

COMPUTATIONAL ORDINAL SOCIOMETRY (NEXORD): Scientific Manifesto, Theoretical-Methodological Foundations, and Open Science Governance

Towards a Physics of the Group: Mathematical Resolution of the Dyadic Vote, Spectral Topology, and Socio-Thermodynamic Diagnosis

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Web Portal: josemancor.github.io/nex-ord-web/

01. SCIENTIFIC ABSTRACT: MORENO & LEWIN DIALECTICAL SYNTHESIS

The NEXORD Scientific Manifesto formalizes the culmination and rigorous synthesis of the two foundational pillars of group science: **Jacob L. Moreno's sociometry (1934)** and **Kurt Lewin's topological field theory and group dynamics (1936, 1951)**. Overcoming nine decades of structural information collapse, unweighted voting distortions, and qualitative force metaphors, NEXORD equips Lewin's dynamic force field with an **authentic mathematical physics, spectral topology, and social micro-thermodynamics of human collectives**. Grounded in the natural ordering of preferences (ordinal *SMIb* matrices), complete dyadic projections in Hilbert spaces and Grassmannian manifolds $Gr(k, N)$, and the exact deduction of factorial duality between emission and reception, the architecture resolves interpersonal choices with zero information loss and no forced-neutrality artifacts.

02. THE FOUR FOUNDATIONAL INNOVATIONS

1. Four-Position SMIb Tetragram

Transcends univariate scalar matrices through an inalienable 4-dimensional dyadic cell: **A1 (p_DA)**: sender's expectation of partner's action; **A2 (DA)**: effective preference granted; **A3 (RECEIVES)**: effective preference received from partner; and **A4 (p_RECEIVES)**: partner's expectation of sender's action.

3. Factorial Duality & Barycentric Theorem

Rigorous decoupling: **Correspondence Analysis (CA)** on summed discrete frequencies ($F_{ACT} = F_{DA} + F_{RC}$) via χ^2 metrics; and **Principal Component Analysis (PCA)** on continuous **SDR** balances via SVD. Proof of the **Barycentric Theorem ($\Delta = 0.000$)**.

2. Exponential Physical Law $W(k) = 2^{-(1-k)}$

Continuous gravitational decay: 1st=1.000, 2nd=0.500, 3rd=0.250, 4th=0.125... Universal grid **Q81 (9x9)** systematically encoding all 81 possible dyadic interaction states without blind spots or arbitrary cutoffs.

4. Spectral Topology in Grassmann $Gr(k,N)$

Relational diagnosis of Lewin's field: Estrada operators (*EE*), Fiedler algebraic connectivity (λ_2), Heider structural frustration (λ_1), and Tononi dyadic integrated information Φ to quantify gravitational strain and systemic cohesion.

💡 **Strict Barycentric Theorem ($\Delta = 0.000$)**: In any factorial space, the subject's active table coordinates lie with exact analytical precision at the weighted center of mass (barycenter) between their emission projection (DA / SDA) and reception projection (RC / SRC). Physically, the dyadic biplot proves that the relational arrow is the dynamic vector linking expansiveness to sociometric status in the group field.

03. OPERATIONAL PLATFORM: WEB CAPTURE, GXTYCZ DESIGNS & IN SILICO SIMULATION

• Web Capture & Comparable GxTyCz Designs

NEXORD enables the **effective, rapid, and highly reliable execution of web-based sociometric studies** across standardized, fully comparable multidimensional designs: **G** (independent or interconnected groups), **T** (longitudinal waves and evolutionary time horizons), and **C** (multiple functional, socio-affective, or situational criteria). Decentralized web collection guarantees origin-level cryptographic anonymization, zero transcription error, and real-time factual factorial computation.

• 'In Silico' Synthetic Sociometry Simulator

Deterministic Monte Carlo mathematical engine capable of generating **synthetic collectives and sociomatrices under controlled experimental hypotheses, strictly bitwise reproducible via pseudo-random seed determination (seed-reproducible)**. It simulates socio-thermodynamic phase transitions, tests rigorous statistical null models, and anticipates critical bifurcation points prior to field deployment, ensuring absolute computational auditability.

04. STRUCTURAL MAP OF THE CENTRAL MANIFESTO (12 SECTIONS)

The main body of the Manifesto (Sections 1 to 7) articulates the mathematical and empirical architecture:

- **§1. Introductory Framework:** Moreno-Lewin epistemological convergence and transcendence of univariate nominal counting.
- **§2. Axiomatics of the SM1b Tetragram and Q81 Grid:** Analytical definition of the 4 dyadic positions and discrete states.
- **§3. Physical Modulators and Social Thermodynamics:** Shannon entropy, relational viscosity, and BDR/SDR balance metrics.
- **§4. Canonical Factorial Duality:** Rigorous boundary between Benzécri χ^2 (CA) and continuous SVD (PCA), and dyadic biplots.
- **§5. Standardized Battery VAR10 and Adjectival Attribution AAG16:** Canonical variables and 4 forced even factors (1 to 8).
- **§6. Algorithmic Pipeline & Factual Execution:** Deterministic in silico orchestration and empirical consistency auditing.
- **§7. Ethical Governance, Open Source, and FAIR Philosophy:** Data deontology, self-esteem protection, and UNESCO transfer framework.

05. THE 5 FORMALIZED TECHNICAL ANNEXES: ORBIT ENGINE (SECTION 8)

Technical Annex	Formal Domain	Methodological Contribution & Demonstrated Invariant
Annex I (ORBIT)	Moreno ↔ Breve Algorithmic Engine	ORBIT: Bijective algorithmic transposition engine (M_ORD) converting ordinal rankings into Morenian frequencies without heuristic distortion.
Annex II	6D / 4D Factorial Projection	Canonical factorial axes, DIMO axonometric projections, and affine barycenter decomposition.
Annex III	18 Relational Densities	The 3 canonical dyadic prisms (Affinity, Strain, and Metaperception) derived from gravitational law $W(k) = 2^{-(1-k)}$.
Annex IV	Wavelet FFT Spectrogram	Fast Fourier Transform applied to sociomatrices: separating status carrier waves from friction micro-harmonics.
Annex V	Markov Chains & Status	Stochastic transition matrices, Perron-Frobenius principal eigenvector derivation, and asymptotic role convergence.

06. SUPPLEMENTARY CORPUS & CONCEPTUAL LEXICON

• 20-Plate High-Res Catalog (Part III)

Full graphic and tabular atlas: from the Moreno-Lewin historical diptych to 18D spectrograms and multi-lane biplots.

• Responses to Critiques (Part V)

Systematic counter-arguments to 10 epistemological objections (physicalism, determinism, ethics) and AI debate transcripts.

• General Glossary (Part IV)

Comprehensive lexicon featuring 42 formalized clinical sociometric operators, standardized acronym tables, and explicit formulas.

• Thematic Bibliography (Part VI)

Academic corpus across 6 axes: foundational sociometry, multivariate analysis, graph theory, and complex network physics.

07. ETHICAL GOVERNANCE & INVIOABLE DEONTOLOGICAL COMMITMENT

When applied to real human participants in educational, clinical, or organizational settings, NEXORD enforces a strict **formative, non-punitive mandate** within a **Privacy by Design** architecture:

- **Mandatory Canonical Anonymization:** Participants dissociated through blind matrix tokens (1A..5A for Group A, 1B..5B for Group B), preserving absolute mathematical voting secrecy.
- **Strict Prohibition of Self-Esteem Harm:** It is deontologically forbidden to attribute to individual personality traits what social thermodynamics demonstrates to be systemic group equilibria or tension states. All diagnostic outputs must heal and empower the collective, strictly prohibiting personal stigmatization.
- **CC-BY-4.0 Open License and Determinism:** Universal transparency, deterministic null models, and seed-reproducible simulations free of non-reproducible black-box algorithms.

08. FILE INVENTORY OF THE CERN ZENODO MASTER RECORD (CONCEPT DOI: 10.5281/ZENODO.23329641)

Filename	Format / Size	Scientific Function in the Ecosystem
00_EXECUTIVE_SUMMARY_NEXORD_MANIFESTO.pdf	PDF (~540 kB)	Default Preview File. Executive summary, Moreno-Lewin abstract, GxTyCz designs, and ORBIT engine.
MANIFIESTO_Y_ANEXOS_NEXORD_2026_ES_EN.html	HTML (~410 kB)	Master Bilingual Interactive Document. Full manifesto (12 §§), 5 annexes, catalog, dynamic glossary, and critiques.
NEXORD_ANEXO_MATEMATICO_v10.pdf / _EN.pdf	PDF (~35 kB)	Formal specification of relational densities, SDR/BDR invariants, and mathematical proofs.
NEXORD_RESPUESTAS_CRITICAS_v91_ES.pdf / _EN.pdf	PDF (~265 kB)	Responses to 10 epistemological critiques and transcripts of sustained methodological AI debates.
NEXORD_GLOSARIO_v911_ES.pdf / _EN.pdf	PDF (~185 kB)	Conceptual lexicon of 42 clinical sociometric concepts and canonical operator reference tables.

09. INTERACTIVE VISORD LABORATORIES (LEVEL 8)

Virtual exploration suites accessible at josemancor.github.io/nex-ord-web/: **VISORD_demo** (continuous 3D/4D dynamics and phase transitions for N<51) · **VISORD_cultural** (dramatic sociometry: *12 Angry Men*, *Bernarda Alba*, *Lord of the Flies*) · **VISORD_radiological** (15-27-54 X-rays and ostracism detection) · **VISORD_dialectical** (real-time micro-interactions and Bales IPA ↔ SMIb Moviola engine).