entrenched biases and emotional underpinnings that drive belief reinforcement.

Cognitive Bias and Heuristics

Cognitive biases, systematic patterns of deviation from rational judgment, significantly impact belief formation and behavior. Kahneman and Tversky's work on heuristics and biases demonstrates how individuals rely on mental shortcuts that often lead to erroneous conclusions (Tversky & Kahneman, 1974; Tversky, Kahneman, & Slovic, 1982). Schwarz's research on cognitive fluency further explores how processing ease influences perceptions of truth and confidence (Schwarz, 2004; Schwarz et al., 2021). However, these theories primarily describe bias rather than provide structured interventions for modifying it.

Motivational and Emotional Influences on Behavior

Theories of motivation, such as Deci and Ryan's Self-Determination Theory, emphasize intrinsic and extrinsic motivational forces in shaping behavior (Deci & Ryan, 2012). Similarly, Dweck's Mindset Theory explores how fixed and growth mindsets influence learning and resilience (Dweck, 2008). While these models highlight motivation's role in behavioral persistence, they do not directly address how to reprogram biases that

fuel maladaptive behaviors. However, we do gain some insight into the Pygmalion Effect, which describes how expectations shape performance and how we can reinforce new behaviors through positive feedback loops (Chandrasegaran, 2018; McKown, Gregory, & Weinstein, 2010).

Gap in the Literature

While existing theories provide valuable insights, they often operate in isolation, failing to integrate key elements necessary for effective and lasting behavior modification. Behavioral models excel at shaping immediate responses but often lack the depth to address ingrained biases. Cognitive and social learning theories acknowledge internal processes but offer no clear method for bias correction. Bias and heuristic research describes distortions in thinking but stops short of practical interventions. Motivational theories focus on sustaining behavior but not on restructuring the emotional and cognitive foundations of belief. The 3B Model fills this gap by synthesizing these perspectives and introducing a structured yet adaptable approach to modifying behavior at its root cause, emotion-driven bias.

Conceptual Framework

The 3B Behavior Modification Model is rooted in the principle that emotion drives bias, bias shapes belief, belief influences behavior, and behavior determines outcomes. However, most people are typically prepared to defend the bulk of these mechanisms. By addressing bias at its emotional core, one element that most people are unprepared to effectively defend, it is theorized that practitioners can guide individuals toward sustainable behavior change.

Key Concepts and Their Academic Context

   • **Bias Formation and Reinforcement:** Bias is not merely a cognitive shortcut but an emotionally reinforced mechanism that dictates how individuals interpret and interact with the world (Bleda & Pinkse, 2025; Everaert, Grahek, & Koster, 2017; Everaert et al., 2017). The model posits that to change behavior, behavior must be seen as an effect. The bias must be altered first, necessitating an understanding of how biases become entrenched.

• **Cognitive Dysfluency and Disorientation:** There is some compelling research that suggests that disrupting cognitive ease can prompt deeper reflection and openness to new information (Alter, 2013; Diachek, Brown-Schmidt, & Duff, 2024). The 3B Model incorporates disorientation tactics to challenge existing biases and create cognitive flexibility.

• **Neuroplasticity and Reinforcement Mechanisms:** Neural adaptation plays a critical role in behavior change (Pérez-Rodríguez & Rodríguez-Moreno, 2019; Reber et al., 2023; Sweatt, 2016). The model integrates neuroplasticity principles, emphasizing repetition, emotional anchoring, and the Pygmalion Effect to solidify new biases and behaviors.

• **Contrastive Inquiry and Cognitive Reframing:** The application of *Contrastive Inquiry* and non-structured goal-oriented Socratic questioning allows individuals to deconstruct and reconstruct belief systems through guided opposition (Robertson, 2025). By challenging conditioned responses and reinforcing alternative perspectives, this method facilitates long-term cognitive restructuring.

The 3B Model provides a comprehensive framework for behavior modification by linking these concepts into a structured, actionable process. It extends beyond existing theories by offering an integrated approach that targets the emotional, cognitive, and behavioral dimensions of change. In the following sections, we will delve into the methodology and application of this model, demonstrating its efficacy through empirical testing and case studies.

Foundation of the Theory

The 3B Model of Behavior Modification is grounded in the principle that emotion drives bias, bias drives belief, belief drives behavior, and behavior ultimately drives outcomes. This cyclical process implies that lasting behavioral change requires intervention at the level of bias rather than merely addressing behaviors themselves. Doing so draws the support of belief, which automatically alters behavior. Unlike traditional behaviorist models that typically focus on external reinforcement (McLeod, 2023; National University, 2023; Pace, 2023), the 3B Model incorporates and exploits cognitive and emotional mechanisms to ensure sustainable change.

A key assumption underpinning the model is that human cognition is not inherently rational but is typically shaped by biases formed through lived experience, social conditioning, and emotional reinforcement. This aligns with the concept of Epistemic Rigidity, which describes the difficulty individuals face in discarding inaccurate information due to cognitive biases such as confirmation bias, the Einstellung effect, and motivated reasoning (Robertson, 2025). The 3B Model posits that these biases must be addressed systematically to effect genuine behavior modification.

Additionally, the model assumes that the limited research suggesting that neuroplasticity plays a central role in modifying biases and beliefs is accurate (Price & Duman, 2020). However, it goes further to suggest that emotional reinforcement, a core component of this process, helps attach new biases to meaningful, personally relevant experiences, ensuring that the modifications are durable.

Proposed Mechanisms and Processes

The 3B Model operates through a structured process that integrates cognitive disfluency, Contrastive Inquiry, Socratic questioning, and reinforcement strategies. Each stage of this process is designed to systematically challenge and reconstruct biases, ultimately leading to sustainable behavioral change. The five core processes of the model are as follows:

  1. **Identifying Intrinsic Motivation:** Change cannot be imposed; it must be internally motivated. The practitioner begins by identifying the individual's intrinsic motivators and linking behavioral modifications to personally relevant goals.

  2. **Understanding Biases:** Individuals are guided through a process of recognizing and categorizing their biases, often through *Contrastive Inquiry* techniques. By exposing the individual to alternate or opposing perspectives, the model disrupts *Epistemic Rigidity* and opens pathways for new interpretations.

  3. **Replacing Distorted Biases Through Emotional Reinforcement:** Once an individual acknowledges their biases, the next step is to replace them with new, accurate beliefs. This is accomplished through emotional anchoring, wherein the new bias is attached to an emotionally salient event or experience. This process is further reinforced through the *Pygmalion Effect*, which emphasizes the power of expectations in shaping behavior.

4. Utilizing Disorientation via Cognitive Dysfluency, Contrastive Inquiry, and Socratic Questioning: The individual is guided through structured *Contrastive Inquiry* and cognitive disfluency, which introduces intellectual, logical, and emotional challenges that force deeper cognitive processing to encourage self-generated corrections of flawed beliefs. *Defense Demolition*, a strategy that uses non-threatening examples of bias to reduce resistance, is an integral part of this process.

5. Leveraging Neuroplasticity for Lasting Change: The final step involves reinforcement through repeated exposure to the corrected belief and structured self-reflection. Journaling, mindfulness practices, and continued real-world application ensure the longevity of the behavior modification (Sloan, Feinstein, & Marx, 2009).

Formalization of the Theory

The 3B Model can be formalized as follows:

Mathematical Representation: Let **E** represent emotion, **B** represent bias, **BL** represent belief, **BH** represent behavior, and **O** represent outcome.

1. $E \rightarrow B$ (Emotions drive bias formation)

2. $B \rightarrow BL$ (Bias shapes belief systems)

3. $BL \rightarrow BH$ (Beliefs influence behavior)

4. $BH \rightarrow O$ (Behavior determines outcomes)

This theory posits that to modify **O**, one must not merely alter **BH**, but systematically intervene at the level of **B** and **BL** by addressing the anchors and triggers associated with **E** through deconstruction and reinforcement mechanisms.

The 3B Behavior Modification Model

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Intervention Point

B

BL

E

BH

O
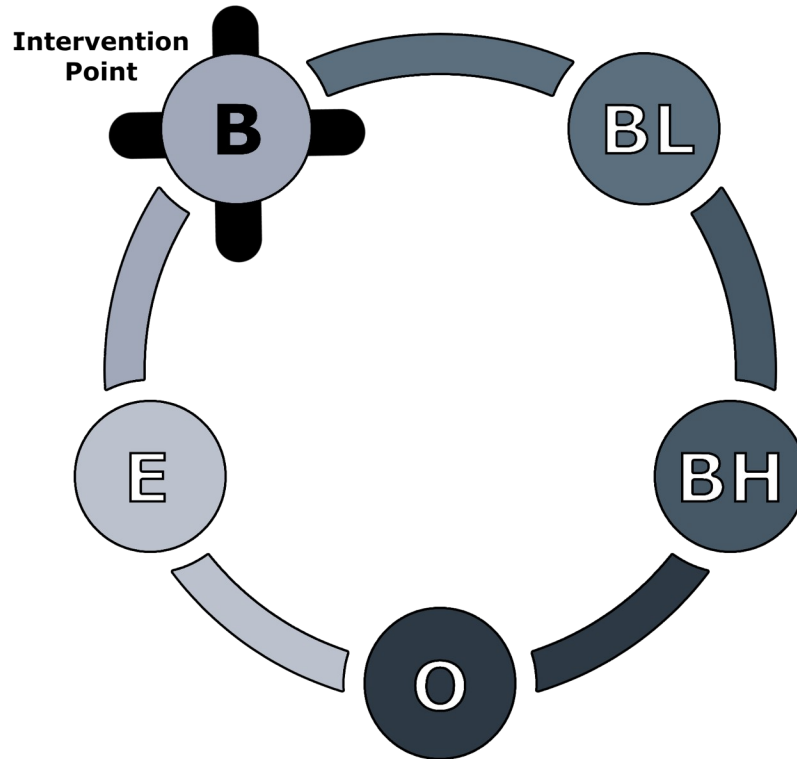
Emotion (E) → Bias (B) → Belief (BL) → Behavior (BH) → Outcome (O)

Conceptual Diagram: A feedback loop can be illustrated where emotion influences bias, bias informs belief, belief dictates behavior, and behavior ultimately reinforces (or challenges) the original emotional and cognitive framework. This recursive loop explains why behavior modification is difficult but also provides a structured pathway for change.

Integration with Epistemic Rigidity: The 3B Model acknowledges that biases are deeply embedded due to Epistemic Rigidity. By integrating contrastive inquiry and defense demolition, the model systematically weakens the individual's resistance to change, fostering cognitive flexibility. This model suggests that this process is crucial for overcoming entrenched biases that traditional behaviorist models fail to address.

The 3B Model provides a novel approach to behavior modification by integrating cognitive, emotional, and reinforcement mechanisms. Unlike conventional models that focus on behavioral conditioning alone, the 3B Model recognizes that belief and behavior are often the result of a predictable chain but are also the very things

that someone is ready to defend. The model further recognizes the necessity of bias modification as a precursor to lasting change. By addressing epistemic rigidity, leveraging cognitive disfluency, and reinforcing new behaviors through neuroplasticity and emotional anchoring, the model offers a comprehensive framework for sustainable transformation. In practice, this method has been shown to be highly effective.

Methods

Research Design

This study employed a mixed-methods approach, combining quantitative and qualitative elements to assess the long-term impact of the 3B Behavior Modification Model. The primary focus was on real-world behavioral changes in leadership development participants. Given that the initial purpose of the program was leadership training rather than experimental research, the study's design was observational and retrospective in nature. Data were gathered from a randomly selected cohort of participants who completed a leadership development program rooted in this model.

Data Collection

The study involved 55 randomly selected participants who completed the leadership development program. Upon completing the development program, all 55 (100%) reported beneficial behavior, attitude, and leadership modifications. In a three-year follow-up, 31 participants (56.4%) responded to follow-up qualitative questions administered via a loosely structured email survey. The purpose of these questions was to gauge the long-term impact of the program on personal and professional growth. It remains unclear why the remaining participants did not respond, though likely explanations include turnover, email address changes, or lack of engagement.

Data Analysis

Qualitative responses were categorized into three key impact areas: (1) *Sustained Positive Trajectory*, (2) *Integration of New Mindset*, and (3) *Perceived Long-Term Value*. Thematic analysis was conducted to identify

patterns and recurring insights within participant responses. Additionally, response rates were quantified to provide a structured assessment of the findings.

Results

Findings: *Continued Progress and Behavioral Change*

All 31 respondents (100%) reported experiencing at least some level of continued progress and permanent changes in behavior and outlook due to their participation in the program. The impact of the program was categorized as follows:

Sustained Positive Trajectory

• **Percentage Reporting Progress:** 100% of respondents indicated they were still on a positive developmental trajectory.

• **Qualitative Themes:** Participants described an ongoing application of learned skills, improved outlook on life and career, increased confidence, and enhanced leadership capabilities as contributing factors.

Integration of New Mindset

• **Percentage Reporting Mindset Adoption:** 87% (27 out of 31) explicitly stated that at least one behavior change, new mindset, or perspective introduced during the program had been fully integrated into their daily lives or leadership styles.

• **Improvement Over Time:** Many participants reported that their understanding and application of the model had improved over time as they became more comfortable with its concepts, echoing findings in other research on post-development improvement suggesting a benefit of professional leadership development as far as two years or more post-development (Hayward, 2011).

• **Partial Adoption:** The remaining 13% (4 out of 31) reported at least partial adoption, citing external challenges such as workplace culture or competing priorities as barriers to full integration.

Perceived Long-Term Value

• **Percentage Reporting Lasting Impact:** 94% (29 out of 31) expressed that the program had created lasting positive changes, particularly in emotional regulation, leadership approaches, and decision-making.

• **Reported Benefits:** Respondents highlighted improved team dynamics, better conflict resolution skills, enhanced leadership behaviors, and a stronger sense of purpose. A notable recurring theme was the shift in prioritization from "being right" to "chasing accuracy." Furthermore, those respondents employed in professional counseling and therapy settings reported similar results when utilizing this approach.

Study Limitations

It is important to acknowledge that the study has several limitations due to its post-hoc design and reliance on self-reported data. Similarly, it is acknowledged that such answers could have been motivated by the Einstein Effect. Moreover, because the program was not initially structured as a formal study, the methodology lacks the strict controls typically present in experimental research.

Furthermore, the program in question was based on the *Reasoned Leadership Development model*, which is a proprietary development model based on the 3B Model, the Theory of Epistemic Rigidity, the Adversity Nexus Theory, and Contrastive Inquiry. Hence, it is possible that attribution to improved outcomes could include elements or combinations not currently recognized. While the findings provide valuable insights into the long-term impact of the 3B Behavior Modification Model, future research should employ a more structured approach, including longitudinal tracking and control groups. Additionally, other researchers are encouraged to explore and validate these findings through independent studies.

Analysis & Discussion

Implications

The 3B Behavior Modification Model presents significant implications across multiple domains, including leadership development, cognitive psychology, behavioral science, and organizational management.

By emphasizing the role of emotional biases in shaping behavior, the model challenges traditional behaviorist approaches that focus primarily on external reinforcements. Instead, it aligns more closely with contemporary findings in neuroscience and psychology that emphasize the importance of intrinsic motivation and emotional processing in behavioral change (Di Domenico & Ryan, 2017; Shiota, Vornlocher, & Jia, 2023).

From a practical standpoint, the model offers a structured approach to leadership training and personal development, providing a roadmap for individuals to recognize and restructure their biases for sustainable behavioral change. Additionally, organizations can leverage this model to refine coaching methodologies, improve team dynamics, and foster a more adaptive workforce. In education, the model has the potential to reshape pedagogical strategies, ensuring that learning interventions align with or destroy select cognitive biases and intrinsic motivations that foster or impede improved retention and application.

Strengths of the Theory

One of the primary strengths of the 3B Model is its holistic integration of cognitive, emotional, and behavioral components. Unlike traditional models that often isolate behavior from its cognitive and emotional roots, this approach recognizes the interconnectedness of these elements, offering a more nuanced and effective framework for behavior modification. Furthermore, the model provides clear mechanisms, bias recognition, emotional reinforcement, and neuroplasticity utilization that enable practitioners to implement it in real-world settings.

Another notable strength is its adaptability. The 3B Model is not confined to a single discipline but can be applied to various contexts, including leadership training, therapy, education, and organizational change management. Its emphasis on the Pygmalion Effect, where expectations shape outcomes, further demonstrates its relevance in mentorship and coaching environments. Additionally, its integration with the Contrastive Inquiry Method ensures a structured approach to challenging Epistemic Rigidity and fostering critical thinking in the pursuit of accuracy.

Limitations of the Theory

While the 3B Model offers a robust framework for behavior modification, it is not without limitations. One key limitation is the reliance on self-awareness and willingness to change, which may vary significantly among individuals. Those resistant to introspection or unwilling to challenge their biases may struggle to engage with the process, limiting its effectiveness. Moreover, the model assumes that biases can be identified and restructured through guided intervention, but some biases, especially those deeply ingrained by cultural or systemic influences, may be more resistant to change or difficult to discover, particularly due to various biases of the practitioner.

Another limitation is the preliminary nature of empirical validation. While years of practice and initial qualitative findings support the efficacy of the model, broader, more structured studies are necessary to establish its effectiveness across diverse populations and settings. The existing study, while informative, was not originally designed as a formal experimental investigation, necessitating further research with controlled variables and quantitative measures to substantiate its claims.

Potential Applications

The potential applications of the 3B Model extend across numerous fields. In leadership development, it provides a foundation for training programs that emphasize self-awareness, emotional intelligence, and cognitive flexibility. Organizations can integrate this model into their talent development strategies, ensuring that leaders are equipped to recognize and adjust their biases for more effective decision-making and interpersonal interactions.

In therapeutic and counseling settings, the model can serve as a structured approach to bias discovery, cognitive-behavioral interventions, or emotional regulation, aiding individuals in recognizing and overcoming maladaptive biases that contribute to anxiety, depression, and other psychological challenges. Educators can also benefit from the model by designing curricula that account for cognitive biases and fostering environments that encourage adaptive learning and critical thinking.

Beyond individual applications, the 3B Model has broader implications for policy and societal change. Institutions that aim to mitigate systemic biases, whether in hiring practices, legal frameworks, or public health initiatives, can draw from this model to design interventions that address the emotional underpinnings of bias-driven behaviors and their aftermath. Future research should explore its applicability in large-scale behavioral modification efforts, including public health campaigns and organizational change initiatives.

The 3B Behavior Modification Model offers a compelling framework for understanding and modifying behavior by addressing the emotional and cognitive mechanisms that drive bias. While further empirical validation is necessary, its theoretical foundation and practical applications position it as a valuable tool for leadership, education, therapy, and beyond.

Conclusion

The 3B Behavior Modification Model offers a novel and comprehensive framework for understanding and influencing behavioral change by addressing the fundamental role of bias, emotion, and belief formation. Grounded in psychological and cognitive principles, the model integrates the impact of neuroplasticity, the Pygmalion Effect, and contrastive analysis to guide individuals through sustainable behavior modification. The findings from the initial qualitative study indicate that participants in a leadership development program rooted in this model experienced significant and lasting changes in behavior, perspective, and decision-making processes.

The potential contributions of this theory are substantial. It provides a structured, psychologically informed approach to behavior change, moving beyond traditional cognitive-behavioral models by emphasizing the necessity of altering emotional biases to create lasting transformations. Its integration with Epistemic Rigidity highlights how entrenched biases can hinder growth and how strategic interventions can foster adaptability and learning. Furthermore, the model has direct applications in leadership, therapy, education, and organizational development, demonstrating its versatility across multiple domains.

While the 3B Model presents a strong conceptual foundation and promising initial results, it is not without its limitations. The qualitative nature of the pilot study restricts the generalizability of findings,

necessitating further empirical testing through controlled experimental designs, longitudinal studies, and cross-disciplinary applications. Future research should explore the model's efficacy across diverse populations and contexts, refine assessment methods for measuring bias transformation, and investigate potential limitations in application.

Ultimately, the 3B Model stands as a significant advancement in the study of behavior modification. By systematically addressing the interplay between bias, belief, and behavior, it provides a robust mechanism for fostering meaningful change. Its implications extend beyond theoretical discourse, offering practical strategies for individuals and organizations seeking to break entrenched patterns and cultivate adaptive, constructive behaviors. As research in this area progresses, the model holds the potential to become a cornerstone in understanding and guiding behavioral transformation.

Resources:

Akpan, B. (2020). Classical and Operant Conditioning—Ivan Pavlov; Burrhus Skinner. Science education in theory and practice: an introductory guide to learning theory, 71-84.

Alter, A. L. (2013). The Benefits of Cognitive Disfluency. Current Directions in Psychological Science, 22(6), 437–442. http://www.jstor.org/stable/44318702

Bandura, A. (1985). Model of causality in social learning theory. In Cognition and psychotherapy (pp. 81-99). Boston, MA: Springer US.

Bleda, M., & Pinkse, J. (2025). Leaving the cold behind: The role of emotions and cognitive biases in business adaptation to climate change. Business & Society, 64(1), 9-44.

Block, J. (1982). Assimilation, accommodation, and the dynamics of personality development. Child development, 281-295.

Bouton, M. E., & Nelson, J. B. (1998). The role of context in classical conditioning: Some implications for cognitive behavior therapy. Learning and behavior therapy, 59-84.

Chandrasegaran, J. (2018). The Role of Self-Fulfilling Prophecies in Education: Teacher-Student Perceptions. Journal on Educational Psychology, 12(1), 8-18.

Deci, E. L., & Ryan, R. M. (2012). Self-determination theory. Handbook of theories of social psychology, 1(20), 416-436.

Di Domenico, S. I., & Ryan, R. M. (2017). The Emerging Neuroscience of Intrinsic Motivation: A New Frontier in Self-Determination Research. Frontiers in human neuroscience, 11, 145. https://doi.org/10.3389/fnhum.2017.00145

Diachek, E., Brown-Schmidt, S., & Duff, M. (2024). Attentional Orienting and Disfluency-Related Memory Boost Are Intact in Adults With Moderate-Severe Traumatic Brain Injury. Journal of speech, language, and hearing research: JSLHR, 67(6), 1803–1818. https://doi.org/10.1044/2024_JSLHR-23-00385

Dweck, C. S. (2008). Mindset: The new psychology of success. Ballantine Books.

Everaert, J., Grahek, I., & Koster, E. H. (2017). Individual differences in cognitive control over emotional material modulate cognitive biases linked to depressive symptoms. Cognition and Emotion, 31(4), 736-746.

Everaert, J., Grahek, I., Duyck, W., Buelens, J., Van den Bergh, N., & Koster, E. H. (2017). Mapping the interplay among cognitive biases, emotion regulation, and depressive symptoms. Cognition and Emotion, 31(4), 726-735.

Hanfstingl, B., Arzenšek, A., Apschner, J., & Gölly, K. I. (2021). Assimilation and accommodation. European Psychologist.

Hayward, S. (2011). Connecting leadership development to bottom line benefits. Strategic HR Review, 10(1), 28–34. https://doi.org/10.1108/14754391111091788

Henton, W. W., & Iversen, I. H. (2012). Classical conditioning and operant conditioning: A response pattern analysis. Springer Science & Business Media.

Holbrook, M., & John-Steiner, V. (2012). Vygotsky and sociocultural approaches to teaching and learning. Handbook of psychology, educational psychology, 7, 117.

Kirsch, I., Lynn, S. J., Vigorito, M., & Miller, R. R. (2004). The role of cognition in classical and operant conditioning. Journal of clinical psychology, 60(4), 369-392.

Martin, I., & Levey, A. B. (1988). Classical conditioning in a cognitive era. Biological psychology, 27(2), 153-166.

McLeod, S. A. (2023, May 29). Behaviorism. Simply Psychology. www.simplypsychology.org/behaviorism.html

McKown, C., Gregory, A., & Weinstein, R. S. (2010). Expectations, stereotypes, and self-fulfilling prophecies in classroom and school life. In Handbook of research on schools, schooling and human development (pp. 256-274). Routledge.

National University. (2023, April 7). Behaviorism in education: Definition, techniques, and examples. Retrieved from https://www.nu.edu/blog/behaviorism-in-education/

Pace, K. (2023, August 10). What is behavioral learning theory? Retrieved from https://www.wgu.edu/blog/what-behavioral-learning-theory2005.html

Pérez-Rodríguez, P. M., & Rodríguez-Moreno, A. (2019). The impact of studying brain plasticity. Frontiers in Cellular Neuroscience, 13, 66. https://doi.org/10.3389/fncel.2019.00066

Polly, D., Allman, B., Casto, A., & Norwood, J. (2017). Sociocultural perspectives of learning. Foundations of learning and instructional design technology.

Price, R. B., & Duman, R. (2020). Neuroplasticity in cognitive and psychological mechanisms of depression: an integrative model. Molecular psychiatry, 25(3), 530–543. https://doi.org/10.1038/s41380-019-0615-x

Reber, T.P., Mackay, S., Bausch, M. et al. Single-neuron mechanisms of neural adaptation in the human temporal lobe. Nat Commun 14, 2496 (2023). https://doi.org/10.1038/s41467-023-38190-5

Robertson, D. (2025, March 3). Epistemic Rigidity: The Invisible Barrier to Growth and Leadership. The Journal of Leaderology and Applied Leadership. https://jala.nlainfo.org/epistemic-rigidity-the-invisible-barrier-to-growth-and-leadership/

Robertson, D. (2025, Feb 3). Unlocking Understanding with the Contrastive Inquiry Method. The Journal of Leaderology and Applied Leadership. https://jala.nlainfo.org/unlocking-understanding-with-the-contrastive-inquiry-method/

Scott, S., & Palincsar, A. (2013). Sociocultural theory.

Schwarz, N. (2004). Metacognitive experiences in consumer judgment and decision making. Journal of consumer psychology, 14(4), 332-348.

Schwarz, N., Jalbert, M., Noah, T. and Zhang, L. (2021), Metacognitive experiences as information: Processing fluency in consumer judgment and decision making. Consum Psychol Rev, 4: 4-25. https://doi.org/10.1002/arcp.1067

Shiota, M. N., Vornlocher, C., & Jia, L. (2023). Emotional mechanisms of behavior change: Existing techniques, best practices, and a new approach. Policy Insights from the Behavioral and Brain Sciences, 10(2), 201-211. https://doi.org/10.1177/23727322231195907

Skinner, B. F. (1971). Operant conditioning. The encyclopedia of education, 7, 29-33.

Sloan, D. M., Feinstein, B. A., & Marx, B. P. (2009). The durability of beneficial health effects associated with expressive writing. Anxiety, stress, and coping, 22(5), 509–523. https://doi.org/10.1080/10615800902785608

Sweatt J. D. (2016). Neural plasticity and behavior - sixty years of conceptual advances. Journal of neurochemistry, 139 Suppl 2, 179–199. https://doi.org/10.1111/jnc.13580

Tversky, A., & Kahneman, D. (1974). Judgment under Uncertainty: Heuristics and Biases: Biases in judgments reveal some heuristics of thinking under uncertainty. Science, 185(4157), 1124-1131.

Tversky, A., Kahneman, D., & Slovic, P. (1982). Judgment under uncertainty: Heuristics and biases (pp. 3-20).

Verplanken, B., & Orbell, S. (2022). Attitudes, habits, and behavior change. Annual review of psychology, 73(1), 327-352.

Zinbarg, R. E. (1993). Information processing and classical conditioning: Implications for exposure therapy and

    the integration of cognitive therapy and behavior therapy. Journal of Behavior Therapy and

    Experimental Psychiatry, 24(2), 129-139.