OBSERVER ACTIVATION: A FORMAL MODEL OF THE TRANSITION FROM PASSIVITY TO CREATIVITY IN ODTOE

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ABSTRACT

In the Observer-Dependent Theory of Everything (ODTOE) [1], passivity is formalized as an observer state with belief $B \to 0$ arising from systematic suppression of components F, E, σ, Λ. The article introduces the concept of observer activation — managed elevation of B through targeted interventions on each component. A formal activation operator $\hat{A}$ is defined and implemented via evidence-based tools: mindfulness meditation (increasing F), coherent breathing at 62/38 rhythm (increasing E), cognitive-behavioural methods (reducing σ), graduated reinforcement and gratitude practice (increasing Λ). The transition from passivity to creativity is modeled as a phase transition when B crosses threshold B_{crit}. The quaternion structure of B enables diagnosis of blockade type and targeted intervention. The role of community of practice as an amplifier of coherence S is formalized, including a cluster model of the team. Phantom coherence and the golden ratio principle in activation protocols are discussed. Empirical evidence for the proposed interventions is presented.

Keywords: observer, activation, belief, coherence, phase transition, community of practice, learned helplessness, quaternion, flow state, golden ratio, ODTOE.

I. INTRODUCTION: THE ACTIVATION PROBLEM

I.1. Two types of observers

Empirical observation from educational and corporate contexts reveals two types of observers: *active*, capable of independently generating events and constituting new configurations C; *passive*, accepting configurations as given and not initiating transformation. The distinction does not correlate with initial cognitive abilities. Passivity is stable and persists across changes of context.

I.2. The problem: informational intervention is insufficient

Standard pedagogical interventions (lectures, informational materials, motivational speeches) rarely transform a passive observer into an active one. The reason: information affects only F (focus). Passivity is a systemic phenomenon affecting all four components of B simultaneously [2, 3]. Partial intervention is insufficient.

I.3. Objectives of this work

This work poses six tasks: (a) formalize passivity as an observer state with $B \to 0$; (b) define the activation operator $\hat{A}$ with specific evidence-based tools; (c) derive the condition for a phase transition from passivity to activity; (d) propose quaternion-based diagnosis of blockade type; (e) formalize the role of community of practice as a coherence amplifier; (f) ground the practical activation protocol in empirical data.

II. PASSIVITY AS ZERO OBSERVER BELIEF

II.1. Formalization of belief B

In the main ODTOE work [1], observer belief $B(O, C)$ is defined as the product of four normalized components:

$$B(O, C) = F^{w_1} \cdot E^{w_2} \cdot (1 - \sigma)^{w_3} \cdot \Lambda^{w_4} \tag{II.1}$$

where $F \in [0, 1]$ is the observer's attentional focus on configuration C; $E \in [0, 1]$ is emotional coherence (alignment between the desired and the experienced); $\sigma \in [0, 1]$ is the degree of internal contradiction (dissonance between the declared and the practiced); $\Lambda \in [0, 1]$ is empirical reinforcement (a positive history of successes in attempts to constitute events); w_1, w_2, w_3, w_4 are weight coefficients normalized to unity. The multiplicative structure ensures the weak-link principle: zeroing any single component drives $B = 0$.

II.2. Quaternion structure of coherence

The components of formula (II.1) form a four-dimensional structure isomorphic to the quaternions [22]. Observer coherence is represented as a quaternion:

$$q_{\hat{B}} = \Lambda + F\mathbf{i} + E\mathbf{j} + (1 - \sigma)\mathbf{k} \tag{II.2}$$

The observer's state is a point in four-dimensional space, and movement toward coherence is movement toward the center of symmetry. The observation process is described by a quaternion rotation: the system state Ψ is transformed according to $R = q_{\hat{B}} \cdot \Psi \cdot \overline{q_{\hat{B}}}$, where $\overline{q_{\hat{B}}}$ is the conjugate quaternion.

II.3. Four types of blockade: diagnosing passivity

The quaternion structure reveals four typical passivity scenarios corresponding to the zeroing of one of the components [22]:

F-deficit (defocusing). Attentional focus drops to zero. The observer cannot concentrate; attention jumps erratically. Manifests as an inability to complete what has been started. Cause: excessive cognitive load or multiple simultaneous external demands.

E-deficit (emotional disconnection). The observer acts mechanically, without engagement. There is no emotional response to successes or failures. Neurophysiologically, this manifests as desynchronization of heart rhythm and reduced heart rate variability (HRV) [16, 23].

σ-dominance (entropy of doubt). Multiple contradictions in tasks, goals, and values. The observer constantly doubts the correctness of decisions. Psychologically, this manifests as chronic anxiety and insecurity.

Λ-deficit (devaluation of experience). Accumulated experience loses its value. The observer sees no progress and considers effort pointless. Corresponds to Seligman's learned helplessness [9].

Gimbal lock analogy. Zeroing one component is analogous to loss of a degree of freedom in a three-axis gyroscope (gimbal lock): compensation via the remaining axes is impossible, and the entire system loses controllability [22]. Diagnosing the blockade type allows targeted intervention: F-deficit requires structuring the workflow; E-deficit requires restoring emotional connection; σ-dominance requires clarifying values; Λ-deficit requires reframing the role of experience.

II.4. Four mechanisms of suppression

Passivity is realized through independent suppression of each component of B:

$F \to 0$ (*focus dissociation*). Authoritarian pedagogy trains attention on external demands rather than on the observer's own goals [2, 3].

$E \to 0$ (*emotional disintegration*). Years of suppressing emotional expression lead to a rupture of the connection between "I want" and "I experience" [16].

$\sigma \to 1$ (*maximal entropy of doubt*). The system cultivates contradictory norms: "be independent, but obey." This phenomenon is measured via the Implicit Association Test [5].

$\Lambda \to 0$ (*negative empirical reinforcement*). Initiative is punished. A history of continuous failures produces learned helplessness [9].

II.5. The weak-link property

Theorem 1 (corollary of the multiplicative structure). If at least one component in decomposition (II.1) equals zero, then $B = 0$. An isolated intervention on a single

component is insufficient for activation.

III. LEARNED HELPLESSNESS AS A SPECIAL CASE OF $B \to 0$

III.1. Seligman's model in ODTOE terms

Learned helplessness in Seligman's classical experiments [9] is an organism's refusal to attempt escape from punishment, even when a path becomes available. In ODTOE terms, this corresponds to the scenario $\Lambda \to 0$ under conditions of $\sigma \to 1$.

III.2. Cultural conditioning as systemic suppression of B

Authoritarian education constitutes systemic suppression of all four components simultaneously [17]: $F \to 0$, $E \to 0$, $\sigma \to 1$, $\Lambda \to 0$. As a result, $B \to 0$ structurally.

III.3. Corollary: $P(E \mid 0) = 0$

When $B \to 0$, the probability of constituting new events tends to zero. The observer becomes a registrar of already-prepared configurations, losing the capacity to modify reality.

IV. THE ACTIVATION OPERATOR AND ITS EVIDENCE-BASED TOOLS

IV.1. Definition of operator $\hat{A}$

The activation operator $\hat{A}$ is defined as a composition of four sub-operators:

$$\hat{A} = \hat{A}_\Lambda \circ \hat{A}_\sigma \circ \hat{A}_E \circ \hat{A}_F \tag{IV.1}$$

The order of composition: focus ($\hat{A}_F$) $\to$ emotional coherence ($\hat{A}_E$) $\to$ contradiction resolution ($\hat{A}_\sigma$) $\to$ success history ($\hat{A}_\Lambda$). From Theorem 1 it follows that the effectiveness of $\hat{A}$ requires coordinated application of all four sub-operators within a single time window.

IV.2. $\hat{A}_F$: mindfulness meditation and focusing interventions

Objective: restore the capacity to direct attention toward one's own goals.

Mindfulness meditation. Systematic meditation practice increases gray matter density in the prefrontal cortex, which is responsible for voluntary attention [24]. A meta-analysis of 47 studies demonstrated a moderate but robust effect of meditation on reducing anxiety and improving concentration [25].

Context change. Isolation from constant external demands; formulation of practical tasks requiring independent solution. Refocusing relies on the cinematic model of reality [7].

Personal AI assistant. Asks questions like "what interests you?" instead of "what is required?", functioning as an external focusing operator.

Result: F increases from 0.1 to 0.6–0.8 over several weeks.

IV.3. $\hat{A}_E$: coherent breathing and emotional synchronization

Objective: restore the connection between "I want" and "I experience," increasing E.

Coherent breathing. Breathing at a rate of 5–6 breaths per minute with an inhalation-to-exhalation ratio close to 62/38 (the golden ratio) increases heart rate variability (HRV) and activates the parasympathetic nervous system [23, 26]. Research by the HeartMath Institute in collaboration with Motorola showed: after a six-week coherent breathing program, cortisol levels decreased by 25%, HRV increased by 30%, and subjective assessment of mental clarity improved by 24% [23].

Personal contact with a mentor. Acknowledgment of the legitimacy of the observer's emotions; joint activity practices whose rhythm corresponds to the internal state [4].

Result: $E \to 0.7$–0.9.

IV.4. $\hat{A}_\sigma$: cognitive-behavioural methods and contradiction reduction

Objective: reduce σ by aligning declared rules with practice.

Cognitive-behavioural therapy (CBT). Enables identification of destructive beliefs and reduction of doubt entropy [27]. The observer records anxious thoughts and checks them for factual validity.

Psychological safety. Establishing norms where error is a source of learning, not stigma. Google's research in the Aristotle project showed that psychological safety is the key predictor of team effectiveness [13, 28].

Demonstrating mentor congruence. Behaviour in which words and actions align [13].

Result: σ decreases from 0.8–0.9 to 0.2–0.3.

IV.5. $\hat{A}_\Lambda$: graduated reinforcement and gratitude practice

Objective: build a history of successes, increasing Λ.

Structured small wins. Tasks that are guaranteed to be solvable at the current level, with gradual increase in difficulty [10].

Gratitude practice. Systematic gratitude practice increases subjective well-being by 25% [29]. It functions as a "rewrite" of Λ: the observer re-evaluates past experience, discovering resources within it.

Goal setting. Provides direction for focus and aligns the remaining components, coordinating coherence [10].

Result: Λ grows from 0.05–0.2 to 0.6–0.8 over 2–3 months.

V. PHASE TRANSITION: THE THRESHOLD VALUE B_{crit}

V.1. Definition of B_{crit}

The critical value B_{crit} is the minimum value at which the observer begins to independently generate events without external stimulation. When $B < B_{\text{crit}}$, the observer remains a passive registrar. When $B > B_{\text{crit}}$, activity becomes self-sustaining.

V.2. Belief dynamics near the threshold

The equation of belief evolution [1]:

$$\frac{dB}{dt} = \gamma \cdot \tanh(\beta \cdot \hat{\delta}) \cdot \hat{\delta} \cdot B(1 - B) \tag{V.1}$$

where γ is the coupling constant, $\hat{\delta}$ is the defect operator, and β is the transition steepness parameter. When $B < B_{\text{crit}}$: $dB/dt < 0$ (decay). When $B > B_{\text{crit}}$: $dB/dt > 0$ (self-reinforcement). At the boundary $B = B_{\text{crit}}$ — unstable equilibrium.

V.3. Flow state as a marker of successful activation

The flow state described by Csikszentmihalyi [21] corresponds in ODTOE to the maximally expanded operator window of the observer. The width of the operator window Δn [30]:

$$\Delta n \propto \frac{B^k}{D_0(1 - S)} \tag{V.2}$$

Flow is achievable with high personal coherence (B is large) and in a low-noise environment (S is large). Attempting to achieve flow in a toxic environment (low S) requires exponentially more personal coherence. According to McKinsey data, observers in a flow state demonstrate productivity gains of up to 500% [31]. Flow is an empirical indicator that $B > B_{\text{crit}}$.

V.4. Subjective time and activation

At low coherence ($B \to 0$), subjective time accelerates — the observer feels a deficit of resources. Effective subjective time [30]:

$$\tau_{\text{eff}}(B) = \frac{\tau_0}{1 - B^k + \varepsilon} \tag{V.3}$$

When $B \to 1$, time slows down ($\tau_{\text{eff}} \to \tau_0$); when $B \to 0$, it accelerates. This phenomenon is observed in states of stress (time flies) and meditative states (time slows down). Restoring B returns to the observer the sense of control over time.

V.5. Practical determination of B_{crit}: measurement protocol

The main ODTOE theory [1] postulates the existence of B_{crit} but does not specify a method for its empirical determination. Below we propose an operational protocol for estimating B_{crit} for a specific observer or group.

Step 1. Measurement of the components of B. Each component of formula (II.1) is operationalized via validated scales:

F (attentional focus) — the Mindful Attention Awareness Scale (MAAS) [36], yielding a score from 1 to 6. Normalized to $[0, 1]$ by dividing by 6.

E (emotional coherence) — heart rate variability (HRV), measured by a pulse oximeter or chest strap sensor. The RMSSD indicator (root mean square of successive differences of RR intervals) is normalized by age norms: $E = \min(\text{RMSSD}/\text{RMSSD}_{\text{norm}},\ 1)$. HRV values and their relationship to emotional regulation are described in [16, 23].

σ (entropy of doubt) — a cognitive dissonance questionnaire, for example, an adapted Festinger scale [37] or IAT [5]. The result is normalized to $[0, 1]$.

Λ (empirical reinforcement) — the number of successfully completed initiatives out of the last N attempts: $\Lambda = k_{\text{succ}}/N$, where k_{succ} is the number of attempts with a positive outcome. The period N is set by context (last 10 tasks, last quarter, etc.).

Step 2. Computing B. With equal weights ($w_i = 1$): $B = F \cdot E \cdot (1 - \sigma) \cdot \Lambda$. With unequal weights: the power formula (II.1).

Step 3. Determining B_{crit} via the bifurcation point. B_{crit} is defined as the value of B at which the sign of dB/dt in equation (V.1) changes. In practice, this is implemented by two methods:

Method A (longitudinal). A series of $M \geq 5$ measurements of B at 1–2 week intervals. For each measurement, $\Delta B = B_{t+1} - B_t$ is computed. The value B^* at which ΔB changes sign from negative to positive is the empirical estimate of B_{crit}.

Method B (group-based). In a sample of $n \geq 20$ observers, each is classified as "active" (independently initiates projects) or "passive" (does not initiate). An ROC curve is constructed for B as a predictor of activity. The optimal threshold (by Youden's index: $\max(\text{sensitivity} + \text{specificity} - 1)$) yields an estimate of B_{crit}.

Step 4. Calibration. Preliminary data from corporate programs [23, 34] suggest

that $B_{\text{crit}} \approx 0.15$–$0.25$ with equal weights. This means it is sufficient to raise each component to the level of ~ 0.7 ($0.7^4 \approx 0.24$) in order to cross the threshold. An observer with $F = 0.8$, $E = 0.7$, $\sigma = 0.2$, $\Lambda = 0.5$ has $B = 0.8 \cdot 0.7 \cdot 0.8 \cdot 0.5 = 0.224$ — near B_{crit}.

Example calculation. Employee: MAAS = 3.6 ($F = 0.6$); RMSSD = 28 ms with a norm of 40 ms ($E = 0.7$); dissonance scale 0.3 ($\sigma = 0.3$, i.e., $1 - \sigma = 0.7$); 2 successes out of 10 attempts ($\Lambda = 0.2$). Then $B = 0.6 \cdot 0.7 \cdot 0.7 \cdot 0.2 = 0.059$. The value $B \ll B_{\text{crit}}$: the observer is deep in the passivity zone. The primary deficit is Λ (0.2). Strategy: prioritize $\hat{A}_\Lambda$ (structured small wins), in parallel with $\hat{A}_\sigma$ (reducing σ from 0.3 to 0.1). Target values: $\Lambda \to 0.6$, $\sigma \to 0.1$, yielding $B = 0.6 \cdot 0.7 \cdot 0.9 \cdot 0.6 = 0.227 > B_{\text{crit}}$.

V.6. Practical corollary

Once B exceeds B_{crit}, the process becomes self-sustaining due to positive feedback in equation (V.1). External intervention is no longer required. The observer enters a self-reinforcement cycle: generates an event $\to$ the event is realized $\to$ belief grows $\to$ generates a more ambitious event. The transition from passivity to activity reflects the principles of a growth mindset — the belief in the plasticity of abilities [12].

VI. THE GOLDEN RATIO AS THE RHYTHM OF ACTIVATION

ODTOE identifies the optimal ratio of activity to recovery: 62% to 38% (the golden section $\varphi \approx 1.618$) [1, 8]. This proportion is reproduced in biological systems: the ratio of diastole to systole in a healthy heart, the optimal inhalation-to-exhalation rhythm in coherent breathing [23, 26].

In the activation protocol, the 62/38 principle is applied at several scales:

Session. 62% of time — directed work with sub-operators $\hat{A}_i$; 38% — reflection and integration.

Workday. $\sim$5 hours of pure productive work, $\sim$3 hours — breaks, informal communication, switching. Attempting to fill more than 6 hours with productive activity leads to an increase in errors [32].

Work week. Experiments with a four-day work week (57/43, close to 62/38) in the United Kingdom and Iceland showed: productivity did not decrease, while stress and burnout levels dropped substantially [33].

Violation of the proportion is a clinical marker of imbalance. An observer working in a 90/10 regime depletes the coherence resource and reduces B, moving away from B_{crit}.

VII. COMMUNITY OF PRACTICE AS A COHERENCE AMPLIFIER

VII.1. Inter-observer coherence S

A Community of Practice (CoP) [14] is a group of observers interacting around a shared practice. In ODTOE, the degree of belief alignment in a CoP is formalized through inter-observer coherence. When CoP participants share common goals and experience similar emotions regarding those goals, their beliefs B_i converge, and the group's coherence grows. CoP coherence:

$$S = 1 - \frac{2}{n(n-1)} \sum_{i=1}^{n} \sum_{j=i+1}^{n} |B_i - B_j| \tag{VII.1}$$

When $S = 1$, all observers share equal belief; when $S = 0$, belief is maximally heterogeneous.

VII.2. Collective constituting capacity

The collective probability formula [1]:

$$P_{\text{coll}}(E) = 1 - \prod_{i=1}^{n} (1 - B_i^k) \tag{VII.2}$$

where k is the synergy parameter ($k > 1$ with good coordination). When $S \to 1$, all B_i equalize, and the formula simplifies: $P_{\text{coll}} \approx 1-(1-\bar{B}^k)^n$, where $\bar{B}$ is the mean belief. A group of coherent active observers is capable of constituting events inaccessible to any individual. Even if no single participant possesses absolute certainty, their joint observation yields a high collective result. At the same time, each participant with low B_i diminishes the collective effect, while each coherent one enhances it for all. This process creates a strange loop [15]: observation influences reality, which transforms the observer's belief, altering future observations.

VII.3. The team as a cluster of observers

Each observer has their own coherence field C_i. The overlap region [22]:

$$O_N = \bigcap_{i=1}^{n} C_i \tag{VII.3}$$

A large overlap region means coordination without explicit discussion. Overlap density $\rho(S) \sim K^{-N(1-S)}$: when $S < 0.6$, the overlap region is exponentially small; when $S > 0.8$, the team operates in automatic coordination mode [22].

VII.4. The spin-up effect

The lifetime of a configuration $T(C)$ in a coherent CoP:

$$T(C) = \frac{T_0}{(1-S)^n} \tag{VII.4}$$

When $S \to 1$: $T(C) \to \infty$. The configuration becomes long-lived and crystallizes in the culture.

VII.5. Protocol for forming a CoP

(a) *Core*: 3–5 observers with $B > B_{\text{crit}}$. (b) *Regularity*: weekly synchronous meetings. (c) *Artifacts*: materials encoding the practice [8]. (d) *Cascading mentorship*: each active observer works with one passive observer. (e) *Synchronous practices*: group coherent breathing increases participants' HRV more than the same practice performed alone [23].

Over 6–12 months, the number of active observers grows exponentially.

VIII. ACTIVATION ARTIFACTS

VIII.1. Definition of an activation artifact

An activation artifact is an object optimized to increase B in observers with $B < B_{\text{crit}}$. It is a special case of a coherence artifact [1]. The artifact's lifetime is determined by the coherence of its readers [22]:

$$T(A) = \frac{T_0}{(1-S_A)^{n_{\text{read}}}} \tag{VIII.1}$$

where S_A is the artifact's coherence with reality, and n_{read} is the number of observers applying the information it contains.

VIII.2. AI assistant as an activation artifact

A personal AI assistant encodes elements of all four sub-operators: $\hat{A}_F$ (targeted questions), $\hat{A}_E$ (emotional support), $\hat{A}_\sigma$ (safety norms), $\hat{A}_\Lambda$ (immediate reinforcement). Scalability and accessibility make it an effective intervention for mass activation.

VIII.3. Scale of activation artifacts

- *Personal contact*: hours; emotional resonance.

- *Small experiment*: days; reinforcement of Λ.
- *AI assistant*: months; impact on F and Λ.
- *Community of practice*: years; amplification of S.
- *Community book*: decades; encoding into Ψ.

IX. PHANTOM COHERENCE: THE RISK OF FALSE ACTIVATION

Phantom coherence (S_{phant}) arises when an observer or group subjectively perceives high alignment despite its objective absence [22]. Examples of corporate collapses (Enron, Theranos, WeWork) demonstrate situations where $S_{\text{phant}} \gg S_{\text{true}}$: participants worked energetically and believed in the cause, but the sustainability formula uses S_{true}, and collapse was inevitable.

The duration of sustainability depends on *true* coherence [22]:

$$T = \frac{T_0}{(1 - S_{\text{true}})^n} \tag{IX.1}$$

Practical implication for activation: an observer "activated" through phantom coherence (external motivation without genuine change in B) inevitably returns to passivity upon encountering reality. Genuine activation requires honest feedback that minimizes the gap between S_{phant} and S_{true}. Honesty is not a moral choice but an engineering resource that prevents collapse [22].

X. EMPIRICAL EVIDENCE

X.1. HeartMath and Motorola

A six-week coherent breathing program: cortisol reduction of 25%, HRV increase of 30%, improvement in mental clarity of 24%. Improvements were sustained for 6 months [23].

X.2. Google and SAP

The Search Inside Yourself program (Google) and analogous SAP initiatives: stress reduction of 28–32%, productivity increase of 14–20%, improved team interaction [34]. The greatest effect was observed with a systemic approach, when coherence training was embedded in a continuous educational program.

X.3. Gallup: engagement and profitability

According to Gallup data, companies with high employee engagement levels show 23% higher profitability [35]. Engagement in ODTOE terms is an aggregated measure of B across an organization's employees.

X.4. Four-day work week

Experiments in the United Kingdom and Iceland: productivity did not decrease, while stress and burnout levels dropped substantially [33]. The result is consistent with the 62/38 principle.

XI. DISCUSSION AND LIMITATIONS

XI.1. Connection with self-determination theory

Self-determination theory by Deci and Ryan [11] postulates three fundamental needs: autonomy, competence, and relatedness. In ODTOE terms, these needs find a direct mapping onto the formalism's components: autonomy corresponds to F (the ability to direct one's own attention toward chosen goals rather than external demands); competence corresponds to Λ (a history of successful event constitution, creating the sense of "I can"); relatedness corresponds to S (coherence with the community, the sense of belonging to a group that shares common goals and values). Thus, the activation operator $\hat{A}$ can be reformulated as providing conditions for satisfying these three needs, confirming the universality of the formalism and its consistency with mainstream motivation theories.

XI.2. Vygotsky's zone of proximal development

L.S. Vygotsky [17] defined the zone of proximal development (ZPD) as the difference between what a subject is able to do independently and what they can accomplish with the help of a more competent partner. This concept has become one of the central ideas in 20th-century pedagogy and finds a precise correspondence in the ODTOE formalism.

ZPD as the interval $[B_{\text{crit}},\ B_{\text{crit}} + \Delta B_{\text{ZPD}}]$. The lower boundary of the ZPD is B_{crit}: the minimum belief necessary for independent activity. Below B_{crit}, the observer is unable to initiate action without external support. The upper boundary is the level of B achievable with the help of a mentor. The width of the ZPD (ΔB_{ZPD}) varies for different observers and contexts.

The mentor as an external operator. In ODTOE terms, the mentor (MKO — More Knowledgeable Other, in Vygotsky's terminology) is an external operator who temporarily provides the observer with coherence elements that they lack. A mentor with high personal B transmits not information but a *coherence template*: a mode of focusing (F), emotional confidence (E), consistency of actions ($1 - \sigma$), and a model

of successful experience (Λ). This explains why an effective mentor must themselves possess high coherence: they cannot transmit what they do not possess.

Scaffolding as stepwise application of $\hat{A}$. The concept of scaffolding, introduced by Bruner in developing Vygotsky's ideas [38], describes the process of gradually removing external support as the learner's independence grows. In ODTOE terms: the mentor applies operator $\hat{A}$ with decreasing intensity. At the initial stage, external support is maximal — all four sub-operators are active. As B grows, the mentor sequentially deactivates sub-operators: first $\hat{A}_F$ (the observer directs their own focus), then $\hat{A}_E$ (emotional autonomy), then $\hat{A}_\sigma$ (the observer's own value system), and finally $\hat{A}_\Lambda$ (the observer's own success history). When $B > B_{\text{crit}}$, scaffolding is removed entirely — the observer has entered the zone of self-sustaining activity.

Internalization. Vygotsky described the process of internalization as the transition from externally mediated action to internal action [17]. In ODTOE, this is formalized as the transition from the external operator $\hat{A}_{\text{ext}}$ (mentor) to the internal operator $\hat{A}_{\text{int}}$ (self-activation). When the observer internalizes all four sub-operators, they are able to maintain and increase their own B without external assistance — and, moreover, they become a mentor for others, completing the recursive cycle.

Social constructivism and CoP. Vygotsky emphasized that development occurs in a social context, not in isolation [17]. This is consistent with the role of CoP (Section VII): a community of practice is an institutionalized form of social context in which multiple mentors and learners simultaneously interact, accelerating activation through the mechanism of inter-observer coherence S.

XI.3. Limitations of the formalism

(a) B_{crit} is not derived from first principles [19]. (b) The operator $\hat{A}$ assumes the observer's voluntary participation. (c) The coefficients w_i and constants in (V.1) are likely culture-specific. (d) The introduction of $\hat{A}$ relies on the "it from bit" paradigm [18], but rigorous justification requires further development. (e) The empirical data (Sections X.1–X.4) were obtained in corporate contexts; extrapolation to other populations requires verification.

XII. CONCLUSION

Observer passivity is formalized in ODTOE as a state with $B \to 0$. The multiplicative structure (II.1) means that partial interventions are ineffective. Quaternion diagnostics (II.2–II.3) enable identification of the blockade type and targeted intervention.

Activation is defined as application of operator $\hat{A}$ (IV.1), implemented through evidence-based tools: mindfulness meditation ($\hat{A}_F$), coherent breathing at 62/38 ($\hat{A}_E$), CBT and psychological safety ($\hat{A}_\sigma$), graduated reinforcement and gratitude practice ($\hat{A}_\Lambda$).

The transition from passivity to activity is a phase transition at $B = B_{\text{crit}}$ (V.1). The

flow state (V.2–V.3) is an empirical marker of successful activation. The golden ratio 62/38 sets the rhythm of the protocol at all scales — from breathing to the work week.

The community of practice (CoP) amplifies activation through inter-observer coherence S (VII.1–VII.5). The observer cluster model (VII.3) formalizes the coordination mechanism. Activation artifacts, including AI assistants, ensure scalability.

Phantom coherence (IX) warns against false activation: a genuine transition requires honest feedback ($S_{\text{phant}} \approx S_{\text{true}}$). Empirical data from HeartMath, Google, SAP, and Gallup (Section X) confirm the effectiveness of the proposed interventions.

The recursive cycle of the system: passive observer $O_0 \to \hat{A} \to B > B_{\text{crit}} \to$ event constitution $\to$ resonance in CoP $\to$ engagement of a new observer. This principle operates from the atom as an elementary strange loop [20] to cultural systems.

CONFLICT OF INTEREST

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