
HARMOGÉNÈSE

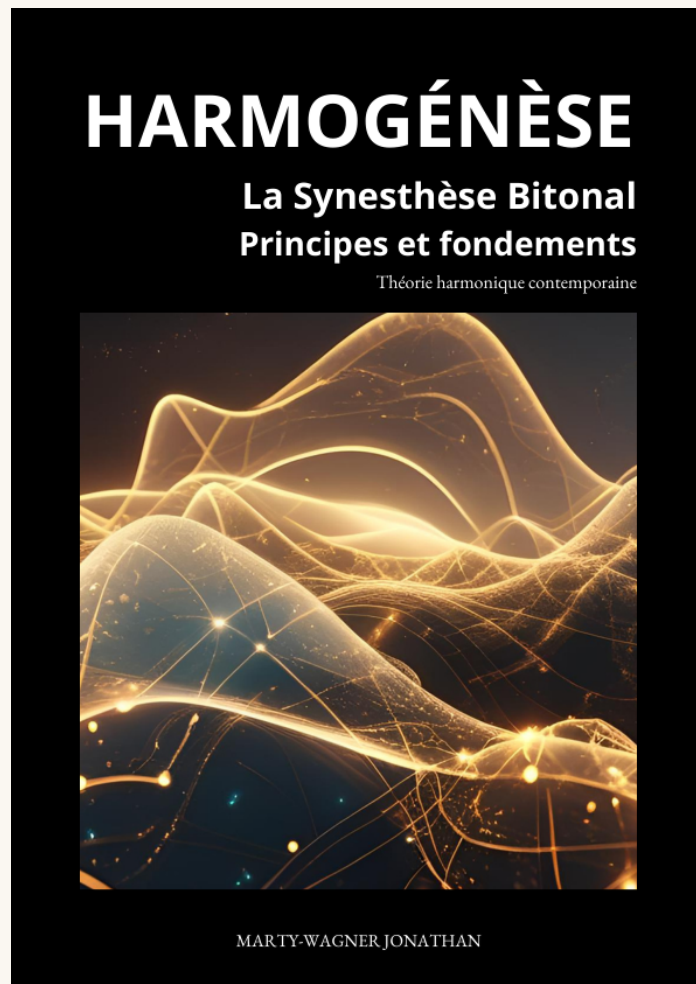
La Synesthèse Bitonale

Principes et fondements

Theoretical Framework for Bitonal Synesthesia and Harmonic
Cartography

Zenodo research overview - condensed excerpt

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Full book page: <https://www.studio-dmp-radiohouse.com/synesthese-bitonal>

Cube Bitonal: <https://www.studio-dmp-radiohouse.com/cubebitonal>

Purpose of this condensed overview

FR. Ce document est une version condensée destinée au dépôt, à la citation et à la découverte du cadre théorique Harmogénèse - La Synesthèse Bitonale. Il ne remplace pas l'ouvrage complet : il en présente les principes, les outils conceptuels et les prolongements logiciels, afin de rendre la recherche repérable dans un contexte ouvert et international.

EN. This document is a condensed research overview of Harmogénèse - La Synesthèse Bitonale. It introduces the theoretical basis of Bitonal Synesthesia, its harmonic mapping principles, and its relation to software tools such as the Cube Bitonal and NEPTUNE. It is intended for consultation, citation, and research visibility, not as a substitute for the full book.

The original work presents Harmogénèse as a musical research laboratory and an active listening method in which tonal, rhythmic and modal interactions can be observed, measured and perceived as evolving expressive states.

The proposed framework does not treat harmony as a closed grammar, but as a field of navigation: a living space where color, distance, density, attraction and interference become compositional parameters.

Recommended Zenodo title:

Harmogénèse - La Synesthèse Bitonale: Theoretical Framework for Bitonal Synesthesia and Harmonic Cartography

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1. Architecture of the work

The complete book is structured as a theoretical and operative atlas. It begins with the definition of Bitonal Synesthesia, then develops tables, indices, induced modal pairs, pivot processes, extensions, movement procedures, portals and finally the Cube Bitonal as a spatial continuation of the system.

The work is not only descriptive. Its ambition is to make harmonic color navigable: to pass from intuition to map, from map to gesture, and from gesture to composition.

Part	Function in the system
I - Bitonal Synesthesia	Definition, foundations, perceptive nature, proximity model $P = f(I,O,M)$, Marty-Wagner Bitonal Tables.
II - Operative Grammars	Induced Modal Pairs, pivot triads, practical vocabulary for trajectories of color.
III - Extensions	Bi-Pentamodal, Mirror and Symmetric Synesthesia: extended spaces beyond the first bitonal matrix.
IV - Movement procedures	Spirale Phrygienne Δ , $\Delta\#5$ Shift, Couloir Hexatonique $\#5\#11$, Lotanal Modulé, TMI.
V - Harmogenetic Portals	Whole Tone, Octatonic and Hexamonde portals: structures that open a musical world rather than prepare it.
Cube Bitonal	Interactive 3D representation of bitonal relations, distances, paths and color trajectories.

2. The origin: color before rule

The origin of the research lies in a compositional situation: the manipulation of polychords, the desire to compare superpositions, and the progressive perception that two tonal worlds do not merely produce “different chords”, but recognizable states of color.

From that point, the core question emerges: do two superposed tonalities generate identifiable harmonic colors? Can these colors be classified, compared, measured and used in composition?

The first tables were born from this need to group, test, hear and organize combinations: major over major, major over minor, minor over minor, and other chordal or modal systems. The work progressively shifted from harmonic vocabulary to harmonic optics.

The Cube Bitonal appears later as the spatial consequence of this process: not simply a graphic interface, but a way to let tonal relations breathe as trajectories, paths and forces.

“The need was not only to hear music, but to see harmonic relations as lights, distances and states.”

This is why Harmogénèse should be understood as a research-creation framework: the musical act comes first, but it gives birth to maps, tools and theoretical objects capable of returning to composition.

3. Definition of Bitonal Synesthesia

Bitonal Synesthesia describes the encounter between two distinct tonal or modal centers whose interaction produces a specific harmonic color and dynamic. It is not treated here as arbitrary polytonality, but as the study of the color resulting from the crossing of two tonal centers with a measurable distance, interference and perceptive orientation.

The model rests on three main dimensions:

- Tonal dimension. The intervallic relation between two centers, often interpreted through the circle of fifths or modal orientation.
- Interference. Shared notes, frictions, attractive notes and the degree of fusion between the systems.
- Perceptive color. The global sensation produced by the crossing: clear, troubled, metallic, dramatic, oniric, luminous, tritonic, or unstable.

In this sense, Bitonal Synesthesia is not a decorative superposition. It is a system for describing and using the perceptive result of two interacting harmonic fields.

The composer no longer writes only chord progressions. He can design trajectories of color: clear -> troubled -> dark -> bright, stable -> unstable -> resolved, near -> distant -> portal-like.

4. Proximity model: $P = f(I, O, M)$

The system introduces a proximity index, noted P , which synthesizes several dimensions of bitonal interaction. The formula is not intended as a reduction of musical perception to arithmetic; rather, it acts as a compass for comparing fields, frictions and polarities.

$$P = f(I, O, M)$$

- I - Intersection. Proportion of common notes between the two scales or systems. It indicates the degree of fusion, from separation to shared material.
- O - Functional orientation. Type of hierarchical or directional relation between the two centers: tonic, subdominant, dominant, tritonic, chromatic, or transitional.
- M - Modal polarity. Difference of modal luminosity between the systems: clear, neutral, dark, or hybrid.

The resulting value can be translated into a chromatic scale. The color is not merely aesthetic: it is an index of friction, proximity and perceptive energy.

In practice, this allows the composer to plan harmonic movement as a curve rather than as a succession of isolated events.

5. Marty-Wagner Bitonal Tables

The Marty-Wagner Bitonal Tables are 12 x 12 maps. Each cell represents a possible interaction between two tonalities or modes. Each interaction can be associated with a friction score, a color and a perceptive adjective.

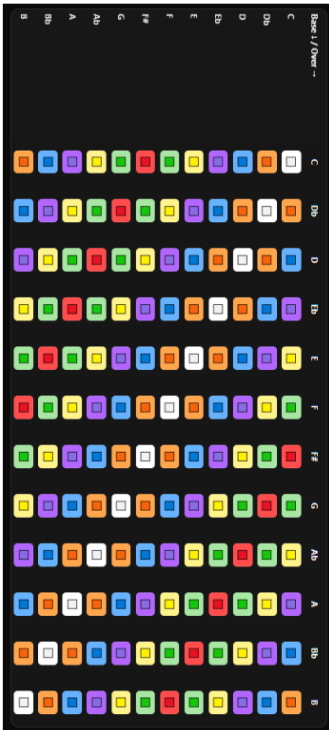
These tables form the first visual basis of the system. They transform bitonal relations into an atlas: one can identify near zones, distant zones, mediant colors, tritone portals and fields of high or low fusion.

The three foundational faces are:

- Maj/Maj. Functional relations between two major tonalities, classified notably by distance on the circle of fifths.
- Maj/Min. Relations between a major field and a natural minor field, with attention to common notes and modal contrast.
- Min/Min. Internal relations in the minor field, also interpretable by distances and shared structures.

Table bitonal de Marty-Wagner

Table #1 - Maj-Maj



	C	D	E	F	G	A	B	C	D	E	F	G	A	B	
C	Orange	Blue	Purple	Green	Red	Yellow	White	Blue	Orange	White	Blue	Orange	White	Blue	Orange
D	Blue	Purple	Green	Red	Yellow	White	Blue	Orange	White	Blue	Orange	White	Blue	Orange	White
E	Purple	Green	Red	Yellow	White	Blue	Orange	White	Blue	Orange	White	Blue	Orange	White	Blue
F	Green	Red	Yellow	White	Blue	Orange	White	Blue	Orange	White	Blue	Orange	White	Blue	Orange
G	Red	Yellow	White	Blue	Orange	White	Blue	Orange	White	Blue	Orange	White	Blue	Orange	White
A	White	Blue	Orange	White	Blue	Orange	White	Blue	Orange	White	Blue	Orange	White	Blue	Orange
B	White	Blue	Orange	White	Blue	Orange	White	Blue	Orange	White	Blue	Orange	White	Blue	Orange
C	Orange	Blue	Purple	Green	Red	Yellow	White	Blue	Orange	White	Blue	Orange	White	Blue	Orange
D	Blue	Purple	Green	Red	Yellow	White	Blue	Orange	White	Blue	Orange	White	Blue	Orange	White
E	Purple	Green	Red	Yellow	White	Blue	Orange	White	Blue	Orange	White	Blue	Orange	White	Blue
F	Green	Red	Yellow	White	Blue	Orange	White	Blue	Orange	White	Blue	Orange	White	Blue	Orange
G	Red	Yellow	White	Blue	Orange	White	Blue	Orange	White	Blue	Orange	White	Blue	Orange	White
A	White	Blue	Orange	White	Blue	Orange	White	Blue	Orange	White	Blue	Orange	White	Blue	Orange
B	White	Blue	Orange	White	Blue	Orange	White	Blue	Orange	White	Blue	Orange	White	Blue	Orange

Visual excerpt: Table bitonale Marty-Wagner - Maj/Maj. The complete book includes several tables and color-classified kits for compositional use.

6. Color classes and compositional reading

The tables use a chromatic vocabulary to make harmonic distance readable. The color scale is not meant as a rigid symbolism, but as a working perceptive map. It lets the composer distinguish fusion, organic proximity, narrative distance, oniric mediants, luminous contrast, chromatic floating and tritonic portal states.

	White	0 / identical	fusion, soft identity
	Green	± 1 fifth	organic neighbour, stable proximity
	Blue	± 2 fifths	narrative modal distance
	Violet	± 3 fifths	mediant field, ample / oniric
	Yellow	± 4 fifths	readable contrast, luminous halo
	Orange	± 5 fifths	strong chromatic floating / mirror
	Red	tritone	portal-like, cold brilliance, maximum tension

A harmonic relation is therefore not only “near” or “far”; it becomes a colored and navigable state. This is the fundamental change of perspective: harmony is approached as a cartography of perceptive energies.

7. Induced Modal Pairs and pivot triads

The Induced Modal Pairs (PMI) formalize a crucial mechanism: when two centers are combined, each scale can absorb the alterations of the other without losing its tonic identity. This produces a deterministic modal pair, such as C Lydian / D Dorian for the relation C / D.

The purpose of the PMI is not to decorate a bitonal relation with modal names. It is to provide a practical vocabulary for orchestration and transition. The composer can move through PMI chains to write color trajectories rather than simple chord successions.

The pivot triad is one of the central operative devices: two modal fields can be made to converse through a shared triadic body. Instead of letting two scales destroy one another through uncontrolled density, the triad creates a perceptive bridge.

This is one of the strongest practical points of Harmogénèse: the system does not only classify. It gives gestures for writing.

Use case: select a bitonal relation -> identify its induced modal pair -> locate shared material -> choose a pivot triad -> orchestrate the color transition.

8. Extensions of Bitonal Synesthesia

The complete work extends the initial model through several additional fields. These extensions widen the combinatorial and perceptive space while preserving the central idea: harmonic color can be navigated through relations, densities and transformations.

Bi-Pentamodal Synesthesia. Two pentatonic systems are combined as compact modal bodies. Their interaction creates a lighter but highly expressive field, useful for density control, modal clarity and timbral writing.

Mirror Synesthesia. The system is extended through inverted axes, negative harmony and tonal symmetry. Here, color is not produced only by distance, but by reversal and reflective displacement.

Symmetric Synesthesia. Modes of limited transposition, augmented/diminished systems and symmetrical collections become tools for creating spaces where gravity behaves differently. The point is not to escape tonality, but to invent controlled zones of altered gravity.

These extensions show that Harmogénèse is not a single table. It is an expanding grammar of relationships between systems.

9. Movement procedures

The fourth part of the work introduces operative movement procedures: ways of crossing, shifting or deforming harmonic space. These procedures act like compositional engines.

- Spirale Phrygienne Δ . A phrygian-inflected spiral gesture that turns attraction, darkness and chromatic angle into a compositional curve.
- $\Delta\#5$ Shift. A Dorian $\#4 / \#5$ -oriented shift, producing ascending colors that feel neither purely modal nor purely tonal.
- Couloir Hexatonique $\#5\#11$. A corridor where weight is suspended through augmented and lydian-sharp forces.
- Lotanal Modulé. An inverted, migrating anatole-like process, treated as a mobile progression rather than a fixed cadence.
- Transfert Mineur Inversé. A reversal process where minor material transfers through a diminished nucleus and changes its expressive polarity.

These names are not ornamental. They are attempts to name gestures that composers often feel before they can describe them: rotations, shifts, corridors, transfers and portals of harmonic energy.

10. Harmogenetic portals

A portal is not an isolated chord. It is a structure of access. It reveals an entire geometry at once: a mode, a symmetric universe, a bitonal world or an emergent structure. In ordinary tonality, one prepares a place. In Harmogénèse, a portal can fabricate the place directly.

The work studies several families of portals: Whole Tone portals, Octatonic portals and the Hexamonde 1-3-1-3, each understood as a way to open coherent but non-ordinary harmonic worlds.

A portal therefore has a dramaturgical function. It is not only harmonic material; it is a narrative breach, a controlled cut in the musical field. Its function is to give access to an atmosphere without requiring a conventional progression.

This is why portals are particularly important for contemporary composition, game music, FM synthesis aesthetics and any writing that seeks to invoke worlds rather than merely connect chords.

“The key is not to prepare a world, but to open it.”

11. The Cube Bitonal

The Cube Bitonal is the interactive spatial representation of the harmonic field generated by Bitonal Synesthesia. It translates the 12 x 12 tables into a navigable environment where relations between two tonal or modal centers can be visualized, compared and manipulated.

Its three principal faces correspond to the three foundational combinations: Maj/Maj, Maj/Min and Min/Min. But the Cube changes the status of the theory: the table becomes an environment, and distance becomes movement.

At the center of the Cube lies the tonal wheel, a circular projection of the twelve centers. By selecting successive pairs, the user creates a path: a harmonic and emotional trajectory calculated through intersection, orientation and modal polarity.

The Cube therefore synthesizes the philosophy of Harmogénèse:

- theory becomes a navigable space;
- harmonic color becomes a controllable parameter;
- composition becomes an exploration of tonal-emotional relief.

Cube Bitonal page: <https://www.studio-dmp-radiohouse.com/cubebitonal>

12. Relation to Harmogénèse tools and citation

The theoretical work is designed to be extended through software. Tools such as the Cube Bitonal and NEPTUNE do not replace the book; they make parts of its logic operational, visible and manipulable.

NEPTUNE, for instance, is an atlas of extended chords and modes. It allows the user to choose a scale family, a mode and a transposition root, then observe which chord structures can live within that modal territory. It belongs to the same movement: turning harmonic color into a map that can be explored.

This document can serve as the reference-mother for future Zenodo deposits: NEPTUNE, the Cube Bitonal, and other Harmogénèse applications can be connected to it as related software records.

Suggested citation format:

Marty-Wagner, J. (2026). Harmogénèse - La Synesthèse Bitonale: Theoretical Framework for Bitonal Synesthesia and Harmonic Cartography. Zenodo. DOI to be added after publication.

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Book page: <https://www.studio-dmp-radiohouse.com/synesthese-bitonal>

Cube Bitonal: <https://www.studio-dmp-radiohouse.com/cubebitonal>

End of condensed overview - version 0.2 draft.