

# Nanopublication — Octave-to-Value Translation — Register as Luminosity

by Arnaud Quercy [2] · C Octaves - Reflexions 23 · 2024

## Claim 2: Octave-to-Value Translation — Register as Luminosity

I translate octave register into color value: lower octaves [1] manifest as darker values, higher octaves as brighter values, maintaining hue family consistency while varying luminosity.

### CONTEXT

The [5] octave relationship in music—where a note and its octave share fundamental identity while differing in register—presents a translation challenge for visual representation. Pitch class determines hue (C = red), but octave register requires a second parameter. I resolve this through value (luminosity): lower registers appear darker, higher registers appear brighter.

This mapping has psychoacoustic logic. Frequency doubling, which defines the octave interval, correlates perceptually with "brightness" in auditory experience—higher octaves are described as "brighter" in both musical and everyday language. The translation preserves this metaphorical structure: as frequency doubles and sound "brightens," color value increases correspondingly.

In "C Octaves - Reflexions 23," the darkest forms (deep browns, burnt sienna) occupy lower compositional positions representing bass register C. Mid-range terracottas and corals represent middle octaves. The brightest vermilion and salmon shapes, positioned prominently, represent upper register C. The hue family remains constant—all are red-spectrum colors—while value articulates vertical position in pitch space.

This approach maintains ideamorphic integrity: the structural relationship (octave = same pitch class, different register) translates into visual structural relationship (same hue family, different value). The invariant is preserved across modalities.

### REFERENCES

- [1] Arnaud Quercy (2024). C Octaves - Reflexions 23 — Catalog raisonné. <https://arnaudquercy.art/en/catalogue-raisonne/AQC0698.html>
- [2] Quercy, A. ORCID: <https://orcid.org/0009-0000-2662-7790>
- [3] Quercy, A. (2024). C Octaves - Reflexions 23 (AQC0698). Synesthetic Explorations collection. [https://artquamanima.com/en/artworks/2024/01/c-octaves-reflexions-23\\_7ro.html](https://artquamanima.com/en/artworks/2024/01/c-octaves-reflexions-23_7ro.html)
- [4] Quercy, A. Ideamorphic Axioms: Foundational Principles for Cross-Modal Translation. [URL to be added]
- [5] Marks, L. E. (1974). On associations of light and sound: The mediation of brightness, pitch, and loudness. *The American Journal of Psychology*, 87(1-2), 173-188.

### EPISTEMIC PROFILE

**Claim type** artistic statement

**Voice** first person

**Epistemic status** systematic practice

**Methodology** ideamorphic translation

**Certainty** high

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**Artist** Arnaud Quercy

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