

The Paradox of
Comprehensibility
in the High-Tier Sector
(Somatic Turn)

Questionnaire:
*Subjective Comprehensibility and
Biological Decoherence in the High-Tier Sector*

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**Questionnaire: Subjective Comprehensibility and Biological
Decoherence in the High-Tier Sector**

English Version

Scientific Survey

Duration: approximately 8–10 minutes

Diagnostic note: This survey serves purely scientific purposes. It is not a clinical, medical, or neuropsychological diagnostic procedure.



Das methodische Kanzlei-Audit: Kritische Baustellen und Korrekturen

1. ATP-Messung

Die Bezeichnung „ATP-Messung“ ist bei reinen Self-Reports biochemisch problematisch.

Biochemisches ATP kann nicht valide durch einen Fragebogen gemessen werden. Je nach tatsächlicher Messlogik ist stattdessen eine präzisere Bezeichnung wie „Subjective Activation Rating“ oder „Perceived Energy Availability“ zu verwenden.

2. ESDI-Interpretation

Der Euclidean Semantic Distance Index ist ausschließlich ein deskriptives Distanzmaß für Unterschiede zwischen semantischen Profilen.

Aus dem Index dürfen keine klinischen oder neuropsychologischen Rückschlüsse auf Burn-out, Dysfunktionen, kognitive Inkohärenz oder andere individuelle Störungen abgeleitet werden.

3. Fehlende Sektionen

Für eine replizierbare Erhebung müssen vollständige Instruktionen, finales Stimulusmaterial, eine festgelegte Item-Reihenfolge und eine dokumentierte Randomisierungslogik ergänzt werden.

4. Stimulus-Inkonsistenz

Stimulus A und Stimulus B müssen in allen Abschnitten eindeutig, identisch benannt und inhaltlich symmetrisch beschrieben werden.

Die Instruktionen müssen sprachlich neutral, vergleichbar lang und frei von suggestiver Wertung sein.

5. Skalenniveau-Fehler

Einzelne Likert-Items sind ordinal zu interpretieren und dürfen nicht ohne Begründung als intervallskaliert behandelt werden.

Eine approximative Intervallinterpretation ist allenfalls für aggregierte Skalenwerte und nur unter explizit geprüften psychometrischen Voraussetzungen zulässig.

The Paradox of Comprehensibility in the High-Tier Sector (Somatic Turn)

Questionnaire: Subjective Comprehensibility and Biological Decoherence in the High-Tier Sector

This scientific survey examines the relationship between the comprehensibility of highly complex system models and the perception of one’s own autonomic nervous system among decision-makers.

Duration: approx. 8–10 minutes.

Diagnostic note: This survey serves purely scientific purposes. It is not a clinical, medical, or neuropsychological diagnostic procedure.

1. Introduction and Information for Participants

Study title: The Paradox of Comprehensibility in the High-Tier Sector (Somatic Turn)

Aim of the study: This scientific survey examines the relationship between the comprehensibility of highly complex system models and the perception of one’s own autonomic nervous system among decision-makers.

Duration: approx. 8–10 minutes.

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2. Screening & Group Membership

Sample Definition

Selection of the option that most precisely describes the primary professional reality.

SCR-01 (Role): What function is primarily held in the High-Tier Sector?

Selection	Response option
☐	C-Level Executive / Founder (CEO, CTO, Managing Partner)
☐	Senior Strategy Consultant / Executive Coach / System Architect
☐	Deep-Tech / Ivy-League Researcher (Cybernetics, AI, Neuroscience)
☐	Other — automatic filter rule: survey terminated

SCR-02 (System Pressure): Are processes steered or calibrated in which automated, high-frequency, or AI-supported models have direct effects on significant budgets, corporate structures, or scientific frameworks?

Selection	Response option
☐	Yes
☐	No — automatic filter rule: survey terminated

3. Sociodemographics & Control Variables

DEM-GENDER: Gender:
[1 = female, 2 = male, 3 = diverse, 4 = prefer not to say]

DEM-AGE: Age in years:
[Open numeric field]

DEM-EXP: Professional experience in the High-Tier Sector:

Selection	Response option
☐	Less than 3 years
☐	3–10 years
☐	More than 10 years

4. Semantic Differential

Meaning Profiles

The following two stimuli are rated spontaneously using the bipolar 5-point scales.

Stimulus A: Technical-Algorithmic Reality

“This operational environment represents institutional frameworks steered by quantitative key performance indicators, high-frequency data structures, predictive artificial intelligence algorithms, systematic compliance mechanisms, and continuous digital real-time tracking of organizational metrics.”

Left pole (1)	1	2	3	4	5	Right pole (5)
rigid / inflexible	☐	☐	☐	☐	☐	flexible / dynamic
powerless / weak	☐	☐	☐	☐	☐	powerful / influential
artificial / isolated	☐	☐	☐	☐	☐	alive / integrated

Stimulus B: Bio-Physiological Reality

“This operational environment represents internal physiological processes steered by sub-diaphragmatic vagal pathways, autonomic nervous system dynamics, neurovisceral feedback loops, real-time somatosensory self-perception tracking, and biological homeostatic regulation under strategic pressure.”

Both stimuli constitute standardized stimulus material for Sector 6. Each stimulus contains exactly 30 words and is formulated in linguistically symmetrical, neutral, descriptive language free of suggestive valuation. This standardization serves to support control of possible priming and order effects; it does not establish that such effects are empirically avoided.

Left pole (1)	1	2	3	4	5	Right pole (5)
exhausted / decoherent	☐	☐	☐	☐	☐	vital / co-regulated
blocked / rigid	☐	☐	☐	☐	☐	flexible / radially networked
suppressed / silent	☐	☐	☐	☐	☐	present / invariant

5. Psychometric Likert Scales

The following statements are rated using the scale below.

Scale:

1 = Strongly disagree

2 = Disagree

3 = Neither agree nor disagree

4 = Agree

5 = Strongly agree

Dimension 1: Subjective Comprehensibility & Cognition

M-COMP

Option	Response option
[1]	Strongly disagree
[2]	Disagree
[3]	Neither agree nor disagree
[4]	Agree
[5]	Strongly agree

Individual items are interpreted as ordinal; aggregated scale scores may be treated as approximately interval-scaled only if reliability, dimensionality, symmetric category labeling, distributional assumptions, and sensitivity analyses support this decision.

Item code	Statement	1	2	3	4	5
M-COMP-01	I understand the mathematical and algorithmic logic of the KPI models used in my sector without error.	[1]	[2]	[3]	[4]	[5]
M-COMP-02	In everyday work, I find it easy to precisely interpret the non-linear feedback loops of my own nervous system, such as sympathetic hyper-arousal, under strategic pressure.	[1]	[2]	[3]	[4]	[5]
M-COMP-03	In the current professional field and leadership culture of my sector, there is a well-founded, practical understanding of the neurobiological necessities of the human body.	[1]	[2]	[3]	[4]	[5]

Dimension 2: Somatic Discrepancy & Energy Availability (Somatic-PEA)

Perceived Energy Availability (Somatic-PEA)

Option	Response option
[1]	Strongly disagree
[2]	Disagree
[3]	Neither agree nor disagree
[4]	Agree
[5]	Strongly agree

Individual items are interpreted as ordinal; aggregated scale scores may be treated as approximately interval-scaled only if reliability, dimensionality, symmetric category labeling, distributional assumptions, and sensitivity analyses support this decision.

Item code	Statement	1	2	3	4	5
PEA-01	I experience a distinct discrepancy between the error-free functioning of our digital models and my real, visceral state of exhaustion.	[1]	[2]	[3]	[4]	[5]
PEA-02	My cognitive mind frequently forces me to systematically override bodily warning signals in order to maintain high system performance.	[1]	[2]	[3]	[4]	[5]
PEA-03	I feel that the high-frequency operational pace of modern business models systematically depletes my subjectively perceived core regulatory energy.	[1]	[2]	[3]	[4]	[5]

Dimension 3: Institutional Openness to Invariance

INVAR

Option	Response option
[1]	Strongly disagree
[2]	Disagree
[3]	Neither agree nor disagree
[4]	Agree
[5]	Strongly agree

Individual items are interpreted as ordinal; aggregated scale scores may be treated as approximately interval-scaled only if reliability, dimensionality, symmetric category labeling, distributional assumptions, and sensitivity analyses support this decision.

Item code	Statement	1	2	3	4	5
INVAR-01	I see an urgent scientific and practical need to formally integrate behavioral-biological protective shields — Somatic Invariance™ — into elite corporate architectures.	[1]	[2]	[3]	[4]	[5]
INVAR-02	I believe that the scientific community currently shows growing openness toward transdisciplinary approaches that connect systems theories with polyvagal theory.	[1]	[2]	[3]	[4]	[5]

6. Closing & Debriefing

Closing text: Thank you for your participation. Your data will be treated as strictly confidential and processed solely within the framework of this scientific structural investigation by the Somatic Echelon Institute.

Clinical note: No individual medical findings or objective performance diagnoses will be derived from the results.

The Somatic Turn – Theoretical Framework & Empirical Survey Design

Research Concept for the Exploratory Psychometric Investigation of Somatic Self-Perception and Perceived Institutional Stability

Exploratory psychometric survey design | Semantic differential | Instrument development

Abstract

This research concept describes a theoretical and methodological framework for the empirical investigation of somatic self-perception, semantic evaluation patterns, and institutional openness toward stability-oriented regulation principles. The focus is on the constructs **Visceral Self-Competence**, **Institutional Openness to Invariance**, and a semantic differential for the comparative evaluation of two stimuli, provisionally designated as **Stimulus A** and **Stimulus B**.

The concept is designed as an exploratory psychometric survey design. It does not serve clinical diagnostics, individual risk assessment, or the derivation of therapeutic decisions. Central assumptions are formulated as theoretical hypotheses and require empirical testing. In particular, an elevated **Euclidean Semantic Distance Index** must not be interpreted as evidence of cognitive incoherence, burnout risk, or neuropsychological dysfunction. The index can only be understood as a descriptive indicator of semantic evaluation differences between two stimulus representations.

Methodologically, several clarifications are needed: missing or incompletely defined instrument sections, inconsistent naming of Stimulus A and Stimulus B, a problematic equation of individual Likert items with interval scale level, an insufficiently justified Perceived Energy Availability (Somatic-PEA) operationalization, and inadmissible causal conclusions from distance metrics.

1. Research Logic and Theoretical Framework

1.1 Starting Point

The **Somatic Turn** concept describes a theoretical perspective shift in which body-related self-perception, affective regulation, autonomic reaction patterns, and institutional decision contexts are considered together. The central question concerns how persons and organizations perceive, semantically classify, and regulatively respond to inner signals, stress markers, decision uncertainty, and stability requirements.

The approach combines elements from:

- Health Psychology
- Embodied Cognition
- Affective Neuroscience
- Stress and Coping Research
- Organizational Psychology
- Psychometrics
- Semantic Differential Methodology
- Self-Regulation Theory

1.2 Central Theoretical Assumption

The fundamental theoretical assumption states that body-related self-perception and semantic meaning attributions can influence how persons experience stress, safety, agency, and institutional stability. This assumption is exploratory and must not be understood as an established clinical mechanism.

1.3 Core Constructs

Construct	Working definition	Function in the research design
Visceral Self-Competence	Subjectively perceived ability to register body-internal signals in a differentiated manner, classify them, and respond regulatively	Person-related predictor or moderator
Institutional Openness to Invariance	Subjectively estimated institutional readiness to allow stable, consistent, and stress-robust regulation principles	Organization-related context factor
Semantic Evaluation Pattern	Evaluation profile of a stimulus along bipolar semantic dimensions	Basis for semantic distance calculation
Euclidean Semantic Distance Index	Mathematical distance between the semantic profiles of two stimuli	Descriptive difference index, not a diagnostic metric

2. Research Questions

2.1 Primary Research Questions

1. To what extent do the semantic evaluation profiles of Stimulus A and Stimulus B differ?
2. Which dimensions of the semantic differential contribute particularly strongly to the distance between both stimulus profiles?
3. Is Visceral Self-Competence related to the evaluation of stability, safety, controllability, or proximity to stress?
4. Is Institutional Openness to Invariance related to the evaluation of institutional stress resilience?
5. Can exploratory patterns be identified that indicate different forms of subjective somatic and institutional meaning attribution?

2.2 Secondary Research Questions

1. Which item groups show sufficient internal consistency?
2. Do the assumed subscales form factorially distinguishable dimensions?
3. Are evaluation patterns stable between relevant comparison groups?
4. Is measurement invariance evident across groups, languages, or measurement time points?
5. What methodological adjustments are required to further develop the instrument with psychometric rigor?

3. Methodological Setting

3.1 Study Design

The planned design is a quantitative, cross-sectional online survey with an exploratory psychometric focus. Optionally, a longitudinal extension can be provided if changes in semantic evaluation patterns over time are to be investigated.

3.2 Study Type

- **Design:** Cross-sectional survey
- **Approach:** Exploratory psychometric instrument development
- **Data type:** Self-report data
- **Measurement mode:** Online questionnaire
- **Primary analysis:** Descriptive statistics, reliability analysis, exploratory factor analysis, semantic distance metrics
- **Optional extension:** Confirmatory factor analysis, measurement invariance testing, longitudinal modeling

3.3 Target Population

The target population should be precisely defined, for example:

- adult persons in professional decision-making contexts
- persons with leadership, consulting, health, or organizational responsibility
- general adult sample for psychometric preliminary testing

Mixing substantially different populations without prior stratification would reduce the interpretability of results.

3.4 Inclusion Criteria

- Minimum age of 18 years
- Sufficient language competence in the survey language
- Informed consent to participate
- Complete processing of central instrument sections

3.5 Exclusion Criteria

- Incomplete datasets in central scale areas
- Obviously random response patterns
- Unrealistically short processing time
- Missing consent for data use
- Multiple participations without identification control

3.6 Survey Structure

The instrument should consist of clearly separated sections:

1. Demographic base variables
2. Context variables
3. Semantic differential for Stimulus A
4. Semantic differential for Stimulus B
5. Visceral Self-Competence Scale
6. Institutional Openness to Invariance Scale
7. Optional stress, burden, or well-being block with validated external instruments
8. Quality control items
9. Closing and debriefing

4. Scale Levels and Psychometric Classification

4.1 Nominally Scaled Variables

Examples include:

- gender, if collected categorically
- industry
- country
- professional role
- organization form
- participation group

Nominally scaled variables allow frequency counts, cross-tabulations, and group comparisons, but no meaningful rank ordering.

4.2 Ordinally Scaled Variables

Likert items and semantic individual items should fundamentally be treated as ordinal because the distances between response categories are not automatically assumed to be equally sized.

Examples include:

- agreement scales from 1 to 5
- frequency scales from 1 to 7
- bipolar semantic ratings from -3 to +3

4.3 Interval Scale Approximation for Scale Values

Sums or mean values from multiple Likert items are frequently treated approximately as interval-scaled in psychological research, provided that:

- multiple items capture a common construct
- sufficient reliability is present

- response categories are symmetrically and uniformly labeled
- distributional assumptions are checked
- sensitivity analyses using ordinal procedures are considered

The equation of individual Likert items with interval scale level is methodologically problematic. Individual items should primarily be interpreted ordinally.

4.4 Ratio-Scaled Variables

Possible ratio-scaled variables include:

- age in years
- processing duration in seconds
- number of relevant professional years
- frequency of certain events

These variables possess a natural zero point and permit ratio interpretations.

5. Operationalization of the Psychometric Instrument

5.1 Instrument Structure

Module	Construct	Item type	Scaling	Evaluation
A	Demography and Context	Single choice, numeric input	Nominal, ordinal, ratio	Descriptive, group formation
B	Stimulus A Semantic Differential	Bipolar ratings	Ordinal; scale value approximately interval-like	Profile analysis, distance metric
C	Stimulus B Semantic Differential	Bipolar ratings	Ordinal; scale value approximately interval-like	Profile analysis, distance metric
D	Visceral Self-Competence	Likert items	Ordinal; sum scale approximately interval-like	Reliability, factor analysis
E	Somatic Discrepancy & Energy Availability (Somatic-PEA)	Likert items	Ordinal; sum scale approximately interval-like	Reliability, factor analysis
F	Institutional Openness to Invariance	Likert items	Ordinal; sum scale approximately interval-like	Reliability, factor analysis
G	Optional: Stress / Well-being	Validated scales	Depends on instrument	Convergent validity
H	Quality Control	Attention checks	Nominal / ordinal	Data cleaning

5.2 Response Format for Likert Scales

Recommended format:

1. [1] Strongly disagree
2. [2] Disagree
3. [3] Neither agree nor disagree
4. [4] Agree
5. [5] Strongly agree

Alternatively, a 7-point scale can be used if finer gradations are empirically desired. The decision should be established and justified before data collection.

5.3 Response Format for Semantic Differential

Recommended format:

- -3 = left pole very strongly pronounced
- -2 = left pole distinctly pronounced
- -1 = left pole slightly pronounced
- 0 = neutral / neither nor
- +1 = right pole slightly pronounced
- +2 = right pole distinctly pronounced
- +3 = right pole very strongly pronounced

Pole direction must be controlled across all items and recoded if necessary.

6. Semantic Differential for Stimulus A and Stimulus B

6.1 Stimulus Definition

Stimulus A and Stimulus B are defined below as standardized stimulus material for Sector 6. Each stimulus contains exactly 30 words and uses linguistically symmetrical, neutral, descriptive language free of suggestive valuation. Standardization serves to support control of possible priming and order effects; it does not establish that such effects are empirically avoided.

Required are:

- identical instruction length for both stimuli
- comparable linguistic complexity
- neutral description without suggestive valuation
- clear sequence or randomized presentation
- control of possible order effects
- clear documentation of stimulus materials

6.2 Standardized Stimulus Material for Sector 6

Stimulus	Standardized wording
Stimulus A: Technical-Algorithmic Reality	“This operational environment represents institutional frameworks steered by quantitative key performance indicators, high-frequency data structures, predictive artificial intelligence algorithms, systematic compliance mechanisms, and continuous digital real-time tracking of organizational metrics.”
Stimulus B: Bio-Physiological Reality	“This operational environment represents internal physiological processes steered by sub-diaphragmatic vagal pathways, autonomic nervous system dynamics, neurovisceral feedback loops, real-time somatosensory self-perception tracking, and biological homeostatic regulation under strategic pressure.”

Stimulus A and Stimulus B are standardized stimulus material for Sector 6. Each stimulus contains exactly 30 words and uses linguistically symmetrical, neutral, descriptive language free of suggestive valuation. Standardization serves to support control of possible priming and order effects; it does not establish that such effects are empirically avoided.

6.3 Semantic Dimensions

Item	Left pole	Right pole	Theoretical dimension
SD1	unstable	stable	Perceived Stability
SD2	unpredictable	predictable	Predictability
SD3	threatening	safe	Perceived Safety
SD4	fragmented	integrated	Integration
SD5	reactive	regulated	Regulation
SD6	chaotic	ordered	Order
SD7	exhausting	resource-conserving	Resource Orientation
SD8	unclear	clear	Clarity
SD9	detached	embodied	Embodiment
SD10	overwhelming	manageable	Manageability
SD11	rigid	adaptive	Adaptability
SD12	tense	balanced	Affective Balance

6.4 Evaluation of the Semantic Differential

For each stimulus, a semantic profile is calculated. This profile consists of the mean values of the respective semantic dimensions. The difference between the profiles can be represented visually and mathematically.

Possible evaluations include:

- item-wise mean values for Stimulus A and Stimulus B
- standard deviations per dimension
- profile plots
- difference values per item
- Euclidean Semantic Distance Index
- reliability of semantic dimensions if subscales are formed
- factor-analytic testing of semantic structure

7. Visceral Self-Competence

7.1 Construct Definition

Visceral Self-Competence denotes the subjectively perceived ability to register, differentiate, emotionally classify, and regulatively respond to body-internal signals. The construct is related to concepts such as **interoceptive awareness**, **body awareness**, **self-regulation**, and **affective differentiation**, but must not be equated with these without empirical testing.

7.2 Proposed Subdimensions

Subdimension	Description
Interoceptive Noticing	Perception of body-internal signals
Signal Differentiation	Distinction of different body and activation states
Affective Labeling	Naming of affective states
Regulatory Response	Ability for appropriate self-regulation
Contextual Integration	Classification of body signals in situational context
Non-catastrophic Interpretation	Non-catastrophizing evaluation of body activation

7.3 Example Items

Response format: 1 = Strongly disagree to 5 = Strongly agree

Item	Formulation	Subdimension
VSC1	Bodily signals are noticed at an early stage, before they intensify.	Interoceptive Noticing
VSC2	Different forms of internal tension can be distinguished from one another.	Signal Differentiation
VSC3	Bodily activation can be described in appropriate language.	Affective Labeling
VSC4	Effective regulatory strategies are available when internal tension arises.	Regulatory Response
VSC5	Bodily reactions are understood in the context of the situation concerned.	Contextual Integration
VSC6	Bodily activation is not automatically interpreted as danger.	Non-catastrophic Interpretation
VSC7	Changes in breathing, muscle tone, or cardiac activation are perceived in a differentiated manner.	Interoceptive Noticing
VSC8	It is possible to subjectively distinguish between fatigue, overload, anxiety, and concentration.	Signal Differentiation
VSC9	Internal states can be named without having to evaluate them immediately.	Affective Labeling
VSC10	Following strain, a return to a regulated state is possible.	Regulatory Response

7.4 Evaluation

An overall value can be calculated as the mean of all VSC items, provided that reliability and factor structure justify this. Additionally, subscale values can be formed if the factor-analytic structure is stable.

Recommended psychometric checks:

- item distributions
- item-total correlations
- internal consistency
- exploratory factor analysis
- confirmatory factor analysis in an independent sample
- testing of convergent and discriminant validity
- test-retest reliability

8. Institutional Openness to Invariance

8.1 Construct Definition

Institutional Openness to Invariance describes the subjectively perceived readiness of an organization or institution to allow stable, consistent, and stress-robust principles in decision-making, communication, and regulation processes. The term **invariance** is not used here in the strictly mathematical sense but as an organizational psychology concept for stability under changing contextual conditions.

8.2 Proposed Subdimensions

Subdimension	Description
Procedural Consistency	Consistency of procedures and decision pathways
Stress-Resilient Governance	Stability of institutional processes under stress
Embodied Decision Awareness	Consideration of human stress limits in decisions
Feedback Permeability	Openness to feedback from operational levels
Adaptive Stability	Balance between adaptability and structural stability
Non-reactive Leadership Climate	Non-reactive leadership and communication climate

8.3 Example Items

Response format: 1 = Strongly disagree to 5 = Strongly agree

Item	Formulation	Subdimension
IOI1	Decision-making processes remain comprehensible even under strain.	Procedural Consistency
IOI2	The organisation maintains core procedures even in crisis situations.	Stress-Resilient Governance
IOI3	Human limits under strain are taken into account in organisational decisions.	Embodied Decision Awareness
IOI4	Feedback from operational areas is taken seriously.	Feedback Permeability
IOI5	Change occurs without unnecessarily jeopardising fundamental stability.	Adaptive Stability
IOI6	Leadership communication remains factual and regulated even under pressure.	Non-reactive Leadership Climate
IOI7	Unclear situations do not automatically lead to frantic structural changes.	Stress-Resilient Governance
IOI8	Contradictions or signs of strain may be raised.	Feedback Permeability
IOI9	Clear principles exist for decision-making under uncertainty.	Procedural Consistency
IOI10	The organisation can respond flexibly without losing its orientation.	Adaptive Stability

8.4 Evaluation

The overall IOI value can be calculated as the mean of the items, provided that psychometric criteria are met. Subscales should only be reported if internal consistency and factor structure support them.

Possible analyses:

- relationship between IOI and semantic stimulus evaluations
- group comparisons by professional role or organization type
- moderation analyses between VSC and semantic evaluation
- relationship with validated scales of organizational climate, psychological safety, or stress burden

9. Mathematical Distance Metric

9.1 Euclidean Semantic Distance Index

To quantify semantic differences between Stimulus A and Stimulus B, a Euclidean distance index can be used. This index measures the geometric distance between two semantic profiles across multiple evaluation dimensions.

9.2 Formula

$$\text{ESDI} = \sqrt{[\sum(i = 1 \text{ to } k) w_i(x_{A,i} - x_{B,i})^2]}$$

9.3 Variable Description

Symbol	Meaning
ESDI	Euclidean Semantic Distance Index
k	Number of semantic dimensions
i	Index of the respective semantic dimension
$x_{A,i}$	Evaluation value of Stimulus A on dimension i
$x_{B,i}$	Evaluation value of Stimulus B on dimension i
w_i	Weighting factor of dimension i
Σ	Sum across all dimensions
$\sqrt{}$	Square root for returning to the original metric distance structure

9.4 Unweighted Variant

If all dimensions are weighted equally, then:

$$w_i = 1$$

The formula is consequently reduced to:

$$\text{ESDI} = \sqrt{[\sum(i = 1 \text{ to } k)(x_{A,i} - x_{B,i})^2]}$$

9.5 Normalized Variant

For better comparability across instrument versions with different numbers of items, a normalized distance can be calculated:

$$\text{ESDI}_{\text{norm}} = \sqrt{[\sum(i = 1 \text{ to } k)(x_{A,i} - x_{B,i})^2]} / D_{\text{max}}$$

With a scale from -3 to +3, the maximum difference per dimension is 6. This yields:

$$D_{\text{max}} = \sqrt{(k \cdot 6^2)}$$

Therefore:

$$\text{ESDI}_{\text{norm}} = \sqrt{[\sum(i = 1 \text{ to } k)(x_{A,i} - x_{B,i})^2]} / \sqrt{(k \cdot 36)}$$

The normalized index lies between 0 and 1.

9.6 Interpretation

ESDI value	Descriptive meaning
0	No semantic distance between Stimulus A and Stimulus B
Low	Small evaluation difference
Medium	Moderate evaluation difference
High	Pronounced evaluation difference

A high ESDI merely shows that two stimuli were evaluated differently in semantic terms. It does not prove cognitive incoherence, a clinical stress disorder, burnout risk, or neuropsychological dysfunction.

10. Perceived Energy Availability (Somatic-PEA) and Methodological Justification

10.1 Measurement Terminology

The construct **Perceived Energy Availability (Somatic-PEA)** refers exclusively to a subjective self-report of perceived energy availability and regulatory capacity. It is not a biochemical, physiological, or clinical measurement.

Biochemical ATP is not measured by this survey. Self-report items cannot validly quantify cellular ATP or other biochemical energy processes; the designation Somatic-PEA is therefore used to preserve the distinction between subjective experience and biological measurement.

10.2 Empirical Justification

An empirically robust operationalisation of Perceived Energy Availability (Somatic-PEA) requires:

- a clear theoretical definition
- a comprehensible self-report measurement method
- evidence of construct validity
- evidence of reliability
- differentiation from existing stress, energy, and activation scales
- examination of the subjective measurement logic

Somatic-PEA must be presented as a subjective self-report construct. It must not be presented as a biochemical measurement or as evidence of cellular energy availability.

10.3 Recommended Designation

The construct should be designated **Perceived Energy Availability (Somatic-PEA)** throughout the instrument when it is measured with the current PEA-01, PEA-02, and PEA-03 self-report items.

The designation corresponds to the subjective measurement logic and does not imply biochemical, diagnostic, causal, or individual performance information.

11. Methodological Uncertainties and Need for Cleanup

11.1 Missing Instrument Sections

For a complete survey design, clearly developed instrument sections are still missing. In particular, the following are required:

- complete instructions
- stimulus materials
- item order
- randomization logic
- response formats
- coding rules
- handling of missing values
- quality control items
- analysis syntax or analysis plan

Without these components, replication is not possible.

11.2 Inconsistent Designation of Stimulus A and Stimulus B

The stimuli must be named consistently. If Stimulus A and Stimulus B acquire different meanings in different sections, confounding arises. A semantic distance can only be interpreted meaningfully if both stimuli are presented in a stable, unambiguous, and comparable manner.

11.3 Problematic Interval Assumption for Likert Items

Individual Likert items fundamentally possess an ordinal scale level. Treating them as interval-scaled is not readily justified for individual items. Only aggregated scale values can, under certain conditions, be used as approximately interval-like. These conditions must be reported and examined.

11.4 Missing Empirical Justification of Somatic-PEA

Perceived Energy Availability (Somatic-PEA) is currently not sufficiently defined. Without theoretical and empirical justification, there is a risk of spurious precision. Equating subjective energy or burden ratings with cellular energy processes would be particularly problematic.

11.5 Impermissible Conclusion from the Euclidean Semantic Distance Index

A higher Euclidean Semantic Distance Index must not automatically be interpreted as an indication of:

- cognitive incoherence
- burnout risk
- neuropsychological disorder
- affective instability
- clinically relevant dysregulation
- pathological decision structure

The ESDI is a descriptive distance metric. Clinical or neuropsychological conclusions would only be permissible if extensive validation studies with suitable external criteria, comparison groups, longitudinal data, and diagnostically validated instruments were available.

12. Statistical Analysis Plan

12.1 Data Checking

- examination of missing values
- analysis of response distributions
- identification of outliers
- examination of processing duration
- control of straightlining
- analysis of potential order effects
- examination of normality assumptions for scale values

12.2 Reliability

Recommended coefficients:

- Cronbach's alpha
- McDonald's omega
- item-total correlations
- split-half reliability
- test-retest reliability for repeated measurement

Cronbach's alpha should not be used as the sole evidence of reliability because it is influenced by the number of items, tau-equivalence, and dimensionality.

12.3 Factor Structure

Recommended steps:

1. Exploratory factor analysis to examine structure
2. Parallel analysis to determine the number of factors

3. Confirmatory factor analysis in an independent sample
4. Examination of alternative models
5. Measurement invariance testing across groups

12.4 Validity

Validity form	Testing approach
Content Validity	Expert review, theoretical item assignment
Construct Validity	Factor analysis, hypothesis tests
Convergent Validity	Correlation with related constructs
Discriminant Validity	Differentiation from unrelated constructs
Criterion Validity	Relationship with external criteria
Incremental Validity	Additional predictive power beyond established scales

12.5 Descriptive and Inferential Statistical Analyses

Possible procedures:

- means and standard deviations
- median and interquartile range for ordinal analysis
- correlation analyses
- regression models
- group comparisons
- cluster analyses as an exploratory procedure
- multilevel models for nested organizational data

13. Clinical and Neuropsychological Classification

13.1 Non-Diagnostic Character

The present concept is a research concept for the development and testing of a psychometric instrument. It is not a clinical, medical, or neuropsychological diagnostic protocol. The collected values cannot establish diagnoses and do not replace a clinical history, psychological diagnostics, medical examination, or neuropsychological testing.

13.2 No Individual Risk Prediction

Individual statements about burnout, trauma-related disorders, depression, anxiety disorders, autonomic dysfunction, or cognitive performance must not be derived from individual scale values,

semantic distances, or self-report data. Such conclusions require validated diagnostic instruments, clinical expertise, and appropriate comparison norms.

13.3 Neuropsychological Restraint

Terms such as **coherence**, **decoherence**, **autonomic regulation**, **neural integration**, or **somatic stability** should be used within this research design as theoretical or metaphorical-conceptual terms unless direct neurophysiological measurements are available. Self-report data do not permit immediate conclusions about neural mechanisms.

13.4 Clinical Applicability

Future clinical applicability could only be considered if:

- the scales are psychometrically validated
- clinical comparison groups have been studied
- cutoff values are empirically justified
- sensitivity and specificity have been examined
- longitudinal data support prognostic statements
- diagnostic standards are followed

Until then, application should be restricted to research, organizational analysis, and theoretical model development.

14. Ethical and Data Protection Requirements

14.1 Informed Consent

Before the survey begins, participants must be informed about its purpose, procedure, duration, data use, voluntary nature, and the possibility of withdrawal. Consent must be documented.

14.2 Data Minimization

Only data required for the research questions should be collected. Sensitive health data require particular justification, protective measures, and clear purpose limitation.

14.3 Anonymization and Pseudonymization

Depending on the study design, personal data should be processed anonymously or pseudonymously. In organizational samples, particular care must be taken to ensure that individuals cannot be indirectly identified.

14.4 Risk Communication

Because the instrument addresses body-related and stress-related topics, factual, non-pathologizing language should be used. Feedback on results must not suggest a diagnostic effect.

15. Recommended Revision of the Research Instrument

15.1 Priority 1: Stimulus Standardization

- define Stimulus A and Stimulus B finally
- create neutral stimulus descriptions
- ensure equal length and complexity
- control order effects
- include manipulation checks

15.2 Priority 2: Complete the Scale Structure

- create complete item lists
- provide a theoretical rationale for subdimensions
- keep response formats consistent
- document recoding logic
- establish evaluation rules in advance

15.3 Priority 3: Psychometric Piloting

- conduct cognitive pretests
- examine comprehensibility
- analyze item difficulty and variance
- examine reliability
- explore factor structure
- revise items with low discrimination

15.4 Priority 4: Validation Strategy

- select external comparison scales
- examine convergent and discriminant validity
- collect test-retest data
- test measurement invariance
- consider normative comparison values only after a sufficient sample size has been reached

16. Refined Scientific Positioning

The research concept positions **The Somatic Turn** as an exploratory theoretical framework for investigating body-related self-perception, semantic evaluation patterns, and perceived organizational stability. Promotional, triumphalist, or unsupported statements are incompatible with a scientific document and have been removed.

Not retained:

- status messages concerning payments
- references to LinkedIn activities
- claims about supposedly error-free autopilots
- unsupported claims of success
- clinically unvalidated risk statements
- absolute statements about neuropsychological states
- promotional claims of exclusivity or superiority

Further development should proceed as methodologically controlled instrument development, not as clinical screening, a diagnostic protocol, or an intervention model claiming evidence.

17. Conclusion

The Somatic Turn – Theoretical Framework & Empirical Survey Design describes an exploratory research concept for investigating somatic self-competence, perceived institutional stability, and semantic stimulus evaluation. The proposed constructs are theoretically compatible with related fields but require careful psychometric development and empirical validation.

The **Euclidean Semantic Distance Index** can be used as a descriptive measure for distinguishing semantic profiles. It must not be interpreted as a clinical marker or neuropsychological proof. Likewise, Perceived Energy Availability (Somatic-PEA) requires clear definitional, psychometric, and empirical foundations and must not be treated as a biochemical energy measurement.

A scientifically robust approach requires stimuli, scales, evaluation logic, scale levels, validity assumptions, and ethical framework conditions to be documented precisely. Only after piloting, reliability testing, factor analysis, and validation studies can the instrument, including Somatic-PEA, be assessed with confidence.

SECTION 1: PARTICIPANT INFORMATION AND INFORMED CONSENT

Welcome to the Scientific Survey Matrix of the Somatic Echelon Institute®.

Study Title: The Paradox of Comprehensibility in the High-Tier Sector (Somatic Turn)

Lead Research Institution: Somatic Echelon Institute®

Target Duration: Approximately 8–10 minutes.

1. PURPOSE OF THE INVESTIGATION

This quantitative, cross-sectional online survey examines the relationship between the comprehensibility of highly complex organizational system models and the subjective self-perception of the autonomic nervous system among high-tier decision-makers.

2. VOLUNTARY PARTICIPATION & RIGHT TO WITHDRAW

Your participation in this study is completely voluntary. You have the right to withdraw from the survey at any time, without giving a reason and without any negative consequences, by simply closing your browser window. Data collected up to that point will not be saved if the survey is terminated prematurely.

3. DATA PROTECTION, ANONYMITY & REPLICABILITY

- All data will be processed strictly pseudonymously or anonymously.
- Individual profiling or identification of specific corporate structures is technically and methodologically excluded.
- The data will be evaluated exclusively in aggregated form within the framework of this exploratory psychometric structural investigation.

4. IMPORTANT DIAGNOSTIC & CLINICAL NOTE

This survey serves purely scientific and exploratory psychometric instrument development purposes. It is NOT a clinical, medical, or neuropsychological diagnostic protocol. Individual statements regarding clinical conditions, autonomic dysfunctions, burnout risks, or cognitive performance pathologies cannot and will not be derived from your scores or semantic profiles.

INFORMED CONSENT & ACKNOWLEDGMENT

By clicking the checkbox below, you explicitly declare that:

☐ I have read and understood the participant information provided above.

☐ I am at least 18 years of age.

☐ I consent to the secure, confidential, and anonymous processing of my data for scientific purposes.

SECTION 2: MATHEMATICAL ESDI EVALUATION SCRIPT

Methodological purpose: The following Python script calculates both the unweighted Euclidean Semantic Distance Index (ESDI) and the normalized variant (ESDI_norm) according to the defined formula.

```

import numpy as np

import pandas as pd

def calculate_esdi(stimulus_a_scores, stimulus_b_scores):
    """
    Calculates the unweighted and normalized Euclidean Semantic Distance Index (ESDI)
    according to the Somatic Turn Methodological Framework (Sector 9).
    Scale range assumed: -3 to +3 (Maximum difference per dimension = 6).
    """
    xA = np.array(stimulus_a_scores)
    xB = np.array(stimulus_b_scores)

    if len(xA) != len(xB):
        raise ValueError("Dimensions of Stimulus A and Stimulus B profiles must be
identical.")

    k = len(xA) # Number of semantic dimensions

    # 1. Unweighted ESDI
    esdi_raw = np.sqrt(np.sum((xA - xB) ** 2))

    # 2. Normalized ESDI (ESDI_norm = raw / D_max)
    # D_max = sqrt(k * 6^2) = sqrt(k * 36)
    d_max = np.sqrt(k * 36)
    esdi_norm = esdi_raw / d_max

    return {
        "Number of Dimensions (k)": k,
        "Raw ESDI": round(esdi_raw, 4),
        "Normalized ESDI (0-1)": round(esdi_norm, 4)
    }

# --- FORENSIC PRE-TEST RUN ---
# Example: 12 Semantic Dimensions (SD1 to SD12) from Page 19
# Simulated mean scores for a participant
example_stimulus_a = [2, 1, 2, 1, 2, 1, 2, 1, 1, 2, 1, 2] # Technical-Algorithmic
Reality
example_stimulus_b = [-2, -1, -2, -2, -1, -2, -2, -1, -2, -1, -2, -1] # Bio-
Physiological Reality

results = calculate_esdi(example_stimulus_a, example_stimulus_b)
print("Somatic Echelon Institute® - Data Processing Ledger Execution:")
for key, value in results.items():
    print(f" -> {key}: {value}")

```

The ESDI is a descriptive distance measure only. It must not be used to derive clinical, diagnostic, causal, or individual performance conclusions.

SECTION 3: APPENDIX – METHODOLOGICAL OPERATIONALIZATION & ETHICS LEDGER

1. Participant Information & Informed Consent (Pre-Survey Gateway)

Methodological purpose: This section satisfies the strict ethical requirements stipulated in Section 14.1 of the theoretical framework. It must be presented as the mandatory entry screen before data collection begins.

Participant Information & Informed Consent:

Welcome to the Scientific Survey Matrix of the Somatic Echelon Institute®.

Study Title: The Paradox of Comprehensibility in the High-Tier Sector (Somatic Turn)

Lead Research Institution: Somatic Echelon Institute®

Target Duration: Approximately 8–10 minutes.

1. PURPOSE OF THE INVESTIGATION

This quantitative, cross-sectional online survey examines the relationship between the comprehensibility of highly complex organizational system models and the subjective self-perception of the autonomic nervous system among high-tier decision-makers.

2. VOLUNTARY PARTICIPATION & RIGHT TO WITHDRAW

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3. DATA PROTECTION, ANONYMITY & REPLICABILITY

- All data will be processed strictly pseudonymously or anonymously.
- Individual profiling or identification of specific corporate structures is technically and methodologically excluded.

- The data will be evaluated exclusively in aggregated form within the framework of this exploratory psychometric structural investigation.

4. IMPORTANT DIAGNOSTIC & CLINICAL NOTE

This survey serves purely scientific and exploratory psychometric instrument development purposes. It is NOT a clinical, medical, or neuropsychological diagnostic protocol. Individual statements regarding clinical conditions, autonomic dysfunctions, burnout risks, or cognitive performance pathologies cannot and will not be derived from your scores or semantic profiles.

INFORMED CONSENT & ACKNOWLEDGMENT

By clicking the checkbox below, you explicitly declare that:

☐ I have read and understood the participant information provided above.

☐ I am at least 18 years of age.

☐ I consent to the secure, confidential, and anonymous processing of my data for scientific purposes.

2. Quantitative Data Processing & Algorithmic Evaluation (Python Source Code)

Methodological purpose: This section provides the complete mathematical syntax required to fulfill the replication criteria defined in Section 11.1. It automates the calculation of the Euclidean Semantic Distance Index (ESDI) as specified in Section 9.

Python Evaluation Script:

```

import numpy as np

import pandas as pd

def calculate_esdi(stimulus_a_scores, stimulus_b_scores):
    """
    Calculates the unweighted and normalized Euclidean Semantic Distance Index (ESDI)
    according to the Somatic Turn Methodological Framework (Sector 9).
    Scale range assumed: -3 to +3 (Maximum difference per dimension = 6).
    """
    xA = np.array(stimulus_a_scores)
    xB = np.array(stimulus_b_scores)

    if len(xA) != len(xB):
        raise ValueError("Dimensions of Stimulus A and Stimulus B profiles must be
identical.")

    k = len(xA) # Number of semantic dimensions

    # 1. Unweighted ESDI
    esdi_raw = np.sqrt(np.sum((xA - xB) ** 2))

    # 2. Normalized ESDI (ESDI_norm = raw / D_max)
    # D_max = sqrt(k * 6^2) = sqrt(k * 36)
    d_max = np.sqrt(k * 36)
    esdi_norm = esdi_raw / d_max

    return {
        "Number of Dimensions (k)": k,
        "Raw ESDI": round(esdi_raw, 4),
        "Normalized ESDI (0-1)": round(esdi_norm, 4)
    }

# --- FORENSIC PRE-TEST RUN ---
# Example: 12 Semantic Dimensions (SD1 to SD12) from Page 19
# Simulated mean scores for a participant
example_stimulus_a = [2, 1, 2, 1, 2, 1, 2, 1, 1, 2, 1, 2] # Technical-Algorithmic
Reality
example_stimulus_b = [-2, -1, -2, -2, -1, -2, -2, -1, -2, -1, -2, -1] # Bio-
Physiological Reality

results = calculate_esdi(example_stimulus_a, example_stimulus_b)

```

```
print("Somatic Echelon Institute® - Data Processing Ledger Execution:")  
for key, value in results.items():  
    print(f" -> {key}: {value}")
```