Unified Absorption Model (UAM)

A Mechanistic Framework for Predictive Updating in Human Change

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Abstract

Human change exhibits marked variability: some experiences produce rapid, durable updates to behavior, belief, or identity, while others—delivered with comparable intention, effort, or repetition—produce only transient or negligible effects. Existing explanatory frameworks typically emphasize motivation, belief, expectancy, repetition, or contextual factors, but these accounts describe correlates of change rather than the mechanism by which updating occurs. This paper introduces the Unified Absorption Model (UAM), a mechanistic framework proposing that absorbed experience functions as a **central enabling condition** under which predictive systems update. Within this model, absorption is defined as a configuration of attention in which competing predictions are attenuated, learning signals are amplified, and identity-relevant models become temporarily more plastic. UAM distinguishes absorbability as a property influencing the rate of system updating rather than the depth or ultimate potential of change. The model offers an account of why moderate absorption repeated over time can produce durable change, why insight and effort alone often fail to update entrenched patterns, and why intensity without absorption yields inconsistent outcomes. Implications are discussed across domains including psychotherapy, learning, and intentional attention-based interventions, with hypnosis presented as a controlled configuration of absorption rather than a distinct state. Ethical considerations and testable predictions are outlined to guide future empirical investigation.

Introduction: The Problem of Inconsistent Change

Across domains concerned with human change—including psychotherapy, learning, behavior modification, and intentional self-regulation—outcomes remain notably variable. Some experiences produce rapid and durable updates to behavior, belief, or identity, while others, delivered with comparable care, repetition, or expertise, yield only transient effects or none at all. This variability persists despite decades of methodological refinement and theoretical debate, suggesting that existing explanatory frameworks may be operating at **a different level of analysis than the mechanisms governing predictive updating**.

Common explanations for change outcomes tend to emphasize factors such as motivation, belief, expectancy, effort, repetition, or contextual support. While each of these variables can

influence engagement and persistence, none reliably accounts for why certain experiences reorganize predictive patterns while others do not. Highly motivated individuals sometimes fail to change, while skeptical individuals sometimes do. Insight can be profound without producing lasting behavioral shifts, and repeated exposure can either consolidate new patterns or leave existing ones intact. These observations point to a gap between descriptive correlates of change and the underlying mechanism by which change occurs.

In many applied disciplines, this gap is addressed implicitly rather than explicitly. Techniques are refined, protocols adjusted, and explanatory emphasis shifts post hoc to whatever factor appears most salient in a given case. When outcomes are favorable, success is often attributed to depth, intensity, or alignment; when outcomes are unfavorable, responsibility is frequently assigned to insufficient effort, resistance, or readiness. Such explanations, however, do not generalize well across individuals or contexts and offer limited predictive value.

A similar pattern appears in theoretical debates. Competing frameworks often describe different aspects of the same phenomenon—subjective experience, behavioral compliance, expectancy effects, attentional focus—without specifying how these elements interact to update underlying predictive systems. As a result, discussions frequently become polarized around surface distinctions rather than converging on a shared mechanistic account. This has limited the development of models capable of explaining both rapid transformation and gradual, cumulative change within a single framework.

The present paper argues that progress in understanding human change requires a shift in explanatory focus: away from outcome descriptions and contextual variables, and toward the conditions under which predictive systems update. Specifically, it proposes that absorbed experience plays a central mechanistic role in enabling durable change. Rather than treating absorption as a special state, subjective depth, or ancillary feature, the Unified Absorption Model (UAM) conceptualizes absorption as a configuration of attention that modulates prediction, learning signal strength, and model plasticity.

By formalizing absorption as a mechanism rather than a byproduct, UAM offers a unified account of why change is sometimes rapid and enduring, sometimes gradual, and sometimes absent despite apparent effort or insight. The sections that follow examine the limitations of existing explanatory frameworks, introduce the core components of the Unified Absorption Model, and explore its implications for understanding variability in human change across domains.

Limitations of Existing Explanatory Frameworks

A wide range of frameworks has been proposed to account for human change across therapeutic, educational, and self-regulatory contexts. Many of these models offer valuable descriptions of conditions under which change is more likely to occur. However, when examined

closely, they tend to characterize correlates or contexts of change rather than specifying the mechanism by which predictive systems update.

Expectancy- and belief-based models emphasize the role of anticipation, meaning attribution, and subjective confidence in influencing outcomes (e.g., Kirsch, 1985). These accounts help explain why individuals who expect improvement may engage more fully or persist longer. Yet expectancy alone does not reliably predict durable change. Individuals may strongly believe change is possible without experiencing lasting updates, while others undergo significant change despite skepticism or ambivalence. Expectancy models describe motivational and interpretive factors but do not explain how or when underlying predictive patterns reorganize.

State-based and non-state-based accounts similarly focus on descriptive distinctions rather than mechanistic processes. State-based perspectives emphasize alterations in subjective experience, attention, or responsiveness, while non-state accounts emphasize social, cognitive, or contextual explanations. Although these perspectives differ in terminology, both primarily describe observable or reportable features of experience. Neither specifies how such features translate into durable updates of behavior, belief, or identity, nor why similar experiential conditions sometimes yield change and sometimes do not.

Repetition and exposure-based models propose that change emerges through repeated contact with stimuli, behaviors, or ideas. In some cases, repetition does lead to consolidation of new patterns. In others, extensive repetition produces little effect or even reinforces existing responses. These models describe that repetition can matter but do not account for when repetition results in updating versus when it merely increases familiarity or tolerance without altering underlying predictions.

Accounts emphasizing cognitive insight focus on awareness, understanding, or reappraisal as drivers of change. Insight can clarify patterns, reduce confusion, and alter interpretation. However, insight alone frequently fails to produce durable behavioral or identity-level updates. Individuals may understand the origins or irrationality of a pattern without experiencing meaningful change, suggesting that awareness and explanation are insufficient in the absence of additional conditions that enable predictive updating.

Across these frameworks, a common limitation emerges. They operate primarily at the phenomenological or contextual level, describing what change looks like, what accompanies it, or what may facilitate engagement. What they do not specify is the mechanism by which predictive systems update—why certain experiences reorganize models while others do not. Without an account of this mechanism, explanations remain fragmented and post hoc, and outcome variability persists as an unresolved problem.

The Unified Absorption Model (UAM)

The Unified Absorption Model (UAM) is proposed as a mechanistic framework for understanding when and why human predictive systems update. Rather than focusing on outcomes, techniques, or experiential labels, UAM specifies the conditions under which experience exerts durable influence on behavior, belief, and identity. At its core, the model treats absorbed experience as a **central enabling condition that increases the likelihood of predictive updating occurring reliably**.

Definition of Absorption

Within UAM, absorption is defined operationally as a configuration of attention—distinguished from attention intensity alone—in which competing predictions are attenuated, perceptual and interpretive resources are selectively allocated, and learning signals are amplified. This definition is intentionally non-mystical and non-state-based. Absorption is not treated as a special altered state, a qualitative depth marker, or a subjective feeling, but as a functional arrangement of attentional and predictive processes that can vary in degree across individuals and contexts.

The term *configuration* is used functionally rather than categorically, referring to a transient pattern of constraint on predictive processing rather than a discrete psychological state. Absorption, in this sense, is a common and regularly occurring feature of everyday experience. It occurs whenever attention becomes sufficiently organized around a coherent stream of information such that alternative predictions temporarily lose influence. The model therefore does not treat absorption as exceptional, but as a normal cognitive phenomenon that can be more or less intentionally configured.

Although UAM shares surface similarities with constructs such as flow or trait absorption (e.g., Csikszentmihalyi, 1990; Tellegen & Atkinson, 1974), it differs in its focus on mechanistic predictive updating rather than experiential quality or dispositional tendency.

Core Components of the Model

UAM identifies several interacting components that jointly determine whether an experience functions as an updating event.

Attention governs the allocation of processing resources and the suppression of competing inputs. Focused and sustained attention reduces prediction competition, allowing specific models to dominate processing.

Prediction refers to the system's ongoing generation of expectations about sensory input, meaning, and outcome. Updating occurs when prediction error is registered under conditions that allow the system to revise its existing models rather than dismiss or contextualize the discrepancy.

Identity relevance reflects the degree to which an experience implicates self-referential or identity-linked predictions, including higher-order self-schemas and self-concept models.

Updates to identity-relevant models tend to be slower and more resistant to change, but when they occur, they are more durable.

Affective salience modulates signal strength by tagging experiences as significant. Salience increases the likelihood that an experience will be registered as meaningful rather than incidental, without requiring emotional intensity or arousal.

Repetition influences consolidation by re-presenting similar updating signals across time. Repetition alone is insufficient; its effect depends on whether repeated experiences occur under conditions of absorption that permit updating.

These components are not independent variables but interacting elements of a single predictive system.

Absorbed Experience as a Predictive Updating Condition

According to UAM, absorbed experience functions as a condition under which predictive systems become more amenable to revision. When attention is sufficiently organized and competing predictions are attenuated, prediction error carries greater informational weight. Under these conditions, experiences are more likely to update existing models rather than be assimilated without change.

This account offers a mechanistic explanation for why experiences of similar content can produce divergent outcomes. An experience may be repeated, intense, or meaningful without producing change if it occurs outside an absorbed configuration. Conversely, relatively moderate experiences can produce durable updates when absorption conditions are present.

Importantly, UAM does not posit absorption as a guarantee of change, but as a **central enabling condition that probabilistically increases the likelihood of reliable predictive updating**.

Absorbability as Rate of System Updating

UAM distinguishes absorbability as a property that influences the rate and efficiency at which predictive systems update, rather than the depth or ultimate potential of change. Individuals vary in how readily they enter absorbed configurations, how long such configurations are sustained, and how efficiently learning signals are integrated under absorption.

This distinction clarifies why individuals with moderate absorbability can achieve substantial change through repeated absorbed experiences, while individuals with high absorbability may update rapidly under fewer exposures. Absorbability affects the efficiency of updating, not the ceiling of what can be changed.

By separating absorbability from notions of depth, responsiveness, or special states, UAM reframes individual differences in change outcomes as differences in updating dynamics rather than capability or capacity.

Mechanism of Predictive Updating Under Absorption

Within the Unified Absorption Model, predictive updating is understood as a function of how information is processed under specific attentional and inferential conditions. Absorbed experience alters these conditions in systematic ways, thereby increasing the likelihood that existing predictive models are revised rather than maintained.

Attenuation of Competing Predictions

Predictive systems continuously generate multiple, partially competing hypotheses about incoming information. Under ordinary conditions, these competing predictions dilute learning signals, as discrepancies can be explained away, contextualized, or attributed to noise. Absorption reduces this competition by organizing attention around a narrower predictive stream. When fewer alternative predictions are active, discrepancies between expectation and experience are less easily dismissed and more likely to be registered as informative.

This narrowing effect does not eliminate prediction error; rather, it constrains the interpretive pathways available to the system. As a result, prediction error is more likely to be integrated into existing models instead of being compartmentalized or ignored.

Signal-to-Noise Ratio and Learning Efficiency

Absorption also influences the signal-to-noise ratio of learning. When attentional resources are fragmented, prediction error competes with irrelevant input, internal commentary, and contextual distraction. Under absorbed conditions, irrelevant variance is reduced. This reduction in error noise increases the relative strength of learning signals associated with the attended experience.

Increased signal clarity does not require heightened intensity or arousal. Instead, it depends on the coherence of attentional allocation and the temporary suppression of competing interpretive frames. Learning efficiency is therefore enhanced not by force or magnitude, but by reduction of interference.

Updating of Identity-Relevant Predictions

Predictive models linked to identity and self-referential organization exhibit greater inertia than context-specific predictions. They update more slowly because they integrate information across

longer time horizons and broader contextual ranges. However, when identity-relevant predictions are engaged under absorbed conditions, updates tend to be more durable.

UAM accounts for this pattern by distinguishing rate from stability. Identity-linked models require more consistent or repeated updating signals, but once revised, they exert influence across multiple contexts. Absorption facilitates such updating by allowing identity-relevant discrepancies to be processed without immediate dismissal or defensive reinterpretation.

Cumulative Effects of Moderate Absorption

The model suggests that moderate absorption, when repeated across time, can produce more durable change than isolated high-intensity experiences. Singular events, even when intense, may fail to update predictive systems if absorption is brief, unstable, or disrupted by competing predictions. In contrast, repeated absorbed experiences provide multiple opportunities for incremental updating, allowing predictive models to adjust gradually and consolidate.

This cumulative mechanism offers an account of why sustained change often emerges through sequences of absorbed experiences rather than through single dramatic episodes. It also clarifies why intensity alone is an unreliable predictor of outcome.

Implications for Human Change

The mechanistic account provided by the Unified Absorption Model yields several implications for understanding why change efforts succeed or fail across contexts. These implications do not depend on specific techniques or domains but follow directly from how predictive systems update under absorbed conditions.

The Role of Insight in Predictive Updating

Insight provides information about existing patterns, origins, or inconsistencies within a predictive system. While such information can alter interpretation or narrative understanding, insight by itself does not reliably produce updating. From a UAM perspective, insight that occurs outside absorbed configurations is likely to be processed as commentary rather than as evidence requiring model revision.

When insight is not accompanied by absorption, competing predictions remain active and can contextualize or neutralize its impact. The system may acknowledge the insight without integrating it into its predictive structure. As a result, understanding can increase without corresponding changes in behavior or identity-level organization.

The Role of Effort in Predictive Updating

Effort is commonly assumed to facilitate change by increasing engagement or persistence. However, effort often involves active monitoring, control, or correction, which can fragment attention and increase competition among predictions. When effort amplifies internal commentary or evaluative processes, it can reduce the coherence required for absorbed experience.

Under the UAM framework, effort that disrupts absorption would be expected to interfere with updating even when motivation is high, as prediction error may be reinterpreted as failure, resistance, or insufficient performance rather than as informative discrepancy.

Repetition and Predictive Revision

Repetition is frequently associated with learning and habit formation, yet its effects are inconsistent. UAM accounts for this variability by distinguishing repetition under absorbed conditions from repetition without absorption. When repeated experiences occur without sufficient absorption, they may increase familiarity or tolerance without altering underlying predictions.

In contrast, repetition that repeatedly engages absorbed configurations allows incremental updating to accumulate. The effectiveness of repetition therefore depends less on frequency alone and more on whether repeated exposures occur under conditions that permit predictive revision.

Timing, Context, and Technique

Techniques and methods are often evaluated based on their procedural features. Under the UAM framework, timing and context would be expected to exert greater influence because they determine whether absorption conditions are present. An otherwise effective method may fail if introduced when attention is fragmented, competing predictions are active, or contextual interference is high.

Conversely, relatively simple or minimal interventions can produce significant change when timing and context support absorbed processing. This perspective helps explain why similar techniques yield variable outcomes across individuals and situations, and why procedural fidelity alone is an unreliable predictor of success.

Applications Across Domains

The Unified Absorption Model is intended as a general explanatory framework rather than a domain-specific theory. Its value lies in clarifying why change processes succeed or fail across different contexts by identifying absorption as a shared updating condition. The following examples are illustrative rather than exhaustive.

Psychotherapy and Behavior Change

In therapeutic and behavior-change contexts, outcomes often vary despite similar interventions and client characteristics. UAM offers an account of this variability by shifting emphasis from technique to updating conditions. Therapeutic interactions that reliably engage absorbed configurations are more likely to produce durable updates, whereas interventions that deliver insight or instruction without absorption may produce understanding without sustained change.

This perspective helps explain why different therapeutic approaches can yield comparable outcomes when absorption conditions are present, and why adherence to a specific method does not guarantee effectiveness in their absence.

Learning and Skill Acquisition

Learning and skill acquisition similarly depend on whether practice occurs under absorbed conditions. UAM suggests that attention organized around coherent task engagement facilitates predictive updating, allowing performance models to adjust efficiently. In contrast, practice characterized by distraction, excessive self-monitoring, or fragmented attention may produce repetition without consolidation.

This distinction helps clarify why equal amounts of practice can yield divergent learning curves and why timing and context often exert greater influence than instructional format alone.

Hypnosis as a Controlled Configuration of Absorption

Hypnosis is included here as one illustrative case rather than as the primary or defining context of the model. Within UAM, hypnosis can be understood as a deliberate and structured way of configuring absorption conditions. Rather than representing a distinct state, hypnosis involves intentional manipulation of attention, expectation, and context to reduce competing predictions and enhance learning signal clarity.

Framed this way, hypnosis functions as an efficient amplifier of mechanisms that operate continuously in everyday experience. Its effectiveness derives from the reliability with which it organizes absorption, not from the induction of a special condition. This interpretation helps reconcile divergent views by locating hypnosis within a general model of predictive updating rather than treating it as an exception to ordinary cognitive processes.

Ethical Considerations and Risks

A mechanistic account of absorbed experience carries ethical implications that warrant explicit consideration. If absorption functions as a condition under which predictive systems update, then its intentional or unintentional deployment has the potential to influence belief, behavior,

and identity beyond therapeutic or educational contexts. Addressing these implications is therefore important for responsible use and continued scholarly credibility.

Non-Therapeutic Absorption

Absorbed configurations occur naturally outside formal change contexts, including in entertainment, social influence, and immersive environments. While such experiences are not inherently problematic, they can nevertheless contribute to predictive updating without explicit consent or awareness. Recognizing absorption as a general mechanism highlights the need to distinguish between benign engagement and unintended influence, particularly when individuals are exposed repeatedly to absorbed experiences without opportunities for reflection or contextual framing.

Attention Capture and Manipulation

Technologies and environments designed to capture and sustain attention can reliably induce absorbed configurations. When attention capture is combined with persuasive or emotionally salient content, predictive updating may occur in ways that primarily serve external objectives rather than individual well-being. UAM draws attention to how manipulation can operate not only through coercion or misinformation, but through sustained absorption that narrows competing predictions and amplifies learning signals. This perspective underscores the ethical responsibility of designers, educators, and communicators who intentionally structure attentional environments.

False Memory Risk

Predictive updating under absorption also carries the risk of incorporating inaccurate or confabulated information into existing models. When absorbed experiences involve reconstruction or interpretation of past events, there is potential for false or distorted memory formation. UAM does not treat this risk as unique to any single method, but as a general consequence of updating under conditions of reduced prediction competition. Ethical practice therefore requires particular caution when engaging absorbed experience in contexts involving autobiographical memory or identity-relevant narratives.

Intentionality and Boundaries

The ethical use of absorption-based influence depends on clear intentionality and well-defined boundaries. Whether in therapeutic, educational, or communicative contexts, practitioners and designers must remain aware of when absorption is being intentionally configured and for what purpose. Explicit goals, informed consent where applicable, and respect for individual autonomy function as essential safeguards when working with mechanisms capable of producing durable predictive change.

Testable Predictions and Future Research

The Unified Absorption Model is offered as a mechanistic framework rather than a finalized empirical account. As such, it generates a set of testable predictions that can guide future research across disciplines concerned with human change. These predictions are intended to be evaluated, refined, or challenged through systematic investigation.

Absorbability and Rate of Change

UAM proposes that individual differences in absorbability will be associated with the rate at which predictive systems update. Individuals with higher absorbability are expected to exhibit faster updating under absorbed conditions, while individuals with lower absorbability may require more repeated or sustained absorbed experiences to produce comparable change. Importantly, the model differentiates differences in rate from limits on the magnitude or durability of change.

Outcome Durability and Intensity

The model distinguishes outcome durability from experiential intensity. UAM suggests that the durability of change will correlate more strongly with the stability and coherence of absorbed configurations than with the intensity of isolated experiences. High-intensity events lacking sustained absorption are expected to produce variable or transient effects, whereas moderate absorbed experiences repeated over time may be associated with more stable updating.

Repetition Under Absorption Versus Non-Absorbed Repetition

UAM predicts a qualitative difference between repetition that occurs under absorbed conditions and repetition that does not. Repetition accompanied by absorption is expected to facilitate incremental predictive updating, whereas repetition without absorption may increase familiarity or tolerance without altering underlying models. Experimental designs comparing these conditions could help clarify the role of absorption in consolidation processes.

Individual Differences in Absorption Profiles

Future research may also examine individual absorption profiles, including variability in onset, stability, and susceptibility to disruption. UAM anticipates that such profiles will interact with context and timing to influence change outcomes. Mapping these differences could contribute to more precise predictions about when and for whom absorbed experiences are most likely to produce durable change.

Conclusion

Human change remains characterized by striking variability. Some experiences reorganize behavior, belief, or identity in lasting ways, while others produce only temporary or negligible effects. Existing explanations have largely focused on motivation, belief, effort, repetition, or experiential depth, yet these accounts describe correlates of change rather than the mechanism by which predictive systems update. As a result, inconsistencies in outcomes have persisted across domains and methods.

This paper has introduced the Unified Absorption Model as a mechanistic framework for understanding when and why change occurs. By conceptualizing absorbed experience as a condition that modulates attention, prediction, and learning signal strength, UAM provides a unified account of how predictive systems become more amenable to revision. The model distinguishes absorbability as a factor influencing the rate of updating rather than the capacity for change and clarifies why moderate absorbed experiences repeated over time may produce durable outcomes.

Importantly, UAM does not rely on special states, mystical properties, or domain-specific assumptions. Absorption is treated as a normal and regularly occurring cognitive phenomenon that can be intentionally configured or arise naturally across contexts. By locating change at the level of predictive updating rather than phenomenological description, the model addresses longstanding inconsistencies without introducing additional theoretical entities.

The Unified Absorption Model is offered as a framework to be examined, tested, and refined. Its contribution lies in clarifying the conditions under which experience exerts lasting influence and in providing a coherent basis for future empirical work aimed at understanding human change.