Pre-Registration Protocol: Open Validation of the Core Emotion Framework (CEF) Scale – Phase 1: Construct Definition, Item Generation, and Multi-Level Factor Structure Confirmation

# I. Conceptual Foundation and Structural Hypotheses

The Core Emotion Framework (CEF) Validation Consortium formally registers this protocol on the Open Science Framework (OSF), adhering to the highest standards of scientific rigor and transparency. This document outlines Phase 1 of the validation roadmap, focusing on the rigorous development and psychometric confirmation of a novel scale designed to measure the 10 Core Emotions of the CEF. This work transitions the CEF from a theoretical synthesis, previously archived via a Zenodo identifier, into a fully open, empirically verifiable research program.

#### A. Review of the Structural-Constructivist CEF Model and Primal Powers

The Core Emotion Framework posits a structural-constructivist model asserting that the vast spectrum of human emotional experiences and character traits—termed "practical traits"—are composite states constructed from a finite set of ten fundamental, irreducible "primal powers," known as Core Emotions.¹ These Core Emotions are conceptualized as foundational psychological capacities or elemental drives, synthesized from both affective neuroscience and

constructed emotion theory.<sup>1</sup>

The CEF addresses the theoretical schism between classical "basic emotion" theories, such as those posited by Ekman, and constructivist theories, exemplified by the work of Lisa Feldman Barrett.<sup>1</sup> By integrating these perspectives, the framework establishes direct neurobiological anchors; for example, the Core Emotion **Boosting**, located in the Gut Center, is explicitly defined as a theoretical parallel to Jaak Panksepp's general-purpose appetitive motivational SEEKING system.<sup>1</sup> Simultaneously, the model functions as a constructionist framework by utilizing these primal Core Emotions as the basic "structural elements" and "building blocks" that combine with interoceptive awareness (aligned with **Sensing**) and conceptual knowledge to construct complex, context-dependent emotional states.<sup>1</sup>

A critical objective for this validation is overcoming the operationalization challenge inherent in quantifying abstract theoretical concepts. For instance, the Core Emotion **Calculating** must be successfully quantified by translating its function of analytical discernment and rational integration into measurable behaviors, such as the ability to perform "Quantitative Assessment" using mathematical models. Similarly, **Constricting**, defined as cultivating emotional granularity and containment, must be translated into quantifiable indices of focused attention, boundary setting, and strategic emotional regulation.

## **B. Formal Hypotheses Regarding the Core Factor Structure**

The validation study is specifically designed to confirm the defined, hierarchical architecture of the CEF.<sup>1</sup> The following formal structural hypotheses (H1–H3) are pre-registered:

- H1: First-Order Structure: The psychometric instrument will demonstrate excellent model fit for a 10-factor oblique model. Each factor is hypothesized to correspond uniquely and robustly to one of the ten Core Emotions: Sensing, Calculating, Deciding, Expanding, Constricting, Achieving, Arranging, Appreciating, Boosting, and Accepting.<sup>1</sup>
- H2: Hierarchical Structure (Tripartite Centers): The ten first-order factors will load onto three distinct second-order factors, consistent with the hypothesized Tripartite Structure of the psyche: the Head (Cognitive Focus), the Heart (Relational and Emotional Flow), and the Gut (Action and Embodiment).¹ The Core Emotion Accepting is hypothesized to function either as an overarching integrating core that loads onto all three centers, or as a distinct related factor capturing the capacity to yield to the natural flow of life.¹
- H3: Foundational Polarity (Agency/Yielding): The underlying factor correlations, both at

the first-order level and the second-order level, will show predictable patterns consistent with the foundational polarity between **Agency** (drive for control, mastery) and **Yielding** (drive for connection, surrender). This structural configuration will be compared directly to established psychological constructs such as Bakan's Agency/Communion dimensions in personality research.

### C. Necessity of Oblique Rotation and Advanced Modeling

The Core Emotion Framework's definition of healthy psychological functioning requires the capacity for "emotional flexibility"—the dynamic balancing and mastery of conflicting desires represented by the Agency and Yielding polarity. Conversely, psychological distress is defined by "emotional rigidity"—a pathological fusion of these elements. 1

The structural model being tested therefore mandates that the core emotions, while distinct, must be highly interrelated building blocks rather than statistically independent traits.

Consequently, the initial Exploratory Factor Analysis (EFA) *must* employ an **oblique rotation method** (e.g., Promax or Oblimin) to accurately model these predicted intercorrelations.<sup>2</sup> An orthogonal (uncorrelated) factor rotation would violate the fundamental premise that these capacities are designed to be harnessed and balanced against each other. Furthermore, confirming the hierarchical structure (H2) and the foundational polarity (H3) requires sophisticated Structural Equation Modeling (SEM) techniques, specifically the testing of Hierarchical CFA models or, alternatively, Bifactor models. These advanced models are essential to demonstrate the unique predictive power of each of the 10 specific Core Emotions (first-order factors) while simultaneously confirming the broader, theoretical organization provided by the three functional centers (second-order factors).<sup>1</sup>

Table 1: CEF Core Emotion Framework Architectural Map (Hypothesized Structure)

CEF Core Emotion	Primary Polarity Affiliation	Functional Center	Primary Function (Excerpt)	Hypothesized Correlates (Example Item Focus)
Sensing	Yielding	Head	Perceive and	Interoceptive

		(Cognitive Focus)	process external stimuli (Right Outgoing Brain) 1	awareness, raw perception <sup>1</sup>
Calculating	Agency	Head (Cognitive Focus)	Capacity to analyze options and plan effectively (Left Reflecting Brain) 1	Quantitative Assessment, mathematical thinking <sup>1</sup>
Deciding	Agency	Head (Cognitive Focus)	Skill to balance information and make informed decisions (Balancing Brain) 1	Behavioral choices, goal commitment <sup>1</sup>
Expanding	Yielding	Heart (Relational and Emotional Flow) <sup>1</sup>	Capacity for openness, connection, and empathy <sup>1</sup>	Relational involvement, mindfulness (DBT/PCT) <sup>1</sup>
Constricting	Yielding	Heart (Relational and Emotional Flow) <sup>1</sup>	Ability to focus, set clear boundaries, and refine emotional responses <sup>1</sup>	Distress Tolerance, emotional granularity <sup>1</sup>
Achieving	Agency	Heart (Relational and Emotional Flow) <sup>1</sup>	Talent for executing tasks with excellence (Balancing Heart) 1	Mode integration, strategic communicatio n (IPT/ST) 1

Arranging	Agency	Gut (Action and Embodiment) <sup>1</sup>	Drive and assertiveness to take decisive action (Outgoing Gut)	Structure creation, trauma reprocessing (EMDR/ST) <sup>1</sup>
Appreciating	Yielding	Gut (Action and Embodiment) <sup>1</sup>	Acknowledgme nt and celebration of achievements <sup>1</sup>	Self-worth, intrinsic value (PCT) <sup>1</sup>
Boosting	Agency	Gut (Action and Embodiment) <sup>1</sup>	Energizing force that sustains motivation and perseverance <sup>1</sup>	SEEKING system parallel, commitment to action (ACT/PE) 1
Accepting	Yielding	Integrating Core <sup>1</sup>	Capacity to let go, accept reality, and manifest change <sup>1</sup>	Radical Acceptance, trauma resolution (DBT/ACT/PE) 1

# II. Research Design, Methodology, and Open Science Compliance

# A. Compliance Mandate: Transparency and Openness Promotion (TOP) Guidelines

The Core Emotion Framework project asserts its commitment to adhering to the Transparency and Openness Promotion (TOP) Guidelines (TOP 2025) across all future studies. This protocol

specifically commits to the highest standard, **TOP Level 2 (Shared and Cited)**. <sup>4</sup> This mandate extends beyond mere disclosure to require researchers to cite and publicly deposit materials, data, protocols, and analysis code in a trusted repository. <sup>4</sup>

This formal document serves as the pre-registration of the theoretical framework, research protocol, and analysis plan for Phase 1. Collaboration with the OSF is critical, as it provides the infrastructure necessary for streamlining the process and eliminating data silos inherent in proprietary research.<sup>1</sup> The registration will utilize a standard OSF Registration template.<sup>5</sup> If necessary to ensure blind review, the registration will be anonymized and potentially placed under an embargo, though the duration will not exceed four years from creation.<sup>5</sup>

### B. Data Archival and Reproducibility Plan

The project commits to eliminating proprietary data silos entirely. To ensure the highest level of reliability, reciprocity, and accountability, all primary data, cleaned datasets, statistical analysis code (e.g., R or Python scripts), and analysis workflows will be publicly accessible and cited upon publication.<sup>1</sup>

The methodology mandates that the program code and scripts for statistical packages, along with all necessary documentation, must be sufficient to allow an informed researcher to precisely reproduce all published results.<sup>6</sup> This commitment to open-source data and reproducible methodology is the project's central deliverable to the Center for Open Science (COS).<sup>1</sup> Data and scripts will be deposited in trusted repositories supporting open archiving, such as OSF Storage, Zenodo, or Figshare.<sup>6</sup>

# C. Operationalizing the TOP Level 2 Standard

For a novel theoretical synthesis such as the CEF to gain traction within the scientific community, particularly one seeking to model the open validation process, merely stating commitment to TOP Level 2 is insufficient; the implementation must be detailed and demonstrable. The project recognizes that a full Level 2 adherence requires specifying the exact environment and tools used. For instance, the analysis plan (Section V) must detail the precise statistical package and version (e.g., R version \$4.x.x\$, lavaan package version \$x.x.x\$)

utilized for structural modeling. Furthermore, confirmation that this annotated code is deposited alongside the data transforms the project from a traditional psychometric study into a model of fully reproducible structural validation.<sup>1</sup>

Table 2: TOP Guidelines Compliance Matrix (Level 2 Commitment)

Research Practice Area	Commitment Level	Action within this Protocol	
Study Registration	Level 2: Shared and Cited	This protocol registers the study and will be cited via permanent DOI/URL.1	
Analysis Plan	Level 2: Shared and Cited	This document (Section V) serves as the publicly shared, cited analysis plan. <sup>4</sup>	
Materials Transparency	Level 2: Shared and Cited	Final scale items, instruction sets, and cognitive interview protocols will be cited and deposited. <sup>4</sup>	
Data Transparency	Level 2: Shared and Cited	Raw and cleaned data, including exclusion documentation, will be cited and deposited on the OSF. <sup>4</sup>	
Analytic Code Transparency	Level 2: Shared and Cited	Statistical scripts (e.g., R/Python) sufficient for reproduction will be cited and deposited. <sup>4</sup>	

# III. Item Development and Content Validation Protocol

### A. Item Generation Strategy

The scale must successfully bridge the gap between the abstract theoretical synthesis and concrete measurement items. Items will be developed directly from the detailed functional definitions of the Core Emotions provided in the foundational framework document. For example, item development for **Calculating** will target analytical capacity, objectivity, and the use of verifiable information, while item development for **Constricting** will target emotional granularity and the maintenance of clear boundaries.

To ensure stable factor loadings and provide sufficient flexibility for item refinement during the EFA, the initial item pool will target a high Item-to-Factor ratio. With 10 Core Emotion factors, the initial pool will aim for approximately 8–10 items per Core Emotion, resulting in an initial pool of \$80-100\$ items. A Likert-type scale will be employed (e.g., 5-point or 7-point), with the final number of response options determined after cognitive interviews to balance psychometric stability with user accessibility.

### **B.** Content Review and Refinement

Content validity is paramount, particularly for a novel structural model. The following protocols ensure the items accurately represent the theoretical constructs:

- Expert Review Protocol: A panel of domain specialists (affective neuroscience, structural psychology, psychometrics) will formally rate each item for its clarity, relevance, and fidelity to the theoretical definition of its target Core Emotion. Inter-rater reliability indices, such as the Intraclass Correlation Coefficient (ICC), will be calculated and reported to quantify agreement among the panel.
- **Cognitive Interviewing:** A distinct subset of the target population will undergo structured cognitive interviews. This process is crucial for identifying and eliminating items that are ambiguous or do not evoke the intended psychological construct in the respondent.<sup>5</sup>
- Exclusion Criteria for Items: Items will be flagged for exclusion if they exhibit low variance in pilot testing, receive low expert rating agreement, demonstrate high ambiguity during cognitive interviews, or show high correlations with items measuring factors other than their target factor, which would suggest problematic cross-loading potential.<sup>5</sup>

### **C. Managing Construct Overlap in Correlated Factors**

The ten Core Emotions are conceptualized as capacities that must be harnessed and integrated to achieve psychological flourishing. Consequently, certain factors, particularly those related to cognitive control—such as **Constricting** (emotional containment), **Deciding** (informed choices), and **Calculating** (objective analysis)—are theoretically expected to correlate strongly. The integrity of the scale hinges on the ability of the item generation process to focus on language that specifically isolates the *primary function* within its designated center. For instance, items must clearly delineate **Constricting** as relating to relational boundary setting and emotional regulation (Heart Center) versus **Calculating** as relating to objective, analytical thinking (Head Center). Failure to make these nuanced distinctions during item development would result in massive cross-loadings during the factor analysis, compromising the theoretical mandate that the scale measures 10 distinct "primal powers".

# IV. Sampling and Data Collection Procedures

### A. Target Population and Sampling Strategy

The initial scale validation requires a general community sample to support the CEF's claim of universality and application across the human psyche. Participants will be recruited via online platforms and academic networks, targeting a diverse range of ages, educational backgrounds, and geographical locations. Standard inclusion criteria will ensure that participants are capable of providing informed consent and comprehending the self-report scale items.

### **B. Required Sample Size and Power Analysis**

Given the complexity of the hypothesized 10-factor structure and the requirement for robust Structural Equation Modeling (SEM), a substantial sample size is necessary to ensure stable factor loadings and the generalizability of results. The protocol mandates a rigorous split-sample validation approach, requiring separate, equivalent samples for Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA).

Adhering to established psychometric guidelines, which recommend a minimum ratio of 10 cases per item <sup>8</sup>:

- 1. Assuming a refined, final scale of approximately 50 items (5 items per factor), the minimum total sample size needed is \$k \times 10 = 500\$.
- 2. To provide statistical power for the split-sample validation and to mitigate anticipated attrition, the target minimum sample size is set at \$N \geq 800\$.
- 3. The collected data will be randomly split into two equivalent samples:  $N_{EFA} \neq 400$  and  $N_{CFA} \neq 400$ . The first sample will define the factor structure, and the second will independently confirm it.<sup>10</sup>

### C. Data Collection Instrument Components

The data collection will consist of the following integrated instruments:

- 1. **CEF Item Pool:** The initial \$80-100\$ item instrument, administered to the full sample prior to the split.
- 2. **External Construct Validity Measures:** Standardized, validated instruments measuring key external constructs critical for Phase 1 validation (Section VI). These include measures of emotional regulation ability (e.g., Difficulties in Emotion Regulation Scale), cognitive flexibility, psychological inflexibility (as a measure of pathology, aligned with the CEF's concept of emotional rigidity <sup>1</sup>), and established personality dimensions like Agency and Communion.<sup>1</sup>
- 3. **Demographic Data:** Standard demographic and background information required for reporting and subgroup analysis.

### D. The Trade-off between Accessibility and Rigor

The public-facing components of the Core Emotion Framework emphasize the simplicity and accessibility of the approach for self-improvement. While this accessibility is vital for public utility, the transition to academic credibility necessitates transparent, rigorous, and verifiable empirical work. A large-scale validation study with a target \$N \geq 800\$ and a robust 10:1 item ratio is a necessary methodological investment. Choosing a statistically conservative approach for sample size and model testing ensures that the scale's structural claims are based on stable factor loadings and generalizable results 7, thereby ethically and empirically grounding the public utility applications. A

# V. Multi-Stage Statistical Analysis Plan (Factor Structure Confirmation)

This analysis plan pre-registers the exact statistical methodology to be applied to confirm the internal validity of the CEF scale, adhering to Level 2 TOP compliance.<sup>4</sup>

### A. Stage 1: Exploratory Factor Analysis (EFA) Protocol (\$N\_{EFA} \geq 400\$)

The EFA will be conducted on the first split sample (\$N\_{EFA}\$) to empirically determine the optimal factor retention and item loadings for the instrument.<sup>10</sup>

- Extraction and Estimation: Maximum Likelihood estimation with robust standard errors (MLR) will be the primary extraction method, as it accommodates potential deviations from multivariate normality often present in self-report data.<sup>9</sup>
- Factor Retention Criteria: Although the 10-factor model is strongly hypothesized based on the theoretical architecture <sup>1</sup>, factor retention will be empirically determined by converging evidence from multiple rigorous methods <sup>2</sup>:
  - 1. Parallel Analysis: This will serve as the primary decision criterion.
  - 2. Model fit indices derived from Exploratory Structural Equation Modeling (ESEM), if ESEM is employed conditionally.<sup>3</sup>
  - 3. Visual inspection of the Scree Plot.
  - 4. Theoretical interpretability based on the 10 distinct Core Emotions.<sup>1</sup>
- Rotation Method: Oblique rotation (e.g., Promax) will be utilized. This choice is

- mandatory due to the theoretical prediction that the 10 Core Emotions are correlated psychological capacities, as dictated by the foundational Agency/Yielding polarity.<sup>1</sup>
- Item Selection Rules: Items will be retained for the final scale if they exhibit a factor loading of \$\geq.40\$ on the target factor and demonstrate minimal cross-loading (e.g., \$\leq.30\$) on all non-target factors.

# B. Stage 2: Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) Protocol (\$N\_{CFA} \geq 400\$)

The structural validity of the derived factor solution will be tested using CFA/SEM on the independent \$N\_{CFA}\$ split sample. All analyses will be conducted using R statistical software. The precise methodology for testing the hypotheses outlined in Section I is specified below <sup>5</sup>:

### Model Testing Sequence:

- 1. **M0 (Null Model):** A baseline model testing zero correlation among all items, required for calculating incremental fit indices (e.g., CFI, TLI).<sup>12</sup>
- 2. **M1 (10-Factor Oblique Model):** Testing the fit of the final item set (derived from the EFA) across 10 correlated first-order factors, confirming Hypothesis H1.
- 3. **M2 (Hierarchical Model):** Testing the fit of a second-order model where the 10 Core Emotions load onto the 3 Tripartite Centers (Head, Heart, Gut), confirming Hypothesis H2.<sup>1</sup>
- 4. M3 (Alternative Models): Testing alternative structures for theoretical comparison, including a simple 2-factor Agency/Yielding model, and a Bifactor model. The Bifactor model tests the fit of a single, overarching factor ("General Emotional Capacity") alongside the 10 specific Core Emotion factors. The final model will be selected based on the optimal balance of statistical fit and theoretical consistency.

### C. Model Fit Indices and Acceptance Criteria

Recognizing that reliance on a single fit index is problematic and that cut-off values are often context-dependent <sup>9</sup>, the protocol mandates that multiple fit indices be reported to provide a comprehensive assessment of model fit. The following indices will be reported for all models (M1–M3): \$\chi^2\$, Degrees of Freedom (\$df\$), Comparative Fit Index (CFI), Tucker-Lewis Index

(TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR).

The following established target heuristics will guide model acceptance:

- CFI \$\geq 0.95\$ (Excellent Fit) or \$\geq 0.90\$ (Acceptable Fit).
- TLI \$\geq 0.95\$ (Excellent Fit) or \$\geq 0.90\$ (Acceptable Fit).
- RMSEA \$\leq 0.06\$ (Good Fit) or \$\leq 0.08\$ (Acceptable Fit).
- SRMR \$\leq 0.08\$ (Good Fit).<sup>9</sup>

# D. Conditional Analysis Plan: Exploratory Structural Equation Modeling (ESEM)

Confirmatory Factor Analysis (CFA) requires a strong conceptual basis for model specification. <sup>10</sup> If the CFA models (M1 or M2) demonstrate inadequate fit, potentially indicating pervasive cross-loadings that standard CFA cannot accommodate, an Exploratory Structural Equation Modeling (ESEM) approach will be implemented using the \$N\_{CFA}\$ sample. <sup>3</sup> ESEM is an integration of EFA's flexibility with CFA's rigorous testing within the SEM framework. <sup>3</sup> ESEM allows for confirmatory tests of *a priori* factor structures while permitting items to load on multiple factors, which is often crucial for highly correlated psychological constructs like the Core Emotions. <sup>3</sup> ESEM will be specified with the hypothesized 10-factor structure and the oblique rotation defined in Stage 1.

## **E. Transparent Changes Protocol**

This pre-registration serves as the definitive analysis plan.<sup>4</sup> Any unplanned analytical procedures, deviations from the sample size calculation, or modifications to the exclusion rules will be transparently documented in a dedicated "Transparent Changes" appendix within the resulting manuscript.<sup>5</sup> Exclusion criteria will be applied to participants demonstrating non-response patterns or inconsistent responding.<sup>5</sup>

# VI. Construct Validity and Initial Clinical Utility Testing

Phase 1 validation must include linking the newly developed instrument to existing psychological measures to empirically ground the CEF's claims of psychological structure and clinical utility.<sup>1</sup>

### A. Convergent and Discriminant Validity Testing

- Internal Consistency and Reliability: Internal consistency will be calculated for each of the 10 Core Emotion subscales using both Cronbach's \$\alpha\$ and McDonald's \$\omega\$. Test-retest reliability will be assessed using a subsample over a \$2-4\$ week interval to evaluate the temporal stability of the Core Emotion scores.
- Convergent Validity: CEF factor scores will be tested for strong positive correlations with
  established measures of theoretically similar constructs. For instance, the Agency affiliated
  factors should correlate highly with personality dimensions such as Conscientiousness,
  Assertiveness, and mastery orientation, while Yielding affiliated factors should correlate
  with aspects of Openness and Mindfulness.
- **Discriminant Validity:** CEF factor scores will be tested for low or non-significant correlations with measures of theoretically distinct constructs, confirming that the scale is not simply measuring general distress or an existing, unrelated construct.

## **B. Testing of Specific Secondary Clinical Hypotheses (CEF Reframes)**

The CEF's utility as a structural-constructivist model is enhanced by its capacity to reframe and integrate established evidence-based psychotherapy modalities. The framework provides a "diagnostic index to choose the right therapy". To validate this utility, specific secondary hypotheses are pre-registered based on the CEF mappings within the *Compendium of Modalities* 1:

- Hypothesis V1: Calculating and Cognitive Restructuring:
  - Rationale: Cognitive Behavioral Therapy (CBT) is described as a "mental architect"
     helping individuals restructure the cognitive blueprints shaping emotional experience.<sup>1</sup>

- The CEF mapping explicitly lists **Calculating** for CBT.<sup>1</sup> This alignment supports the notion that the analytical function of Calculating is essential for the restructuring process.<sup>1</sup>
- Predicted Outcome: Scores on the CEF Calculating dimension will positively correlate strongly with external measures of Cognitive Restructuring Ability and inversely correlate with indices of Automatic Negative Thoughts (ANTs).

### Hypothesis V2: Deciding and Behavioral Commitment/Agency:

- Rationale: Deciding is defined as the skill to balance information and make informed behavioral choices.<sup>1</sup> This function aligns directly with the emphasis in CBT on "behavioral choices" and behavioral activation, as well as the commitment components of Acceptance and Commitment Therapy (ACT).<sup>1</sup>
- Predicted Outcome: Scores on the CEF Deciding dimension will positively correlate strongly with clinical measures of Behavioral Activation/Commitment to Action and self-reported use of Interpersonal Effectiveness skills (as taught in Dialectical Behavior Therapy, DBT).

### Hypothesis V3: Constricting and Distress Tolerance/Boundary Setting:

- Rationale: Constricting functions as a regulator in the Heart Center, enabling the
  capacity for containment and the setting of clear boundaries.<sup>1</sup> This parallels DBT's core
  skill module of Distress Tolerance—the ability to tolerate intense emotion without
  immediate dysfunctional reaction—and the need for focused, structured work in CBT.<sup>1</sup>
- Predicted Outcome: Scores on the CEF Constricting dimension will positively correlate
  with measures of effective Distress Tolerance and skill in Boundary Setting (e.g., in
  relational or professional contexts).

#### Hypothesis V4: Boosting and Conative Motivation (SEEKING):

- Rationale: Boosting is explicitly noted as a direct theoretical parallel to Panksepp's primal appetitive motivational SEEKING system.<sup>1</sup> This core emotion represents the energizing force that sustains motivation and perseverance, linking it to goal-directed behavior.<sup>1</sup>
- Predicted Outcome: Scores on the CEF Boosting dimension will positively correlate strongly with measures of Approach Motivation and Goal Pursuit, thereby supporting its claim of neurobiological anchoring.

## C. The Clinical Implications of Construct Validation

The empirical confirmation of these targeted correlations (V1–V4) will grant the CEF scale

immediate clinical utility. If, for example, a client's profile reveals a weakness in **Calculating** (V1), the empirical findings would justify guiding that client toward the cognitive restructuring techniques of CBT to strengthen that specific primal power, validating the CEF's practical application as a structural index for guiding intervention selection. This transition of the theoretical structural model into an actionable, empirically grounded clinical tool is the core objective of Phase 1 validation.

Table 3: Planned Hypotheses for External Construct Validity

CEF Core Emotion	External Construct Target	Reference Modality	Predicted Correlation Strength	Justification Snippet
Calculating	Cognitive Restructuring Ability	СВТ, СРТ	Strong Positive	Analytical discernment, cognitive blueprints <sup>1</sup>
Deciding	Behavioral Activation/Co mmitment	ACT, CBT	Strong Positive	Capacity for informed choices, behavioral alignment <sup>1</sup>
Constricting	Distress Tolerance/Bou ndary Setting	DBT, FST	Moderate to Strong Positive	Focus, containment, setting clear boundaries <sup>1</sup>
Boosting	Approach Motivation/SEE KING	ACT, PE	Strong Positive	Energizing drive, parallel to primal motivational systems <sup>1</sup>

# VII. Public Dissemination and Future Research Planning

### A. Dissemination of the Validated Instrument

Upon successful completion of the multi-stage factor analysis (EFA \$\rightarrow\$ CFA/SEM/ESEM) and construct validity testing, the final, validated CEF scale items, scoring key, and psychometric protocol will be released as an open-source instrument. The instrument will be dedicated to the public domain (e.g., via a CC-BY license) and deposited on the OSF, ensuring maximum accessibility and utility for future research and clinical application globally.

# B. Preparing for Phase 2: Hypothesis Testing and Reproducible Data Collection

The validated CEF scale (Phase 1 deliverable) is the essential foundation for Phase 2, which focuses on hypothesis testing and reproducible data collection. The validated scale will immediately be deployed in Phase 2 to empirically test the Foundational Polarity (Agency vs. Yielding) in dynamic contexts, and to rigorously test the specific clinical efficacy claims reported in the theoretical synthesis (e.g., the capacity to reduce symptoms of Attention Deficit Hyperactivity Disorder (ADHD) or heal panic attacks by separating core emotions). This next stage will require the development and pre-registration of a subsequent, equally detailed protocol for multi-site randomized controlled trials (RCTs).

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