

Universal Neumes: Chant Theory in Messiaen's Aesthetics

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Abstract Gregorian chant exerted a pivotal influence on Olivier Messiaen's spiritual and musical universe. Scholars have noted his theological preference for this repertoire and its central role in his organ playing, and have observed how some of Messiaen's melodies contain obvious traces from chants. Recent analytical work has ventured further and shown how plainchant in fact served as a melodic and formal matrix behind the composer's musical language. This article raises the additional claim that Messiaen's employment of plainchant rested upon an idiosyncratic and questionable – but largely coherent – theory of neumes as a more or less universal feature in music. A quasi-archaeological reconstruction proves necessary to reconstruct this conception from the composer's fragmentary and enigmatic statements. The article investigates Messiaen's readings of Vincent d'Indy and Dom André Mocquereau, including ideas from Hugo Riemann, showing that rhythm is a most central element in their similar connections between chant and freedom of expressivity in contemporary music. All in all, chant theory is highlighted as a vital element in analyses of Messiaen's own music, as well as a theoretical framework that explains many of the composer's seemingly eclectic connections between different repertoires.

It is both evident and uncontested that Gregorian chant exerted a central influence on Olivier Messiaen's characteristic universe. A substantial body of research has discussed what *kind* of influence it exerted, and yet this question remains anything but settled. Theologically inclined commentators have been keen to gloss on the composer's conviction that plainsong is the only truly liturgical music.¹ Messiaen's personal fondness for undertaking organ improvisations on chants further situates the significance of chant in such a setting.² It is Messiaen's liturgical predilection for Gregorian

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Work on this article has been made possible through funding from the Swedish Research Council. The author wishes to express his gratitude to Sean Dunnahoe, Meghan Quinlan and Anne Weddigen for kind assistance in matters of language and translation. Comments from the journal's anonymous reviewers have been tremendously helpful concerning details as well as broader issues. Translations are my own unless otherwise stated.

¹ As professed in a 1977 lecture under the rubric 'Liturgical Music': 'There is only one: *plainsong*. Only plainsong possesses all at once the purity, the joy, the lightness necessary for the soul's flight toward Truth.' Olivier Messiaen, *Lecture at Notre-Dame*, trans. Timothy J. Tikker (Paris: Alphonse Leduc, 2001), 5.

² Messiaen said that playing for Sunday Vespers 'afforded me one of my greatest joys – improvising on Gregorian themes'. Almut Rössler, 'Conversation with Olivier Messiaen on December 16, 1983, in Paris', Almut Rössler, *Contributions to the Spiritual World of Olivier Messiaen*, trans. Barbara Nagg and Nancy Poland (Duisburg: Gilles & Francke, 1986; originally published as *Beiträge zur geistigen Welt Olivier Messiaens* (Duisburg: Gilles & Francke, 1984)), 117–44 (p. 138).

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chant that inspires, for example, Wolfgang Bretschneider's claim that, "The image of his life and creativity, his convictions and his spirituality would remain a fragment without this "extraordinary treasure".³

Such theological or liturgical aspects contrast with more technical approaches. Jason Hardink has suggested that, "Messiaen was the first composer to assimilate the language of Gregorian chant and feature it in composition in much the same way as we speak of other composers absorbing folk idioms into their compositional style."⁴ Messiaen's method was, however, certainly not unprecedented in this regard. On the contrary, organist composers and mentors such as Charles-Marie Widor, Marcel Dupré and Charles Tournemire had done the same in some of their works. Nevertheless, Hardink's verdict raises the question of whether Messiaen's language is permeated with chant to a degree beyond that of his predecessors.

A comment from Harry Halbreich appears to resolve tensions between such different viewpoints: "Plainchant occupies a unique place among Messiaen's sources of inspiration. It is the only source whose impact is as much spiritual as material."⁵ The composer's multivalent use of Gregorian melodies largely proves him right. David Lowell Nelson has categorized Messiaen's different compositional procedures and shows how he sometimes cites plainchant melodies for semantic theological purposes, sometimes only paraphrases them within a musical language that resembles chant.⁶ As a consequence, explanations of chant's influence must note its impact on several distinct levels.

Messiaen himself provides no unequivocal support for plainchant's ostensibly unique role. A preliminary version of his treatise *Technique de mon langage musical* names plainsong and Debussy as the two most influential sources behind his music.⁷

³ "Das Bild seines Lebens und Schaffens, seiner Überzeugungen und seiner Spiritualität bliebe ohne diesen "außergewöhnlichen Schatz" Fragment." Wolfgang Bretschneider, "Le plain-chant – source de toute notre musique occidentale": Der Cantus Gregorianus bei Olivier Messiaen', *La cité céleste: Olivier Messiaen zum Gedächtnis: Dokumentation einer Symposienreihe*, ed. Christine Wassermann Beirão, Thomas Daniel Schlee and Elmar Budde (Berlin: Weidler, 2006), 139–54 (p. 139). See, in a similar vein, Dieter Buwen, 'Gregorianik im Werk Messiaens', *Musik und Kirche*, 71 (2001) 349–55; and Dorothee Bauer, *Olivier Messiaens Livre du Saint Sacrement* (Paderborn: Ferdinand Schöningh, 2015), 104: "Zum anderen ist die Gregorianik für Messiaen untrennbar mit der Liturgie verbunden" ('On the other hand, Gregorian chant is for Messiaen inseparably linked with the liturgy').

⁴ Jason M. Hardink, 'Messiaen and Plainchant' (DMA dissertation, Rice University, 2006), 3.

⁵ "Le plain-chant occupe une place unique parmi les sources d'inspiration de Messiaen. C'est la seule dont l'impact soit autant d'ordre spirituel que matériel." Harry Halbreich, *L'Œuvre d'Olivier Messiaen* (Paris: Fayard, 2008), 173. Reflecting Hardink's argument above, Halbreich compares Messiaen's employment of chant to Bartók's integration of folk music. *Ibid.*, 174.

⁶ "It is possible to find music that resembles chant in many of Messiaen's works. The spectrum of chant influences includes the composer's own melodies that have some features of chant, melodies that may resemble a specific chant, and specific chants that are either quoted or paraphrased and labelled in the score." David Lowell Nelson, 'An Analysis of Olivier Messiaen's Chant Paraphrases' (Ph.D. dissertation, Northwestern University, 1992), 7–8.

⁷ Olivier Messiaen, Dossier sur *Technique de mon langage musical* (1941–2), Paris, Bibliothèque Nationale de France, RES VMA MS-1540 (6). For Messiaen, plainchant is the common term for all liturgical singing in the Western (Catholic) church. He holds the Roman (Gregorian) tradition to be the single lasting form of an earlier multitude of plainchant traditions. See Olivier Messiaen, *Traité de rythme, de couleur, et d'ornithologie*, 7 vols. (Paris: Alphonse Leduc, 1994–2002), iv (1997), 7.

The printed version juxtaposes influences, without explanation of their interrelationship, from 'birds, Russian music, Debussy's *Pelléas et Mélisande*, plainchant, Hindu rhythms'.⁸ It would thus seem that Messiaen certainly drew heavily on plainchant, but as one of several distinct sources.

A literal reading of such statements can reinforce tendencies to assume a fragmentary disorderliness in Messiaen's creative reception of musical, literary and theological sources. Not least the composer's colossal and collage-like *Traité de rythme, de couleur, et d'ornithologie* is frequently found wanting in clarity and coherence. The absence of discursive explanations certainly makes it difficult to find underlying connections between its encyclopedic catalogues of seemingly disparate topics.⁹ Bretschneider noted that plainchant for Messiaen is 'the source of all our Western music', but unfortunately he eschews further investigation of this claim. Bretschneider's understanding that chant's liturgical and symbolic significance would stand opposed to 'purely technical and aesthetic perspectives' seems to reinforce a further conviction that Messiaen's outlook forms a mosaic of associations rather than a comprehensive theory.¹⁰ In a similar fashion, Hardink discusses notable elements in Messiaen's approach, but provides no framework for studying their interconnections, even though he calls the composer an 'intensively systematic artist'.¹¹

This article ventures beyond the view that plainchant serves as one of several unrelated influences (whether primarily spiritual or material) on Messiaen. The point is not to discard other aspects, but to reveal how technical and semantic employments of chant melodies relate to a more fundamental and analytical approach to plainchant

Following Messiaen's own terminology, the terms Gregorian chant, plainchant and plainsong are here used as synonyms.

⁸ Olivier Messiaen, *The Technique of my Musical Language*, trans. John Satterfield (Paris: Alphonse Leduc, 1956; rev. edn 2002; originally published as *Technique de mon langage musical* (Paris: Alphonse Leduc, 1944)), 7. Cf. Robert Sherlaw Johnson, *Messiaen* (London: Dent, 1975; 2nd edn, 1989), 21: 'The most important sources of Messiaen's melodic patterns are plainchant and, since 1941, birdsong.'

⁹ Characteristic of Messiaen's thought in the *Traité* is, as noted by Stefan Keym, 'den oftmals enzyklopädischen, katalogartigen, im Detail sehr genauen, zugleich aber bisweilen erstaunlich unsystematischen, fragmentarischen und generell wenig diskursiven Ansatz [...] Wer in diesem Traktat umfassende Werkanalysen und eine erschöpfende Darlegung der einzelnen Aspekte von Messiaens musikalischer Sprache sucht, mag angesichts des sprunghaften, offenen Charakters vieler Kapitel enttäuscht sein' ('the often encyclopaedic, catalogue-like approach, very precise in detail, but at the same time every so often astonishingly unsystematic, fragmentary and generally scantily discursive [...] Whoever seeks comprehensive work analyses and an exhaustive explication of the individual aspects of Messiaen's musical language in this treatise may be disappointed, in view of the desultory, open character of many chapters'). Keym, 'Olivier Messiaen: *Traité de rythme, de couleur, et d'ornithologie* (1949–1992), en 7 tomes, Paris, Alphonse Leduc, 1994–2002', *Musiktheorie*, 19 (2004), 269–74 (pp. 273–4). See also Christopher Dingle, *Messiaen's Final Works* (Abingdon: Ashgate, 2013), 11: 'While he provides ample information on what material is actually in the music, Messiaen says little about how his techniques fit into the broader scale of composition. It is easy to be dazzled by his lists, categorizations and explanations and, as a consequence, fail to see the analytical wood for the trees.'

¹⁰ 'Fernab von jeder rein technischen oder ästhetischen Betrachtungsweise'. Bretschneider, 'Le plainchant – source de toute notre musique occidentale', 145; and cf. *ibid.*, 139, 148, 154.

¹¹ Hardink, 'Messiaen and Plainchant', 3.

in the composer's writings. It retraces the roots of a decisively theoretical conception of plainchant that has remained unrecognized, or at least has not been thematized as a comprehensive vision. In order to remedy the fragmentary nature of Messiaen's own writings, the first aim is to undertake a kind of 'intellectual archaeology' of the composer's readings on chant, in order to see how he draws upon ideas in previous literature.¹² Beyond the range of sources studied in Yves Balmer, Thomas Lacôte and Christopher Brent Murray's work on Messiaen as borrower,¹³ this study works primarily with the texts he read, analysed and used in his writings.

The task of identifying relevant sources would have been cumbersome without recent findings by Daniel K. S. Walden and Dom Patrick Hala. They have revealed how the musical aesthetics of Dom André Mocquereau – Messiaen's most cherished authority on chant – was developed in conversation with Vincent d'Indy and Hugo Riemann.¹⁴ The indisputable influence of Mocquereau on Messiaen's understanding of Gregorian chant here establishes a broader framework that sheds light on Messiaen's dependence on a late Romantic trajectory rarely considered in studies of his sources.¹⁵

In addition to historical studies of such connections, analytical work has lately instilled a heightened awareness of plainchant's far-reaching impact on Messiaen's musical syntax. In one of the most significant recent contributions to Messiaen scholarship, Balmer, Lacôte and Murray provide vital clues. Their reading primarily of *Technique de mon langage musical* unveils a distinct technique of *melodic lending* hidden behind its statements that, 'Plainchant is a mine of rare and expressive melodic contours' and that, 'We shall make use of them [the contours], forgetting their modes and rhythms for the use of ours.'¹⁶ Their further analysis reveals how Messiaen typically retains melodic shapes and rhythmic characters from chant melodies, but disintegrates their actual melody and harmony. In other words, *contours* from chant

¹² As it is put at the outset of a valuable concordance to Messiaen's sources on plainchant: 'In order wholly to understand and evaluate the formation of Messiaen's unique technical language [...] it is imperative to examine how he was influenced and borrowed (often quite heavily) from a range of sources.' Gareth Healey, *Messiaen's Musical Techniques: The Composer's View and Beyond* (Farnham: Ashgate, 2013), 13.

¹³ 'Our research is based on the simultaneous exploration of three immense corpora: Messiaen's music; the body of music he loved, played, and analyzed; and his writings.' Yves Balmer, Thomas Lacôte and Christopher Brent Murray, 'Messiaen the Borrower: Recomposing Debussy through the Deforming Prism', *Journal of the American Musicological Society*, 69 (2016), 699–791 (p. 704).

¹⁴ Daniel K. S. Walden, 'Dom Mocquereau's Theories of Rhythm and Romantic Musical Aesthetics', *Études grégoriennes*, 42 (2015), 125–50; Patrick Hala, *Solesmes et les musiciens*, 2 vols. (Solesmes: Éditions de Solesmes, 2017–20), i: *La Schola Cantorum* (2017).

¹⁵ As exceptions, influences from d'Indy and Riemann are studied in James Mittelstadt, 'Resonance: Unifying Factor in Messiaen's *Accords spéciaux*', *Journal of Musicological Research*, 28 (2009), 30–60; in Tobias Janz, 'Messiaens Mozart und die "Théorie de l'accentuation"', *Olivier Messiaen: Texte, Analysen, Zeugnisse*, ed. Wolfgang Rathert, Herbert Schneider and Karl Anton Rickenbacher, 2 vols. (Hildesheim: Olms, 2012–13), ii: *Das Werk im historischen und analytischen Kontext* (2013), 219–37; and in Wolfgang Rathert, 'Messiaen und die Geschichte', *ibid.*, 295–307.

¹⁶ Messiaen, *The Technique of my Musical Language*, 36. See Yves Balmer, Thomas Lacôte and Christopher Brent Murray, *Le modèle et l'invention: Messiaen et la technique de l'emprunt* (Lyons: Symétrie, 2017), 29–54.

melodies pass through the 'deforming prism' of his own harmonic modes and are reproduced with new pitches.¹⁷

Recognition of this technique allows Balmer, Lacôte and Murray to identify many previously unrecognized chant models in Messiaen's music. They can therefore argue that chant functions as a melodic and formal matrix for the composer's own style.¹⁸ The melodic motifs in Gregorian neumes are pivotal to the melodic contours that lie at the heart of such processes.¹⁹ Messiaen regards chant neumes as an archetypal set of melodic contours with universal significance, applicable to all kinds of music: to apply a certain 'neumatic lens' is Messiaen's primary method for analysing melodies within virtually every conceivable musical language.²⁰

The composer's own 1977 *Lecture at Notre-Dame* offers a promising, albeit enigmatic, vantage point for witnessing applications of this approach. Messiaen claims that, 'The marvellous thing about plainsong is its neumes,' and goes on to argue that, 'The neumes are melodic formulae [...] also found in the songs of birds: the Garden Warbler, the Black-Cap, the Song-Thrush, the Field Lark, the Robin, all sing neumes. And the admirable quality of the neume is the rhythmic suppleness which it engenders.' This suppleness supposedly emerged in Greek and Hindu rhythms, but Messiaen also claims that it was this quality that 'Chopin tried to rediscover in his rubato'.²¹

The suggestion that neumes can be found even in birdsong is baffling at first. However, Wai-Ling Cheong has shown that the breakthrough of Messiaen's distinct *style oiseaux* around 1952–3 followed in the wake of deeper studies in chant and Greek metrics. She points out how these interconnections continued to shape the *Traité*, where analyses of melodic motifs in birdsong are replete with detailed references to different neumes (see Figure 1).²² Cheong gives tentative explanations of Messiaen's

¹⁷ Messiaen, *The Technique of my Musical Language*, 35. For earlier approaches, see Sherlaw Johnson, *Messiaen*, 20–1; Anne Le Forestier, *Olivier Messiaen: L'Ascension*, Cahiers d'analyse et de formation musicale, 1 (Paris: Alphonse Leduc, 1984); and Hardink, 'Messiaen and Plainchant', 40–6.

¹⁸ For Messiaen, 'Le plain-chant constitue en premier lieu une matrice mélodique et formelle, permettant la mise en œuvre de son propre langage intervallique et modal, tout en s'éloignant d'une technique de composition motivique et de travail thématique' ('First, plainchant constitutes a melodic and formal matrix, allowing the implementation of its own intervallic and modal language, while moving away from a technique of composition based on motifs and thematic work'). Balmer, Lacôte and Murray, *Le modèle et l'invention*, 314.

¹⁹ For an emphatic but somewhat too general categorization of Messiaen's early language as a 'style neumatique', see François Sabatier, 'Olivier Messiaen et Charles Tournemire: Autour du chant grégorien', *L'orgue*, 283 (2008), 37–48 (p. 44).

²⁰ 'Cette méthode d'identification de neumes au sein d'une mélodie [...] est élevée par Messiaen au rang de procédure analytique majeure, efficiente pour tout répertoire. Cette conception revient à envisager le neume comme un "contour mélodique"' ('This method of identifying neumes within a melody [...] is elevated by Messiaen to the rank of a major analytical procedure, applicable to any repertoire. This conception amounts to considering the neume as a "melodic contour"'). Balmer, Lacôte and Murray, *Le modèle et l'invention*, 44.

²¹ Messiaen, *Lecture at Notre-Dame*, 5.

²² As she argues, 'The extent to which neumes and Greek rhythms fill the main body of *Traité V* leaves us with hardly any doubt about their importance in Messiaen's mature birdsong.' Wai-Ling Cheong, 'Neumes and Greek Rhythms: The Breakthrough in Messiaen's Birdsong', *Acta musicologica*, 80 (2008), 1–32 (p. 8). See also Rob Schultz, 'Melodic Contour and Nonretrogradable Structure in the Birdsong of Olivier Messiaen', *Music Theory Spectrum*, 30 (2008), 89–137 (p. 89).

Figure 1 Messiaen's neumatic analysis of his *La fauvette des jardins*, p. 37, last 7 bars, based on Messiaen, *Traité*, v/1, 395–6. Image reproduced from Wai-Ling Cheong, 'Neumes and Greek Rhythms: The Breakthrough in Messiaen's Birdsong', *Acta musicologica*, 80 (2008), 1–32 (p. 10).

rationale behind this idiosyncratic nexus, among them a suggested religious motive to employ the widest possible range of techniques in his offerings to the Catholic faith.²³

The second aim of this article is to complement the findings of Balmer, Lacôte and Murray on the one hand, and those of Cheong on the other. They have already helped to establish a 'neumatic lens' at the heart of Messiaen's method of analysis and shown how it functions as a creative matrix in his own language. The following discussion adds the further claim that these aspects are rooted in a speculative theory of neumes. An archaeological examination of antecedents in Riemann, d'Indy and Mocquereau explains Messiaen's universalism concerning neumes, including both expressive ideals and the method of using chant as a prism for analysing music of all kinds. Speculative dimensions in this particular line of thought lead Messiaen to fundamental musical principles and (inspired by them) the creative employment of chant that eventually distinguishes his approach from lessons first learnt from teachers and mentors such as Dupré, Maurice Emmanuel and Tournemire.²⁴ This study sets out to reconstruct Messiaen's theoretical stance and the now largely

²³ 'Having steeped himself in the musical portrayal of birdsong that embraces both neumes and Greek rhythms, he may have found himself empowered to draw freely on the wealth of techniques and materials accumulated over the years in creating his finest offerings to the Catholic faith, which he had from the very beginning of his career set up as the most important mission of his music.' Cheong, 'Neumes and Greek Rhythms', 30; and cf. *ibid.*, 25–30.

²⁴ The aim here must be limited to an investigation of how Messiaen draws upon Riemann, d'Indy and Mocquereau, rather than to provide in-depth comparisons with other French predecessors.

forlorn trajectory of historical musical aesthetics upon which it builds. The primary ambition is understanding rather than critique, which is not to be confused with some assumed premiss that the theory would have lasting validity. On the contrary, many assumptions and implications cannot be sustained in a contemporary light, a circumstance that, however, has little bearing on Messiaen's idiosyncratic use of it in response to topical developments in music.

The article first surveys Messiaen's chapters on plainchant in the fourth volume of his *Traité*, with an emphasis on his reception of Dom Mocquereau and neumes. This task permits a further reconstruction of links between Mocquereau, d'Indy, Riemann and Messiaen. Having established biographical and intellectual connections between these authors, the article proceeds to situate Mocquereau's and Messiaen's stance towards earlier conceptions of 'free rhythm' in the French Romantic revival of Gregorian chant. A discussion of historiography then forms a central part of the overall claim for a distinct theory of chant in Messiaen's writings, including the further argument that chant is a categorically different source from other influences, such as Greek or Hindu metrics. Indeed, a schema of music's evolution throughout history, imbibed from Mocquereau and d'Indy, here emerges as a central but often overlooked category in Messiaen's aesthetics.²⁵ Within this outlook, the melodic element in plainchant grows out of ancient rhythm, before harmony eventually emerges from this dual rhythmic-melodic nexus.

Having touched upon how d'Indy's vision of history influenced Messiaen's early career and humanism, the article reconstructs the implications of arguments for the historical and systematic primacy of rhythm. Such a tenet combines ontological and mathematical speculation, an ecological basis for music and a correspondence between music and dance that is of immediate relevance for Mocquereau's performance editions of chant. This ideal rests on a fluctuation between *arsis* and *thésis*, notions that connect Messiaen with a sensitivity for expression that is rooted in Riemann's romanticism. After a discussion of these links, the final section of the article retraces the basis in Mocquereau's writings for the novel theory of sound represented by Messiaen's *Neumes rythmiques* and a similar integration of rhythm, harmony and sound colour in some late works.

The multilayered theory of chant reconstructed here is conspicuously kaleidoscopic. Indeed, its fundamental logic suggests that neumes not only lie at the heart of human and avian music, but also constitute a universal element in music. The complexity of this vision opens vistas that allow numerous hidden links to be traced between chant theory and many different aspects of Messiaen's own music. The ambition here must be restricted to a reconstruction of the theory itself, together with references to compositions on which it exerts a palpable influence.

A reconsideration of connections with Emmanuel and Tournemire would also be specifically pertinent in the light of the theory presented in this article.

²⁵ Rathert's 'Messiaen und die Geschichte' is an important pioneer study of the topic, which, however, has had a limited impact on anglophone scholarship.

Neumes in *Traité* and the nexus of influences behind Messiaen's theory

The first challenge is to survey Messiaen's principal text on chant and to set its content in context. During his lifetime, remarks on Gregorian chant appeared in fragmentary form throughout *Technique de mon langage musical*, as well as in various interviews and lectures, but these sources fail to formulate a clear-cut conception. Two chapters in the fourth volume of the posthumous *Traité* contain Messiaen's most detailed and significant exposition of plainchant.²⁶ These chapters have been helpfully annotated and incisively – but only selectively – studied and compared with other sources, but their broader aesthetic significance remains largely undiscussed.²⁷ This dearth of scholarly interest echoes Messiaen's limited success during his teaching at the Paris Conservatoire in conveying his vision of Gregorian chant. Students have described how he stressed knowledge of plainchant as a significant step in a composer's education, as well as its relevance to modern music. The teaching sought to reveal in this repertoire 'a survival of fundamental principles from Greek metrics and a distillation of all possible melodic movements'.²⁸ As this comment indicates, Messiaen treated chant as a kind of universal melodic matrix that simultaneously provided links back to forlorn teachings on rhythm.²⁹

Demonstrating how a 'distillation' of plainchant has provided a basis for Western music is a central preoccupation in the first chapter of the *Traité* to discuss chant. Messiaen's main thesis is stated already on the first page: 'The orthography of plainchant is neumatic, that is to say, it employs the grouping of sounds called *neumes*. These melismas [...] we find in birdsong and in all music.'³⁰ He then enumerates common neumes, demonstrating how their melodic patterns are contained in modern music. For example, having presented the *torculus* with its three distinct sounds (down, up, down, with the first and third pitches never identical), Messiaen finds this pattern

²⁶ In line with Cheong's remarks on the relevance of neumes and Greek rhythms for Messiaen's development in the 1950s, it is worth noting that his work on these topics for the *Traité* stem from 1949 and the ensuing years. On the genesis and later editing of the *Traité* by Messiaen's widow, Yvonne Loriod, see Olivier Messiaen, *Music and Color: Conversation with Claude Samuel*, trans. E. Thomas Glasow (Portland, OR: Amadeus Press, 1994; originally published as *Musique et couleur: Nouveaux entretiens avec Claude Samuel* (Paris: Pierre Belfond, 1986)), 39–40; Stefan Keym, *Untersuchungen zur musiktheatralen Struktur und Semantik von Olivier Messiaens Saint François d'Assise* (Hildesheim: Olms, 2002), 233; and Jean Boivin, 'Genesis and Reception of Olivier Messiaen's *Traité de rythme, de couleur, et d'ornithologie*, 1949–1992: Toward a New Reading of the Composer's Writings', *Messiaen Perspectives 2: Techniques, Influence and Reception*, ed. Christopher Dingle and Robert Fallon (Farnham: Ashgate, 2013), 341–61.

²⁷ Previous discussions appear in Bretschneider, 'Le plain-chant', 147–9; Healey, *Messiaen's Musical Techniques*, 13–20; Balmer, Lacôte and Murray, *Le modèle et l'invention*, 42–52; and Stephen Broad, 'Recontextualising Messiaen's Early Career', 2 vols. (Ph.D. dissertation, University of Oxford, 2005), i, 137–8; and Hardink, 'Messiaen and Plainchant', 12–25, 47–50.

²⁸ 'Ceci n'est nulle part aussi clair que dans le plain-chant, où Messiaen relève à la fois une survivance des principes fondamentaux de la métrique grecque et un concentré de tous les mouvements mélodiques possibles.' Jean Boivin, *La classe de Messiaen* (Paris: C. Bourgeois, 1995), 207.

²⁹ On chant in Messiaen's teaching, see also Messiaen, *Music and Color*, 176.

³⁰ 'L'orthographe de plain-chant est neumatique. C'est-à-dire qu'il utilise des groupements de sons intitulés *neumes*. Ces mélismes [...] nous retrouvons dans le chant des oiseaux et dans toute musique.' Messiaen, *Traité*, iv, 7.

Figure 2 Messiaen, *Traité*, iv, 9. © Copyright Editions Musicales Alphonse Leduc. Used by kind permission of Hal Leonard Europe Limited.

in the opening right-hand figure of Debussy's 'Reflets dans l'eau' from *Images* (see Figure 2).³¹ In a similar fashion, the ornamented version of the second theme in the Andante from Mozart's 'Jupiter' Symphony is seen to duplicate the movement of a *climacus resupinus*: three descending sounds and a final note one step higher than the first (see Figure 3).³² In its final edited form, Messiaen's chapter concludes with an appendix that gives further 'examples of Neumes that inspired the great Musicians'.³³ Without explaining the analytical method on which these excerpts rest, examples of each neume are found in melodic themes drawn from modern music. Messiaen finds, for example, the *scandicus flexus* – three ascending notes, and a final descending interval – in eight works (see Figure 4).³⁴

Climacus resupinus :

La variante ornementale du 2^e thème, dans l'Andante de la Symphonie « Jupiter » de Mozart :

violons est une succession de Climacus resupinus.

Figure 3 Messiaen, *Traité*, iv, 10. © Copyright Editions Musicales Alphonse Leduc. Used by kind permission of Hal Leonard Europe Limited.

³¹ *Ibid.*, 9.

³² *Ibid.*, 10.

³³ 'Annexe: Voici quelques exemples de Neumes qui ont inspiré les grands Musiciens.' *Ibid.*, 35–40. On the appendix, see Balmer, Lacôte and Murray, *Le modèle et l'invention*, 47–52.

³⁴ Messiaen, *Traité*, iv, 36.

SCANDICUS FLEXUS :

MOUSSORGSKY
(Khovantchina -
Scène du Prince
Golitsyne)



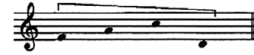
STRAWINSKY
(*Sacre du
Printemps*)



MESSIAEN*
(8^e Prélude)



MOZART
(*Flûte enchantée -
air de Sarastro -*)



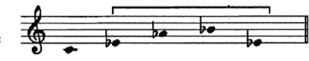
MOZART
(id. Sarastro)



BERLIOZ
(*Chanson du
Roi de Thulé*)



BEETHOVEN
(*Sonate pathétique -
Andante -*)



GRIEG
(*Per Gynt -
chanson de Solveig -*)



Figure 4 Messiaen, *Traité*, iv, 36. © Copyright Editions Musicales Alphonse Leduc. Used by kind permission of Hal Leonard Europe Limited.

The text points out that neumes can move in both conjunct and disjunct intervals. The singular focus on identifying ascending and descending figures in melodies results in an unusual and abstract analysis which completely ignores pitches and harmonic functions. An editorial comment from Yvonne Loriod confirms the centrality of neumes for her late husband but provides no keys to grasp their significance: ‘It is a pity that Olivier Messiaen did not mention the innumerable Neumes from Plain-chant which inspired his works. The reader will find hundreds.’³⁵ Scholars have noted that ‘Messiaen views these neumes and the musical shapes they represent as an intrinsic, inevitable aspect of Western music’, but the rationale he used in collecting these excerpts has remained perplexing.³⁶ Only through Balmer, Lacôte and Murray’s analysis of melodic borrowing has it become clear how neumes are treated as melodic motifs, separated from the harmonic framework central to melodies in modern tonality.

The *Traité*’s second chapter regarding chant is more theoretically discerning and sheds further light on Messiaen’s sources and approaches. The impetus, pedagogical background and method of the chapter is clearly stated at the beginning:

³⁵ ‘Il est dommage qu’Olivier Messiaen n’ait pas cité les innombrables Neumes de Plain-chant qui ont inspiré ses œuvres. Le lecteur en trouvera des centaines.’ Messiaen, *Traité*, iv, 38.

³⁶ Hardink, ‘Messiaen and Plainchant’, 49–50. On Messiaen’s analysis of his own *Île de Feu 1*, Hardink argues – quite problematically – that, ‘Commentary links his music to neumatic notation, but the connection is not vital to his conception of the music’ (p. 51). With regard to the same phenomenon in *Technique de mon langage musical*, it has been deemed ‘difficult to understand the impetus for these “derivations” if one takes them at face value because, while we can see that Messiaen’s examples are inspired by the basic shape of the “source”, the resulting melodic phrases clearly owe much more to Messiaen’s techniques than they do to the “source” material’. Broad, ‘Recontextualising Messiaen’s Early Career’, i, 87. For Healey, Messiaen’s compilation of musical examples is ‘highly questionable’: ‘The only real value of this section is to highlight the composers in which Messiaen was interested.’ Healey, *Messiaen’s Musical Techniques*, 17.

Just as there are several concepts of time, so there are several concepts of rhythm. The theory of *arsis* and *thesis* is one of these concepts. It is, without a doubt, the simplest, the most obvious, perhaps the most specifically human [...] Having often tried to explain to my students the admirable work, in two volumes, that Dom Mocquereau devoted to plainchant and Gregorian rhythm – the work entitled *Le nombre musical grégorien* – I have always found that the first section of the first volume, ‘The Origin of Rhythm’, however luminously thought out, written as it is in an easy and agreeable style, and furnished with abundant examples, was extremely difficult to penetrate, even after renewed reading and meditation. So for my own reading (as for my students), I will attempt to make a summary of the 11 chapters by Dom Mocquereau dedicated to rhythm. All of that which follows is thus a condensation of Dom Mocquereau's thought, with ample citations of the original – and, where necessary, my [own] grain of salt.³⁷

Messiaen also discusses the work of Dom Joseph Gajard (1885–1972) and Auguste Le Guennant (1881–1972), but, as proclaimed in the quotation above, their mentor Dom André Mocquereau (1849–1930) is the main source of influence on his own understanding of Gregorian chant.³⁸ Even the initial chapter on chant relies heavily on both annotated and hidden quotations from this ‘greatest theoretician of plainchant’.³⁹ From this endorsement of Mocquereau, Gareth Healey has inferred that, ‘Messiaen saw his teaching as an extension of the Solesmes tradition to which he so firmly aligned himself.’⁴⁰ Such a stance is, however, now too indistinct, in the light of increasing scholarly attention to disagreements between leading agents within the Solesmes community.

At Solesmes, Mocquereau had initially collected and edited sources to establish a firm historical basis for broader aesthetic ideas proposed by his mentor Dom Joseph

³⁷ ‘Comme il y a plusieurs concepts du temps, il y a plusieurs concepts du rythme. La théorie de l'*arsis* et de la *thesis* est un de ces concepts. C'est sans doute le plus simple, le plus évident, peut-être le plus spécifiquement humain [...] Ayant souvent essayé d'expliquer à mes élèves l'admirable ouvrage en 2 tomes que Dom Mocquereau a consacré au plain-chant et à la rythmique Grégorienne – ouvrage intitulé: “*le Nombre musical Grégorien*” – j'ai toujours constaté que la 1^{re} partie du 1^{er} tome: “l'origine du rythme” – pourtant lumineusement pensée, écrite dans un style aisé, agréable, et pourvue d'exemples abondants – était extrêmement difficile à pénétrer, même après lectures et méditations renouvelées. Aussi vais-je tenter de faire pour mes lectures (comme pour mes élèves), un résumé des onze chapitres que Dom Mocquereau a dédiés au rythme. Tout ce qui va suivre est donc un condensé de la pensée de Dom Mocquereau, avec de larges citations de l'original – et, s'il y a lieu, mon grain de sel.’ Messiaen, *Traité*, iv, 43.

³⁸ *Ibid.*, 26–32, 52–6. See Dom Joseph Gajard, *Notions sur la rythmique grégorienne*, 2nd edn (Paris: Desclée, 1944), and Auguste Le Guennant, *Précis de rythmique grégorienne, d'après les principes de Solesmes* (Paris: Institut Grégorien, 1948). It is notable that Maurice Duruflé based his reception of chant on Dom Gajard, filtered through Le Guennant, who served as director of the Institut Grégorien de Paris; see Ronald Ebrecht, *Duruflé's Music Considered* (Lanham, MD: Lexington Books, 2020), 10.

³⁹ Messiaen, *Music and Color*, 69. ‘Ma façon de lire le plain-chant, de le jouer, de le chanter [...] correspond aux règles, aux lois de Dom Mocquereau.’ Quoted in Boivin, *La classe de Messiaen*, 207. For a concordance between Mocquereau's and Messiaen's texts, see Healey, *Messiaen's Musical Techniques*, 13–20. Quotations here follow Dom André Mocquereau, *Le nombre musical grégorien: A Study of Gregorian Musical Rhythm*, trans. Aileen Tone, 2 vols. (Paris: Tournai, 1932–51).

⁴⁰ Healey, *Messiaen's Musical Techniques*, 15.

Pothier (1835–1923). As the result of internal conflicts, Mocquereau would eventually be given full responsibility and freedom to shape the course of chant scholarship and performance practice. To strengthen the scholarly standard, he sought to keep up with the latest developments in musicology at the turn of the century. At a time when French Catholicism was entangled in a ‘cultural war’ with secular republicanism, he ‘made every effort to cast himself as a sort of bridge between the monastic community and the aesthetic debates that were electrifying the compositional community of turn-of-the-century France’.⁴¹

As part of these aspirations, Mocquereau began a significant correspondence in 1896 with Vincent d’Indy (1851–1931), co-founder of the private conservatoire Schola Cantorum in Paris.⁴² D’Indy was a strident proponent of a distinct Catholic culture and the foremost public spokesman for a new philosophy of musical education in which renewed attention to Gregorian chant played a significant role. Although commonly dismissed in post-war modernism, towards the end of his life d’Indy was hailed as a ‘bold innovator’ and the ‘uncontested leader of the new school’. Beyond a common confessional identity, Mocquereau could here learn from a figure hailed for ‘*the comprehensive sweep of his ideas*’.⁴³

More specifically, Mocquereau read a draft of the rhythm chapter in d’Indy’s treatise *Cours de composition musicale*, which was based on the syllabus at the Schola Cantorum.⁴⁴ Mocquereau soon applied its ideas to Gregorian studies, not least in his magnum opus *Le nombre musical grégorien*.⁴⁵ Messiaen appears to have read this treatise already during his studies at the Conservatoire.⁴⁶ As seen above, his own *Traité* expresses a desire to illuminate and convey Mocquereau’s treatment of ‘the origin of rhythm’: the fruit of Mocquereau’s reading of the *Cours*. At this point, it is noteworthy that Messiaen highlights Mocquereau as a theorist of rhythm, a stance that introduces a turn away from melody as the central element in plainchant.

⁴¹ Walden, ‘Dom Mocquereau’s Theories’, 136. On intersections between social, political and aesthetic aspects of Gregorian chant towards the turn of the century, see Katherine Bergeron, *Decadent Enchantments: The Revival of Gregorian Chant at Solesmes* (Berkeley, CA: University of California Press, 1998); Jane F. Fulcher, *French Cultural Politics and Music: From the Dreyfus Affair to the First World War* (Oxford: Oxford University Press, 1999); Katharine Ellis, *The Politics of Plainchant in Fin-de-siècle France*, Royal Musical Association Monographs, 20 (Farnham: Ashgate, 2013), 47–67; and Benedikt Lessmann, ‘Appropriations of Gregorian Chant in *Fin-de-siècle* French Opera: *Couleur locale* – Message-Opera – Allusion?’, *Journal of the Royal Musical Association*, 145 (2020), 37–74.

⁴² For documents and analyses of contacts between Solesmes and the Schola Cantorum, see Hala, *Solesmes et les musiciens*, vol. i.

⁴³ Verdicts from Louis de Serres, Louis Laloy and Erik Satie, cited in Brian Hart, ‘Vincent d’Indy and the Development of the French Symphony’, *Music and Letters*, 76 (2006), 237–61 (p. 238). Hart wrote that, ‘D’Indy arguably influenced musical directions in *fin de siècle* France more than any other individual except Debussy’ (*ibid.*, 237).

⁴⁴ For correspondence concerning the rhythm chapter, see Hala, *Solesmes et les musiciens*, i, 407–10, 426–31; see also Walden, ‘Dom Mocquereau’s Theories’, 133–5. Quotations from the treatise below follow Vincent d’Indy, *Course in Musical Composition, Volume 1*, trans. and ed. Gail Hilson Woldu (Norman, OK: University of Oklahoma Press, 2010).

⁴⁵ ‘Pour dom Mocquereau, d’Indy représentait la quintessence de l’intelligence musicale de l’époque.’ Hala, *Solesmes et les musiciens*, i, 407.

⁴⁶ Pierrette Mari, *Olivier Messiaen: L’homme et son oeuvre* (Paris: Seghers, 1965), 14.

There is, however, also a vital direct influence from d'Indy's *Cours* to consider.⁴⁷ When asked about his inspiration to teach musical analysis, Messiaen pointed out that, 'Since my childhood, I had pored over the composition treatise of Vincent d'Indy [...] That's how musical analysis came into my life.'⁴⁸ The method of analysing music from all ages through Gregorian neumes is in fact taken directly from the *Cours*, together with the implication that it makes chant relevant to the creation of new music.⁴⁹ D'Indy's analysis of cyclical form in Franck's Violin Sonata notes how three motifs serve as a melodic skeleton or framework – *charpente mélodique* – for the whole piece. He finds the *torculus* neume in all three motifs and holds it to function as a basic thematic cell for the whole sonata (see Figure 5).⁵⁰ D'Indy's *charpente mélodique* and the concomitant method of analysis is clearly the model for Messiaen's concept of *contour mélodique*.

A further theoretical connection lies behind this method. As noted in a snub by Camille Saint-Saëns, Hugo Riemann was a vital source for d'Indy's theories.⁵¹ The conception that motifs constitute the most basic building blocks in music is a

⁴⁷ A still relevant observation is that, 'Insufficient notice has been taken of the marked similarities between d'Indy and Messiaen, not only in their mature mysticism, but also in their theological cast of mind and mode of existence.' Andrew Thomson, *Vincent d'Indy and his World* (Oxford: Clarendon Press, 1996), 219. There are obvious similarities between d'Indy's *Cours* and the prominent role of Gregorian chant in composition studies and the renewal of contemporary music. On such traits, see Fernand Biron, *Le chant grégorien dans l'enseignement et les œuvres musicales de Vincent d'Indy* (Ottawa: Les Éditions de l'Université d'Ottawa, 1941).

⁴⁸ Messiaen, *Music and Color*, 175. 'Messiaen's use of the technical word *neume* to describe the basic units in his own melodic-rhythmic thought was already current at the Schola Cantorum.' Robin Freeman, 'Trompette d'un ange secret: Olivier Messiaen and the Culture of Ecstasy', *Contemporary Music Review*, 14 (1996), 81–125 (p. 86). On d'Indy's 'neume filter', see Jean Boivin, 'Musical Analysis According to Messiaen: A Critical View of a Most Original Approach', *Olivier Messiaen: Music, Art and Literature*, ed. Christopher Dingle and Nigel Simeone (London: Routledge, 2016), 137–57 (p. 147).

⁴⁹ 'L'influence de Vincent d'Indy professeur sur la vie musicale contemporaine laisse entrevoir la valeur intrinsèque de son enseignement, l'excellence de sa méthode d'éducation fondée sur l'étude et l'analyse des œuvres de tous les temps. Cette méthode cependant tire avant tout sa valeur du fait qu'elle remonte aux sources de notre art musical: le chant grégorien.' Biron, *Le chant grégorien*, 24–5. 'D'Indy provided a scheme whereby composers might apply rhythmic principles of Gregorian chant to their music, rendering explicit the possible applications of Gregorian rhythmic principles to classical musical practices that were only implicit in *Le nombre musical*.' Walden, 'Dom Mocquereau's Theories', 131.

⁵⁰ Vincent d'Indy, *Cours de composition musicale*, ii/1 (Paris: Durand, 1909), 423–4; cf. d'Indy, *Course*, 73. On the connection between this example and Messiaen, see Balmer, Lacôte and Murray, *Le modèle et l'invention*, 46.

⁵¹ 'Ce qui me met fort à l'aise pour discuter les idées de M. d'Indy, c'est que bien souvent, de son propre aveu, ces idées ne sont pas les siennes, mais celles de l'Allemand Hugo Riemann' ('What makes me at ease discussing Mr. d'Indy's ideas is that very often, by his own admission, these ideas are not his, but those of the German Hugo Riemann'). Camille Saint-Saëns, *Les idées de M. Vincent d'Indy* (Paris: Pierre Lafitte, 1919), 11. Notable here is Saint-Saëns's remark that the method of applying Greek metrics to the performance of modern repertoire was also imported from the 'other side of the Rhine'. Writings by the Greek philologist Rudolf Westphal first inspired Jules Combarieu, whose 1897 texts are important precursors to d'Indy and Messiaen. See Jules Combarieu, *Études de philologie musicale: Théorie du rythme dans la composition moderne d'après la doctrine antique, suivie d'un Essai sur l'archéologie musicale au XIXe siècle et le problème de l'origine des neumes* (Paris: Picard, 1897).

le premier et le plus pur modèle de l'emploi *cyclique* des thèmes dans la forme Sonate : en effet, indépendamment des idées musicales appartenant en propre à chacune des pièces de cette œuvre, *trois motifs* générateurs ou conducteurs spéciaux (x , y , z), successivement exposés, participent à la construction de ce véritable monument musical, auquel ils servent en quelque sorte de « charpente mélodique » :



La cellule x , génératrice de toute l'œuvre, se retrouve même dans les dessins y et z , en tant que *neumes mélodiques* : elle consiste en un *torculus* (♣) portant un accent expressif sur sa note centrale (*fa ♯*).

Le dessin y , contenant en ses *trois dernières notes* le *torculus* de x , s'expose pour la première fois au début du développement du *deuxième mouvement* (S), et se reproduit, sous diverses formes, dans la *Fantaisie* et le *finale*.

Figure 5 D'Indy's motivic analysis of Franck's Violin Sonata, taken from his *Cours de composition musicale*, ii/1, 423–4.

quintessentially Riemannian idea. His 'primacy of thematic over tonal structure' inspired d'Indy's, and therefore also Messiaen's, treatment of melodic contours.⁵² As discussed in the fourth volume of Messiaen's *Traité* (near to its chapters on chant), d'Indy created a theory of accentuation that bridges melodic motion and rhythm. Messiaen notes that d'Indy follows Riemann's terminology, although he could just as well have employed Mocquereau's terms *arsis* and *thésis*. A central point is that melodic shapes are regarded as carriers of active or passive rhythmic motion, a tension that Messiaen analyses in Mozart with recourse to Riemann's notions of masculine and feminine rhythmic groups.⁵³ The *Traité* clearly perceives thematic connections between Riemann and Mocquereau, even though Messiaen cannot have known that the German theorist and the Solesmes scholar corresponded directly on these matters.⁵⁴

⁵² Thomson, *Vincent d'Indy*, 65.

⁵³ See Messiaen, *Traité*, iv, 133–6; and on Riemann's notions in d'Indy's *Course*, see Thomson, *Vincent d'Indy*, 136–7.

⁵⁴ For explicit cross references, see foremost Mocquereau, *Le nombre musical grégorien*, 64, which points back to a detailed discussion of Mocquereau in Hugo Riemann, 'Ein Kapitel vom Rhythmus', *Die Musik*, 3 (1903/4), 155–62. Further references appear in *Antiphonarium tonale missarum XIe siècle: Codex H. 159 de la Bibliothèque de l'École de Médecine de Montpellier*, Paléographie musicale: Les principaux manuscrits de chant grégorien, ambrosien, mozarabe, gallican, 7, ed. Dom André Mocquereau (Solesmes: Imprimerie Saint-Pierre, 1901), and Hugo Riemann, *Handbuch der Musikgeschichte*, 2 vols. in 5 parts (Leipzig: Breitkopf & Härtel, 1904–13), i/2: *Die Musik des Mittelalters* (1905). Walden, 'Dom Mocquereau's Theories', 127, reports that archives at Solesmes hold 21 letters exchanged between the two.

At this point, it seems clear that there is a web of influences running between Riemann, d'Indy, Mocquereau and Messiaen. Before seeking to untangle their implications, Messiaen's motives for engaging with chant theory need to be surveyed against the backdrop of recent scholarship on Gregorian revivalism in France.

Contrasting outlooks on 'free rhythm'

At the outset of his *Technique de mon langage musical*, Messiaen includes Gregorian chant among the sources that can set music free to fulfil a new calling, at a moment when forms within the era of tonality have grown 'old'. As he puts it,

We shall not reject the old rules of harmony and of form; let us remember them constantly, whether to observe them, or to augment them, or to add to them some others still older (those of plainchant and Hindu rhythms) or more recent (those suggested by Debussy and all contemporary music).⁵⁵

Prior to this, Messiaen claims to have 'special ideas on [...] prosody, and the union of the musical line with the living inflections of speech'.⁵⁶ He aspires 'to make melody "speak"' and to establish its unequivocal primacy. This stance entails that harmony must confine itself to what lies 'in a latent state in the melody'.⁵⁷ That six chapters on rhythm precede Messiaen's treatment of melody and melodic contours suggests that 'living' qualities of melody themselves rest upon a prior rhythmic basis. In articles from the late 1930s, he had already established the centrality of chant in liberating the originality, vitality and variety of a 'living' (*vivant*) music. Plainchant had been proclaimed 'the most living, the most original and the most joyously free' of Catholic treasures.⁵⁸

For Messiaen, these qualities stand opposed to a prevalent antithesis of freedom: the 'laziness' of habitually relying on conventional equal or ternary metre.⁵⁹ The first

⁵⁵ Messiaen, *The Technique of my Musical Language*, 8.

⁵⁶ *Ibid.*, 7.

⁵⁷ *Ibid.*, 8.

⁵⁸ 'Le plain-chant, langue musicale officielle de L'Eglise, est certainement la plus vivant, la plus originale, la plus joyeusement libre des œuvres religieuses.' Olivier Messiaen, 'De la musique sacrée', *Carrefour*, June–July 1939, 75, cited here from Stephen Broad, *Olivier Messiaen: Journalism 1935–1939* (Abingdon: Ashgate, 2012), 75, and above in translation from *ibid.*, 136. On 'living' music, see also Olivier Messiaen, 'Musique religieuse', *La page musicale*, 5 February 1937, 1 (repr. in Broad, *Olivier Messiaen: Journalism*, 63–4), and Stephen Broad, 'Messiaen and *Art sacré*', *Messiaen Perspectives 1: Sources and Influences*, ed. Christopher Dingle and Robert Fallon (Farnham: Ashgate, 2013), 269–78.

⁵⁹ 'Paresseux, les vils flatteurs de l'habitude et du laisser-aller qui méprisent tout élan rythmique, tout repos rythmique, toute variété, toute respiration rythmique, toute alternance dans l'art si difficile du nombre musical, pour nous servir sur le plateau illusoire du mouvement perpétuel de vagues trois temps, des quatre temps plus vagues encore, indignes de plus vulgaire des bals publics, de la moins entrainée des marches militaires.' Olivier Messiaen, 'Contre la paresse', *La page musicale*, 17 March 1939, 1, cited from Broad, *Olivier Messiaen: Journalism*, 68–9, cf. translation on p. 130: 'Lazy: the vile flatterers of habit and laissez-faire who scorn all rhythmic undulation, all variety, all respiration, all alternation in the subtle art of musical meter, serving us instead, on the illusory platter of perpetual motion, vague 3-in-a-bars and vaguer 4-in-a-bars, native to the most vulgar of public dances and the most limping of military marches.'

chapter on rhythm in his *Technique de mon langage musical* mentions Mocquereau's teaching on neumes in the context of a desire to 'replace the notions of "measure" and "beat"'. The first significant example given from Messiaen's own music illustrates his aspiration to create an 'ametrical music' in which 'the rhythm is absolutely free'.⁶⁰ Such a quest for freedom beyond the 'enemy' of fixed measure was a long-standing aesthetic idea in French musical thought, although its implications varied throughout time and between different agents. Messiaen follows statements by d'Indy and Mocquereau, both deeply rooted in a Romantic endeavour to employ chant as a means of venturing beyond strict metre.⁶¹ His dependency on these authors entails a particular approach to rhythmic freedom that becomes apparent when set against the wider history of French chant theory.

The view that plainchant melodies had been degraded by incorporating fixed metre was integral to Romantic chant theories and underpinned ambitions to restore melodies to a more original state. Such aspirations emerged in tandem with theories of what such pristine qualities implied. Towards the middle of the nineteenth century, restoration efforts in the Benedictine abbey at Solesmes had firmly rejected 'mensuralism' and the idea that the durations of notes were established by mathematical relationships to a basic note value. Their contrasting 'equalism' exerts a lasting impact on Messiaen's *Traité*: 'Except in some particular cases [...] all the sounds are of equal value.'⁶² This terminology is potentially misleading, however. It captures an ambition to break free of fixed proportions, but equalism simultaneously induced a new rhythmic inequality, based on accentuation patterns in the Latin texts of chant melodies.

Mocquereau's mentor Dom Pothier advocated such a verbal turn as the basis for a more flexible rhythm. For him, attention to textual accents inspired more subtle changes between longer and shorter syllables, thus allowing 'free' expressivity in

⁶⁰ Messiaen, *The Technique of my Musical Language*, 9, 11. The example is the opening of 'Les anges' from Messiaen's *La nativité du Seigneur*.

⁶¹ 'And it is not unreasonable to think that rhythm, free in the future as it had been in the past, will once again reign over music and liberate it from the bondage under which it was held – for nearly three centuries – by the usurping and debilitating domination of the poorly understood measure.' D'Indy, *Course*, 58. Having studied this text, Mocquereau comments in a letter to d'Indy (21 January 1901): 'Je me réjouis de me trouver d'accord avec vous, car pour moi, l'ennemi, c'est la mesure, et le rythme est tout, et c'est surtout dans le chant grégorien que cela est vrai' ('I am delighted to find myself in agreement with you, because for me, the enemy is the measure, and rhythm is everything, and this is especially true in Gregorian chant'). Hala, *Solesmes et les musiciens*, i, 429.

⁶² 'Sauf certains cas [...] tous les sons ont une valeur égale.' Messiaen, *Traité*, iv, 7. For a rich survey of scholarly debate on Gregorian rhythm, including these central terms, see Nancy Phillips, 'Notationen und Notationslehren von Boethius bis zum 12. Jahrhunderts', *Die Lehre vom einstimmigen liturgischen Gesang*, ed. Thomas Ertelt and Frieder Zaminer, *Geschichte der Musiktheorie*, 4 (Darmstadt: Wissenschaftliche Buchgesellschaft, 2000), 293–623. The classic presentation remains Pierre Combe, *Histoire de la restauration du chant grégorien d'après des documents inédits* (Solesmes: Abbaye de Solesmes, 1969), trans. Theodore N. Marier and William Skinner as *The Restoration of Gregorian Chant: Solesmes and the Vatican Edition* (Washington DC: Catholic University of America Press, 2003).

performance.⁶³ The turn towards linguistic models nevertheless had its limits. As put in Pothier's *Les mélodies grégoriennes d'après la tradition*, a certain liberation from language is necessary when a fixed metre obstructs 'natural' rhythmic instincts:

There are two kinds of proportion and consequently two kinds of rhythm. If proportion is established on a rigorous and invariable basis, as in verses, it is measured; if proportion is only determined by the natural instinct of the ear, like in speech, it is free.⁶⁴

In line with this antithesis, Pothier contrasts a linguistic *rhythme poétique* with the freedom in a *rhythme oratoire*.⁶⁵ The latter hinges upon a natural instinct, 'interior sensibility' and 'unseen impulse'. This subjective response and religious spontaneity is at once an ideal in performance and serves to situate chant in human nature and a 'living tradition' of liturgy.⁶⁶

Mocquereau's preface to *Le nombre musical grégorien* praises Pothier's work for its incontestable religious and aesthetic merits. It affirms Pothier's 'accentualism' but subtly transforms its meaning. While sensitive in tone, this preface heralds a decisive aesthetic turning point within the Solesmes tradition. Pothier's intuitive streaks are slyly set aside as antiquated when Mocquereau speaks of a general 'desire for more profound knowledge' and 'true principles' in rhythm – not only for scholarly reasons, but also to overcome uncertainties and imperfection in performance.⁶⁷

Mocquereau's aim is to venture beyond Benedictine manuals on Gregorian rhythm from the preceding decades by adopting a more universal approach than considering

⁶³ As put by Pothier's associate Augustin Gontier, who ostensibly coined the notion of *rhythme libre*: 'Le plain-chant est une récitation modulée dont les notes ont une valeur indéterminée et dont le rythme, essentiellement libre, est celui du discours.' Gontier, *Méthode raisonnée de plain-chant: Le plain-chant considéré dans son rythme, sa tonalité et ses modes* (Paris: V. Palmé, 1859), 1. See also *ibid.*, 4–7; Combe, *The Restoration of Gregorian Chant*, 26–8; and Benedikt Lessmann, *Die Rezeption des gregorianischen Chorals in Frankreich im 19. und frühen 20. Jahrhundert* (Hildesheim: Olms, 2016), 168. Pothier 'considered the Latin text with its accents a basic factor of the rhythmic life, particularly in the syllabic and neumatic chants or passages, in which the textual accent should make itself felt in the performance as a stress of the corresponding note of the melody'. Willi Apel, *Gregorian Chant* (Bloomington, IN: Indiana University Press, 1958), 127.

⁶⁴ 'Il y a deux sortes de proportion, par conséquent deux sortes de rythme. Si la proportion est établie sur des bases rigoureuses et immuables, comme dans les vers, le rythme est mesuré; si la proportion n'est déterminée que par l'instinct naturel de l'oreille, comme dans le discours, le rythme est libre.' Dom Joseph Pothier, *Les mélodies grégoriennes d'après la tradition* (Tournai: Desclée, 1880), 179. For a corresponding view in Moritz Hauptmann's coeval theory of metre, see William E. Caplin, 'Theories of Musical Rhythm in the Eighteenth and Nineteenth Centuries', *The Cambridge History of Western Music Theory*, ed. Thomas Christensen (Cambridge: Cambridge University Press, 2002), 657–94 (p. 679).

⁶⁵ This distinction had already appeared in Gontier, *Méthode raisonnée de plain-chant*, 3.

⁶⁶ 'The real value of the neumes resulted "spontaneously", as Pothier put it, from good pronunciation, creating rhythms so natural they never had to be written down. Such spontaneity recalled Pothier's original description of the Gregorian song, in whose accents he had heard a similarly instinctive expression – the "spontaneous cry of religious thought and feeling".' Bergeron, *Decadent Enchantments*, 108; see also *ibid.*, 104–12.

⁶⁷ Mocquereau, *Le nombre musical grégorien*, 15–17. Mocquereau states that there has been a 'lack of definite rules for the rendition of rhetorical musical rhythm and the imperfection of neumatic notation' (p. 17). The disagreement between Pothier and Mocquereau has even been called an 'intellectual war'; see Bergeron, *Decadent Enchantments*, 87, and Ellis, *The Politics of Plainchant*, 47–67.

merely language, notation or particular musical parameters.⁶⁸ This stance is symbolic of a wider shift in Romantic music theory and aesthetics, in which Riemann had rejected previous accent theories for lacking systematicity.⁶⁹ In a similar vein, *Le nombre musical grégorien* suggests that questions of language and notation belong within the (mere) 'matter of rhythm'; as such, they demand a preceding grasp of the very 'nature of rhythm'. Mocquereau posits certain 'natural laws of rhythm' from which human language, chant and Pothier's devotional spontaneity could not possibly be exempt.⁷⁰

Thus, before even mentioning the rhetorical and musical elements on which *Gregorian rhythm* is based, we begin by studying the rhythm *in itself*, so to speak, that is rhythm stripped, as far as possible, of anything which might obscure it, complicate it, or distort its fundamental principles [...] by so doing, [this] will enable us to penetrate to its core, and to see it in its naked truth.⁷¹

As approvingly noted by Riemann himself, this ambition first requires Mocquereau to establish an abstract aesthetic foundation, which later can be applied to the specific realm of plainchant.⁷² Such a move echoes how Riemann incorporated aspects of natural sciences into music theory to provide a universal foundation for its claims.⁷³ Messiaen's later reception of chant theory follows such a turn towards a natural basis and adheres to its supposed universality and well-grounded epistemology. Mocquereau's move beyond Pothier's accents and intuitive subjectivity explains why Messiaen approached melody from the vantage point of rhythm. As a faithful student of *Le nombre musical grégorien*, he was convinced that a proper understanding of music

⁶⁸ Mocquereau, *Le nombre musical grégorien*, 28, 130–5.

⁶⁹ The 'attempts by theorists, such as Lussy, to break away from the mechanical performance of metrical accents by proposing a variety of rhythmic and expressive accents result in a hotchpotch of ad hoc formulations and individual solutions lacking theoretical precision and (especially important for Riemann) any sense of *system*'. Caplin, 'Theories of Musical Rhythm', 683.

⁷⁰ To give a further example, medieval authorities are recognized to 'represent the liturgical melodies as belonging to free rhythm, musical or rhetorical. This rhythm cannot, of course, claim any exemption from the laws of general Rhythmics.' Mocquereau, *Le nombre musical grégorien*, 19–20.

⁷¹ *Ibid.*, 30.

⁷² It is characteristic of Mocquereau that he 'als obersten Satz aufstellt, dass alles schlichteste Natur und Einfachheit sein müsse. Aber was ist schlichte Natur und Einfachheit auf dem Gebiete des Rhythmus? Die Notwendigkeit, das Grundwesen des Rhythmus zu definieren, um seine unbehinderte freie Herrschaft auf dem Gebiet des gregorianischen Chorals erwiesen und zugleich erläutern zu können, zwingt Dom Mocquereau, auf philosophisch-ästhetisches Gebiet zu übertreten, und damit gewinnt seine Studie eine allgemeinere Bedeutung' ('establishes a highest principle that everything must be of the plainest nature and simplicity. But what is plain nature and simplicity in the field of rhythm? The necessity to define the essence of rhythm, in order to be able to demonstrate and at the same time to explain its unhindered free reign in the field of Gregorian chant, forces Dom Mocquereau to cross over into philosophical-aesthetic territory. Thereby, his study acquires a more universal significance'). Riemann, 'Ein Kapitel vom Rhythmus', 156.

⁷³ 'Music theory belongs among the natural sciences, in the sense that art is nature; music theory would have a right to exist even if it only fulfilled the single purpose of proving the immanent law-abiding order of artistic creation.' Letter from Riemann to Franz Liszt (1879), quoted in Alexander Rehding, *Hugo Riemann and the Birth of Modern Musical Thought* (Cambridge: Cambridge University Press, 2003), 20. As noted on the same page, 'Riemann recognised that in order for music theory to be taken seriously, if it wanted to say anything authoritative about music at all, it had to partake of the prestige that the natural sciences enjoyed.'

and rhythm in music requires a prior grasp of an abstract essence of rhythm. In contrast to Pothier's references to a 'living tradition', Messiaen does not approach the potential in chant for a living expressivity in music from liturgical or specifically religious viewpoints. His theory of chant rather rests upon an amalgamation of systematic and historical arguments – as the following discussion will demonstrate.

Progress and universality in the spiral of history

A characteristic feature of a broad 'quest for the origins of music' at the turn of the twentieth century is the way in which theories from the natural sciences were merged with theories of a gradual and law-bound unfolding of artistic creation throughout history.⁷⁴ The historical origins of music received a distinct value in such a paradigm, together with the goal, influenced by German idealism, 'to discover one single source, one natural principle, with which to explain harmony and metre in its entirety'.⁷⁵ The rhythm chapter from d'Indy's *Cours* which Mocquereau asked to study is steeped in both these aspirations. Both aspects need be surveyed here. Initially, it is noteworthy how d'Indy's conception of art rests upon an evolutionary framework:

Art, in its course throughout the ages, can be reduced to the idea of the *microcosm*. Like the world, like peoples, like civilizations, like man himself, it goes through successive periods of youth, maturity and old age, but it never dies, and renews itself perpetually. It is not a closed circle, but a spiral which constantly rises and progresses.⁷⁶

D'Indy's quasi-Hegelian spiral movement is directed towards constant progression, but its continually expanding movement remains governed by an original central or systematic axis. To attain further expansion within the spiral, it is necessary to pay close attention both to an original point of departure and the (normative) evolution of history from that point up to the present.⁷⁷ D'Indy's teaching syllabus also rested on

⁷⁴ Alexander Rehding, 'The Quest for the Origins of Music in Germany circa 1900', *Journal of the American Musicological Society*, 53 (2000), 345–85.

⁷⁵ Rehding, in *Hugo Riemann*, 23, is here referring to Moritz Hauptmann. Riemann was praised precisely for his ability to explain music, in its entirety, from a single highest principle; see Michael Arntz, *Hugo Riemann (1849–1919): Leben, Werk und Wirkung* (Cologne: Concerto, 1999), 229. See also Peter Rummenhölter, 'Der fluktuierende Theoriebegriff Hugo Riemanns: Musiktheorie zwischen Idealismus und Naturwissenschaft', *Hugo Riemann (1849–1919): Musikwissenschaftler mit Universalanspruch*, ed. Tatjana Böhme-Mehner and Klaus Mehner (Cologne: Böhlau, 2001), 31–6.

⁷⁶ Vincent d'Indy, 'Une école d'art répondant aux besoins modernes', *La tribune de Saint-Gervais*, 6 (1900), 303–14 (p. 305), quoted in translation from Thomson, *Vincent d'Indy*, 118–19. See also d'Indy, *Course*, 37.

⁷⁷ 'The spiral combines the circle, representing perfection, with the straight line, representing progress – one thinks of Dante's Mount Purgatory, with its rising succession of interconnected circular cornices. Even the graded hierarchy of musical courses, comprehensively listed in his speech, evokes the ascending circles of the heavens in Dante's Neoplatonic conception of Paradise; each moving circle represents an area of doctrine, with the highest, the crystalline heaven, controlling the movements of the lower.' Thomson, *Vincent d'Indy*, 120. See also Jann Pasler, 'Paris: Conflicting Notions of Progress', *The Late Romantic Era: From the Mid-19th Century to World War I*, ed. Jim Samson, *Man and Music*, 7 (London: Macmillan, 1991), 389–416 (pp. 401–5).

the need for composers to study the history of musical forms before they made their own creative contributions beyond the imprints of a preceding tradition.⁷⁸ The ‘basic foundation’ for his *Cours* is a division of music history into three ‘grand eras’. They are, in turn:

- (1) *the rhythm-monodic era*, from the third to the thirteenth century,
- (2) *the polyphonic era*, from the thirteenth to the seventeenth century,
- (3) *the metered era*, from the seventeenth century to our time.⁷⁹

These periods and terms are pregnant with implications. D’Indy dates the birth of a specifically musical art, in which rhythm and (melodic) monody coincide, to the third century. The inner logic of his spiral therefore entails that studies of the origins of rhythm must hark back to a pre-musical age and revisit its historical foundations in antiquity.

D’Indy’s ‘spiral’ left a distinct imprint on Messiaen’s early career. As a newly appointed member of the teaching staff at the Schola Cantorum, he was involved in the formation of the concert society La Spirale in 1935. The honorary president of the group was Nestor Lejeune, who as director of the Schola Cantorum was responsible for appointments of a new generation of progressive teachers.⁸⁰ Messiaen’s adaptation of chant theory and of the universality implied in d’Indy’s ‘neume filter’ clearly embraced an ideological legacy at this institution, but he nevertheless belonged within a new wave of Catholic art.⁸¹ Notions of free rhythm attained particular political connotations within an emerging nonconformist spirituality, as is evident in Messiaen’s connections between a rhetoric of liberation from the monotony of metre and a humanism centred on ideals such as love, spirituality and sincerity of emotion.⁸²

Such a new “‘integral” humanism’ – to use Jacques Maritain’s topical expression – underpins Messiaen’s aspiration to create a “‘true”, that is to say spiritual, music. Music

⁷⁸ Gail Hilson Woldu, ‘Vincent d’Indy, *musicien artiste*, and the *Cours de composition musicale*’, in d’Indy, *Course*, 1–33 (pp. 8–15).

⁷⁹ D’Indy, *Course*, 37, cf. *Antiphonarium tonale missarum XIe siècle*, 162.

⁸⁰ On La Spirale and a 1934 reshuffle at the Schola Cantorum, see Nigel Simeone, ‘La Spirale and La Jeune France: Group Identities’, *Musical Times*, 143/1880 (2002), 10–36; Broad, ‘Recontextualising Messiaen’s Early Career’, i, 105–10.

⁸¹ On transformations in Catholic culture away from conflicts between faith and modern culture in d’Indy’s generation, see Stephen Schloesser, *Jazz Age Catholicism: Mystic Modernism in Postwar Paris 1919–1933* (Toronto: University of Toronto Press, 2005).

⁸² Olivier Messiaen, ‘La transmutation des enthousiasmes’, *La page musicale*, 16 April 1936, 1: ‘Plus de rythmes monotones par leur carrure même; nous voulons librement respirer!’ Quoted from Broad, *Olivier Messiaen: Journalism*, 61; cf. Messiaen, *Traité*, i (1994), 58: ‘Laissons de côté le “pas cadence” des soldats, affreusement anti-nature! La marche libre – la vraie – ne comporte jamais deux groupes de pas de durée absolument identique.’ As put by Stephen Schloesser in *Visions of Amen: The Early Life and Music of Olivier Messiaen* (Grand Rapids, MI: Eerdmans, 2014), 242: ‘Messiaen was fully immersed in the search for a new music, a new order, and a new “integral” humanism.’ See also Jane F. Fulcher, ‘The Politics of Transcendence: Ideology in the Music of Messiaen in the 1930s’, *Musical Quarterly*, 86 (2002), 449–71, and Fulcher, *Renegotiating French Identity: Musical Culture and Creativity in France during Vichy and the German Occupation* (Oxford: Oxford University Press, 2018), 289–95.

that is an act of faith. A music that touches all subjects without ever ceasing to touch God.⁸³ This quest for unlimited connections between human culture and the divine serves as a theological warrant behind Messiaen's musical eclecticism. It also helps to explain why Mocquereau was such an attractive theoretical inspiration for him. In *Le nombre musical grégorien*, Messiaen was convinced he had found universal principles applicable to any kind of musical sources. While Greek and Hindu metrics provide beneficial examples of rhythm, to plainchant is ascribed 'perfect freedom'.⁸⁴ In other words, this consummate Christian music is categorically different from other sources. It functions both as the official musical language of the Church and as a theory for all music, in an asymmetric model of Christian inclusivity.

At the same time, Messiaen's extensive explorations in ancient rhythms echo d'Indy's stress on the necessity of remaining in living contact with the origins of an ordered and gradual evolution of civilization and music. D'Indy's designations for the three ages of music shed light on how historical evolution, rather than theological arguments per se, plays a key role in the elevation of chant above these vital sources. It has already been noted that Messiaen regarded plainchant as a living link to ancient Greek metrics. On a level of principle, d'Indy's designation of a rhythmo-monodic period implies a similar dual interconnection between Greek metrics and melodic plainchant. Rhythmomonodic singing forms a historical repertoire that keeps the legacy of a pre-musical era alive.⁸⁵ As melodic *music*, chant both incorporates pure rhythm and adds a further layer of expression. Within such an outlook, Mocquereau's *Le nombre musical grégorien* is significant because it thematizes this reciprocity of rhythm and monody: it seeks out natural and historical (Greek) origins for rhythm that remain normative in what d'Indy deemed the 'eminently expressive character of Gregorian chant'.⁸⁶

Like d'Indy, Messiaen associates historical periods with characteristic musical elements or techniques, albeit in a way that dissociates his stance from conventional musical historicism.⁸⁷ The overall organization of the material in Messiaen's two major treatises is arguably the most illuminating testimony to his reception of d'Indy's

⁸³ 'Je réclamaï plus haut une musique "vraie", c'est-à-dire spirituelle. Une musique qui soit un acte de foi. Une musique qui touche à tous les sujets sans cesser de toucher à Dieu.' Messiaen, 'De la musique sacrée', quoted from Broad, *Olivier Messiaen: Journalism*, 76 (trans. on p. 137); cf. Messiaen, *The Technique of my Musical Language*, 7. Schloesser, *Visions of Amen*, 242, highlights how Messiaen was inspired by Jacques Maritain's *Humanisme intégral: Problèmes temporels et spirituels d'une nouvelle chrétienté* (Paris: F. Aubier, 1936). Although this is certainly relevant, Messiaen takes a divergent aesthetic route from the intellectual neoclassicism preferred in Maritain's circle. See Douglas Shadle, 'Messiaen's Relationship to Jacques Maritain's Musical Circle and Neo-Thomism', *Messiaen the Theologian*, ed. Andrew Shenton (Farnham: Ashgate, 2010), 83–99.

⁸⁴ 'Le plain-chant lui-même, d'une liberté rythmique cependant parfaite'. Olivier Messiaen, 'Billet parisien: Réflexions sur le rythme', *La sirène*, May 1937, 14, quoted from Broad, *Olivier Messiaen: Journalism*, 28 (trans. on p. 91); cf. Schloesser, *Visions of Amen*, 108–11.

⁸⁵ 'Actually, the flexibility of the neumes of plainchant, the use of *arses* and *theses*, and the combining of twos and threes in plainchant correspond in a certain sense to a survival of Greek meters.' Messiaen, *Music and Color*, 75.

⁸⁶ D'Indy, *Course*, 104.

⁸⁷ On 'die Synchronie zwischen Epochen und Techniken', see Rathert, 'Messiaen und die Geschichte', 223–4.

schema of evolution. Within them, chant provides a beneficial vantage point for interpreting what has been called a ‘fundamental ambiguity’ in Messiaen’s approach to melody and rhythm.⁸⁸ *Technique de mon langage musical* claims an unequivocal primacy for melody and yet it is launched with detailed explorations of rhythm.⁸⁹ Comparing the *Cours* and the *Traité*, Tobias Janz has rightly called the former the ‘hypotext of a palimpsest’, a verdict that holds both on individual parts and concerning the whole structure.⁹⁰ Volumes 1–3 of the *Traité* are devoted to fundamental rhythmic principles, before the exposition of plainchant in the fourth volume represents the introduction of melody and thus of music proper in history. The lengthy treatment of birdsong in the fifth volume bridges melody and the introduction of harmony, a topic treated in two final volumes. In its overarching design, the *Traité* thus mirrors the division of history in d’Indy’s three main epochs.

In spite of these concurrences, Messiaen takes a highly personal approach to historiography, as is evident from his treatment of rhythm. He employs d’Indy’s language of an ordered progress in steps but also adheres to a vigorous orientalism in French music and in comparative philology. A few decades before him, d’Indy’s spiral and the teaching at the Schola Cantorum opposed theorems of a purely linear progression in music, often associated with the Paris Conservatoire and political republicanism.⁹¹ As a contrast to both outlooks, Messiaen heralds the newfound interest in rhythm, not least from oriental sources, as the recovery of an expressive sensibility that has been lost in Western musical history.⁹²

His conviction that rhythm has been given proper attention only recently mirrors, whether knowingly or not, a schema articulated in sketches for François-Joseph Fétis’s never completed treatise on rhythm. Fétis had posited a development in four stages from a prevailing ‘unirhythmical’ stage, in which music is constrained by a single static metre and operates in basic binary or ternary units. For him, progress towards greater expressive capacities called for techniques that permitted more sophisticated and

⁸⁸ Balmer, Lacôte and Murray, *Le modèle et l’invention*, 88.

⁸⁹ *The Technique of my Musical Language* is introduced by this methodological statement: ‘Knowing that music is a language, we shall seek at first to make melody “speak”. The melody is the point of departure. May it remain sovereign!’ (p. 8) What follows are six chapters on rhythm, before Messiaen finally discusses melody. The *Traité* investigates rhythm throughout three volumes before turning to plainchant – and thereby to melody – in its central and fourth tome.

⁹⁰ ‘Vincent d’Indy’s *Cours de composition musicale* – ein Text, der an vielen Stellen wie der Hypotext eines Palimpsests durch die Oberfläche von Messiaen’s *Traité* durchscheint’. Janz, ‘Messiaen’s Mozart’, 295.

⁹¹ On these approaches, see Pasler, ‘Paris: Conflicting Notions of Progress’, 390–407; Catrena M. Flint, ‘The Schola Cantorum, Early Music and French Political Culture, from 1894 to 1914’ (Ph.D. dissertation, McGill University, Montreal, 2006); Peter Asimov, ‘Comparative Philology, French Music, and the Composition of Indo-Europeanism from Fétis to Messiaen’ (Ph.D. dissertation, Cambridge University, 2020).

⁹² ‘Il y a tout de même dans l’histoire une succession ordonnée d’événements. Dans la civilisation occidentale, en tout cas, la mélodie est apparue en premier lieu, puis l’harmonie, ensuite le souci du timbre, plus tard le souci rythmique dont je suis un peu responsable, enfin il y a une caractéristique connue en Orient depuis longtemps mais qui est tout à fait récente en Occident, c’est le souci de la nuance et du tempo, des oppositions et de l’alliage de la nuance et du tempo.’ Claude Samuel, *Entretiens avec Olivier Messiaen* (Paris: Pierre Belfond, 1967), 53.

flexible types of metrical organization.⁹³ Messiaen echoed a similar Enlightenment conviction of inevitable progress towards increasing complexity in music, at least in the earlier part of his career. While Riemann and d'Indy in a pessimistic teleology feared a final eclipse of music in modernity, the radical young Messiaen saw in the 'old rules' of homophonic plainchant a source of progression towards greater rhythmical and expressive complexity.⁹⁴ Although plainchant is described as a consummate art in itself, Messiaen believes there is still room for composers to strive further towards an 'inexhaustible' music, 'powerfully original' and with 'varied means of expression', even a 'divine melody that will draw us into the sanctuary of the melodies of the Beyond'.⁹⁵

As a student, Messiaen first encountered similar expressive rhythmic ideals in the work of Maurice Emmanuel. There are many overlapping tendencies between what he learnt at the time and in his later thorough reading of Mocquereau.⁹⁶ Nevertheless,

⁹³ Fétis's four consecutive stages are labelled *unirhythmique*, *transirhythmique*, *plurirhythmique* and *omnirhythmique*. See Fétis's 'Du développement futur de la musique: Dans le domaine de rythme', *Revue et gazette musicale de Paris*, 19 (1852), 281–4, 289–92, 297–300, 325–7, 353–6, 361–3, 401–4, 457–60, 473–6; Mary I. Arlin, 'Metric Mutation and Modulation: The Nineteenth-Century Speculations of F.-J. Fétis', *Journal of Music Theory*, 44 (2000), 261–322; and (on the necessity of polyrhythm), Messiaen, *Traité*, i, 30–1.

⁹⁴ 'Im Unterschied zu der – eine deutliche Beeinflussung durch Riemann zeigenden – pessimistisch-teleologischen Auffassung d'Indys, dass mit der Moderne der endgültige Niedergang der Musik als Tonkunst drohe, hält sich Messiaen allerdings an das aufklärerische, in mancher Hinsicht an Vico und Herder anknüpfende Fortschrittsmodell Fétis', das die Geschichte der musikalischen Syntax (insbesondere der Tonalität) als Entfaltung einer Totalität der Phänomene ("pluritonique" bzw. "omnitonique") deutet; 'So liegt in der Einstimmigkeit des Gregorianischen Gesangs für ihn bereits ein Modell rhythmischer Freiheit der Avantgarde.' (In contrast to d'Indy's pessimistic-teleological conception – showing a distinct influence from Riemann – that with modernity the final decline of music as an art is looming, Messiaen adheres to Fétis's Enlightenment model of progress, in several respects following on from Vico and Herder, which interprets the history of musical syntax (especially tonality) as an unfolding of a totality of phenomena ("pluritonic" or "omnitonic"); 'For him, the monophony of Gregorian chant already contains a model of the rhythmic freedom in the avant-garde.') Rathert, 'Messiaen und die Geschichte', 227, 223.

⁹⁵ 'Cette vie – inépuisable et toujours nouvelle à ceux qui la cherchent – appelle des moyens d'expression puissamment originaux et variés.' Messiaen, 'La transmutation des enthousiasmes'. Cf. Messiaen, 'Musique religieuse': 'la divine mélodie qui seule nous introduira dans le sanctuaire des mélodies de l'au-delà', quoted from Broad, *Olivier Messiaen: Journalism*, 63–4, 62 (trans. pp. 125, 123). On this progressive tendency, see also Hans Rudolf Zeller, 'Messiaens kritische Universalität: Versuch über neue und "außereuropäische" Musik', *Olivier Messiaen*, Musik-Konzepte, 28, ed. Heinz-Klaus Metzger and Rainer Riehn (Munich: Edition Text + Kritik, 1982), 56–77 (p. 62).

⁹⁶ In spite of differences in details, Emmanuel and Mocquereau were in unison on the application of terms drawn from contemporary philology; see Maurice Emmanuel and Amédée Gastoué, 'R. P. Dom André Mocquereau: Le nombre musical grégorien ou rythmique grégorienne: théorie et pratique. – Tome I.', *La tribune de Saint-Gervais*, 14 (1908), 258–64; cf. Asimov, 'Comparative Philology', 90. Messiaen wavered on how deep an influence Emmanuel's teaching at the conservatoire had had on him. Emmanuel is left out of the homage to teachers in Messiaen, *The Technique of my Musical Language*, 7, and according to Messiaen, *Music and Color*, 72–3, Messiaen did not venture deep into Greek rhythms as a student. As a contrast, see the paean in 'Olivier Messiaen parle de Maurice Emmanuel', in Maurice Emmanuel, *Histoire de la langue musicale* (Paris: Henri Laurens, 1911). On biographical aspects and further concurrences such as those relating to modality, birdsong transcriptions, Hindu rhythms and the centrality of the notion of sound, see Ulrich Linke, 'Von Vögeln und Modi – sowie vom Tod und vom Weiterleben. Olivier Messiaens Lehrer Maurice Emmanuel', *Olivier Messiaen und die Französische Tradition*, ed. Stefan Keym and Peter Jost

Messiaen's affirmation of a progressive potential in chant implies that he sides with Mocquereau and d'Indy against Emmanuel, who sought continuity with, rather than evolution from, Greek metrics and for whom medieval music – not to speak of modern metre – already constituted a regression.⁹⁷ For Messiaen it was never a matter of composing new music according to results in recent scholarship, as if a leap straight back to rhythms from ancient sources would be possible. Rather, the melodic layer in plainchant has instilled an irreducible contribution in the unfolding of music and thereby gives the Gregorian melodies the status of a focal point in history. Messiaen's speculative approach to the origin of rhythm clarifies this prominence further, in that his reception of Mocquereau inspires musical principles that ostensibly stem from plainchant and its living contact with the very essence of rhythm.

The primacy of rhythm: mathematics, ecology and beauty of gesture

Having looked at historiographical motives behind quests for a lost essence of rhythm in chant, it is now time to engage with vital motives and implications in Messiaen's reception of chant theory. A natural point of departure is d'Indy's and Mocquereau's shared view that rhythm is 'the original and primordial element of all art', a thesis from which a number of central aesthetic convictions follow.⁹⁸ Such a statement indicates that a broad and unitary concept of art is assumed to precede its manifestations in particular art forms, such as music, dance and visual arts. *Le nombre musical grégorien* cites an informative passage from d'Indy's *Cours*:

Rhythm is the primordial element. One must consider it as anterior to all other elements of music; primitive peoples know, as it were, no other musical manifestation. Many peoples know nothing of the existence of harmony; some may know nothing of melody; but none ignore rhythm.⁹⁹

Within d'Indy's framework, rhythm is fundamental in both temporal and aesthetic regards: it precedes the historical evolution of music proper and is universally recognized by all human beings. The *Cours* meets idealist methodological expectations that it should be possible to deduce rhythm, in its entirety, from a single proposition and states: 'Order and Proportion in Space and Time: this is the definition of *Rhythm*.' The *Traité* cites d'Indy's principle, and Messiaen elsewhere commented on Mocquereau's slight

(Cologne: Dohr, 2013), 143–81, and on a common influence from German classical studies, see Wai-Ling Cheong, 'Ancient Greek Rhythms in Messiaen's *Le sacre*: Nietzsche's Legacy?', *Musicology*, 27 (2019), 97–136. Konstantine Panegyres, 'Classical Metre and Modern Music', *Greek and Roman Musical Studies*, 6 (2018), 212–38, provides a good summary of Emmanuel's work but in the case of Messiaen fails to realize the relevance of plainchant in the reception of Greek metrics.

⁹⁷ On Emmanuel's historiography, see Rathert, 'Messiaen und die Geschichte', 232–4.

⁹⁸ D'Indy, *Course*, 37.

⁹⁹ Mocquereau, *Le nombre musical grégorien*, 44–5; d'Indy, *Course*, 51. Cf. Messiaen's comment in Messiaen, *Music and Color*, 67: 'I feel that rhythm is the primordial and perhaps essential part of music; I think it most likely existed before melody and harmony.'

reformulation of it.¹⁰⁰ The latter's version is commended, but without the assumption that it could serve as a single and conclusive statement:

Rhythm is the one musical notion that cannot be defined simply. Innumerable definitions have been proposed, both good and bad according to the perspective from which they're viewed. One of them – by Dom Mocquereau – is very famous and sums up the ideas of Plato and the ancient Greeks on the subject: 'Rhythm is the ordering of movement.' This definition has the advantage of being applicable to dance, to words, and to music, but it's incomplete.¹⁰¹

As Messiaen notes, the possibility of applying this principle to different art forms is a central feature. Although d'Indy and Mocquereau differ on matters of classification, both authors subscribe to a 'Greek' subdivision of art into two main branches that operate primarily either with space or with time.¹⁰² Music belongs within the latter category, but the primacy of an abstract 'nature' of rhythm implies that the difference between the 'matter' of space and time is only one of degree. The idea of a primordial order that conjoins space and time serves as a focal point also in Messiaen's theory of rhythm, connecting his preoccupation with (1) mathematics, (2) nature and birdsong and (3) a gestural approach to chant.

The foundation of Messiaen's rhythmic order on mathematics is central to claims for the universality of neumes, because it induces a ground for rhythm deemed even more fundamental than nature itself. For d'Indy, melody is a compound that unites the realms of nature and culture – including Pothier's emphasis on accents in language.¹⁰³ He also conjoins natural and psychological dimensions when speaking of an inherent '*need in our mind*' for creative apperceptions of rhythm.¹⁰⁴ The vital point here is, however, that all other dimensions in rhythm are tied back to a truly universal mathematic structure.¹⁰⁵

Modern misconceptions of Mocquereau often stem from failures to grasp how his turn towards a 'Greek' order similarly induces a law-bound basis for language and chant rhythm, which in fact inspires rather than restricts a markedly anthropocentric and

¹⁰⁰ D'Indy, *Course*, 48–9; Messiaen, *Traité*, i, 41.

¹⁰¹ Messiaen, *Music and Color*, 67, cf. Mocquereau, *Le nombre musical grégorien*, 43; Messiaen, *Traité*, i, 41.

¹⁰² D'Indy, *Course*, 48–9; Mocquereau, *Le nombre musical grégorien*, 37–8.

¹⁰³ 'Music depends at once on the *mathematical* sciences through Rhythm, on the *natural* sciences through Melody.' D'Indy, *Course*, 50; cf. *ibid.*, 51: 'Melody, which springs directly from language through accent, is almost as widely prevalent as Rhythm.'

¹⁰⁴ D'Indy, *Course*, 53 (emphasis original). D'Indy's connection between psychological dimensions and natural inclinations is almost literally taken from Hugo Riemann, 'Ideen zu einer "Lehre von den Tonvorstellungen"', *Jahrbuch der Musikbibliothek Peters*, 21/22 (1914/15), 1–26 (p. 7), discussed in Klaus Mehner, 'Hugo Riemanns "Ideen zu einer "Lehre von den Tonvorstellungen"', *Hugo Riemann*, ed. Böhme-Mehner and Mehner, 49–57 (p. 52).

¹⁰⁵ To say that Messiaen believed in 'die Doppelnatur der Musik als natürliches Phänomen und geschichtliche Realität' ('music's dual nature as a natural phenomenon and historical reality') captures a similar polarity, albeit with another conception of nature; see Rathert, 'Messiaen und die Geschichte', 223.

creative stance.¹⁰⁶ The mathematical implications in Mocquereau's title *Le nombre musical grégorien* stand on the border between, or possibly bridge, textual and arithmetic approaches to chant. Pothier had spoken of 'numbers' in connection with an experiential ground for 'oratorical' freedom. It remains enigmatic whether Mocquereau's 'Gregorian number' refers primarily to such freedom or else to d'Indy's very different claim that rhythm 'is expressed in numbers and depends on *arithmetic laws*'.¹⁰⁷

Messiaen is less ambiguous on the aesthetic division between language and mathematics, unmistakably following in the wake of d'Indy. As d'Indy does in the *Cours*, Messiaen highlights music as the final art within the quadrivium of medieval learning and emphasizes how it bridges the gulf between arithmetic knowledge and human art.¹⁰⁸ Mathematics and music become closely related intellectual enterprises, which also relate to other sciences. This backdrop indicates the relevance of Messiaen's fascination with ancient and medieval learning, as well as his inclination for arithmetic, especially the notion of numbers.¹⁰⁹ Such an ontological basis for rhythm goes hand in hand with his proud self-image of being a 'rhythmician', including a claim that explorations in rhythm and music provide valuable insights into the order of the world.¹¹⁰

This outlook has direct bearings on the method of finding neumes at work in all kinds of music. It logically entails that analysis can reveal the same universal rhythmic patterns in music by all composers who, while also responding to historical and cultural contexts, have been perceptive enough to build their own musical syntax on universal laws.¹¹¹ As a further example of such reciprocity between music and mathematics,

¹⁰⁶ See Mocquereau, *Le nombre musical grégorien*, 27 and 21–2, where 'natural laws of rhythm' explicitly have priority over 'the accentuation and natural rhythm of the words themselves'. As Mocquereau continues, 'There exists only one general system of Rhythmics; its fundamental laws are based on human nature itself' (*ibid.*, 38). Tensions between natural and artistic aspects have been difficult to conceptualize in modern research. Apel, *Gregorian Chant*, 275–81, treats Mocquereau as a theorist of textual accents but also indicates contradictions in such a reading. Furthermore, 'Es ist, wie auch Katherine [*sic*] Ellis angemerkt hat, die große Widersprüchlichkeit Mocquereaus, dass er in Fragen der melodischen Restitution der Choräle eine wissenschaftliche, strikt und den Quellen orientierte Position einnimmt, in seiner Choralrhythmuslehre jedoch kaum den Maßstab der Objektivierbarkeit genügt' ('As Katherine [*sic*] Ellis has noted, Mocquereau's great contradiction is that he takes a scholarly position on questions of melodic restitution of chants, strictly oriented towards the sources, while his theory of rhythm in plainchant hardly satisfies the standard of objectivity'). Lessmann, *Die Rezeption des gregorianischen Chorals in Frankreich*, 171–2; cf. Ellis, *The Politics of Plainchant*, 112.

¹⁰⁷ D'Indy, *Course*, 50; cf. Pothier, *Les mélodies grégoriennes*, 179: 'Le rythme libre est appelé *nombre* par les orateurs.' Lessmann, *Die Rezeption des gregorianischen Chorals in Frankreich*, 171, is somewhat too certain that Mocquereau follows Pothier.

¹⁰⁸ Messiaen, *Traité*, i, 52; d'Indy, *Course*, 49–50.

¹⁰⁹ As Alain Louvier notes, 'Messiaen, qui se défendait d'être mathématicien, semblait fasciné par le Nombre' ('Messiaen, who denied being a mathematician, seemed fascinated by numbers'). Messiaen, *Traité*, iii (1996), 1.

¹¹⁰ See, for example, Messiaen, *Music and Color*, 67, 249; and Rathert, 'Messiaen und die Geschichte', 222–3.

¹¹¹ 'So wäre für Messiaen das Arbeiten mit dem Ton in seiner räumlich-diastematischen und zeitlich-rhythmischen Qualität auch für einen heutigen Komponisten immer ein erster Anfang, der sich nicht prinzipiell, sondern nur graduell von der Situation eines antiken, mittelalterlichen oder sogar außer-europäischen Komponisten unterscheiden würde' ('So for Messiaen, working with the tone in its

Technique de mon langage musical reveals how Messiaen drew a direct link between Mocquereau's theory of rhythmic variety in neumes and his own 'predilection for the rhythms of prime numbers (five, seven, eleven, thirteen, etc.)'.¹¹²

The sketched ontological basis for rhythm also explains the presence of neumes in birdsong. D'Indy had already used the abstract primacy of rhythm to advocate a universal naturalism. He situates the preoccupation of ancient Greek scholars with human speech and metre within a comprehensive ecology, ranging over areas such as astronomy, biology and zoology:

Rhythm is universal; it appears in the movement of the stars, in the periodicity of the seasons, in the regular alternation of the days and nights. It is found in the life of plants, in the cry of animals, and even in man's posture and speech.¹¹³

The integral first volume of Messiaen's *Traité* reads like a formidable explication of a universal rhythmic order, both realized in and holding together a complex of 'super-imposed times' in nature. Within an underlying evolutionary schema similar to d'Indy's, different time structures are arranged starting from an origin in astronomy and geology before turning to birds, minerals, plants and animals. Only thereafter does the human time of dance and language appear on the scene, as preparation for sustained explications of Greek and Hindu rhythms. These patterns are then posited to have survived in music by Beethoven, Ravel, Claude Le Jeune and Messiaen himself.¹¹⁴

The method of treating rhythm as a universal phenomenon implies that Messiaen's theological basis for Gregorian chant and its rhythms rests on a more abstract basis than the religious and liturgical sensibilities of Pothier's generation. D'Indy cites the conductor Hans von Bülow's quip 'In the beginning there was Rhythm!' and in a similar paraphrase states that rhythm is, 'in the genesis of Art, the vitalizing and generative element, akin to the *fiat lux*, the Word of God, in the genesis of universe'.¹¹⁵ Although Messiaen finds Bülow 'disrespectful' towards the Bible, his own invocation of Thomas Aquinas at the outset of the first volume of the *Traité* reads like a less markedly vitalistic version of d'Indy's basic point. God's eternity is here the focal point that interconnects and sustains all created time structures.¹¹⁶ Messiaen's theory does not therefore hinge upon individual religious experience or liturgical tradition. Rather, the mathematical order behind all music is held to rest upon a created cosmological

spatial-diatematic and temporal-rhythmic quality would always be an initial beginning also for a contemporary composer, who would not be set apart in principle, but only by degrees, from the situation of an ancient, medieval or even non-European composers'). Rathert, 'Messiaen und die Geschichte', 223. For a similar view, see Mocquereau, *Le nombre musical grégorien*, 33.

¹¹² Messiaen, *The Technique of my Musical Language*, 9.

¹¹³ D'Indy, *Course*, 51.

¹¹⁴ See specifically the section 'Les rythmes extra-musicaux et leur influence sur le rythme musical', Messiaen, *Traité*, i, 52–68. Without insight into the theoretical framework, Messiaen's outline may seem 'a *pot-pourri* of ideas, largely quoted out of context, with little underlying pattern or relevance'. Andrew Shenton, 'Time in Olivier Messiaen's *Traité*', *Music, Art and Literature*, ed. Dingle and Simeone, 173–89 (p. 176).

¹¹⁵ D'Indy, *Course*, 51. Cf. Olivier Messiaen, *Conférence de Bruxelles: Prononcée à l'Exposition Internationale de Bruxelles en 1958* (Paris: Alphonse Leduc, 1960), 11, which paraphrases Mocquereau, *Le nombre musical grégorien*, 47, on the historical beginning of rhythm.

¹¹⁶ Messiaen, *Traité*, i, 7–9, 41.

foundation, gradually realized in the evolution of nature.¹¹⁷ Within this common order, it is less surprising to find similarities between the expressiveness of birds, Chopin and liturgical singing.

Finally, the integration of time and space in rhythm implies a particular reciprocity between music and gestures. The *Cours, Le nombre musical grégorien* and the *Traité* all describe an original unity of the spoken word, music and dance as ‘*arts of motion*’.¹¹⁸ As put by Mocquereau, in Greek dramatic performances, ‘There was but *one rhythm* that could simultaneously give form to three things: musical sounds, words, and orchestration.’¹¹⁹ D’Indy describes how a felicitous combination of rhythmical and plastic arts carried an intrinsic sacrality, which was lost when the corporeal element of dance was excluded from Christian liturgy in the Middle Ages. While the rhythm and artistic expressivity of the sung word was developed further in Gregorian chant, it remained separate from the art of dance – which, instead, continued to inspire Western instrumental and symphonic music.¹²⁰

In close proximity to d’Indy, Mocquereau uses Greek concepts to revive a conception of music as a form of constant motion and change. Its imagined reciprocity with physical motions is intended to highlight a dimension of rhythm lost in a metrical era.¹²¹ As put in a statement that Messiaen cites verbatim: ‘All the rhythmic theories of antiquity were summed up in a single idea repeated under endless forms: *the beautiful ordonnance of movement*’ (emphasis original).¹²² The notion of beauty points to an intrinsically spatial aspect, and Mocquereau seeks to instil awareness of a *real* movement in the melodic curves of plainchant. It is hardly surprising that Messiaen found this approach difficult to transmit to students, because Mocquereau argues that melodies quite literally bring forth a palpable movement from one location to another. For him, this reality of rhythmic motion must not be disregarded as a mere analogy to visible movements in space. Vocal motion is portrayed to walk on ‘feet’ of an infinitely light and flexible character, far from the incessant ‘brutality’ of metrical regularity:

The voice indeed moves neither accidentally nor mechanically; its risings and fallings are of a more spiritual than material nature, moved, as it is, by a vital and spontaneous power, a power both free and intelligent.¹²³

¹¹⁷ See Messiaen, *Traité*, iii, 349, for an example of how Messiaen cites Book of Wisdom 11:20 and Daniel 5:25 to situate the notion of numbers in a speculative theological framework.

¹¹⁸ Mocquereau, *Le nombre musical grégorien*; Messiaen, *Traité*, iv, 43; cf. D’Indy, *Course*, 50.

¹¹⁹ Mocquereau, *Le nombre musical grégorien*, 38; cf. d’Indy, *Course*, 49, and Messiaen, *Traité*, iv, 43.

¹²⁰ D’Indy, *Course*, 58.

¹²¹ As succinctly put in Messiaen, *Traité*, iv, 43, citing and paraphrasing Mocquereau, *Le nombre musical grégorien*, 109: ‘Dans la philosophie d’Aristote, se mouvoir signifiait *changer* [...] Les Grecs avaient donné le nom d’*arts de mouvement* à la poésie, à la musique, et à la danse. Par nature, ces arts sont soumis au changement: leur existence est successive et s’écoule, goutte à goutte, dans le temps’ (‘In the philosophy of Aristotle, motion signifies *change* [...] The Greeks had given the name *arts of motion* to poetry, to music and to dance. By nature, these arts are subjected to change, their existence is successive and flows, drop by drop, in time.’) (Emphases original.)

¹²² Mocquereau, *Le nombre musical grégorien*, 109; Messiaen, *Traité*, iv, 43.

¹²³ Mocquereau, *Le nombre musical grégorien*, 112. Messiaen summarizes a longer elucidation on the same page: ‘Le mouvement vocal, celui de la mélodie grégorienne surtout, emprunte le moins possible à la matière. Il se meut, mais invisiblement; il marche, mais avec légèreté. “Le Beau est léger;

Mocquereau's chant editions were largely aimed at inspiring performances of chant informed by the kind of movement suggested here. Central to this endeavour is a certain energy that carries melodic phrases from their inception through various intermediary points to a final cessation. As Messiaen puts it in a paraphrase of Mocquereau's argument,

The voice that articulates a phrase, recites a verse, sings a melody, moves in its own manner. It goes from the first articulation up to the final syllable, successively passing all the intermediary syllables. On this passage, it mimics the motion of a dancing body, or better, that of a bouncing ball; it rises, falls, from bearing point to bearing point, until the definitive rest that brings to a close phrase, melody, and rhythm.¹²⁴

Mocquereau's most conspicuous attempt to convey his vision to a broad audience is his plastic system of *chironomy* for Gregorian chant. This particular system is succinctly explained by Messiaen: 'What is chironomy? It is – etymologically – the rule of the hand: that is to say, the indication of rhythmic motion by means of waves of the hand.'¹²⁵ As Mocquereau saw it, there was a constant tradition in chant performance – ostensibly going back to Greek drama – of a conductor indicating a composite musical and plastic rhythm through hand gestures. He distanced himself from fixed patterns of movement in contemporary solfeggio and a mere striking of beats. Nevertheless, a parallel law-bound system of conducting emerges in Mocquereau's system, designed to embody his vision of rhythmic subtlety and flexibility. This chironomy involves gestures that visibly capture falling and rising motions, as shown in [Figure 6](#).¹²⁶

Beyond such simple rhythmic elements, Mocquereau wants to capture a reinvigoration of melodic energy within the wider compass of a phrase. He expounds on the movement of a ball that bounces several times on the ground on its passage from the beginning to the end of its motion. In this roundabout manner he indicates where melodies in a similar fashion 'hit the ground' (see [Figure 7](#)).¹²⁷

tout ce qui est divin marche sur des pieds délicats." (Nietzsche)' ('The vocal motion, that of the Gregorian melody especially, borrows as little as possible from the material. It moves, but invisible; it walks, but with lightness. "The beautiful is light; everything that is divine walks on delicate feet." (Nietzsche)' Messiaen, *Traité*, iv, 43. On Nietzsche's influence on rhythm theories in French music, see Cheong, 'Ancient Greek Rhythms in Messiaen's *Le sacré*', and Rainer Cadenbach, 'Wie Hugo Riemann sich von Carl Fuchs dabei helfen ließ, "das erlösende Wort" einmal bei Nietzsche zu finden. – Zu einer vergessenen Kontroverse über künstlerisches Schaffen und "Phrasierung"', *Hugo Riemann*, ed. Böhme-Mehner and Mehner, 69–91.

¹²⁴ 'La voix qui articule une phrase, déclame un vers, chante une mélodie, se meut également à sa manière. Elle va de l'articulation première jusqu'à la syllabe finale, en passant successivement par toutes les syllabes intermédiaires. Dans ce passage, elle imite le mouvement de l'homme qui danse, ou mieux, celui d'une balle qui rebondit; elle s'élance, s'abaisse, se relève, et parvient ainsi, d'appuis en appuis, jusqu'au repos définitif qui clôt à la fois la phrase, la mélodie, le rythme.' Messiaen, *Traité*, iv, 43.

¹²⁵ 'Qu'est-ce que la chironomie? C'est – étymologiquement – la règle par la main: c'est-à-dire l'indication du mouvement rythmique au moyen d'ondulations de la main.' Messiaen, *Traité*, iv, 51; cf. *ibid.*, 54.

¹²⁶ Mocquereau, *Le nombre musical grégorien*, 117.

¹²⁷ *Ibid.* See pp. 120–2 for Mocquereau's analogy with the way in which a golf club sets a ball in motion, complete with an image of his imaginary golfer! On Gajard's rendering, see Messiaen, *Traité*, iv, 53–4.



Figure 6 Mocquereau, *Le nombre musical grégorien*, 117.

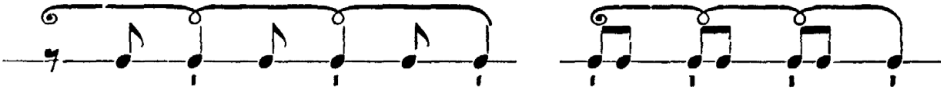


Figure 7 Mocquereau, *Le nombre musical grégorien*, 117.

There is no reason to follow Mocquereau's chironomy in further detail, but it is noteworthy how much space Messiaen devotes to it. He cites extensively from *Le nombre musical grégorien*, as well as from Gajard's transmission of his teacher's system. Having first presented images of various rhythmic elements similar to the ones reproduced here from Mocquereau, Messiaen then gives his own renderings of longer melodic lines according to this method. One of the most elaborate examples shows a formulaic pattern of movements to be used by imaginary conductors. It reveals how such chironomy is derived from close analyses of rhythmical structures in chant melodies. In Messiaen's view, a major benefit in *Le nombre musical grégorien* is that rhythm is shown to have a 'cinematic order'. This order brings the arguably most well-known aspect of Mocquereau's theory into play: the conviction that rhythm is in its very nature an 'alternation of momentum and rest, of *arsis* and *thésis*'.¹²⁸ Messiaen's own chironomy for *Ostende nobis Domine* shows how meticulously he applies these twin concepts in analysis and performance suggestions. The letter A (for *arsis*) provokes ascending or 'bouncing' motions in the chironomy, whereas T (for *thésis*) brings about descending motions (see Figure 8).¹²⁹

Similar graphic representations of rhythmic movements beyond strict measures appear in Messiaen's work around 1930, suggesting an initial influence from Mocquereau at this time. *La mort du nombre* for soprano, tenor, violin and piano depicts an apocalyptic disintegration of time and space. The composer's own poetry articulates a contrasting vision of a new liberated existence strikingly similar to the light movement envisioned by Mocquereau.¹³⁰ The orchestral piece *Les offrandes oubliées*

¹²⁸ 'Alternance des élans et des repos, des *arsis* et des *thésis*'. Messiaen, *Traité*, iv, 44.

¹²⁹ *Ibid.*, 61.

¹³⁰ Messiaen's own lyrics for the piece articulate it thus: 'Plus légers que des oiseaux de plumes, plus légers que le vide, plus légers que ce qui n'est pas, nous planerons audessus d'un rêve. Le poids du nombre sera mort. Le poids du nombre sera mort. Il sera mort! mort!' ('Lighter than feathered birds, lighter than empty space, lighter than what is not, we will soar above a dream. The weight of number will be dead. The weight of number will be dead. It will be dead! dead!'). Olivier Messiaen, *La mort du nombre* (Paris: Durand, 1931), 9–11, translation in Schloesser, *Visions of Amen*, 118.

A A T
 < / >
 [Piano accompaniment]

Ostén-

T A T A T A T A T A T A T
 < / > < / > < / >

A
 [Piano accompaniment]

de no-bis Dó- mi-ne mi-se-ri-cór-di-am tu-

A T T T A T A T T T A T A T
 [Piano accompaniment]

am: et sa-lu-tá-re tu-

A A T A A T T A T T T A A T A A T
 T > < > > >
 [Piano accompaniment]

um da no- bis.

A A T T A A T T
 T > > >
 [Piano accompaniment]

Figure 8 Messiaen, *Traité*, iv, 61. © Copyright Editions Musicales Alphonse Leduc. Used by kind permission of Hal Leonard Europe Limited.

Très lent, douloureux, profondément triste ($\text{♩} = 44$)

1^{rs} VIOLONS
2^{ds} VIOLONS
ALTOS
VIOLONCELLES
CONTREBASSES

M. B. – Les signes placés au dessus du quatuor concernent le chef d'orchestre. $\square = \frac{1}{2}$ temps – $\square \text{ avec barre } = 1$ temps binaire – $\triangle = 1$ temps ternaire.

Figure 9 Messiaen, *Les offrandes oubliées*, bars 1–3. © 1931 Durand Ed. With the kind permission of Editions Durand.

presents conductors with a system for representing the music's alternation between binary and ternary groups (see Figure 9).

While the actual signs depart from Mocquereau's, a syntax based on groups of two and three reiterates the most notorious aspect of Gregorian rhythm theories from Solesmes. Furthermore, as in his chironomy for the *Ostende nobis Domine*, Messiaen uses a diagonal mark to denote what he (perplexingly enough) calls '½ temps'.¹³¹ In the light of his reception of Mocquereau, it seems clear that this indicates a middle ground or high point of tension, within shorter or longer periods. Such traces of influences suggest how a primitivist turn to the 'old rules' of plainchant was an important aspect of Messiaen's youthful aspirations for a more complex rhythmical language.¹³² At the same time, Mocquereau's chironomy broadly prefigures later graphic notation, which – somewhat like Messiaen's neumes – typically prescribes gestures and motions without fixed pitches.¹³³

A suggestion that post-war graphic notation would stand connected to plainchant or recourses to Greek antiquity seems far-fetched in historiographies shaped by high modernism and the avant-garde. Nevertheless, there is a certain logical progression from ideas about a historical and systematic primacy of rhythm to particular expressive ideals in Messiaen's music, as well as to allusions to chironomy in his own compositions. Explorations up to this point have outlined how Messiaen's readings in chant theory instilled a conviction that music is firmly situated in a mathematical and

¹³¹ Olivier Messiaen, *Les offrandes oubliées: Méditation symphonique pour orchestra* (Paris: Durand, 1931), 1. Messiaen credits the conductor Roger Désormière with the invention of these signs and points out that they also were employed in the orchestral version of his song cycle *Poèmes pour Mi*; see Messiaen, *The Technique of my Musical Language*, 29.

¹³² Messiaen, *The Technique of my Musical Language*, 8. 'By employing this notation, Messiaen was engaging in modernist primitivism, pointing ahead to his future by aligning himself with a certain faction of the past.' Schloesser, *Visions of Amen*, 109.

¹³³ Hardink, 'Messiaen and Plainchant', 22–4. On 'neumatic' methods within graphic notation in modern music, see Pierre Boulez, *Orientations: Collected Writings*, ed. Jean-Jacques Nattiez, trans. Martin Cooper (Cambridge, MA: Harvard University Press, 1986), 84–7.

ecological order. This stance provides a truly universal basis for his analyses of music through neumes and reveals an assumed inner connection between such disparate repertoires as birdsong and plainchant. Having first reconstructed these fundamental ideas in dialogue with their roots in d'Indy and Mocquereau, it is now possible to take a closer look at the musical potential in a Greek-inspired theory of rhythm as 'the beautiful ordonnance of movement'.¹³⁴

Neumes as motifs within Riemannian dynamic shadings

The examples of chironomy given above have already indicated how Messiaen postulates a schema of different levels in rhythm, from basic elements to larger and multiplex structures. As outlined in the *Traité*, this outlook follows Mocquereau, who enumerates four rhythmic layers, with the 'phrase' as the highest unit (see Figure 10). This schema can also be found in d'Indy and harks back to a systematic theory in Riemann.¹³⁵

In addition, *Le nombre musical grégorien* establishes the primordial unit of a 'short or indivisible elementary pulse'. This 'atomic' level is equivalent to syllables in language and remains a substrate below the simplest of the four rhythmic layers.¹³⁶ Such a minimal pulse that itself remains inappreciable is crucial to Messiaen's understanding of 'an uninterrupted succession of equal durations' at the bottom of rhythm. He regards awareness of these 'atoms' crucial for performers of his music. Listeners, however, perceive only the 'rhythmizing' of the flow that takes place in his practice of adding 'to any rhythm whatsoever a small, brief value which transforms its metric balance'.¹³⁷ Stephen Broad has traced Messiaen's distinct technique of added values to Mocquereau's performance ideals in chant; a musical backdrop would then be Riemann's method of clarifying rhythmic structures through prolongations of their first note.¹³⁸ Messiaen, however, ardently denied that his 'added values' constitute a kind of notated rubato.¹³⁹ Recent research appears to prove him right, in reconstructions of his notion from Hindu sources without the Riemannian performance aspects.¹⁴⁰ Nevertheless, the following discussion aims to show how Riemann's Greek-inspired term 'rhythmizing' explains why he regarded neumes as carriers of rhythmic motion, as well as highlighting expressive ideals intrinsic to this understanding.

¹³⁴ Mocquereau, *Le nombre musical grégorien*, 53, Messiaen, *Traité*, iv, 43.

¹³⁵ Mocquereau refers to these 'stages' as 'elementary rhythm', 'rhythm-incise', 'rhythm-member' and 'rhythm-phrase'; *Le nombre musical grégorien*, 46, Messiaen, *Traité*, iv, 45.

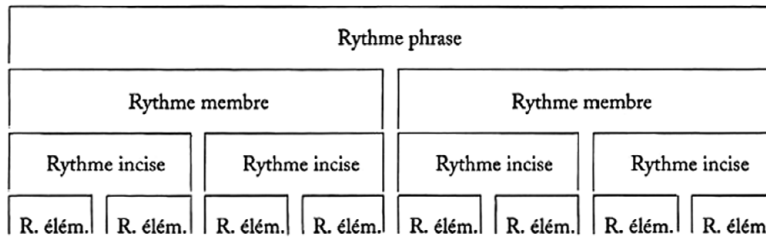
¹³⁶ Mocquereau, *Le nombre musical grégorien*, 222–3, 48–9.

¹³⁷ Messiaen, *Music and Color*, 68; Messiaen, *The Technique of my Musical Language*, 10. On 'the foundation of a basic, indivisible pulse', 'crucial to accurate performance but not to a listener's perception of larger rhythms', see Hardink, 'Messiaen and Plainchant', 25–7.

¹³⁸ Broad, 'Recontextualising Messiaen's Early Career', i, 133–8; Hugo Riemann, *Musikalische Dynamik und Agogik: Lehrbuch der musikalischen Phrasierung auf Grund einer Revision der Lehre von der musikalischen Metrik und Rhythmik* (Hamburg: D. Rather, 1884), 9.

¹³⁹ Roessler, *Contributions to the Spiritual World of Olivier Messiaen*, 133.

¹⁴⁰ Balmer, Lacôte and Murray, *Le modèle et l'invention*, 347–51; Asimov, 'Comparative Philology', 251 n. 30.



(R. élém. = rythme élémentaire).

Figure 10 Messiaen, *Traité*, iv, 45. © Copyright Editions Musicales Alphonse Leduc. Used by kind permission of Hal Leonard Europe Limited.

For Riemann, the capacity of ‘rhythmizing’ first arises from a motion and expressive potential in tensions between several notes. In contrast to the atomic level of individual notes, he calls the first rhythmic layer that instils such movement ‘motifs’.¹⁴¹ Mocquereau echoes this stance and adds a notable emphasis on a certain qualitative criterion: ‘*Rhythm is ordered movement* [...] A series of sounds – syllables or musical tones – does not suffice to constitute a rhythm’ (emphasis original).¹⁴²

Mocquereau thus accepts the idea that a rhythmic order originates in dynamic relations between several events, a Riemannian vision that leads him beyond the primacy of syllabic chant advocated by Pothier. In the wake of Riemann’s motifs, he speaks of neumes as the first layer of rhythm proper. The neume is defined as ‘a melodic group’ which ‘expresses a *musical idea*’. It thus ‘retains its *form*, its individuality and autonomy’ (emphases original) even when detached from its original melodic context.¹⁴³ As put in *Le nombre musical grégorien*,

The *word* in language and the *neum* in music are individuals of a highly sociable nature. They exist only to meet, associate and combine in phrases – musical or literary. The neums, in so doing, become flexible and lend themselves to certain transformations and modifications which bring the individual neum into a closer relation with its surroundings in the phrase, fitting it more intimately into the general melodic and rhythmic scheme.¹⁴⁴

As a basic building block, the neume is ascribed both a constant form and a capacity for adaptation and transformation into different musical structures. Messiaen’s neumatic analyses and technique of melodic borrowing capture the former tendency,

¹⁴¹ The ‘Rhythmizomenon’ is never individual notes, rather motifs of at least two notes function as the ‘kleinsten Einheitsgebild von bedeutsamem Inhalt und bestimmtem Ausdruckswerte’ (‘minutest unitary structure of significant content and particular expressive values’). Hugo Riemann, *System der musikalischen Rhythmik und Metrik* (Leipzig: Breitkopf & Härtel, 1903), p. VIII. A motif is thus a ‘kleinen Organismus von eigenartiger Lebenskraft’ (‘small organic unit with a peculiar vitality’) and the original ‘Bewegungselement’ (‘element of movement’) in music. Riemann, *Musikalische Dynamik und Agogik*, 11.

¹⁴² Mocquereau, *Le nombre musical grégorien*, 43. As Mocquereau duly acknowledges, the initial definition is taken from Plato, *Laws* II 665a.

¹⁴³ Mocquereau, *Le nombre musical grégorien*, 245.

¹⁴⁴ *Ibid.*, 246.

towards distinctiveness and permanence, with the implication that the musical *idea* within a neume remains identifiable in changing musical settings.¹⁴⁵ Furthermore, Mocquereau discusses cases where pitches are changed to facilitate the melodic flow within a neume or the proper interplay with other neumes.¹⁴⁶ This trait is a second vital element for turning neumes into a general method of analysis and into creative tools in modern composition.

As these considerations reveal, Messiaen's conception of neumes is derived from theories that inscribe movement and tensions between distinct events ('beats') into the fabric of any truly rhythmic syntax. This basic principle makes it highly problematical to argue, as Hardink does, that: 'The concept of stasis in Messiaen's output [...] owes its aesthetic to Gregorian chant.'¹⁴⁷ Messiaen himself had no concept of *stasis*, although he could describe himself as a 'static composer' because of his musical preoccupation with eternity. However, this aspect is in fact at odds with the late Romantic tradition which informed his reception of plainchant.¹⁴⁸ Rather, influences from chant theory inspired visions of a musical language brimming with dynamic tensions, as shown when he suggests an analogy between simple neumes and appoggiaturas or passing notes in modern harmony.¹⁴⁹

Within this framework, it is natural to see how Mocquereau's theory suggested a possible route for liberating rhythm in the writing of new music. *Le nombre musical grégorien* could teach Messiaen how rhythm, as a form of ordered movements,

seizes the imperceptible undulations of sonorous bodies, unites them, organizes them in more varied and more ample undulations; arranges them with intelligence and taste in a perfect order; this it is that gives to them a form, that spiritualizes them in a certain sense, and gives them movement, beauty and life.¹⁵⁰

The ideal advocated here is a certain Apollonian refinement that spiritualizes motion. In other words, rhythm should venture beyond a 'pathological' tendency in early Romantic affect theories, where metre and human experience of it passively 'succumbs' to momentary affects.¹⁵¹ Mocquereau follows Riemann's move away from simple alternations between distinct and ostensibly unrelated accents and unaccents. The German theorist had articulated a conception of 'gradually changing intensity of two or three tones grouped into a *metrical motif*'. The most important

¹⁴⁵ 'In the case of a neum, the relation of pitch between its notes is established without regard to the notes which may precede or follow the neum.' Mocquereau, *Le nombre musical grégorien*, 227.

¹⁴⁶ Such 'substitution is found not only in *recto tono* recitation but it occurs constantly in the living flow of the Gregorian melodic phrase'; 'There are other cases where [...] these substitutions are not caused by a modification in the melody. They are caused by the *position* of certain notes in relation to other notes or neums, so that their pitch may be considered *in relation to what precedes or what follows* the intermediary note' (emphases original). *Ibid.*, 233–4.

¹⁴⁷ Hardink, 'Messiaen and Plainchant', 7.

¹⁴⁸ Messiaen, *Music and Color*, 103–4; cf. Messiaen, *Traité*, i, 7–9.

¹⁴⁹ *Ibid.*, iv, 8.

¹⁵⁰ Mocquereau, *Le nombre musical grégorien*, 43–4.

¹⁵¹ His general Dionysian preferences notwithstanding, Nietzsche articulated a contrast between an ancient ethical metric of time and a 'barbaric' – as well as pathological – modern metric of affect; see letter from Friedrich Nietzsche to Carl Fuchs, August 1888, reprinted in Cadenbach, 'Wie Hugo Riemann sich von Carl Fuchs dabei helfen ließ', 87–8.

feature of a metrical motif is its ‘dynamic shading’ (*dynamische Schattierung*): a steady growth, a becoming, or a ‘positive development’ leads to a ‘dynamic climax’ followed by a passing away, a dying off, or a ‘negative development’.¹⁵² Mocquereau’s notions of *arsis* and *thesis*, or *élan* and *repos*, translates Riemann’s ‘becoming’ and ‘passing away’ and intends to capture similar flexible and subtle gradations.¹⁵³ The inserted crescendo and diminuendo signs in Messiaen’s chironomy reveal how his rhythmic analyses also rest on such a shifting intensity within phrases. The assumed ground of both music and plastic arts within a common nature of rhythm helps to explain why neumes in chironomy are regarded as conjoined melodic and metrical motifs, in line with a late Romantic, ‘ultra-expressive’ ideal in performance.¹⁵⁴

There is also a lasting influence on Messiaen’s chironomy, through Mocquereau, from the most notorious aspects of Riemann’s break with nineteenth-century accent theories: namely, his often dogmatic conviction that every single metrical unit contains an upbeat and a downbeat, as well as his refusal to place the beginning of motifs on metrically strong positions. Sometimes referred to as having propounded an ‘axiomatic anacrusis (*Auftaktigkeit*)’, Riemann argued that earlier accent theories had failed to account for an ascending motion at the origin of musical movements. He regarded such energy necessary for phrase structures to take off, but claimed that the real aesthetic worth of metrically accentuated motifs lies in a contrary repose.¹⁵⁵

Le nombre musical grégorien scrupulously transmits Riemann’s conviction that the energy and equilibrium between these different shadings are reiterated at all four layers of rhythm. Messiaen endorses Mocquereau’s ‘final synthesis’ of all rhythms to a dynamic and ‘indissoluble union of momentum and rest’. In plainchant, at least, he also accepts a deconstruction of all rhythms into underlying alternations between groups of two and three, arguing that they symbolize basic binary or ternary motions in the human body.¹⁵⁶ A primacy of irregularity and tension becomes manifest in the further suggestion that even spondaic metre emerges from an archetypal

¹⁵² Caplin, ‘Theories of Musical Rhythm’, 684.

¹⁵³ Riemann himself deems Mocquereau’s terms *élan* and *repos* preferable because of their philosophic profundity; see Riemann, ‘Ein Kapitel vom Rhythmus’, 159.

¹⁵⁴ ‘That the crescendo and decrescendo notations were meant as actual indications of tone intensity is obvious from much of Riemann’s discussion; thus his, like Lussy’s, is clearly a theory of musical performance, one rooted in a Romantic aesthetic of ultra-expressivity.’ Caplin, ‘Theories of musical rhythm’, 684. Cf. Messiaen, *Traité*, iv, 47, 51.

¹⁵⁵ Rehding, *Hugo Riemann*, 73, and Hartmut Krones, ‘Hugo Riemanns Überlegungen zu Phrasierung und Artikulation’, *Hugo Riemann*, ed. Böhme-Mehner and Mehner, 93–115, especially p. 94.

¹⁵⁶ ‘C’est ce dernier rythme – le rythme à la fois binaire et ternaire ou *rythme mixte et libre* – qui est d’un usage constant dans le plain-chant, par le fait même de l’écriture et de la pensée neumatiques. Selon Dom Mocquereau, la nature nous en donne l’exemple. “La Marche de l’homme est binaire; sa respiration est ternaire. Quant au rythme mixte et libre, il est partout autour de nous; c’est même l’état ordinaire des mouvements rythmiques dans les éléments. Les ondulations sonores et visibles des flots de la mer, les mouvements dessinés des montagnes, le bruit du vent.” (‘It is the latter rhythm – rhythm being at the same time binary and ternary, or *mixed and free rhythm* – which is in constant use in plainchant, precisely because of the neumatic writing and thinking. According to Dom Mocquereau, the example lies in nature itself: “The pace of the human being is binary; his breathing is ternary. As for the mixed and free rhythm, it is everywhere always around us; it is even the ordinary state of the rhythmic movements within elements. The sound waves and visible ripples of the sea, the motions

forward-directed or 'iambic' motion.¹⁵⁷ In this way, Messiaen's reception of Mocquereau's *arsis* and *thésis* retains Riemann's general phrase schema of a necessary 'upbeat motion', a middle point – called *ictus* – and an ensuing cessation of intensity.

The *Traité* nevertheless deems the chant scholar 'insatiable' in his Riemann-like synthesis. This is a point where Messiaen – like d'Indy – breaks with Mocquereau's 'Teutonic systematicity', articulating an enhanced awareness of historical heterogeneity in music, and thus beginning to recede from the strict universality posited by Riemann. The fourth volume of the *Traité* discusses at length d'Indy's theory of articulation, which in its analyses of masculine and feminine melodic groups employs Riemann's basic schema of becoming and passing away within phrases. While its articulation in the *Cours* is deemed appropriate in music from Gluck to Wagner, Messiaen declares it 'absurd' to search for its constitutive elements in plainchant or Stravinsky.¹⁵⁸ His own chironomy for chant models certainly employs the notions and concomitant vision of Mocquereau's similar theory of *arsis* and *thésis*. In contrast, however, to the more dogmatic use of these basic patterns in his own chapter on Mozart, Messiaen's analyses of plainchant incorporate these shadings of intensity in a much less heterogeneous fashion.¹⁵⁹ In this flexibility, supposedly, lies the primary aesthetic value of plainchant for Messiaen.

As this stance makes clear, the argument that plainchant provides a link back to original and universal rhythmic theories does not imply that particular rhythmic

drawn in the mountains, the noise of wind.”) (Emphases original.) Messiaen, *Traité*, iv, 47; cf. Mocquereau, *Le nombre musical grégorien*, 67–8.

¹⁵⁷ “Le rythme égal n'est donc que la réduction du rythme inégal ternaire, rythme primordial et naturel” (Dom Mocquereau, id.). Première synthèse: les rythmes primitifs ou élémentaires se réduisent à deux: a) rythme inégal iambique b) rythme égal spondaïque. Deuxième synthèse: les autres sortes de rythmes sont réductibles à ces deux formes qui en restent les archétypes. Troisième synthèse: le rythme spondaïque est un resserré du rythme iambique. Quatrième synthèse: l'un et l'autre sont des variations du principe rythmique fondamental: arsis – thésis. Cinquième et dernière synthèse: union indissoluble de l'élan et du repos. Arsis et thésis ne sauraient exister l'une sans l'autre. Elles sont “les deux phases d'un mouvement un et indivisible”: (“The even rhythm is therefore only the reduction of ternary uneven rhythm, primordial and natural rhythm” (Dom Mocquereau, id.). First synthesis: the primitive or elementary rhythms are reduced to two: a) uneven iambic rhythm b) even spondaic rhythm. Second synthesis: the other kinds of rhythm are reducible to these two forms, which remain their archetypes. Third synthesis: the spondaic rhythm is a contracted iambic rhythm. Fourth synthesis: both of them are variations of the fundamental rhythmic principle: arsis – thesis. Fifth and final synthesis: indissoluble union of momentum and rest. Arsis and thesis cannot exist one without the other. They are “the two phases of a single and indivisible motion.”) (Emphases original.) Messiaen, *Traité*, iv, 46; cf. Mocquereau, *Le nombre musical grégorien*, 62, 65.

¹⁵⁸ Messiaen, *Traité*, iv, 140. This stance tallies with a verdict that Mocquereau's alternation between binary and ternary motion is accurate in chant, but must be disregarded as a universal theory of rhythm: ‘Pour Dom Mocquereau, tous les rythmes se ramènent à l'agencement du 2 et du 3. Je ne souscris pas à cette opinion pour tous les rythmes. Pour un certain nombre de rythmes seulement – et parmi eux les neumes du chant Grégorien – Dom Mocquereau a raison. Son esprit de synthèse est insatiable. Il rentre tous les rythmes possibles dans la combinaison 2 et 3.’ *Ibid.*, 45.

¹⁵⁹ Compare, for example, Messiaen's chironomy for *Ostende nobis Domine* (see Figure 8 above) with the chapter on d'Indy and Mozart: Messiaen, *Traité*, iv, 131–70. See also Po-Yi (Nelson) Wu, ‘Messiaen's Dynamic Mozart’, *Olivier Messiaen: The Centenary Papers*, ed. Judith Crispin (Newcastle upon Tyne: Cambridge Scholars Publishing, 2010), 281–300 (pp. 282–3); and Janz, ‘Messiaen's Mozart’, 298–9.

patterns in historical chant provide timeless norms for the further evolution of music. It is necessary to distinguish between a fundamental theoretical level and its adaptation in compositional practice. Messiaen's emphasis on chant as a model for 'ametrical' music employs ideas from Mocquereau against the chant scholar's own strict system. The rhythmic symmetry on four levels articulated in *Le nombre musical grégorien*, from motifs to full-scale phrases, stands heir to a manifest norm of regular eight-bar periods in Riemann. To accept the underlying logic of such symmetry would, however, oppose the core values Messiaen seeks to salvage from plainchant. In the end, he is a more emphatic champion of 'freedom' in chant than Mocquereau, and must find his role model's rhythmic theories 'incomplete'.¹⁶⁰

From Mocquereau to new orders of sound

Beside Messiaen's theoretical affirmation of a modified form of the expressive ideal of dynamic shading, there is a more manifest – albeit perhaps surprising – creative reception of *Le nombre musical grégorien* to consider here. Once more, the inspiration comes from Mocquereau's quest for a 'pre-musical' universality, which entails a primacy of sound over particular elements in music (or language).¹⁶¹ Messiaen could here find incentives for an emancipation of sounds from traditional musical structures, a central preoccupation in his musical context of the late 1940s and early 1950s. His celebrated serial pieces from the middle of the century have typically been compared to dodecaphony, Boulez, or Pierre Schaeffer's *musique concrète*. Influences from Mocquereau's theory of sound on Messiaen's distinct brand of serialism have been less widely appreciated. The thesis that 'Rhythm is ordered movement' beyond a 'series of sounds' led the Gregorian scholar to argue that:

These movements must be put in order and harmoniously arranged. This ordinance, this putting in order, is the form itself of rhythm. This it is that disposes harmoniously the succession of short and long sounds, high and low sounds, and every kind of timbre.¹⁶²

In the *Traité*, Messiaen takes *Le nombre musical grégorien* and meticulously reproduces its positing of four, and later five, dimensions inherent in the phenomenon of sound. The original quadruple concerns the interplay between (1) the quantitative order (durations); (2) the dynamic order (intensity); (3) the melodic order (itches); and (4) the phonetic order (timbres).¹⁶³ These distinct and 'interpenetrating' orders in sound provide an obvious link to Messiaen's *Mode de valeurs et d'intensités*, together with a decisive stress on human agency in the ordering of sound. This piece creates a composite 'mode' of 24 durations, 7 dynamic levels, 36 notes and 12 *touches* (modes of

¹⁶⁰ For an image of symmetry on Riemann's four rhythmic levels, see Caplin, 'Theories of Musical Rhythm', 687, and cf. Mocquereau, *Le nombre musical grégorien*, 46, 53–4 (with reference to Riemann).

¹⁶¹ 'Sound is the basis of all music, of all speech, of all rhythm, whether musical or rhetorical.' Mocquereau, *Le nombre musical grégorien*, 40.

¹⁶² *Ibid.*, 43.

¹⁶³ *Ibid.*, 40–1; cf. Messiaen, *Traité*, i, 44; iv, 44.

attack). An order of 12 modes of attack on the piano is clearly not quite the same as different timbres in a more literal sense. Nevertheless, the basic parameters behind this groundbreaking work are a sounding corollary of Mocquereau's four orders, albeit further advanced.¹⁶⁴

The most distinctive aspect of Messiaen's serialism is arguably its focus on the element of rhythm. This trait echoes how Mocquereau's chant theory outlined a fifth, 'cinematic' order, or simply 'The Rhythmic Order, properly speaking'.¹⁶⁵ As Vincent Benitez notes, 'For Messiaen, manipulating the order of durations was a key element [...] in discovering different kinds of movement beyond the simple forward.'¹⁶⁶ A topic worth investigating further is to what extent the subtle flexibility and dynamic shading inherent in Mocquereau's theory of *arsis* and *thésis* influenced Messiaen's serial explorations of movement, in *Quatre études de rythme* and beyond.

The individual piece that first springs to mind in this context is *Neumes rythmiques*. This explicit attempt to turn the movement in different neumes into an element for new compositions was highlighted already in 1958, in a tribute written by his student Karlheinz Stockhausen.¹⁶⁷ Messiaen's exposition of the work in the third volume of the *Traité* in fact contains his single most lucid explication of neumes. He explains that neumes in chant are 'melodic groups rather than rhythmic groups';¹⁶⁸ nevertheless, he argues that their primary musical interest originates in shadings between *arsis* and *thésis*. In preparation for the composition, Messiaen first transposed the kind of movement supposedly inherent in the originally melodic gestures of neumes into a new 'language' of individual rhythms. Each rhythmic neume then received a fixed intensity – certainly artificial, but often inspired by the intensity of its original melodic gesture.¹⁶⁹ Equipped with such a fixed repertoire of sonorous rhythms, Messiaen was able to build entire phrases that recreate irregular, 'fluid, deceptive and imaginative' shadings of intensity, much in the spirit of Mocquereau.¹⁷⁰

¹⁶⁴ See Olivier Messiaen, *Quatre études de rythme, with analysis by the composer* (Paris: Durand, 2008), 12–14; Messiaen, *Traité*, iii, 125–31. On its rendering of, and move beyond, Mocquereau's orders, see Vincent Benitez, 'Reconsidering Messiaen as Serialist', *Music Analysis*, 28 (2009), 267–99 (pp. 280–4).

¹⁶⁵ Mocquereau, *Le nombre musical grégorien*, 42. 'Messiaen's preoccupation with time and eternity led him to favour rhythm over other musical parameters in his serial techniques; for this reason, his serial practice bears little resemblance to orthodox 12-note technique. Messiaen used pitch and/or timbre to either complement or delineate rhythmic designs through contrasts of tonal colour.' Benitez, 'Reconsidering Messiaen', 267.

¹⁶⁶ *Ibid.*

¹⁶⁷ Karlheinz Stockhausen, 'Messiaen ist ein glühender Schmelztiegel', *Olivier Messiaen: La cité celeste – Das himmlische Jerusalem: Über Leben und Werk des französischen Komponisten*, ed. Thomas Daniel Schlee and Dietrich Kämper (Cologne: Wienand Verlag, 1998), 29 (first published in *Melos*, 25/12 (1958), 392).

¹⁶⁸ 'Les neumes du plain-chant sont en réalité plutôt des groupes mélodiques que des groupes rythmiques.', Messiaen, *Traité*, iii, 147.

¹⁶⁹ Messiaen, *Traité*, iii, 147–54; iv, 62–5.

¹⁷⁰ Peter Hill, 'Piano Music II', *The Messiaen Companion*, ed. Peter Hill (London: Faber, 2008), 307–51 (p. 317). 'Messiaen's purpose [...] is to bring back to musical sound its syncretic entity, which was characteristic of plainchant, which [the] composer considered to be the best music in the world. However, he doesn't stylize the sound of plainchant, he tries to follow the way of deconstruction [...]

This procedure allows Messiaen to disentangle the cinematic movement theorized by Mocquereau from the distinct repertoire of plainchant. Neumes become a creative tool in the development of a new musical language that almost literally reproduces fundamental ideals in Mocquereau's theory of sound, while forming completely new structures. The theory of interconnecting orders of sounds is, however, no less significant than the Riemannian shading of intensity articulated in the interplay between *arsis* and *thésis*. Messiaen's rhythmic neumes are not primarily to do with durations; rather, from the outset they are compound and sounding phenomena that embody a kind of melodic movement, a certain fixed intensity and, in fact, a specific timbre.

As the composer's own exposition of *Neumes rythmiques* reveals, neumes are rhythmic elements that in every appearance retain the same basic rendering in every parameter. While durations can vary slightly, the inherent shading of intensity in Messiaen's version of a *podatus*, a *clivis* or a *torculus* remains constant. They are reproduced with a fixed melodic movement, but the conviction that timbre is an intrinsic element also inspires Messiaen to add colour by means of harmonic 'resonances'. In the first section of neumes, each bar represents a distinct neume. While the constant central pitch throughout the nine bars is an *e'*, it is both set within different structures of melodic intensity, and receives different colourings through the resonance of added chords (see Figure 11).¹⁷¹

This technique is of pivotal importance in understanding connections between the reception of Mocquereau's theory of sound in rhythm and Messiaen's refined rendering of birdsong as developed in the 1950s. The crucial point is that harmonic resonances – or chords – are conceived as an integral aspect in neumatic analyses of a single melodic line. This conviction mirrors the statement in *Technique de mon langage musical* that harmony lies 'latent' in melody. It requires Messiaen to develop complex homophonic harmonic textures in order to reproduce resonances within the melodies of birdsong in an ostensibly 'authentic' manner. The link between plainchant and birdsong highlighted by Cheong can at this point be explained as (at least) a threefold interconnection:

- (1) The natural basis behind Messiaen's chant theory presupposes an ecological and evolutionary unity between birdsong and the music of humanity.
- (2) Birdsong shines forth as representative of the flexibility and rhythmic subtleness dormant in a proper understanding of rhythmic-melodic neumes, through which birdsong also can be analysed.

and re-create the main features of plainchant on a new level of understanding,' Tatiana Tsaregradskaya, 'Sound Attack in the Works of Olivier Messiaen: Total Serialism Revisited', *Lietuvos muzikologija*, 14 (2013), 152–9 (p. 157).

¹⁷¹ 'Messiaen's technique here [...] is to add chords above or below melodic notes in order to colour them with resonances, using harmony as an organist uses registration.' Paul Griffiths, *Olivier Messiaen and the Music of Time* (London: Faber, 1985; repr. 2008), 149. On developments of individual neumes in the piece, see p. 151, and cf. Paul Francis McNulty, 'Olivier Messiaen: The Reluctant Avant-Gardist: A Historical, Contextual and Analytical Study of the *Quatre études de rythme* and the *Livre d'orgue*' (Ph.D. dissertation, Durham University, 2014), 229–33.

Bien modéré (neumes rythmiques, avec résonances, et intensités fixes)

Figure 11 Messiaen, *Neumes rythmiques*, bars 3–11 (analysed as a succession of *arsis* and *thesis* in Messiaen, *Traité*, iii, 156). © Copyright Editions Musicales Alphonse Leduc. Used by kind permission of Hal Leonard Europe Limited.

- (3) An accurate musical rendering of melodic lines in birdsong requires harmonic colouring, in line with the theory of sound orders that Messiaen found articulated in Mocquereau's *Le nombre musical grégorien*. It is thus also natural to see a manifest continuity between the experimentation with such orders in a piece like *Neumes rythmiques* and the development of bird style in ensuing works from the 1950s.

An obvious objection against a one-sided stress on influences from Mocquereau on Messiaen's integration of rhythm, melody and even harmony is that his previous experiments with resonance appear to be unconnected to writings on chant. However, as shown by James Mittelstadt, vital ideas behind the development of Messiaen's harmonic language – most notably regarding the concept of resonance – are inspired by readings of d'Indy, and possibly of Riemann.¹⁷² The obvious affinity between them and Mocquereau indicates that further attention to Messiaen's creative reception of the

¹⁷² Mittelstadt, 'Resonance', 33–7.

Gregorian scholar's cinematic order may prove a fertile route to the analysis of the integration of durations, melody and sound-colour into the composer's late works. Its vision of sound as a perfect integration of duration, intensity, pitch and timbre would possibly explain the gradual turn towards the harmonic and instrumental colourings of plainchant essential to works such as *Couleurs de la cité céleste* and *Et expecto resurrectionem mortuorum*. Another significant passage where Messiaen makes use of Mocquereau's orders of sound, including timbre, is the opening of 'Les stigmates' from the opera *Saint François d'Assise*.¹⁷³

Conclusion: chant theory as an integrative but camouflaged influence

This article can be seen as a lengthy gloss on Messiaen's characteristic statement that, 'The marvellous thing about plainsong is its neumes.'¹⁷⁴ When this and other sayings are contextualized, Messiaen's theoretical approach to neumes arguably becomes 'the marvellous thing' in his reception of contemporary literature on chant. 'Archaeological' investigation of a backdrop in writings by Riemann, d'Indy and Mocquereau allows a reconstruction of Messiaen's claim for the universality of neumes as a peculiar but largely coherent and comprehensive theory. This vision brings together some of the composer's most characteristic and speculative ideas on music with a number of distinct techniques both explicit and implicit at the surface level of his writings.

The potential benefits of this reconstruction for future scholarship bridge the same macro and micro levels as the theory itself. Recent studies have already demonstrated that a certain 'neumatic lens' – inherited from d'Indy – plays a central role in Messiaen's assimilation of Gregorian chant into his own music, not least in the *style oiseaux* developed in the 1950s. This article draws attention to theoretical foundations behind these procedures.¹⁷⁵ It shows how Messiaen presupposed a unitary dimension common to all music, on intertwined mathematical, natural, historical and theological grounds. On these particular premisses, his references to 'neumatic' formulas in modern composers make logical sense, as does his connection of expressiveness in birdsong with Chopin's rubato.

¹⁷³ I thank one of the reviewers for highlighting 'Les stigmates'. See Olivier Messiaen, *Saint François d'Assise*, Act 3, Tableau 7 (Paris: Alphonse Leduc, 1990), Figures 3–4, 7–8. The four rhythmic layers in the Easter chant as a 'mélodie de timbres' in *Couleurs de la cité céleste* is another example that resembles Mocquereau's schema; see also Wai-Ling Cheong, 'Plainchants as Coloured Time in Messiaen's *Couleurs de la cité céleste*', *Tempo*, 64/254 (2010), 20–37. Stefan Keym's detailed exposition of sources behind the use of colour in the musical 'building blocks' of *Saint François d'Assise* cites Messiaen on 'rhythmic colours' in his *Les petites liturgies* and points out influences from d'Indy; see his *Untersuchungen*, 153–231. The integrative 'rhythmic' theory of sound articulated by Mocquereau might provide a novel framework to integrate the wide array of influences.

¹⁷⁴ See, as earlier, Messiaen, *Lecture at Notre-Dame*, 5.

¹⁷⁵ A previous lack of awareness of this veiled universality behind Messiaen's neumatic method of analysis becomes apparent in the, in itself correct, observation that, 'Many commentators are also struck by the astonishing – and revealing – links that the analyst draws between works of widely divergent styles, sometimes composed centuries apart, certainly a typical trait of his teaching.' Boivin, 'Genesis and Reception', 350.

Such a comprehensive vision of plainchant points beyond itself to wider vistas within Messiaen's musical thought. An open question is, to what degree does scholarly analysis require a conscious distance from the often opaque terminology in his two main treatises?¹⁷⁶ However, the primary challenge is arguably not to pass verdict on Messiaen's collage-like catalogues of sources and techniques, but to comprehend underlying threads that explain the rationale behind them. His style of writing provides a good case for the lasting relevance of the hermeneutic dictum to 'understand a writer better than he understood himself'.¹⁷⁷ The reader often needs to reconstruct underlying concepts and frameworks that make intelligible the fragments on the surface level of the texts. It may well be that Messiaen himself was only dimly aware of fundamental premisses at work in his own musical universe, a circumstance that calls for conscientious attempts to piece them together.

A study of plainchant not only raises the need for further investigations of Messiaen's reception of German music theory, partly through French authors such as d'Indy and Mocquereau,¹⁷⁸ but also indicates the centrality of an evolutionary outlook, in which medieval chant preserves an ancient metric legacy, forms a distinct repertoire on its own and carries seeds for modern harmony within its own sounding structures. This framework sheds light on the enigmatic interplay between the main elements of music in Messiaen's thought. It explains why his main exposition of plainchant occurs in the fourth volume of the *Traité* – devoted to melody – where it arches over from the initial volumes on rhythm to the subsequent tomes on harmony.

A second area of study is a look at how the reconstructed theory of chant shaped Messiaen's own musical language. He claimed that all well-written music contains a 'constant alternation' between *arsis* and *thesis*, as 'perfectly delineated by the greatest theoretician of plainchant, Dom Mocquereau'.¹⁷⁹ Thus, it would seem that the main lesson Messiaen drew from Mocquereau was a particular expressive ideal of 'rhythmic suppleness', a flexible schema of rises and falls within phrases. This article highlights traces of Mocquereau in works by Messiaen from 1930–1 and points out resemblances between the chant scholar's writings and motifs behind Messiaen's own progressive language, as articulated in the composer's early journalistic writings and the *Technique de mon langage musical*.

¹⁷⁶ For an emphatic argument in favour of an analysis liberated from constraints in Messiaen's own concepts, see Healey, *Messiaen's Musical Techniques*.

¹⁷⁷ Friedrich Schleiermacher's classic presentation of this ideal reads: 'Complete understanding grasped in its highest form is an understanding of the utterer better than he understands himself'; and, 'The task is also to be expressed as follows, to understand the utterance at first just as well and then better than its author. For because we have no immediate knowledge of what is in him, we must seek to bring much to consciousness that can remain unconscious to him.' Schleiermacher, *Hermeneutics and Criticism: And Other Writings*, ed. Andrew Bowie (Cambridge: Cambridge University Press, 1998), 266, 23.

¹⁷⁸ Riemann and Mocquereau are certainly influential figures in the link between Messiaen and a German trajectory of Greek philology, originating with Nietzsche. See Cheong, 'Ancient Greek Rhythms in Messiaen's *Le sacre*: Nietzsche's Legacy?'

¹⁷⁹ Messiaen, *Music and Color*, 69.

In spite of the claim that such a schema should permeate all music, Messiaen's neumatic analyses of melodic contours or a certain historiography of music need not imply that chant provided a matrix behind his own compositional processes in every case. Indeed, significant caution is called for regarding the epistemological status of his theoretical claims. As put by Jennifer Donelson, Messiaen's writings 'oscillate between a sort of absolute notion of fundamental aesthetic principle (which was really more of a conviction of the things discovered through his own musical language)' and expressions of a deeply felt personal vocation.¹⁸⁰ In general, it might be more apt and fruitful to study how absolutist theoretical convictions and Messiaen's own artistic sensibility stand reciprocally linked than to examine their literal purported implications. It would therefore be natural to investigate further how Mocquereau's theory of *arsis* and *thésis* inspired the composer's own 'musical poetics'.¹⁸¹ The most obvious way would be to reconsider works from the 1930s or early 1940s, and in them search for connections between the schema of 'becoming' and 'passing away' and Messiaen's still enigmatic 'special ideas [...] on prosody, and the union of the musical line with the living inflections of speech'.¹⁸² Further investigations of how Messiaen read d'Indy's *Cours* and Mocquereau's *Le nombre musical grégorien* promise to illuminate one of his most cherished aesthetic principles: the possibility of regarding musical sentences as constituting a succession of melodic periods, in which harmony and different rhythmic techniques serve the expressive intensity latent in melody itself.¹⁸³

Mocquereau's integration of duration, intensity, pitch and timbre as constituent layers in a truly rhythmic or 'cinematic' order exerted a more distinct influence on Messiaen, one that surfaces in serial techniques developed in *Neumes rythmiques* and used in the composer's late works. The compound theory of sound articulated in *Le nombre musical grégorien* can also potentially explain why Messiaen again came to cite Gregorian melodies in works from the 1960s, having previously sought rather to amalgamate their musical qualities into his own syntax. Moving away from earlier convictions that plainchant should not be harmonized, Messiaen now developed an

¹⁸⁰ Jennifer Donelson, 'How Does Music Speak of God? A Dialogue of Ideas between Messiaen, Tournemire, and Hello', *Mystic Modern: The Music, Thought, and Legacy of Charles Tournemire*, ed. Jennifer Donelson and Stephen Schloesser (Richmond, VA: Church Music Association of America, 2014), 317–29 (p. 328). In a similar vein, Hans Rudolf Zeller discusses Messiaen's personally experienced rather than argumentative and critical approach to (Western) universal claims, highlighting 'das Moment der immanenten Kritik an jenem Universalitätsanspruch, der dank einer merkwürdig partiellen Weltfremdheit auch in der Musik die höchst spezifischen eigenen Intentionen und Kriterien für allgemein- oder alleingültig hielt und allerdings von jeher nie um Mittel und Wege verlegen war, sie auch auf den Rest der Welt auszudehnen' ('the moment of immanent critique of that claim to universality which, thanks to a curious and partial unworldliness also in music, deemed his own highly specific intentions and criteria to be universally or exclusively valid and, indeed, never was at a loss for ways and means to extend them even to the rest of the world'). Zeller, 'Messiaens kritische Universalität', 59–60.

¹⁸¹ On tensions between theoretical claims and Messiaen's musical poetics, see Tobias Janz, 'Musikalische Poetik und musiktheoretischen Denken in Olivier Messiaens *Traité de rythme, de couleur, et d'ornithologie*', *Musiktheorie im Kontext: V. Kongress der Gesellschaft für Musiktheorie*, ed. Reinhard Bahr and Jan Philipp Sprick (Berlin: Weidler, 2008), 177–89.

¹⁸² See once more, Messiaen, *The Technique of my Musical Language*, 7.

¹⁸³ See *ibid.*, 8, 44.

interest in harmonic and timbral colourings of chant melodies. To posit Mocquereau's theory of sound as the sole source behind the idea that melodies contain an inherent harmonic resonance would be reductionistic. Nevertheless, experiments with harmonic colourings in birdsong throughout the 1950s follow naturally from the multi-dimensional understanding of neumes and sound articulated by the Gregorian scholar. Further work on neumes in the *style oiseaux* might here benefit from readings of *Le nombre musical grégorien*.

The claim that plainchant exerts a unique influence on Messiaen's music is not new. This article endorses this view but seeks to modify the grounds on which it is articulated. Messiaen used plainchant in many different ways and this repertoire certainly held a prominent liturgical and theological significance for him. However, more crucial in this context is how its syntax was amalgamated into the fabric of his own language. Messiaen's reception of Mocquereau's theory of neumes is a central backdrop that sheds light on this transformation of historical plainchant into building blocks in the composer's deeply personal brand of musical modernism. Most crucially, chant theory also functioned as an intellectual filter that allowed Messiaen to situate his own creativity within the broader evolution of music. Finally, and perhaps above all, it provided him with what he held to be a truly universal theory of music, regardless of whether it was created by human or by avian voices.