

## CHAPTER 7. CONCLUSIONS

Color is an essential component of Olivier Messiaen's distinctive compositional style. His music-color synesthesia was neither an intellectual contrivance nor a learned set of associations; it was an automatic, unsuppressible response to an aural stimulus. The colorations evoked by Messiaen's synesthesia rested on a complex system of relationships residing fundamentally at the level of pitch class. I hope that the dissertation's quantification of Messiaen's pitch-color correspondences and presentation of a method for determining harmonic colorations will prove suggestive in other synesthetic studies.

An awareness of the coloristic component of a work set in *musique colorée* is vital to fully appreciate the work. Many non-synesthetic listeners will hear the chords of a modal passage as distinct harmonies, since they comprise different pcsets and different voicings; for Messiaen, a series of chords in the same mode evoked a single coloration (rather than different colorations for each chord) and thereby suggests an extended harmonic unit. Understanding such coloristic similarities—and differences—among chords (especially among those that are adjacent) enables one to apprehend more fully and appreciate Messiaen's harmonic choices.

The dissertation responds to Jonathan Bernard's call for a "generalized theory of harmonic structure" of the music of Messiaen.<sup>1</sup> Because Messiaen composed in diverse styles, a single comprehensive theory that encompasses all of his techniques (*musique colorée*, the harmonization of birdsong, dodecaphonic techniques, etc.) is probably not possible; however, a general theory of *musique colorée* is approachable. The dissertation maintains that the harmonic structure of *musique colorée* can be best understood by examining absolute pitch, color-sets, and voicing.

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1. Jonathan W. Bernard, "Messiaen's Synaesthesia: The Correspondence between Color and Sound Structure in His Music," *Music Perception* 4/1 (Fall, 1986), 68.

### Original Contributions of the Dissertation

The dissertation postulates that Messiaen's synesthesia was a genuine physiological condition and satisfied all but one of Richard Cytowic's criteria for idiopathic synesthesia. Messiaen's synesthesia was involuntary but elicited (it occurred whenever he heard or read music), consistent and discrete (colorations did not change over time, and were very specific), memorable (the percepts could be recalled and described), and accompanied by a sense of emotional certitude (he felt that what was happening was indeed real). Unlike the arbitrary mystical associations devised by Scriabin and the pseudo-spiritual contrivances of Kandinsky, Messiaen's synesthesia was real, and involved very real sound-color correspondences.

The analysis of "Apparition du Christ glorieux" in Chapter 6 of the dissertation demonstrates typical harmonies of a work set in *musique colorée*, and the importance of understanding the distinction between modes and special chords. There is a trend in published studies to analyze the harmonic content of Messiaen's music purely in terms of modes; such studies ignore the variety within Messiaen's compositional process.<sup>2</sup> The dissertation's proposed harmonic taxonomy—which is grounded upon the analysis of voicing—provides a simple and direct method for analyzing individual harmonic structures in Messiaen's music.

In the dissertation, the characteristics of *musique colorée* are defined, demonstrating the musical parameters that were most conducive, for Messiaen, to the evocation of a synesthetic response. Color is not ubiquitous in Messiaen's music—not even in his late works, which are his most colored. The marked shift in Messiaen's compositional style that occurred in the early 1950s was quite possibly related to synesthesia, since it was then

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2. See, for example, Jonathan W. Bernard, "Messiaen's Synaesthesia: The Correspondence between Color and Sound Structure in His Music," *Music Perception* 4/1 (Fall, 1986), 41–68; Rosemary Walker, "Modes and Pitch-Class Sets in Messiaen: A Brief Discussion of 'Première Communion de la Vierge,'" *Music Analysis* 8/1–2 (1989), 159–168.

that Messiaen became fully attuned to his synesthetic perceptions and began to pay particular attention to them while composing.

The dissertation offers a method for ascertaining unknown harmonic colorations. The study provides a systematic and near-comprehensive listing of colorations of Messiaen's modes and special chords. Additionally, the dissertation provides a detailed coloristic analysis of a synesthete's photisms; the dissertation defines the discrete code behind an individual's synesthetic percepts, and shows how the elements of a stimulus interact and affect a synesthetic percept. Finally, the dissertation presents a chord-by-chord coloristic analysis of a complete work, and examines patterns within colorations.<sup>3</sup>

The concept of non-harmonic tones within an atonal environment is often problematic. However, Messiaen's own theories provide a framework for understanding certain tones within his music as non-harmonic; in fact, Messiaen even provided a term—*note ajoutée*—that conveniently accommodates such non-harmonic analysis. Further, the clearly identifiable harmonic vocabulary of *musique colorée* facilitate the analysis of certain tones as non-harmonic.

### **Opportunities for Further Research**

For Messiaen, chord voicing had an effect on color. Since Messiaen's synesthetic percepts were fundamentally contingent upon harmonic voicings—voicings that are quite consistent within the realm of *musique colorée*—one may hypothesize that Messiaen's synesthesia informed his manner of voicing. The scarcity of semitones and clusters (three or more adjacent semitones) in harmonic voicings within *musique colorée* supports this hypothesis. My subject AF provides a possible explanation. Depending on the piece, AF will “balance” the pitches in her cluster-laden chords to support or negate a certain color.<sup>4</sup>

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3. In analyses of his works in *Traité*, Messiaen did provide colorations for many chords, but he never provided all the colors of a work, nor did he ever discuss the overall coloristic content of a work.

4. Interview with AF, January 4, 2002.

In speaking of György Ligeti's *Volumina* (a work conspicuous for its use of clusters), Messiaen similarly explained how clusters negated a chord's coloristic potential:

I know of Ligeti's *Volumina*. I admire Ligeti much; in my opinion he is one of the greatest contemporary musicians. The remarkable thing about *Volumina* is the use of clusters. I, too, have written clusters, [e.g., the chord of total chromaticism] but they become interesting only when they are no longer true clusters. The cluster is an enormous gray in which one hears all pitches simultaneously, i.e., one hears nothing. Only when a pitch is absent does a color emerge and shine. Therefore, a cluster must be manipulated; one must take away tones in order to give it color.<sup>5</sup>

The correspondence between chromatic saturation and lack of color is related to the phenomenon of how, for Messiaen, certain types of aggregate formations (e.g., much of Schoenberg's music) evoked gray or black. From statements by Messiaen and AF, one could infer that, for synesthetes, clusters evoke a coloristic disparity that suppresses color.

Messiaen further explained how, for him, color was contingent upon voicing:

I have managed to use the twelve tones in "packets" that absolutely do not sound like a twelve-tone series or a truncated series; they sound like colors. I have occasionally employed successions of chords in which one hears the twelve tones simultaneously a great number of times, yet no one notices. One hears major and minor triads; it is voicing that places a certain tone in the forefront and changes the color.<sup>6</sup>

Thus, chromatic saturation by itself does not imply lack of color, since a carefully voiced aggregate could evoke color. Further study of the percepts of living synesthetic composers should lead to greater understanding of the relative prominence of pc colors within

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5. "Ich kenne 'Volumina' von Ligeti. Ihn bewundere ich sehr, und er ist meiner Ansicht nach einer der größten zeitgenössischen Musiker. Auffällig an 'Volumina' ist der Gebrauch von Clustern. Cluster habe ich auch schon geschrieben, aber sie werden erst da interessant, wo sie keine wahren Cluster mehr sind. Der Cluster selbst ist ein enormes Grau, in dem man alle Töne gleichzeitig hört, d.h. man hört nichts. Erst wenn ein Ton daraus fehlt, taucht eine Farbe auf, bekommt er Glanz. Ein Cluster muß also bearbeitet werden, man muß ihm Töne wegnehmen, um ihm Farbe zu geben." Karin Ernst, *Der Beitrag Olivier Messiaens zur Orgelmusik des 20. Jahrhunderts* (Freiburg: Hochschul Verlag, 1980), 323.

6. "[I]l m'est arrivé d'utiliser les douze sons en paquets et cela ne sonne absolument pas comme une série ou comme un tronçonnage de série; cela sonne comme des couleurs. J'ai parfois employé des successions d'accords où l'on entend un grand nombre de fois simultanément les douze sons et personne ne s'en aperçoit. On entend des accords parfaits et c'est la disposition qui met en vedette tel ou tel son et qui change la couleur." Claude Samuel, *Entretiens avec Olivier Messiaen* (Paris: Editions Pierre Belfond, 1967), 48-49.

photisms. It is possible that pc color is intersubjectively perceived by a variety of color-music synesthetes. If such intersubjectivity can be shown to exist, theorists could achieve an even greater understanding of Messiaen's manner of voicing.

Although the dissertation's taxonomic harmonic analysis of "Apparition" ignores unison doublings, a study of Messiaen's manner of scoring might yield interesting results: how consistent is Messiaen concerning unison doublings in his special chords?; does he tend to favor doublings of certain pitch classes (which in turn accentuate certain colors)?; within his special chords, does he tend to double certain parts of a chord?; does his manner of doubling change with scoring?; and, how might the reinforcement of a pitch class through unison doubling effect resultant harmonic coloration? Answers to such questions could provide further insight into the music-color correspondence of Messiaen's synesthesia, and in turn offer clues regarding his scoring habits.

### **Future**

According to Cytowic, synesthetes as a group tend to be highly creative and exhibit excellent memories; they are also drawn towards order, symmetry and balance.<sup>7</sup> Perhaps it was an inclination for symmetry that drew Messiaen to symmetrical constructions such as modes of limited transposition and non-retrogradable rhythms. Perhaps a similar desire for balance urged him to explore natural resonance, and to employ complementary pitch-class collections in his compositions. Most compelling, perhaps an innate need for order drove Messiaen to codify his compositional resources into the two-volume *Technique de mon langage musical* and the seven-volume *Traité de rythme, de couleur et d'ornithologie*: very few composers have catalogued their compositional methods as rigorously.<sup>8</sup> Messiaen's

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7. Richard E. Cytowic, *Synesthesia: A Union of the Senses*, second edition (Cambridge: MIT Press, 2002), 296.

8. Messiaen's theoretical works are more descriptive than pedagogical. Ironically, as a teacher of composition, Messiaen rarely discussed his own compositional methods; rather, he encouraged his students to follow their own paths. For an excellent survey of Messiaen's teaching career, see Jean Boivin, *La Classe de Messiaen* (Paris: Christian Bourgois, 1995).

pre-compositional tools included tables of all his special chords in all possible inversions and transpositions, labeled with their respective colorations. As the dissertation's taxonomic harmonic analysis of "Apparition" demonstrates, harmonic structures within *musique colorée* are readily classifiable, and viewing the work through such classifications unveils levels of harmonic complexity and formal organization that are less transparent than those derived using other methodologies (e.g., set theory, transformational theory).

As the title *Éclairs sur l'Au-Delà* suggests, *musique colorée* evokes phenomena beyond the purely aural experience of listening to music. For Messiaen, music produces colors that—in the words of Kandinsky—resulted in a corresponding vibration of the human soul. In his work, Messiaen truly moves "beyond" what other contemporary composers were doing, and similarly invites us to move beyond the commonly accepted boundaries of musical analysis to gain an understanding of this rich and fascinating music.