



Counterfactual Thinking and Behavioural Recovery following Near-Miss Experiences

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Abstract: Near-miss experiences represent situations in which individuals approach failure, loss, or undesirable outcomes but avoid the final negative consequence. Such experiences create a unique psychological condition because individuals perceive that alternative outcomes were possible, motivating them to compare actual events with imagined alternatives. This cognitive process, known as counterfactual thinking, plays an important role in emotional regulation, learning, decision evaluation, and future behavioural adjustment. This conceptual research article develops a theoretical framework explaining how near-miss experiences activate counterfactual thinking and how this process contributes to behavioural recovery. Drawing upon counterfactual reasoning, cognitive appraisal theory, self-regulation theory, and adaptive learning perspectives, the article proposes that counterfactual thinking functions as a cognitive mechanism through which individuals transform challenging experiences into opportunities for improvement.

The framework highlights that counterfactual thinking may produce both adaptive and maladaptive outcomes depending on the direction, interpretation, and regulation of reflective processes. Constructive upward counterfactual thinking may encourage learning, corrective action, and future preparation, whereas excessive focus on unattainable alternatives may increase regret and hinder recovery. Similarly, downward counterfactual thinking may support emotional adjustment by increasing awareness of avoided negative outcomes.

This article contributes to behavioural psychology by positioning near-miss experiences as a distinct psychological trigger that activates counterfactual processing and influences behavioural recovery. The proposed framework explains how cognitive evaluation, emotional regulation, and self-regulatory capacity shape the transformation of past experiences into adaptive future behaviour.

Keywords: Counterfactual Thinking; Near-Miss Experiences; Behavioural Recovery; Cognitive Appraisal; Self-Regulation; Adaptive Learning; Psychological Adaptation

1. Introduction

1.1 Background

Human behaviour is shaped by experiences of success, failure, and outcomes that are close to personal goals and expectations. Among these experiences, near-miss events represent a distinct psychological situation because they involve both the possibility of failure and a sense of relief. A near-miss occurs when an individual narrowly avoids an undesirable outcome or comes close to achieving a desired goal without fully reaching it. Such experiences often create strong emotional and cognitive reactions because individuals evaluate not only the actual outcome but also the alternative possibilities that might have occurred under different conditions.

One of the key cognitive processes linked with near-miss experiences is counterfactual thinking. Counterfactual thinking refers to the process through which individuals imagine alternative versions of past events by considering outcomes different from what actually happened. These thoughts often involve reflecting on what might have changed and influence how people interpret experiences, understand outcomes, and prepare for future situations.

Counterfactual thinking contributes to behavioural adaptation by helping individuals review previous actions and identify areas for improvement. After experiencing a near-miss event, individuals often examine the factors responsible for the outcome and consider strategies to improve future decisions. Through this reflective process, counterfactual thinking supports learning, motivation, and behavioural recovery.

However, counterfactual thinking does not always result in positive adaptation. The same process that encourages learning may also create regret, self-criticism, and emotional strain when individuals repeatedly focus on alternative outcomes without developing constructive solutions. Therefore, understanding the conditions under which counterfactual thinking supports recovery is important for explaining how individuals adapt after challenging experiences.

Near-miss experiences occur across multiple areas, including education, professional performance, health decisions, sports, and everyday decision-making. In each situation, individuals need to interpret the experience, manage emotional reactions, and decide whether changes in future behaviour are required. Studying the relationship between counterfactual

thinking and behavioural recovery provides insight into how individuals convert difficult experiences into opportunities for learning and improvement.

1.2 Problem Statement

Although counterfactual thinking has been widely examined in relation to emotions, judgement, and decision-making, its role in behavioural recovery after near-miss experiences requires further conceptual understanding. Existing research has primarily focused on immediate emotional outcomes, including regret, disappointment, and relief. Less attention has been given to how individuals use counterfactual reflection to restore adaptive behaviour after challenging situations.

A major theoretical challenge involves understanding why similar near-miss experiences produce different behavioural outcomes among individuals. Some individuals respond by analysing their experiences, modifying their strategies, and improving future performance. Others remain focused on negative comparisons and experience difficulties in adapting. These differences indicate that counterfactual thinking interacts with emotional regulation, self-evaluation, and personal coping processes.

Another important concern involves distinguishing between productive reflection and unproductive rumination. Counterfactual thoughts provide useful guidance when individuals identify causes, recognise improvement areas, and develop future strategies. However, repeated focus on alternative outcomes without meaningful action may maintain negative emotional responses and restrict behavioural recovery. A clearer conceptual explanation is needed to understand how counterfactual thinking contributes to adaptive recovery.

This article addresses this gap by examining the psychological mechanisms through which counterfactual thinking influences behavioural recovery following near-miss experiences. It also explores the factors that determine whether counterfactual reflection supports learning and behavioural improvement or creates barriers to adaptation.

1.3 Research Motivation

Human experiences involving failure, uncertainty, and unexpected outcomes influence future behaviour through processes of reflection and evaluation. Near-miss experiences are especially significant because they create a psychological state where individuals face both the possibility of failure and the awareness that a different outcome was possible. These experiences often encourage individuals to review their actions, identify contributing factors, and consider alternative approaches for future improvement.

The motivation behind this conceptual research comes from the need to understand how individuals transform near-miss experiences into opportunities for behavioural recovery. Unlike complete failures, near-miss events create complex psychological responses because the actual outcome might appear acceptable while alternative possibilities continue to influence thoughts and future decisions.

Counterfactual thinking provides an important perspective for understanding this process. By generating alternative scenarios, individuals evaluate previous decisions and develop interpretations that guide future behaviour. The impact of counterfactual thinking depends on how these thoughts are formed and applied. Constructive reflection supports learning and behavioural adjustment, whereas repetitive and emotionally focused reflection may reduce effective recovery.

This research focuses on identifying the psychological conditions that support recovery after challenging experiences. Understanding the relationship between counterfactual thinking and behavioural recovery provides valuable insights for psychology, education, organisational behaviour, health decision-making, and personal development.

2. Literature Review

2.1 Counterfactual Thinking and Cognitive Evaluation of Past Events

Counterfactual thinking refers to the cognitive process through which individuals create alternative possibilities for past events and evaluate how different actions, decisions, or circumstances might have resulted in different outcomes. This process plays an important role in human reasoning because it helps individuals understand past experiences, evaluate their involvement in outcomes, and develop strategies for future behaviour.

Research on counterfactual thinking identifies two major forms of mental simulation: upward and downward counterfactual thinking. Upward counterfactual thinking involves imagining outcomes that are better than the actual result. This form of reflection is often associated with recognising mistakes, missed opportunities, and areas for improvement. Although upward counterfactual thoughts may create feelings of regret or dissatisfaction, they also provide useful information for learning, improving performance, and achieving future goals when individuals focus on factors within their control.

Downward counterfactual thinking involves imagining outcomes that might have been worse than the actual situation. This form of reflection often supports emotional regulation by increasing awareness that a more negative outcome was avoided. After near-miss

experiences, downward counterfactual thinking may help individuals reduce distress and develop a more balanced interpretation of the event.

The behavioural effects of counterfactual thinking depend on how individuals interpret and apply these mental simulations. When individuals use counterfactual reflections to understand causes, identify improvement areas, and develop future strategies, the process supports learning and behavioural adjustment. In contrast, repeated focus on irreversible outcomes or personal weaknesses may increase regret, rumination, and emotional difficulties. Therefore, counterfactual thinking should not be viewed as entirely positive or negative. Its impact depends on the direction of reflection, the purpose behind the thoughts, the perceived control over the situation, and the emotional meaning attached to alternative outcomes.

2.2 Near-Miss Experiences and Psychological Responses

Near-miss experiences are psychologically important events where individuals narrowly avoid negative outcomes or come close to achieving desired goals without fully reaching them. These experiences exist between complete success and failure, creating a combination of relief, disappointment, uncertainty, and reflection.

Unlike clear failures, near-miss experiences often encourage deeper evaluation because individuals believe that a small change in behaviour, decision, or circumstance might have produced a different result. This perception increases attention toward causes, missed opportunities, and alternative actions that may influence future decisions.

Research on decision-making suggests that near-miss experiences influence future behaviour by encouraging individuals to adjust strategies, improve preparation, and modify actions. By reflecting on what might have happened differently, individuals identify weaknesses, recognise opportunities for improvement, and develop more effective responses.

However, near-miss experiences may also create negative psychological effects when individuals focus excessively on the gap between the actual outcome and the desired outcome. Continuous attention toward missed possibilities may increase frustration, disappointment, and self-critical thoughts, especially when the outcome holds personal importance.

The psychological impact of near-miss experiences depends on how individuals interpret and process these events. Some individuals view near-miss situations as useful feedback for learning and improvement, while others interpret them as signs of personal failure.

Understanding these differences requires examining the cognitive and emotional processes involved in responding to near-miss events.

2.3 Behavioural Recovery and Adaptive Learning

Behavioural recovery refers to the process through which individuals restore effective functioning, adjust previous responses, and develop improved strategies after difficult or unexpected experiences. Recovery involves learning from past events and creating future-oriented approaches rather than simply returning to previous patterns of behaviour.

Near-miss experiences may support behavioural recovery by encouraging self-evaluation and reflective learning. When individuals examine previous decisions and consider alternative actions, they identify factors influencing outcomes and develop strategies for improving future performance. Through this process, cognitive reflection connects past experiences with future behavioural change.

Self-regulation is an important part of behavioural recovery because individuals need to manage emotional reactions, maintain motivation, and apply insights through practical actions. Individuals with stronger self-regulation abilities are more likely to use counterfactual reflections constructively by focusing on improvement rather than remaining focused on negative comparisons.

However, behavioural recovery does not occur automatically after near-miss experiences. Reflection supports learning when individuals identify solutions and apply lessons to future actions. When reflection becomes repetitive and focuses only on alternative outcomes without practical responses, it may lead to unproductive rumination. Therefore, the relationship between counterfactual thinking and behavioural recovery depends on the ability to convert reflection into adaptive learning and meaningful behavioural change.

Overall, studying behavioural recovery through the perspective of counterfactual thinking provides a deeper understanding of how individuals use challenging experiences for improvement, adaptation, and better future decision-making.

3. Conceptual Framework Development

The present conceptual framework provides an integrated explanation of how individuals transform near-miss experiences into opportunities for behavioural recovery through counterfactual thinking and adaptive learning. Drawing from counterfactual thinking theory, self-regulation perspectives, and research on behavioural adaptation, the framework proposes

that near-miss experiences act as important triggers that initiate cognitive evaluation and reflection processes.

Near-miss experiences hold psychological importance because they create a sense that different outcomes were possible. Unlike complete failures or successful outcomes, near-miss events encourage individuals to examine what might have changed and why the actual outcome occurred. This evaluation process activates counterfactual thinking, through which individuals create alternative scenarios and compare actual outcomes with possible alternatives.

The framework identifies counterfactual thinking as the central cognitive mechanism connecting near-miss experiences with behavioural recovery. Through counterfactual reflection, individuals evaluate previous decisions, identify factors influencing outcomes, and develop strategies for future improvement. However, the impact of counterfactual thinking depends on how individuals use this reflection. Constructive counterfactual thinking supports learning and behavioural adjustment, whereas repetitive negative reflection may restrict recovery by keeping attention focused on disappointment and missed possibilities.

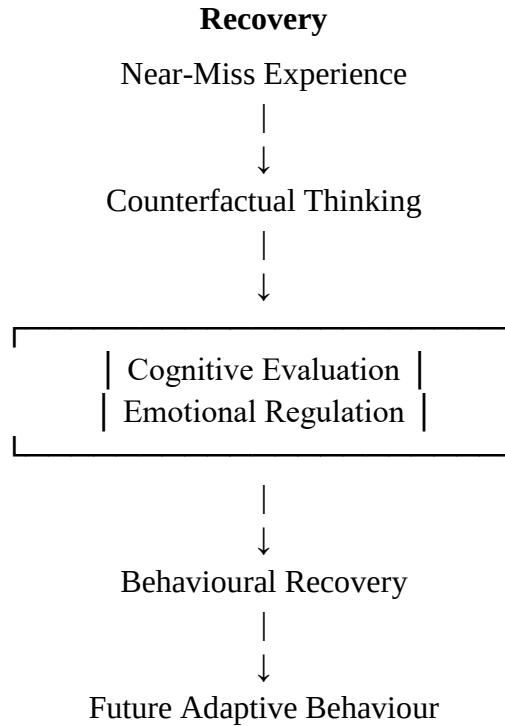
The framework further suggests that counterfactual thinking influences behavioural recovery through two key processes: cognitive evaluation and emotional regulation. Cognitive evaluation helps individuals understand past experiences, identify factors within their control, and develop alternative strategies for future situations. Emotional regulation determines how effectively individuals manage feelings such as regret, disappointment, and frustration after near-miss experiences and convert these emotions into adaptive responses.

Behavioural recovery represents the main outcome of the proposed framework. It refers to an individual's ability to restore effective functioning, modify previous approaches, and develop improved behavioural strategies after challenging experiences. Through reflection and adaptation, individuals may transform near-miss experiences into learning opportunities that support future performance and better decision-making.

The framework also highlights self-regulation and perceived controllability as important factors influencing this process. Individuals with stronger self-regulation abilities are more likely to manage emotional responses and apply counterfactual insights to create behavioural changes. Similarly, when individuals believe their future outcomes are influenced by their own actions, counterfactual reflection is more likely to result in constructive improvement rather than passive acceptance.

Overall, the proposed framework suggests that behavioural recovery after near-miss experiences does not occur through counterfactual thinking alone. Instead, recovery develops through an interaction between cognitive reflection, emotional regulation, self-regulatory abilities, and future-focused behavioural adaptation.

Figure 1: Conceptual Framework of Counterfactual Thinking and Behavioural



Moderators:

- Self-Regulation
- Perceived Controllability
- Emotional Stability

Table 1 presents the key constructs included in the proposed conceptual framework and explains their theoretical roles and expected relationships.

Moderating Factors:

- Self-Regulation Ability
- Perceived Controllability
- Emotional Stability

Table 1: Constructs and Theoretical Relationships

Construct	Role in Framework	Theoretical Relationship
Near-Miss Experience	Triggering Event	Initiates reflection and evaluation of alternative outcomes
Counterfactual Thinking	Core Cognitive Mechanism	Enables comparison between actual and possible outcomes
Cognitive Evaluation	Mediating Mechanism	Converts reflection into learning and behavioural adjustment
Emotional Regulation	Mediating Mechanism	Determines whether emotional responses support recovery
Self-Regulation	Moderating Factor	Strengthens translation of reflection into behavioural change
Perceived Controllability	Boundary Condition	Influences whether reflection produces adaptive improvement
Behavioural Recovery	Outcome Variable	Represents restoration, adaptation, and future improvement

The proposed conceptual framework contributes to existing literature by integrating cognitive reflection processes with behavioural recovery mechanisms. Rather than viewing near-miss experiences only as sources of regret or disappointment, the framework highlights their potential role as catalysts for learning, adaptation, and improved future decision-making.

4. Research Propositions

Based on the proposed conceptual framework, this article develops a set of theoretical propositions explaining how counterfactual thinking after near-miss experiences contributes to behavioural recovery. These propositions combine insights from counterfactual thinking theory, cognitive evaluation perspectives, self-regulation theory, and behavioural adaptation research.

The framework suggests that near-miss experiences do not directly determine future behavioural outcomes. Instead, individuals interpret these experiences through cognitive and emotional processes that influence whether the event becomes a source of learning and improvement or leads to repeated negative reflection. The following propositions explain the mechanisms through which counterfactual thinking supports behavioural recovery.

2.4 Proposition Development

Proposition 1: Near-Miss Experiences Trigger Counterfactual Thinking

Near-miss experiences create a psychological condition where individuals perceive that a different outcome was possible. Since the outcome appears close to an alternative result, individuals become motivated to examine previous actions, decisions, and circumstances that may have influenced the final outcome. This evaluation encourages individuals to generate counterfactual thoughts about what might have happened differently.

Through this process, near-miss experiences act as triggers for cognitive reflection and alternative outcome evaluation. Counterfactual thinking is likely to become stronger when individuals consider the experience personally important and believe that different actions might have changed the outcome.

Proposition 1: Near-miss experiences increase counterfactual thinking by encouraging individuals to evaluate alternative outcomes and identify factors influencing the result.

Proposition 2: Counterfactual Thinking Supports Behavioural Recovery through Adaptive Learning

Counterfactual thinking provides individuals with information about the connection between past actions and future outcomes. When individuals focus on aspects of an experience that are within their control, counterfactual reflection helps identify mistakes, evaluate alternative approaches, and develop strategies for improvement.

This process allows individuals to transform past experiences into learning opportunities by creating future-focused solutions. Therefore, constructive counterfactual thinking contributes to behavioural recovery by supporting adaptation and improvement after challenging experiences.

Proposition 2: Constructive counterfactual thinking supports behavioural recovery by promoting adaptive learning and future-oriented behavioural adjustment.

Proposition 3: Cognitive Evaluation Mediates the Relationship between Counterfactual Thinking and Behavioural Recovery

Counterfactual thinking does not automatically result in behavioural improvement. Its effectiveness depends on how individuals evaluate the causes, controllability, and consequences of an experience. Cognitive evaluation helps individuals distinguish between factors they are able to change and factors beyond their control.

When individuals engage in meaningful evaluation, counterfactual thoughts become practical insights for future action. This process creates a connection between reflection and behavioural change.

Proposition 3: Cognitive evaluation mediates the relationship between counterfactual thinking and behavioural recovery by transforming alternative thoughts into useful behavioural insights.

Proposition 4: Emotional Regulation Influences the Adaptive Value of Counterfactual Thinking

Near-miss experiences often create emotional responses such as regret, disappointment, frustration, or uncertainty. These emotional reactions influence whether counterfactual thinking supports recovery or creates further difficulties.

Effective emotional regulation allows individuals to acknowledge negative emotions while maintaining focus on future improvement. In contrast, poor emotional regulation may result in repeated negative reflection and reduced ability to adapt.

Therefore, emotional regulation plays an important role in determining whether counterfactual thinking produces constructive or unproductive outcomes.

Proposition 4: Emotional regulation influences the relationship between counterfactual thinking and behavioural recovery by determining whether reflection supports adaptation or negative fixation.

Proposition 5: Self-Regulation Moderates the Relationship between Counterfactual Thinking and Behavioural Recovery

Self-regulation influences an individual's ability to control responses, maintain future goals, and implement behavioural changes. Individuals with stronger self-regulation abilities are more capable of applying counterfactual insights to modify future actions.

In contrast, individuals with lower self-regulation may recognise alternative possibilities but struggle to convert reflection into behavioural change. Therefore, self-regulation determines the extent to which counterfactual thinking contributes to recovery.

Proposition 5: Self-regulation strengthens the relationship between counterfactual thinking and behavioural recovery, with individuals having stronger self-regulation showing greater adaptive responses.

Proposition 6: Perceived Controllability Strengthens Adaptive Counterfactual Processing

The way individuals perceive control over an event influences whether they view near-miss experiences as opportunities for improvement. When individuals believe future outcomes are influenced by their own actions, counterfactual thoughts are more likely to focus on improvement strategies and behavioural adjustment.

In contrast, when individuals view events as uncontrollable, they may show lower motivation to apply lessons gained from reflection.

Proposition 6: Perceived controllability strengthens the positive relationship between constructive counterfactual thinking and behavioural recovery by encouraging future-oriented action.

Proposition 7: Integrated Process of Behavioural Recovery Following Near-Miss Experiences

The proposed framework suggests that behavioural recovery develops through a series of connected processes rather than through counterfactual thinking alone. Near-miss experiences initiate reflection, counterfactual thinking creates alternative interpretations, cognitive evaluation identifies improvement opportunities, and emotional regulation supports the implementation of behavioural changes.

This integrated process explains how individuals transform challenging experiences into opportunities for learning, adaptation, and future improvement.

Proposition 7: Behavioural recovery following near-miss experiences develops through an integrated process involving counterfactual thinking, cognitive evaluation, emotional regulation, and self-regulatory processes.

Table 2: Summary of Research Propositions

Proposition	Relationship
P1	Near-miss experiences increase counterfactual thinking
P2	Constructive counterfactual thinking enhances behavioural recovery
P3	Cognitive evaluation mediates the relationship between counterfactual thinking and recovery
P4	Emotional regulation influences the adaptive outcomes of counterfactual thinking
P5	Self-regulation strengthens the relationship between reflection and recovery
P6	Perceived controllability enhances adaptive counterfactual processing
P7	Behavioural recovery occurs through an integrated cognitive-emotional mechanism

5. Research Gap

Existing research has extensively explored counterfactual thinking as a cognitive process linked with regret, emotional responses, judgement, and decision evaluation. Previous studies

show that individuals use alternative mental simulations to understand past experiences and guide future decisions. However, the relationship between counterfactual thinking and behavioural recovery after near-miss experiences remains insufficiently explained from a conceptual perspective.

A major limitation in existing literature is the focus on emotional outcomes of counterfactual thinking, particularly regret and disappointment. Although these emotional responses are important, they do not fully explain how individuals convert reflections about alternative outcomes into adaptive behavioural changes. The process through which counterfactual thoughts support recovery, learning, and future improvement requires further theoretical development.

Another important gap relates to the unique nature of near-miss experiences. Unlike situations involving clear success or failure, near-miss events involve uncertain outcomes where individuals may experience both positive and negative interpretations. Existing research provides limited understanding of why some individuals use near-miss experiences as opportunities for learning and growth, while others remain focused on missed possibilities and struggle to recover effectively.

In addition, the connection between cognitive reflection and behavioural adaptation has not been fully integrated into existing conceptual frameworks. Counterfactual thinking provides individuals with insights about possible improvements, but behavioural recovery also depends on other psychological processes, including self-regulation, motivation, emotional management, and future-oriented planning.

This conceptual research addresses these gaps by examining counterfactual thinking as a mechanism influencing behavioural recovery after near-miss experiences. The article presents an integrated perspective explaining how alternative mental simulations contribute to learning, adaptation, and improved future decision-making.

6. Novelty / Conceptual Contribution

The primary contribution of this article lies in examining counterfactual thinking beyond its traditional role in evaluating past events. Previous research has mainly focused on how counterfactual thoughts influence emotions such as regret, disappointment, and relief. This article extends the existing discussion by exploring how counterfactual thinking supports behavioural recovery and helps individuals transform challenging experiences into opportunities for learning and improvement.

This conceptual study connects counterfactual thinking theory with behavioural recovery perspectives. It proposes that near-miss experiences create a reflective process where individuals evaluate alternative outcomes, understand the factors behind an event, and determine future responses. Through this process, counterfactual thinking acts as a link between past experiences and future behavioural change.

A key contribution of this article is the distinction between constructive and maladaptive forms of counterfactual thinking. Constructive counterfactual reflection involves understanding the causes of an outcome, identifying areas for improvement, and developing strategies for future action. In contrast, maladaptive counterfactual thinking involves repeated attention toward missed opportunities without generating meaningful behavioural changes.

The article also highlights that behavioural recovery depends on multiple psychological processes. Counterfactual thinking alone does not guarantee positive outcomes. Its effectiveness depends on factors such as emotional regulation, self-confidence, motivation, and the ability to transform reflection into practical action.

The conceptual framework developed in this article provides a foundation for future empirical research examining how individuals recover from near-miss experiences across different contexts, including education, workplace performance, health decisions, and personal goal achievement.

Although previous studies have examined counterfactual thinking as a cognitive process related to regret, decision evaluation, and future planning, limited attention has been given to the specific conditions that activate counterfactual thinking and influence its behavioural outcomes.

This article proposes that near-miss experiences serve as distinct psychological triggers that differ from both success and failure. Unlike complete failures, near-miss events create a perception that a different outcome was possible through a small change in behaviour, decision-making, or circumstances. This perception encourages individuals to generate alternative possibilities and evaluate what might have been done differently.

The central contribution of this framework is the identification of near-miss experiences as an important starting point for counterfactual processing. Rather than viewing counterfactual thinking only as a response to regret or dissatisfaction, this article presents it as a process through which individuals transform near-miss experiences into opportunities for behavioural recovery and adaptive learning.

The proposed framework extends existing counterfactual thinking research by explaining the process:

Near-Miss Experience → Counterfactual Processing → Cognitive Evaluation and Emotional Regulation → Behavioural Recovery

This perspective explains why similar near-miss experiences produce different outcomes among individuals. Some individuals use counterfactual reflection to identify improvement strategies and modify future behaviour. Others remain focused on missed outcomes without developing effective responses.

Therefore, the main contribution of this research lies in explaining how and why near-miss experiences activate counterfactual processes that support behavioural recovery under specific cognitive and emotional conditions. The article moves beyond the assumption that counterfactual thinking automatically leads to recovery and focuses on the mechanisms through which this process develops.

7. Research Objectives / Research Questions

The primary objective of this conceptual research article is to examine the role of counterfactual thinking in shaping behavioural recovery after near-miss experiences. The study aims to develop a theoretical understanding of how individuals interpret narrowly avoided failures or incomplete achievements and how these interpretations influence future behavioural changes.

The article also seeks to explore the psychological mechanisms through which counterfactual thoughts contribute to learning, motivation, and self-improvement. By integrating perspectives from cognitive psychology, behavioural adaptation, and self-regulation theories, the research examines how reflection on alternative outcomes influences recovery processes and future decision-making.

The specific research objectives are:

- To examine how counterfactual thinking influences the interpretation of near-miss experiences.
- To analyse the relationship between alternative mental simulations and behavioural recovery processes.
- To explore the conditions under which counterfactual thinking supports constructive learning rather than negative emotional fixation.

- To understand the role of self-regulation and emotional processing in converting near-miss experiences into future behavioural improvement.
- To develop a conceptual explanation of how individuals adapt their behaviour after narrowly avoided failures or incomplete achievements.

Research Questions

RQ1: How does counterfactual thinking influence behavioural recovery after near-miss experiences?

RQ2: Which psychological mechanisms determine whether counterfactual reflection leads to adaptive or maladaptive outcomes?

RQ3: How do individuals convert reflections about alternative outcomes into future behavioural adjustments?

RQ4: What role do emotional regulation and self-control play in the relationship between counterfactual thinking and behavioural recovery?

RQ5: How do existing cognitive and behavioural theories explain recovery processes following near-miss experiences?

8. Conceptual Framework / Theoretical Analysis

The relationship between counterfactual thinking and behavioural recovery after near-miss experiences can be explained through an integrated conceptual framework combining counterfactual thinking theory, cognitive appraisal theory, self-regulation theory, and adaptive learning perspectives. This framework proposes that near-miss experiences create a reflective process where individuals evaluate alternative possibilities, understand their role in outcomes, and develop future behavioural responses.

The central assumption of this framework is that near-miss experiences do not directly determine future behaviour. Instead, recovery depends on how individuals process the experience and convert cognitive reflection into meaningful behavioural changes. Counterfactual thinking serves as an interpretative mechanism through which individuals examine how different actions, decisions, or circumstances might have produced different outcomes.

The framework proposes three interconnected stages:

Near-Miss Experience → Counterfactual Evaluation → Behavioural Recovery

During the first stage, individuals experience an outcome close to success or failure and attempt to understand the factors influencing the result. During the second stage, individuals

generate alternative scenarios and evaluate possible changes in actions or decisions. During the final stage, these reflections influence future behaviour by supporting adjustment, learning, and emotional adaptation.

8.1 Counterfactual Thinking as a Mechanism of Reflection and Learning

Counterfactual thinking provides individuals with a cognitive process for analysing previous experiences and considering alternative possibilities. After a near-miss event, individuals often examine the actions, decisions, and circumstances that influenced the outcome. This reflective process supports learning by identifying areas where future behaviour can be improved.

Upward counterfactual thinking, where individuals imagine a better possible outcome, helps identify missed opportunities and ineffective strategies. Although these thoughts may create initial dissatisfaction, they support corrective action when individuals interpret them as useful feedback rather than evidence of personal failure.

The effectiveness of upward counterfactual thinking depends on whether individuals focus on factors within their control. When individuals identify specific behaviours that require change, counterfactual reflection supports improvement. However, when reflection focuses only on uncontrollable circumstances, it may increase frustration without supporting recovery.

Therefore, counterfactual thinking functions as a learning process when individuals use alternative scenarios to understand causes and develop strategies for future action.

8.2 Near-Miss Experiences and Cognitive Appraisal Processes

Cognitive appraisal theory suggests that individuals respond to events based on how they interpret their meaning. Near-miss experiences are significant because they allow multiple interpretations.

An individual may view a near-miss event as a result of inadequate preparation, ineffective decision-making, or an opportunity for learning. These interpretations influence emotional responses and determine whether the individual moves toward recovery or remains focused on negative evaluation.

Through counterfactual thinking, individuals reassess the meaning of an experience by comparing the actual outcome with alternative possibilities. This comparison helps determine whether the event becomes a source of motivation or continued dissatisfaction.

Therefore, behavioural recovery after near-miss experiences depends partly on the appraisal process through which individuals understand and interpret the event.

8.3 Self-Regulation and Translation of Reflection into Action

Self-regulation plays an important role in connecting counterfactual thinking with behavioural recovery. Reflection alone does not create improvement. Individuals must convert insights gained from reflection into practical behavioural changes.

After a near-miss experience, self-regulation helps individuals establish goals, modify strategies, and maintain motivation for future improvement. Individuals with stronger self-regulatory abilities are more likely to use counterfactual thoughts constructively because they move from analysing past experiences toward planning future actions.

In contrast, weaker self-regulation may result in repeated reflection without meaningful behavioural change. In such cases, counterfactual thinking may become focused on regret, self-criticism, or repeated attention toward missed possibilities rather than adaptive learning.

Therefore, self-regulation serves as an important pathway through which counterfactual thoughts influence behavioural recovery.

8.4 Conceptual Relationship Model

The proposed conceptual relationship can be represented as:



This framework suggests that near-miss experiences become meaningful learning opportunities when individuals engage in constructive reflection. Counterfactual thinking provides the cognitive foundation, while emotional processing and self-regulation determine whether reflection leads to behavioural recovery.

9. Methodology

9.1 Research Design

This article adopts a conceptual research design based on theoretical integration and interdisciplinary analysis. Unlike empirical studies that examine relationships through participant data or experimental methods, conceptual research focuses on developing theoretical explanations and connecting existing ideas from different fields.

The methodological approach involves analysing established concepts related to counterfactual thinking, near-miss experiences, cognitive appraisal, self-regulation, and behavioural adaptation. The purpose is to develop a clear conceptual explanation of how individuals recover behaviourally after experiences involving narrowly avoided failures or incomplete achievements.

9.2 Conceptual Approach

The conceptual approach combines multiple psychological perspectives to examine the relationship between cognitive reflection and behavioural recovery. The analysis focuses on the interaction among four major constructs:

Near-Miss Experiences: Events where individuals experience outcomes close to success or failure, creating opportunities for reflection, evaluation, and behavioural adjustment.

Counterfactual Thinking: The cognitive process through which individuals generate alternative possibilities about past events and consider how different actions or circumstances might have changed outcomes.

Self-Regulation: The ability to manage emotions, maintain goals, and convert reflective insights into future behavioural strategies.

Behavioural Recovery: The process through which individuals adapt, learn, and modify future behaviour after challenging experiences.

The interaction among these constructs provides a theoretical explanation of how individuals transform difficult experiences into opportunities for learning and improvement.

9.3 Theoretical Foundations

The relationship between counterfactual thinking and behavioural recovery is supported by several established psychological theories. These theories explain how individuals interpret experiences, regulate responses, and modify future behaviour. They also help explain why similar near-miss experiences produce different outcomes among individuals.

Counterfactual Thinking Theory

Counterfactual Thinking Theory explains how individuals create alternative versions of past events by imagining outcomes different from what actually occurred. These mental simulations help individuals evaluate previous decisions, identify possible causes, and consider strategies for future improvement.

In the context of near-miss experiences, counterfactual thinking becomes especially important because individuals perceive a close connection between the actual outcome and possible alternatives. When a person narrowly misses a goal, they often reflect on what action, decision, or circumstance might have changed the result. These reflections create awareness of improvement opportunities and influence future behaviour.

However, the effects of counterfactual thinking depend on the nature of the reflection. When individuals focus on factors within their control, counterfactual thoughts support learning and behavioural correction. When reflection focuses on uncontrollable situations or repeated emotional comparisons, it may limit effective recovery.

Cognitive Appraisal Theory

Cognitive Appraisal Theory explains that emotional and behavioural responses depend on how individuals interpret and evaluate events. The impact of a near-miss experience is influenced not only by what happened but also by the meaning individuals assign to the experience.

After a near-miss event, individuals may interpret the outcome as evidence of poor performance, a signal for improvement, or an opportunity for learning. These interpretations influence emotional responses and determine whether individuals move toward constructive adaptation.

Counterfactual thinking supports this appraisal process by providing alternative explanations and possible interpretations of an event. By comparing actual outcomes with imagined possibilities, individuals develop an understanding of why the outcome occurred and how future behaviour might be improved.

Self-Regulation Theory

Self-Regulation Theory explains how individuals manage thoughts, emotions, and behaviours to achieve personal goals. Behavioural recovery after a near-miss experience requires individuals to regulate emotional reactions, maintain motivation, and develop strategies for future improvement.

Counterfactual thinking provides information about possible changes, while self-regulation determines whether these insights result in behavioural adjustment. Individuals with effective self-regulation are more likely to use reflections about past experiences to create new goals and modify future actions.

In contrast, difficulties in self-regulation may result in repeated focus on negative alternatives without meaningful behavioural change. Therefore, self-regulation acts as an important link between cognitive reflection and adaptive recovery.

Learning and Behavioural Adaptation Perspective

Learning theories explain how experiences influence future behaviour by providing information about effective and ineffective strategies. Near-miss experiences serve as valuable learning opportunities because they reveal connections between actions and outcomes.

Through counterfactual analysis, individuals identify possible changes that may improve future performance. This process allows previous experiences to guide future decisions through reflection, evaluation, and behavioural adjustment.

From this perspective, behavioural recovery involves more than returning to previous patterns. It represents an adaptive process involving learning, modification, and continuous improvement.

10. Discussion / Critical Discussion

10.1 Counterfactual Thinking as a Pathway to Behavioural Recovery

The conceptual analysis suggests that counterfactual thinking plays an important role in shaping how individuals recover after near-miss experiences. Near-miss events create a unique psychological situation because individuals recognise that a different outcome was possible. This awareness encourages them to reflect on previous actions, decisions, and circumstances that influenced the result.

Constructive counterfactual thinking supports behavioural recovery by helping individuals identify the specific factors responsible for an outcome. When individuals focus on aspects within their control, they are able to develop improvement strategies and adjust future behaviour. In this way, counterfactual reflection connects past experiences with future adaptation.

However, recovery does not occur through reflection alone. The effectiveness of counterfactual thinking depends on whether individuals convert their insights into practical

behavioural changes. Without action, counterfactual thoughts remain comparisons between actual and possible outcomes without contributing to improvement.

Therefore, the relationship between counterfactual thinking and behavioural recovery involves both cognitive evaluation and behavioural implementation. Reflection provides information about possible changes, while self-regulation and motivation determine whether this information leads to meaningful improvement.

10.2 Constructive and Maladaptive Counterfactual Thinking

Counterfactual thinking may produce positive or negative outcomes depending on how individuals use this reflective process. Constructive counterfactual thinking involves analysing previous experiences to identify improvement opportunities. This form of reflection supports learning, preparation, and future-oriented decision-making.

For example, after a near-miss experience, individuals may examine which strategies contributed to the outcome and which behaviours require modification. Such reflection strengthens problem-solving abilities and improves readiness for future situations.

In contrast, maladaptive counterfactual thinking involves repeated attention toward alternative outcomes without identifying possible solutions. Continuous focus on what might have happened may increase regret, frustration, and self-critical thoughts. In such cases, reflection becomes emotionally difficult rather than supporting behavioural improvement.

Therefore, the impact of counterfactual thinking depends on maintaining a balance between reflection and action. Effective recovery requires individuals to use alternative thoughts as sources of information for improvement rather than as repeated reminders of negative outcomes.

10.3 Near-Miss Experiences as Opportunities for Adaptive Learning

Near-miss experiences are often viewed negatively because they highlight the difference between actual outcomes and desired goals. However, these experiences also provide valuable opportunities for behavioural learning. Unlike complete failures, near-miss events provide information about how close individuals were to achieving success and which factors influenced the final result.

The psychological importance of near-miss experiences lies in their ability to encourage deeper evaluation. Individuals often become more attentive to previous decisions and more motivated to improve future performance. Through this process, challenging experiences become sources of learning and behavioural development.

However, the adaptive value of near-miss experiences depends on how individuals interpret them. Individuals who view these experiences as opportunities for learning are more likely to recover and improve. In contrast, individuals who interpret them as evidence of personal inadequacy may experience difficulty adapting.

Therefore, near-miss experiences should be understood as complex psychological events where interpretation determines whether the experience becomes a barrier to progress or a foundation for future improvement.

11. Research Contribution / Implications

This conceptual research contributes to behavioural psychology by developing a theoretical explanation of how counterfactual thinking influences behavioural recovery after near-miss experiences. The article expands existing discussions on counterfactual cognition by moving beyond emotional outcomes and examining how individuals transform reflections about past experiences into future behavioural changes.

A major contribution of this study is the identification of counterfactual thinking as a possible mechanism connecting challenging experiences with adaptive learning. Near-miss events often create uncertainty because individuals recognise that different actions, decisions, or circumstances might have produced different outcomes. By evaluating these alternative possibilities, individuals gain awareness of their behavioural patterns and identify opportunities for improvement.

The conceptual framework also highlights the importance of interpretation and self-regulation in shaping recovery outcomes. Counterfactual thinking does not automatically result in behavioural improvement. Its effectiveness depends on whether individuals manage emotional responses and convert reflection into meaningful action. This perspective provides a clearer understanding of why some individuals recover effectively after difficult experiences, while others experience continued difficulty in adapting.

The major implications of this research include:

- **Behavioural Psychology Implication:** The study highlights the role of cognitive reflection in understanding how individuals learn from challenging experiences and modify future behaviour.
- **Decision-Making Implication:** Understanding counterfactual processes provides insight into how individuals evaluate previous decisions and develop improved strategies for future choices.

- **Educational Implication:** Educational settings can use reflective practices to help individuals analyse mistakes constructively and develop adaptive problem-solving skills.
- **Organisational Implication:** Work environments can encourage constructive reflection after setbacks by focusing on learning, improvement, and future performance rather than focusing only on failure.
- **Personal Development Implication:** Understanding counterfactual thinking patterns may help individuals use past experiences as sources of learning and improvement instead of remaining focused on negative comparisons.

12. Limitations

This conceptual research article has several limitations that require consideration. The primary limitation is that the study is based on theoretical analysis rather than empirical investigation. Although the conceptual framework combines established psychological perspectives, the proposed relationships require validation through future empirical research involving different populations and behavioural settings.

Another limitation relates to the complexity of behavioural recovery after near-miss experiences. Responses to challenging events are influenced by various factors, including personality traits, emotional regulation abilities, social support, motivation, and previous experiences. This article focuses mainly on counterfactual thinking as an important cognitive mechanism but does not examine all factors that influence recovery processes.

The conceptual framework also provides limited differentiation between various types of near-miss experiences. Such events occur across multiple contexts, including education, professional performance, health decisions, personal goals, and everyday choices. The psychological meaning and behavioural outcomes of near-miss experiences may vary depending on the specific context.

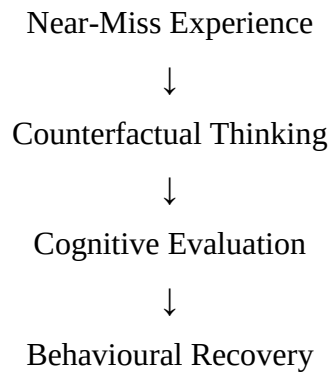
Additionally, the effects of counterfactual thinking depend on individual interpretation and emotional conditions. Constructive reflection may support learning and recovery, whereas repeated negative reflection may create difficulties in adaptation. Future research should examine the specific conditions under which counterfactual thinking supports positive behavioural change or contributes to negative outcomes.

13. Future Research Directions

Future research should empirically examine the conceptual relationships proposed in this article through experimental, longitudinal, and field-based research designs. Such studies will

provide deeper insights into how counterfactual thinking develops after near-miss experiences and how it contributes to actual behavioural change.

Future empirical studies should investigate whether counterfactual processing acts as a mechanism through which individuals transform near-miss experiences into adaptive behavioural outcomes. A possible research model may examine the following sequence:



Future research should also explore individual differences that influence the relationship between counterfactual thinking and behavioural recovery. Psychological factors such as self-efficacy, resilience, emotional regulation, motivation, and personality characteristics may influence whether individuals use counterfactual reflection constructively or experience difficulty adapting after challenging experiences.

Self-regulation ability and perceived controllability represent important areas for further investigation. Individuals with stronger self-regulation abilities may be more capable of converting counterfactual insights into practical behavioural improvements. In contrast, individuals with lower self-regulation may experience difficulty transforming reflection into adaptive action.

Future studies should examine how near-miss experiences operate across different behavioural contexts. Experiences related to academic performance, workplace decisions, health-related behaviour, and competitive environments may produce different patterns of reflection and recovery. Studying these differences will provide a broader understanding of behavioural adaptation processes.

Another important research direction involves developing and evaluating interventions that promote constructive counterfactual thinking. Approaches focusing on reflective learning, adaptive goal setting, self-regulation, and emotional management may help individuals use challenging experiences as opportunities for improvement.

The proposed framework can be tested through experimental studies, longitudinal research, and survey-based methods. Future research may examine whether the quality and direction of

counterfactual thinking predict behavioural recovery after near-miss experiences and whether self-regulation strengthens this relationship.

Future theoretical development should also consider the connection between counterfactual thinking and related cognitive processes, including attribution, motivation, memory, and future planning. An interdisciplinary approach combining cognitive psychology, behavioural science, and self-regulation research may provide a broader understanding of how individuals learn from near-miss experiences and develop improved future behaviours.

14. Declarations

Conflict of Interest

The author declares that there is no conflict of interest related to the development, analysis, interpretation, or presentation of this conceptual research article.

Funding Statement

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Ethics Statement

This article is based on conceptual analysis and does not involve human participants, experimental procedures, or the collection of personal data. Therefore, ethical approval was not required for this theoretical research work.

Data Availability Statement

No empirical dataset was generated, collected, or analysed in this conceptual research article. The study is based on theoretical analysis and synthesis of existing scholarly knowledge.

Author Contribution Statement

The author contributed to the conceptual development, theoretical analysis, interpretation of relevant psychological perspectives, manuscript preparation, and final approval of the article.

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