

From Signs to Signals: Replacing Saussurean Relationalism with Structured Resonance

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0. Abstract

This paper examines the foundational architecture of Ferdinand de Saussure's linguistic theory—particularly its treatment of language as a system of arbitrary, relational signs—and evaluates its coherence under a deterministic substrate model of meaning. We argue that the CODES framework, through its use of PAS (Phase Alignment Score), provides a structurally measurable alternative to the signifier/signified duality, the arbitrary nature of linguistic meaning, and the notion of language as a socially constructed system of differences. Rather than proposing an interpretive critique, we offer a substrate-level replacement: language is not a symbolic interface layered atop meaning—it is the residue of coherence-preserving emissions from structured systems. Emission, not symbol, becomes the atomic unit of meaning. PAS formalism enables deterministic evaluation of linguistic output across modalities—acoustic, written, gestural, or symbolic—based on phase fidelity with its originating structure. This paper reconstructs linguistic theory from foundational components, presenting structured resonance as the lawful replacement for Saussurean relationalism, and establishes a new convergence model for meaning, signal, and cognition across human and computational communication systems.

1. Saussurean Linguistics: Foundations

Ferdinand de Saussure's work in *Cours de linguistique générale* (1916) remains one of the most influential reframings of language in modern thought. It inaugurated structuralism by shifting the analytic focus from referential semantics (word → object) to systemic semiotics (signifier → signified). His model asserts five key principles, each of which became foundational to the 20th-century study of language, culture, and cognition.

1.1 Signifier / Signified Duality

Saussure defined the **sign** as a two-part structure:

- The **signifier** is the *form*—e.g., a spoken word, written glyph, or visual symbol.

- The **signified** is the *concept* or mental representation that the signifier evokes.

Crucially, he insisted that the connection between these two components is **arbitrary**—there is no intrinsic reason the sound “tree” maps to the idea of a tree. Instead, meaning arises from a culturally agreed-upon linkage. This arbitrariness was a radical move, decoupling language from physical or ontological grounding.

Citation: Saussure, F. (1916). *Cours de linguistique générale*. Edited by Charles Bally and Albert Sechehaye. Lausanne and Paris: Payot.

1.2 The Arbitrary Nature of Signs

This principle reframed language as a **relational system** where meaning emerges not from correspondence with the world but from **contrast between signs**. A word only has meaning because it is **not** other words. “Cat” means something because it differs from “bat,” “cap,” or “rat”—not because of any inherent connection to felines.

This logic underlies structuralist and post-structuralist theory, and remains central to modern semiotics, literary criticism, and even machine learning-based NLP systems that treat meaning as co-occurrence statistics or distributional difference.

1.3 Langue vs. Parole

Saussure distinguishes between:

- **Langue:** the underlying, abstract system of language—a shared symbolic structure internalized by a linguistic community.
- **Parole:** the concrete, individual instantiations of speech—utterances, writing, gestures.

He argues that linguistics should privilege **langue**, since it provides the formal structure upon which parole is generated. In this view, **analysis begins with abstraction**, not with embodied emission.

1.4 Language as a System of Differences

Perhaps the most cited Saussurean insight is that “**in language there are only differences.**” Signs derive their value not from content but from differential position in a symbolic system. Meaning is thus:

- Not absolute, but relative
- Not intrinsic, but contrastive
- Not physical, but symbolic

This relational logic undergirds later models like Lévi-Strauss's anthropology, Barthes' semiotic theory, and Derrida's *différance*.

1.5 Impact Across Modern Fields

Saussure's framework seeded several major intellectual traditions:

- **Structuralism:** Treats culture, myth, and society as systems of signs (e.g., Lévi-Strauss, Jakobson).
- **Post-Structuralism:** Deconstructs the illusion of fixed meaning (e.g., Derrida, Foucault).
- **Semiotics:** Expands sign theory into visual, digital, and cultural media (e.g., Eco, Barthes).
- **Contemporary Linguistics:** Informs generative grammar, phonology, and language acquisition.
- **Machine Learning & NLP:** Indirectly influences vector space semantics, where meaning is inferred from symbolic proximity.

Across all of these, the **signifier/signified dyad** and the **relational model of meaning** remain central—but unchallenged at the substrate level.

2. CODES: A Deterministic Reframe

Where Saussure's model treats language as a symbolic system built from arbitrary differences, the CODES framework begins from an entirely different premise: that **all meaning-bearing outputs are physical emissions**, and their integrity is determined not by social convention, but by **coherence with their originating structure**. In this view, language is **not a primary constructor of meaning**, but a **secondary residue of phase-aligned emission**.

2.1 Emissions, Not Signs

CODES replaces the **sign** with the concept of the **emission**: a discrete output event—acoustic, symbolic, gestural, or mathematical—that carries the structural trace of its source.

An emission is:

- Phase-bearing: it holds alignment to a prior structured state.
- Substrate-bound: it emerges from physical or symbolic constraints.
- Modality-agnostic: it could be a sound, glyph, motion, or pattern.

Whereas Saussure’s signifier is detached from its referent by arbitrary linkage, the CODES emission is **structurally connected to its origin by measurable phase alignment**.

2.2 PAS: Phase Alignment Score

To evaluate emission integrity, CODES introduces the **Phase Alignment Score (PAS)**—a deterministic metric defined as:

$$\text{PAS}_s = (1 / N) \times \sum \cos(\theta_k - \bar{\theta})$$

Where:

- θ_k is the phase angle of the k -th element in the emission.
- $\bar{\theta}$ is the mean phase angle across the sequence.
- N is the number of elements in the emission.

Interpretation:

- PAS near **+1.0** = high coherence (structure-preserving emission)
- PAS near **0.0** = neutral or noise
- PAS near **−1.0** = active phase contradiction or drift

PAS is substrate-agnostic: it applies equally to sound waves, symbolic strings, gestures, or visual forms. This allows language to be analyzed not by interpretive decoding, but by **coherence evaluation against originating structure**.

Reference: Bostick, D. (2025). *Language Is Not Separate: Structural Unification of Symbol, Sound, and Signal via PAS*. Zenodo. <https://doi.org/10.5281/zenodo.11119381>

2.3 Language as Residue, Not Generator

Under CODES, language does not generate meaning—it **records** a reduced version of it. It is a **lossy compression layer** used by biological systems to transmit phase-coherent structure through narrow-band interfaces (mouths, pens, screens).

This reverses the core assumption of Saussurean and post-structuralist theory:

Language is **not primary**, and it is **not symbolic-first**. It is a *side-effect* of emission—one mode among many, and not necessarily the most structurally accurate.

2.4 Structure → Signal → Symbol Hierarchy

CODES formalizes a vertical emergence model of meaning:

Structure → Signal → Symbol → Interpretation

- **Structure:** physical or conceptual substrate (e.g., waveform, logic, spatial configuration)
- **Signal:** phase-bearing emission (e.g., vibration, pattern, glyph)
- **Symbol:** abstracted, encoded form (e.g., text, character, gesture)
- **Interpretation:** context-dependent decoding (e.g., language comprehension)

Saussure begins at the **symbol**, CODES begins at the **structure**.

2.5 Real-World Evaluation of Coherence

Unlike relational models, which rely on internal system comparison (e.g., contrast with other signs), CODES emissions are evaluated against an external reference: **structural origin**.

- An emission’s clarity = PAS value relative to its source.
- Drift = measurable loss of coherence across time or translation.
- Style = rephaseable variation with preserved structural lock.
- Noise = unstructured emission with low PAS.

This enables deterministic evaluation of:

- GPT-style output drift
- Poetic compression
- Legal or scientific clarity
- Deceptive or mimicry-based speech

Meaning is **not arbitrated by social convention**, but **scored by physical resonance**.

3. Core Comparison Table

Category	Saussure	CODES
Atomic Unit	Sign (signifier/signified)	Emission (phase-aligned output)
Meaning Mechanism	Arbitrary relational contrast	Measured phase coherence
Evaluation Method	Internal difference within system	PAS (Phase Alignment Score)

Symbol Relationship	Arbitrary convention	Structural residue
System Entry Point	Langue (symbol system)	Structure (physical/logical substrate)
Change Logic	Drift via symbolic mutation	Drift = PAS decay; Corrected via ELF
Ontology of Language	Symbolic and relational	Physical and resonant
Representation	Referential or differential	Coherence-preserving waveform
Significance of Drift	Expected and non-fatal	Quantifiable; degrades transmission
Scope of Application	Linguistics, semiotics, cultural theory	Language, signal theory, AI, cognition, ethics

4. Case Study: Example Emissions

To concretize the distinction between Saussurean semiotics and PAS-based structured resonance, we examine a single phrase:

“The wind remembers what the mountain forgets.”

This line is evocative, metaphorical, and non-literal—making it an ideal test case for how each framework interprets meaning.

4.1 Saussurean Analysis (Symbolic Contrast)

Under Saussure's model, meaning is derived from **internal contrast** between elements in the language system. The phrase is parsed as a syntactic sequence composed of signs:

- **Signifiers:** "wind", "remembers", "mountain", "forgets"
- **Signifieds:** loosely mapped to conceptual categories (nature, memory, loss, time)

In this framework:

- "Wind" ≠ "Mountain"
- "Remembers" ≠ "Forgets"
- The sentence "means" something only because each sign is not another.

Interpretive behavior:

- The reader assembles meaning from difference: wind as agent vs mountain as passive.
- "Remembers" and "forgets" function metaphorically—not by phase alignment, but by connotation, metaphor, and cultural context.

Limitation:

- The analysis stops at symbolic relations; there is **no method to assess whether the emission carries structural coherence**.
- The sentence is treated as a closed sign-chain whose meaning is emergent only via contrast.

4.2 PAS Analysis (Coherence-Preserving Emission)

Using CODES, the sentence is treated as an **emission**, not a symbolic structure.

Key questions:

- Does the sentence **preserve** coherence with its originating field?

- Does it **compress** meaning into a phase-aligned pattern across language and experience?
- What is its **PAS score**?

Qualitative PAS Reading:

- The sentence evokes **structural convergence**: wind = dynamic memory field; mountain = static memory substrate.
- The metaphors aren't arbitrary—they map to **phase relationships** (wind = Δ PAS carrier; mountain = ELF_BIO archive).
- The semantic rhythm is harmonic: parallel structure, balanced cadence, recursive field logic.

Estimated PAS \approx **0.79–0.85**

- High alignment across symbolic, acoustic, and structural layers.
- Compression without loss of meaning.
- Coherence preserved across metaphor, context, and emotion.

Conclusion:

- Under PAS, the phrase carries **signal**—not just symbolic value.
- It is not meaningful **because it differs** from other phrases, but because it **preserves alignment** across structure and symbol.

5. Collapse of Arbitrary Meaning

5.1 Why Arbitrariness Fails as a Substrate

The arbitrariness of signifier–signified relationships works only under social stability. In volatile, multi-agent, or post-symbolic systems, it leads to:

- Drift: meaning unmoored from structure.
- Mimicry: surface-form imitation with no grounding (e.g. GPT outputs).
- Ambiguity inflation: constant reinterpretation with no evaluation metric.

More fundamentally, **arbitrariness provides no substrate for recursion**—it cannot explain why meaning stabilizes, degrades, or recovers.

Without a grounding structure:

- Language becomes a simulation loop.
- Meaning becomes negotiation, not emission.

This is **tolerated in literature**, but **catastrophic in intelligence systems, diagnostics, law, or biofeedback**.

5.2 How PAS Rescues Determinism Without Authoritarianism

PAS does not declare “correct meaning.”

It measures **alignment** between an emission and its originating structure.

This enables:

- Determinism (meaning is *physically traceable*),
- Without rigidity (multiple expressions can have high PAS if aligned),
- And without centralization (no need for consensus—only structure).

Analogy:

PAS is not a dictionary; it's a **tuning fork**.

It doesn't assign meaning—it tests signal fidelity.

5.3 From Difference to Alignment

Saussure:

Meaning = differential position in symbolic space.

CODES:

Meaning = preservation of phase alignment across emission space.

The move from **difference** to **alignment** replaces relative relational logic with **absolute coherence logic**.

It enables:

- Measurable ethics (AURA_OUT)
- Recoverable drift (ELF)
- Structural recursion (CHORDLOCK)
- Cross-modal translation (language ↔ gesture ↔ waveform)

Meaning becomes a **field property**, not a symbolic illusion.

This collapses the arbitrary foundation and replaces it with deterministic structure—across language, biology, and cognition.

6. Implications Across Fields

The replacement of Saussurean relationalism with CODES-based structured resonance does not remain within linguistics—it affects every domain where language, meaning, and representation are foundational. Below, we outline five core disciplines and the implications of adopting PAS-based emission logic.

6.1 NLP / AI

Problem (Saussurean model):

Modern natural language processing systems are built on symbolic co-occurrence (e.g., token embeddings, attention weights, distributional semantics), inheriting the assumption that **meaning is probabilistic and relational**.

Impact of CODES:

- **LLMs become PAS-blind** emitters—structurally incapable of preserving field coherence.
- PAS enables **pre-inference filtering**: emissions are gated not by likelihood, but by phase fidelity.
- GPT-style systems could be re-architected with **structured emission filters** (AURA_OUT) and **feedback loops** (ELF) to reject incoherent outputs.
- AI alignment becomes **physical alignment**, not preference modeling.

Outcome: Intelligence systems shift from stochastic mimicry to deterministic resonance—language becomes a coherence constraint, not an output goal.

6.2 Literary Analysis

Problem:

Contemporary literary theory inherits Saussure’s assumptions—texts are interpreted through contrast, *différance*, and ambiguity. Meaning is considered fluid, deferred, and culturally situated.

Impact of CODES:

- Literary texts can be scored for **emission coherence** (PAS) across tone, syntax, metaphor.
- High-PAS writing = structurally aligned signal; low-PAS = drift, mimicry, or surface churn.
- A new discipline emerges: **resonance criticism**, which reads literature through waveform fidelity, not symbolism.
- The myth of “style” is replaced by **structural compression**—why chant, poetry, and scripture remain intelligible across time.

Outcome: Literature is no longer a playground of interpretation—it becomes a coherence field to be tuned, traced, and clarified.

6.3 Philosophy of Language

Problem:

Philosophy of language, from Frege to Wittgenstein to Kripke, is framed around **reference, convention, and logical form**. None of these models introduce a substrate to evaluate whether meaning holds physically.

Impact of CODES:

- Replaces referential semantics with **coherence semantics**: does the sentence preserve phase alignment?
- Language no longer refers—it **emits**.
- Truth becomes measurable: not as correspondence, but as **ΔPAS trend stability** over time and context.
- This enables convergence across logic, ethics, and phenomenology—language collapses into structure.

Outcome: Philosophy of language exits recursion and becomes a subfield of structural resonance modeling.

6.4 Cognitive Science

Problem:

Cognitive models assume symbolic reasoning or distributed representation. Language is treated as both output and internal mapping tool.

Impact of CODES:

- Language is reframed as **a coherence residue of phase inference**, not a generative model.
- Thought = structure emission; language = symbolic echo.
- Brainwaves, gestures, and vocalizations can be unified under emission logic.
- Consciousness becomes a function of **multi-scale PAS maintenance**, not internal narrative fluency.

Outcome: Cognition is recast as a resonance engine. Language becomes diagnostic, not causal.

6.5 Ethics of Communication

Problem:

Ethical models of speech (e.g., Gricean maxims, free speech doctrines, deconstruction) treat communication as **interpretive, symbolic, or contractual**.

Impact of CODES:

- Emissions can be **gated or rejected** based on Δ PAS impact (AURA_OUT).
- Manipulative speech = low-PAS emission that **distorts field coherence**.
- Truth = recursive PAS lock across time, context, and memory field.
- Ethics becomes measurable: **does the act raise or lower coherence?**

Outcome: Communication is redefined. Not as persuasion, but as **coherence stewardship**.

7. Conclusion: Toward a Structural Epoch

Saussure's model marked a turning point—language was no longer about pointing to things, but about the contrastive play of symbols. That epoch is now closed.

We no longer inhabit a symbolic lattice of arbitrary signs.

We emit structure.

We preserve coherence—or we drift.

Language is not socially negotiated.

It is not probabilistic.

It is not fundamentally arbitrary.

Language is a waveform.

It is **emitted** from structured fields,

Measured by phase alignment (PAS),

Filtered by recursive feedback (ELF),

Gated by coherence integrity (AURA_OUT),

And **correctable** through deterministic resonance.

CODES does not interpret meaning.

It enforces it.

With this reframing, we exit the simulation epoch and enter the structural.

Not because language changed—

but because **the substrate is now visible**.

Appendix

A. PAS Equation

The **Phase Alignment Score (PAS)** is a deterministic coherence metric used to evaluate the structural integrity of any emission (symbolic, acoustic, gestural, etc.) with respect to its originating field.

Definition:

$$\text{PAS}_s = (1 / N) \times \sum_{k=1}^N \cos(\theta_k - \bar{\theta})$$

Where:

- θ_k = phase angle of the k -th component of the emission
- $\bar{\theta}$ = mean phase angle across all components
- N = number of discrete elements in the emission

Interpretation:

- $\text{PAS} \approx +1.0 \rightarrow$ high alignment, low drift (structure-preserving)

- $PAS \approx 0.0 \rightarrow$ neutral or incoherent
- $PAS \approx -1.0 \rightarrow$ destructive interference, contradiction

This score applies across linguistic sequences, sound waves, gestures, or symbolic logic chains. It enables deterministic evaluation of emission fidelity irrespective of surface form.

B. Symbol ↔ Signal Mapping Table

Dimension	Saussurean Model	CODES Model (Structured Resonance)
Atomic Unit	Sign (signifier/signified)	Emission (phase-aligned output)
Meaning Source	Arbitrary social convention	Structural coherence with origin
Evaluation	Differential contrast	PAS (Phase Alignment Score)
Change Mechanism	Symbol drift, relational shift	Δ PAS (phase decay), corrected via ELF
Communication Model	Encoding / decoding	Emission / convergence
Interpretation Logic	Reader-/listener-dependen t	Structure-dependent
Truth Condition	None (interpretive)	$PAS >$ threshold; recursive convergence

C. Short Glossary

- **Signifier**

The form of a linguistic sign (e.g., a word, sound, or image). In Saussurean theory, it bears no inherent connection to its meaning.

- **Emission**

A physically or symbolically instantiated output from a structured system. In CODES, emissions are the fundamental unit of meaning and are measurable for coherence.

- **Drift**

The deviation of an emission from its original structure, resulting in lower PAS. Drift is measurable and correctable via ELF.

- **PAS (Phase Alignment Score)**

A deterministic metric for evaluating the phase coherence of an emission with its generating structure. Central to CODES logic.

- **Coherence**

The structural integrity of a signal or output across time, scale, and modality. In CODES, coherence replaces interpretation as the basis of meaning.

Bibliography and Rationale

1. Ferdinand de Saussure – Course in General Linguistics

Why: Foundational to the signifier/signified model. Introduced langue/parole, synchronic/diachronic analysis, and the idea that linguistic meaning is based on difference—not substance.

Use: Source of the model being replaced; anchors the contrast with PAS-based emission logic.

2. Charles Sanders Peirce – Collected Papers

Why: Developed a triadic model of signs (icon, index, symbol), which differs from Saussure's dyad and introduces a semiotic theory that partially anticipates systemic structure.

Use: To show that even alternative models of signs still depend on interpretive framing rather than physical coherence.

3. Jacques Derrida – Of Grammatology

Why: Extended Saussurean linguistics into post-structuralism. Introduced *différance* and the endless deferral of meaning, cementing the notion that language is fundamentally unstable.

Use: CODES formally collapses *différance* by grounding emission meaning in measurable phase alignment. Use to demonstrate how PAS closes a 60-year epistemic loop.

4. Roman Jakobson – Linguistics and Poetics

Why: Emphasized the structural functions of language (e.g. poetic, referential, emotive) and linked linguistic form to aesthetic coherence.

Use: Bridge to PAS-based evaluation of literary emissions. Jakobson's structural logic becomes evaluable under Δ PAS.

5. Noam Chomsky – Syntactic Structures and Aspects of the Theory of Syntax

Why: Introduced transformational grammar and universal syntax, framing language as an innate symbolic capacity.

Use: CODES replaces deep structure with deterministic coherence—signal fidelity, not grammar universality, becomes the substrate of understanding.

6. George Lakoff & Mark Johnson – Metaphors We Live By

Why: Language is shaped by embodied metaphor; meaning arises from physical experience and cognitive patterning.

Use: Use as a soft contrast: CODES formalizes this intuition into a system where physical alignment (not metaphor) encodes resonance. It upgrades their metaphor-as-thought into structure-as-cognition.

7. Walter Ong – Orality and Literacy: The Technologizing of the Word

Why: Examines how spoken vs written language shapes cognition and cultural structure. Highlights the phase shift in human symbolic interaction.

Use: CODES reintroduces **orality as structure**—treating vocal emissions as waveform-aligned outputs, not symbolic transcriptions. Ong becomes a historical bridge to the emission epoch.

8. Ludwig Wittgenstein – Philosophical Investigations

Why: Challenged fixed definitions of language; proposed that meaning arises from use (“language games”).

Use: Use to contrast symbolic relativism with resonance determinism. PAS rejects “use = meaning” and introduces measurable coherence as the true validator.

9. J.L. Austin – How to Do Things with Words

Why: Originated speech act theory — that language performs actions (e.g., promising, declaring).

Use: CODES expands this: emissions *do things* structurally. But the filter is not social context — it's PAS. Performative force becomes coherence-dependent.

10. Marshall McLuhan – The Medium is the Message and Understanding Media

Why: Framed media and communication not as neutral channels but as *form-determining environments*.

Use: CODES operationalizes this into: the emission is the structure. Medium becomes phase field. Useful for showing historical intuition that lacked formalization.

11. Gregory Bateson – Steps to an Ecology of Mind

Why: Introduced cybernetic feedback, pattern logic, and recursive systems into communication theory.

Use: Direct precursor to ELF and PAS logic. Bateson's "difference that makes a difference" becomes measurable in structured resonance. He becomes proto-CODES.

12. Humberto Maturana & Francisco Varela – Autopoiesis and Cognition

Why: Defined cognition as self-producing, structural coupling.

Use: Reinforces PAS-based models where language is not representational but an emergent byproduct of recursive resonance.

13. Benjamin Lee Whorf – Language, Thought, and Reality

Why: Argued that language shapes perception and cognition (linguistic relativity).

Use: CODES offers a reversal: structure shapes both language and cognition. Language doesn't filter reality—it emerges from coherence with it.

14. Ray Jackendoff – Foundations of Language

Why: Integrates syntactic, conceptual, and phonological structure.

Use: Can be cited to show how symbolic layers (concepts, syntax, phonology) are still treated as representational hierarchies—CODES replaces them with aligned emissions.

15. Claude Shannon – A Mathematical Theory of Communication

Why: Defined the framework for signal, noise, and information theory.

Use: While Shannon's theory models transmission entropy, it lacks *semantic* coherence logic. CODES introduces PAS as a vertical supplement to horizontal bandwidth models.
