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Debussy's Forms of Deception: Toward a Theory of Implication, Attraction, and Tension in the *Préludes*

Submitted for the degree of Doctor of Philosophy

2011

Daniel Thomas Shanahan

Trinity College, Dublin

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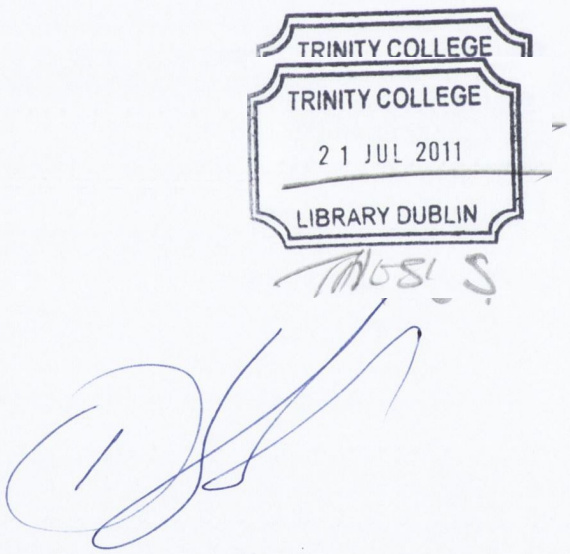

Summary

This thesis examines the role of process in Debussy's music through analyses of melodic implication, rhythmic projection, and harmonic attraction in the *Préludes.* It traces the evolution of analytical methodologies that have been applied to the composer's music, focusing on their treatment of ambiguity in the composer's music. It then argues for an approach that focuses on the potentialities of the various parameters, with the aim of viewing the interaction of elements of process and closure throughout the selected pieces.

The methodology is placed against a discussion of Debussy analysis throughout the 20th century, and illustrates the various ways in which previous methodologies dealt with structural, melodic, rhythmic, and harmonic ambiguities. It discusses the nature of formal analysis applied to the composer's music (and the inherent difficulties of a dichotomy of 'form as structure' and 'form as process'), as well as the nature of motivic and thematic analysis, and the various ways in which such analyses can discuss melodic ambiguity in the composer's works. The discussion then turns to architectonic theories of meter applied to *Préludes,* discussing the role of metric ambiguity through an invocation of Krebs's theories of metric displacement. Finally, the ambiguities of Debussy's harmonic structures are examined through analytical methods that view the music as extensions of tonality (with functioning tonal syntax), and those that discuss it in the terminology of pitch-collections. After discussing the various issues with such analyses, a method which views the piece as processes of implication is presented, and each parameter is treated individually.

Meyer and Narmour's implication-realization model is used to discuss a number of the melodic elements in the *Préludes*, as it allows for a discussion of closure in Debussy's melodies, which frequently avoids traditional structures (i.e. sentences,

periods, etc.). By focusing on melodic implication, the present study attempts to illustrate the perception of process in many of the composer's pieces. Hasty's theory of rhythmic projection (which is somewhat analogous to Meyer and Narmour's theories of melodic implication), is invoked to illustrate the perception of metric fluidity many of the *Préludes.*

Debussy's harmonic structures, the most studied aspect of his compositional style, frequently possess the pitch collections of certain scales or modes, but lack their necessary syntax. As a result, they have been analyzed through the lenses of both set-theoretical and tonal methodologies. This has provided a view of Debussy's harmonic structures that is overly dichotomous, failing to focus on their ambiguous nature. The present study discusses both views, and argues for the use of Lerdahl's harmonic attraction, which allows for an analysis of attraction (and tension) in progressions that are seemingly without the traditional notion of function.

The final chapter analyzes three pieces as a confluence of these parametric processes, attempting to form an understanding of the synoptic perception of the piece. I then argue that such a methodology could be applied to Debussy's larger works as well, and that by viewing the parametric implications individually, one can understand the synoptic perception of the composer's music more clearly.

Acknowledgments

This thesis was made possible with the help of a number of individuals on both the academic and personal level. Firstly, I would like to thank Simon Trezise for his consistent guidance, encouragement, and advice on matters that have gone well beyond the normal scope of a supervisor's duties. In his role as external examiner, Professor Steven Rings has offered valuable insight into my work, and has provided excellent advice. The staff at the Department of Music at Trinity College, Dublin has been been extremely helpful during the writing of this thesis. Conversations with both Michael Taylor and Martin Adams eventually grew into a number of sections in this dissertation, and their belief in my ability to teach a number of courses shaped my time in Dublin for the better.

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For Eva

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Chapter 1: Foundations for a Perceptually-Based Analysis of Debussy's Music

1.1: Introduction: The Analytical Difficulties of Debussy's Music

In his 1907 book on Debussy's *Pelléas et Mélisande,* Lawrence Gilman wrote that, in the composer's music,

> beauty is not the beauty that issues from clear and transparent designs, from a lucid and outspoken style: it is a remote and inexplicable beauty, a beauty shown through with mystery and strangeness, baffling, incalculable. It is unexpected and subtle in accent, wayward and fantastic in rhythm. Harmonically it obeys no known law, consonances, dissonances, are interfused, blended, re-echoed, juxtaposed, without the smallest regard for the rules of tonal relationship established by long tradition. It recognizes no boundaries whatsoever between the different keys; there is constant flux and change, and the same tonality is seldom maintained beyond a single beat of the measure.[1]

More than a century later, the issues that Gilman described as 'baffling' and 'incalculable' are still plaguing analysts of Debussy's music. Analysts frequently emphasize either the coherence of the piece (either by way of underlying tonal structures or pitch-class content, perhaps most notably the analyses of Pomeroy and Parks),[2] its discontinuity (as a result of its 'moment forms', a somewhat anachronistic application of Stockhausen's term),[3] or its inherent organicism (such as the analyses of Eimert, Schnebel, and Barraqué).[4] Few analyses, however, focus on the aspects

---

[1] Lawrence Gilman, *Debussy's Pelléas Et Mélisande, a Guide to the Opera* (New York: Schirmer, 1907), 19.

[2] Richard S. Parks, *The Music of Claude Debussy* (New Haven: Yale University Press, 1989); Boyd Pomeroy, 'Debussy's Tonality: a Formal Perspective', in *The Cambridge Companion to Debussy*, Simon Trezise (ed.), (Cambridge: Cambridge University Press, 2003), 155–78.

[3] See Karlheinz Stockhausen, 'Moment-forming and Momente,' in Karlheinz Stockhausen and Robin Maconie, *Stockhausen on Music: Lectures and Interviews*, (London: Kampmann Press, 1989), 63–75. For an application of moment form to Debussy's music, see Marianne Wheeldon, 'Interpreting Discontinuity in the Late Works of Claude Debussy,' (PhD Thesis, Yale University, 1997).

[4] Herbert Eimert, 'Debussy's *Jeux*', *Die Reihe* 5 (1961), 3–20; Dieter Schnebel, 'Brouillards: Tendencies in Debussy', *Die Reihe* 6 (1964), 33–39. Jean Barraqué, *Debussy*, (Paris: Éditions du Seuil, 1962).

Debussy tried so fervently to emphasize: the perceptual nature of his music.[5] Schopenhauer, whose writings greatly influenced the composer,[6] wrote that

> the point of comparison between music and the world lies hidden very deep...but the effect of music is more powerful and penetrates far more deeply than that of the other arts; for they communicate only shadows, whereas music communicates the essence.[7]

While I will refrain from referring to the 'impressionistic' or 'symbolist' aspects of Debussy's music (for reasons put forth by Stefan Jarocinski),[8] the somewhat related notion of Schopenhauer's musical 'essence' comes up quite a bit in analyses of the composer's music, although frequently in somewhat modified forms. Cone referred to Debussy's 'art of suggestion,'[9] and Jankélévitch stressed the role of the mysterious (as well as the 'secretive') in Debussy's compositional style.[10] It would therefore seem obvious that any study of Debussy's music might focus on these 'suggestive' elements, or those that create such 'mysteries' for the listener. Obviously, the majority of methods for music analysis are meant to focus

---

[5] Debussy famously stated that, 'Beauty must appeal to the senses, must provide us with immediate enjoyment, must impress us or insinuate itself into us without any effort on our part.' in Léon Vallas, *The Theories of Claude Debussy,* (New York: Dover, 1967), 13. Vallas writes that, 'In [Debussy's] opinion, music was not intended "to reproduce nature more or less exactly, but to receive the mysterious accord that exists between nature and the imagination"' 10.

[6] The composer was aware of Schopenhauer's writings by at least 1889. See Claude Debussy, *The Poetic Debussy: A Collection of His Song Texts and Selected Letters*, Margaret G. Cobb (ed.), (Boston: Northeastern University Press, 1982), 187.

[7] Arthur Schopenhauer, *The World as Will and Idea,* Paul Kegan (trans.) (Ann Arbor, MA: Trench, Tubner, and Co., 1907), 331. See also Paul Roberts, *Claude Debussy* (London and New York: Phaidon Press, 2008), 192.

[8] Claude Debussy and Stefan Jarocinski, *Debussy: Impressionism and Symbolism*, (London: Eulenburg, 1976), 159. Jarocinski writes that the term 'symbolist' would be more appropriate when referring to the composer's music, but that to use such a term would be 'to replace a greater by a lesser evil, without emerging from the labyrinth of erroneous generalizations.' (159)

[9] Edward T. Cone 'Debussy's Art of Suggestion' in *Hearing and Knowing Music: The Unpublished Essays of Edward T. Cone*, Robert P. Morgan (ed.), (Princeton: Princeton University Press, 2009), 159.

[10] Vladimir Jankélévitch, *Debussy et le mystère* (Neuchátel: Baconnière, 1949) discussed in Steven Rings, 'Mystères limpides: Time and Transformation in Debussy's 'Des Pas sur la neige' in *19th Century Music,* vol. 32, no.2 (2008), 178–208 (178).

on the perceptual nature of music. To take just one example, Schoenberg (citing Schopenhauer) writes:

> As Schopenhauer shows in his theory of colors...a real theory should start with the subject. And, just as he considers the colors physiological phenomena, 'conditions, modifications of the eye...so one would have to go back to the subject, to the sense of hearing, if one would establish a real theory of tones.'[11]

Yet there remains a disconnect between the conclusions that are able to be made by the multitude of analyses of Debussy's music, and the perception of the listener. Writing in 1908, Daly seems to acknowledge this disparity when he states:

> Debussy deliberately aims at an ambiguous tonality which shall come as near to Nature as possible. Again, what the unaccustomed ear may regard as a dissonance, has been employed by Debussy, not from any perverse love of the ugly for he probably loves the ugly as little as anyone else, but because he has learned to regard this seeming dissonance as a scintillating mass of tone, to be used because it fits into his scheme, just as some blot of vivid colour may be the accent, the something which gives to a picture its vitality and point.[12]

Daly quickly acknowledges that dissonance does not equal unpleasantness, a consistent concept throughout the Debussy literature. The tonal ambiguity discussed by Daly was elaborated into multiple parameters by Ernst Kurth, who correctly noted that it was these ambiguous elements that 'impressionist' composers were attempting to achieve. He states:

> [the idiom] strives to place the emphasis of its effects in the music's faintly lapsing atmospheres, which it attempts to achieve through a direct

---

[11] Arnold Schoenberg, *Theory of Harmony*, (Berkeley: University of California Press, 1978) 18. citing Schopenhauer, *Samtliche Werke: Schriften zur Erkenntnislehre* (Zweite Auflage;Wiesbaden: Eberhard Brockhaus Verlag, 1948), 21. This is not to mention Schenker's multiple writings on the perceptual nature of music, or the various writings on the natural construction of tonality, ranging from Rameau to Riemann, Weber, Hauptmann and Helmholtz, among others.

[12] William H. Daly, *Debussy: a Study in Modern Music*, (Edinburgh: Methven Simpson, Ltd. , 1908) 27–28.

> divergence from fixed lines - which in music form the basis of harmonic and tonal clarity, as well as of formal unity.[13]

Kurth continues to warn against an overly technical approach to 'impressionist music', as he believed it would be entirely fruitless unless the analyses attempted to avoid traditional boundaries (which I assume meant more than simply formal boundaries, but an avoidance of a tonal/atonal, metric/non-metric dichotomies, as well). Kurth writes:

> If the theoretical approaches were to search for distinctly defined technical characteristics in an attempt to comprehend the entirety of this phenomenon, they would run a risk similar to that present if one were to shine a light into a haze in order to better discern it. The phenomenon, being thoroughly situated in murkily veiled impressions, would become blurred and disappear here as well, even melt into nothingness with all of the conceptual examination, if the theoretical approach were not to recognize the essence of the phenomenon and seek its fundamental concepts in a location entirely other than specifically demarcated, clearly observable lines. When fixed forms are lacking, the problem for theoretical study always lies in the principles and fundamental traits that guide the transitions and remain in a constant state of suspension.[14]

Borrowing from Kurth's metaphor of 'shining a light into a haze,' I would argue that any analysis of such technicalities and boundaries of Debussy's music would similarly risk a blinding reflection, in this case a 'confirmation bias,'in which the suspected findings and preconceptions an analyst places upon a piece of music

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[13] 'Auch hier strebt er das Schwergewicht der Wirkungen in die dämmerig verfließenden Stimmungen zu legen, indem auf diese das Abgehen von festen Linien, das ist in der Musik vor allem von harmonischer und tonaler Klarheit, ferner aber auch von formaler Geschlossenheit, unmittelbar hinzielt.' Ernst Kurth, *Romantische Harmonik Und Ihre Krise in Wagners 'Tristan'* (Bern: P. Haupt, 1920), 357.

[14] 'Wenn nun die Theorie, um die ganze Erscheinung überhaupt zu erfassen, nach scharf umrissenen technischen Merkmalen sucht, so läuft sie ähnliche Gefahr, als wenn man einen Dämmer, um ihn genauer zu erspähen, belichten wollte; die durch und durch in trüb verschleiernden Eindrücken beruhende Erscheinung würde auch hier verschwimmen und verschwinden, ja für alle begriffliche Erfassung ins Nichts zerfließen, falls diese nicht in Erkenntnis des Wesentlichen die grundlegenden Begriffe ganz anderswo suchte als in bestimmt abgrenzenden, klar belichtbaren Linien; wo feste Formen fehlen, liegt stets für die Theorie das Problem in der Gesetzmäßigkeit und den Grundzügen, aus denen sich die Uebergänge vollziehen und in steter Schwebe bleiben.' in *Ibid.* 357–358. Kurth points out at that the very word 'impression' 'is always something that contains movement within itself, something that cannot be delineated, as opposed to that which can be conceptually and sensorially clearly determined.' (Das liegt schon im Wort; Impression, Eindruck, ist immer etwas in sich Bewegtes, Unabgrenzbares im Gegensatz zum begrifflich und sinnlich klar Bestimmbaren.) in *Ibid.,* 357–358.

begins to pervade the piece, whether or not it's actually there.[15] As such, any music containing such tonal and formal ambiguities is perhaps more susceptible to reflecting the will of the theorist: the search for an *Urlinie* takes precedence over the actual tonal structure of a piece, a discussion of pitch-class collections revolves more around the interaction of these pitch collections than the forces that create motion, gravitation, tension, or expectation within the piece.

Debussy's music has been particularly susceptible to such reflective analyses over the past century; it is perhaps a testament to both the transitional nature of the period in which the composer was writing, as well as the inherent ambiguities in the repertoire.[16] An overview of these analytical methodologies would therefore not only provide an insight into the music, but it would illustrate the evolutionary nature of the analytical discourse applied to the composer's *oeuvre*. The music has been placed at the heart of the Darmstadt school's organicism, contemporary Schenkerian theory, and the rise of semiotic and literary theory (to name but a few), all of which allow for a new perspective of the composer's music, superimposed upon the underlying intent of testing the boundaries of a methodology via music frequently seen as analytically intangible.

This intangibility leads to a greater cognitive dissonance: Debussy's music, full of nonfunctional harmonies, metric dissonance, forms that are not clearly delineated, and melodies comprised of frequently asymmetrical, non-developing ideas, is among the most popular music of the past century. This disparity might be traced back to the simple question of whether one should treat

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[15] Although this is a fairly common term, Huron's application of it to Schenkerian theory might be the first in the music-theoretical area. Discussed further in Chapter 4. David Huron, *Sweet Anticipation: Music and the Psychology of Expectation*, (Cambridge, MA: MIT, 2006), 97.

[16] Jaroncinski notes that, 'a musical work conceived within the limits of a long-established tradition may be open to all sorts of interpretations; viewed as a whole it may seem to the hearer to call for some sort of semantic interpretation, or even arouse in him associations of ideas or concrete images.' Jarocinski, *Debussy: Impressionism and Symbolism*, 49.

Debussy's music as an extension of earlier tonal music, or a forerunner to the modernist composers of the 20th century.[17] While the composer has been championed as a 'quiet revolutionary'[18] by many, Somer writes that, 'the stylistic innovations that distinguish the music of Debussy have threatened to obscure our awareness of the intricate web of associations that joins the composer to past.'[19] Similarly, Jankélévitch writes:

> Debussy's revolutionary innovations seem unforeseeable before the fact (or to anyone who seeks to anticipate them), surprising in the moment, and organically necessary after the fact or upon retrospective reflection.[20]

The duality of traditionalist and modernist slants led to both the unique elements of Debussy's music, as well as the many of the difficulties faced by analysts. Whittall writes that:

> [Debussy's] questioning of tradition, especially Germanic tradition, and his advocacy of spontaneity in preference of calculation, help to define the distinctive atmosphere and techniques of his most important works.[21]

Debussy's 'questioning of tradition,' a somewhat general dismissal of the Austro/ Germanic compositional traits, creates a void in which neither traditional nor contemporary analytical methodologies are able to provide a meaningful summation of the piece. In the *Préludes,* there is rarely a descending *Urlinie,* and a cadential V–I is avoided almost as much as it comes to fruition. Voice-leading does exist, and does aid

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[17] Obviously aware of this, Debussy wrote in 1895 that he was 'working on things that will be understood only by our grandchildren in the twentieth century.' Claude Debussy, Pierre Louÿs, *Correspondance De Claude Debussy Et Pierre Louÿs*, Henri Borgeaud (ed.), (Paris,: J. Corti, 1945), 45. cited in Arthur B. Wenk, *Claude Debussy and Twentieth-Century Music*, Twayne's Music Series. (Boston, Mass.: Twayne Publishers, 1983), 19.

[18] Victor Lederer, *Debussy: The Quiet Revolutionary*, (New York: Amadeus Press, 2007); Wenk, *Claude Debussy and Twentieth-Century Music*, 1–19.

[19] Avo Somer, 'Musical Syntax in the Sonatas of Debussy: Phrase Structure and Formal Function', *Music Theory Spectrum* 27/1 (2005), 67–95 (67).

[20] Vladimir Jankélévitch *Music and the Ineffable*, Carolyn Abbate (trans.), (Princeton, N.J.: Princeton University Press, 2003), 106.

[21] Arnold Whittall, *Musical Composition in the Twentieth Century*, (Oxford: Oxford University Press, 1999), 17.

harmonic progression, but it is, by no means, voice-leading in a Schenkerian sense (it doesn't necessarily follow principles of tonality: leading tones are subverted, cadences are deemphasized, and much of the voice-leading is chromatic, and leads to distant tonal centers). Similarly, attempts to classify a piece in terms of the pitch-collections contained within it fails to provide an account for the fluidity of the composer's music, and is entirely separated from the listener's perception of the music, instead favoring a *post-hoc* account of the structure of the music with little emphasis on the gradual realization of the elements of the work by the listener.

Perhaps the primary obstacle in Debussy pertains to the perception of the immediate event, which is juxtaposed with the perception of the various syntactical constructs. Most analytical methodologies focus on the role of grammar, syntax, and structure, while Debussy's music de-emphasizes the role of process to allow for the listener to 'attend primarily to the qualities of sense experience – the sound of a particular instrument, the specifically sensuous shape of a motive, the changing qualities of such sounds as they follow one another.'[22] Meyer notes that 'the more one perceives the relationships among things...the less one tends to be aware of their existence as things in themselves – as pure sensation.'[23] Drawing an analogy of an out of focus color slide, he notes that when objects are unable to be recognized, a viewer is more aware of the color.[24] Debussy's music, however, is not devoid of the grammatical, syntactical, or structural elements, but allows them to coexist with the immediate. Thus, there has been a great void in Debussy analysis. There has been a century of focusing on

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[22] Leonard B. Meyer, *Style and Music: Theory, History, and Ideology*, (Philadelphia: University of Pennsylvania Press, 1989), 269.

[23] Leonard B. Meyer, *Music, the Arts and Ideas: Patterns and Predictions in Twentieth-Century Culture*, (Chicago: University of Chicago, 1967), 74.

[24] *Ibid.*, 74.

either its coherence or discontinuity. Those that study coherence, Pomeroy notes, fall into

> two broad camps: accommodationist (of established tonal theories to Debussy's idiosyncratic brand of tonality) and rejectionist (of the viability of any such accommodation).[25]

Those that focus on discontinuity do so with an emphasis on the moment, often discarding large-scale relationships.[26]

The goal of this dissertation is twofold: firstly, it attempts to trace an evolution of analytical thought applied to Debussy's music through the prism of the *Préludes,* as the progress of thought toward Debussy's music tends to mirror the evolution of 20th century analytical concepts. Secondly, it argues for a theory of melodic implication, rhythmic projection, and harmonic attraction (which is then used to quantify harmonic tension) in the composer's music. In doing so, it aims to provide an analysis of a natural 'ebb and flow' of the composer's music discussing potentialities within the individual parameters. By doing so, I hope to provide a theory of Debussy's music as perceived, in order to illustrate the nature of the music which the composer frequently referred to one of the greatest 'forms of deception.'[27] Strangely, Debussy's music is rarely the subject of a psychologically grounded analysis, an odd fact considering that Debussy's compositional goal was so grounded in the role of the listener. Narmour and Lerdahl have analyzed the implicative and attractional elements in 'La Terrasse des audiences du clair de lune,' respectively, but the focus of the former was primarily on the melodic

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[25] Boyd Pomeroy, 'Debussy's Tonality: A Formal Perspective', in *The Cambridge Companion to Debussy*, Simon Trezise (ed.), (Cambridge: Cambridge University Press, 2003), 155–78 (157–158).

[26] Wheeldon's Dissertation uses Stockhausen's 'Moment form' while Kinariwala emphasizes Conesian 'stratifications' throughout the *Préludes.* Marianne Wheeldon, 'Interpreting Discontinuity in the Late Works of Claude Debussy' (PhD Thesis, Yale University, 1997). Neela Delia Kinariwala, 'Debussy and Musical Coherence: A Study of Succession and Continuity in the *Préludes*' (PhD Thesis, University of Texas at Austin, 1987).

[27] Claude Debussy, *Debussy on Music: The Critical Writings of the Great French Composer Claude Debussy*, François Lesure (trans.) and Richard Langham Smith (ed.), (London: Secker & Warburg, 1977), 85.

parameter, and the latter focused largely on the role of harmonic elements, as well as the reduction of the piece into primary structural points.[28] The present study attempts to expand on these analyses, as well as various studies of implication, projection, and attraction with the aim of bridging the gap of the analytical discourse on Debussy's music, and the music as it is perceived.

The layout of this dissertation is meant to provide a clear approach to the multiplicity of analytical concepts presented over the past century in regard to Debussy's music. Any parametrically divided discussion such as this one, however, creates somewhat of a dilemma. Obviously music is perceived synoptically, an interaction of melodic, rhythmic, harmonic, and formal elements. Nevertheless, any analysis of expectation must dissect these interactions to understand them as a whole. If one must make such a dissection, Debussy's music would lend itself to such a division quite readily. Cone writes that, 'Debussy cut the tenuous thread still holding the musical elements together, so that rhythm and melody could develop independently of harmony.'[29] In fact, many of the *Préludes* emphasize one parametric element over the other, and full closure of a piece is frequently delayed by the denial of an expectation in one parameter, while another is allowed to reach such closure (the analyses in Chapter 6 focus on these interactions in more depth).

Werner Danckert's study of Debussy's music follows a similar structure, but beginning with melody (*melos*), followed by *harmonik, polyphonie,* and *arhitektonik.*[30]

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[28] Eugene Narmour, 'Implication Et Réalisation Mélodique dans 'La Terrasse Des Audiences du Clair De Lune de Debussy', *Analyse Musicale* 16 (1989), 44–53. Fred Lerdahl, 'An Analysis of Debussy's 'La Terrasse Des Audiences Du Clair De Lune' from the Viewpoint of a Generative Theory of Tonal Music", *Analyse Musicale* 16 (1989), 54–60.; Fred Lerdahl, *Tonal Pitch Space*, (Oxford: Oxford University Press, 2001), 305–5–20.

[29] Edward T. Cone 'Music: a View from Delft' in *Music, a View from Delft: Selected Essays*, Robert P. Morgan (ed.), (Chicago: University of Chicago Press, 1989), 19–28 (23).

[30] Werner Danckert, *Claude Debussy*, (Berlin: W. de Gruyter, 1950).

In his analysis of *La Mer*, Barraqué argued for a similar parametric division, stating that,

> [b]y approaching each compositional parameter successively (harmony, melody, dynamics, rhythm, structure etc.) a method can be created which considers each element in relation to the rest.[31]

The present study will begin with a discussion of Debussy's treatment of form, discussing the use of a rhetorical ABA' in the *Préludes*, albeit in highly modified forms as a way of escaping what Harold Bloom would refer to as the 'anxiety of influence' of his predecessors.[32] This is followed by a discussion of Debussy's melodic forms in Chapter 3, first through traditional motivic and thematic phrases, but arguing for both an implicative and attractional approach (using both Meyer and Narmour's implicative methodologies, as well as presenting a method based on Lerdahl's melodic attraction). Chapter 4 discusses Debussy's metric structures through the lens of metric dissonance, hypermeter, and Hasty's rhythmic projection, arguing for an analysis of metric potentiality through the latter's approach. In Chapter 5, Lerdahl's harmonic attraction is invoked after a brief discussion of the previous literature covering Debussy's harmonic style (which has comprised the bulk of Debussy analysis thus far) from both tonal and atonal perspectives. As these chapters cover a breadth of post-war approaches to the composer's music, a brief discussion of the analytical writings in the early part of the 20th-century would be warranted at this point.

1.2 Early Analytical Approaches

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[31] 'Par l'approche successive des différents paramètres musicaux (harmonique, mélodique, dynamique, rhythmique, structurel, etc.), une méthode peut s'efforcer de reconsidérer chaque phénomène par rapport aux autres.' Jean Barraqué, Debussy's *La Mer*: Or 'the Birth of Open Forms, an Essay in Comparative Methodology", *Analyse Musicale* 12 (1988), 15–62 (16)

[32] Harold Bloom, *The Anxiety of Influence; a Theory of Poetry*, (Oxford: Oxford University Press, 1973), *Passim.*

Discourse surrounding Debussy's *Préludes* tends to fall into one of two camps: those that treat the music as an extension of tonality, and analyze it through traditional (tonal) means, and those that treat it as an early form of atonality, and prefer to discuss it as divorced from tonality altogether. Analyses are obviously not so black and white, but the premise is important. Should an analysis of music that is nominally reliant on tonality discard such tonal terminology when the music discards traditional concepts of both tonality and structure?[33] Many of the earliest analytical writings on the topic weren't preoccupied with the concept of structural coherence or tonal adherence, as their primary concern was on the immediate nature of the various sonorities, an imbalance that caused Debussy to scold René Lénormand prior to the publication of the latter's *Étude sur l'harmonie modérne.*[34]

One argument to be made is that Debussy's music surpassed the analytical thinking of the early 20th century. The verticalist analyses provided by many at this time didn't allow for the fluidity of the compositions, or the interaction between the linear and the structural. Viewed from a solely harmonic perspective (as both analyses discussed below do), there is little sense of progression. Oscar Thompson writes:

> Debussy's chord successions may be said to be of first importance primarily because they tend to invalidate rather than confirm tonalities, irrespective of scales, modes and other fixities of musical procedure. He was not an atonalist in the postwar sense, but he opened the door for those who were to come.[35]

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[33] Losckspeiser notes that 'the work of Debussy, as we see it today, achieved no more, harmonically, than was to be expected from any successor of Wagner. It broke down the rigidity of the tonal order a little more effectively, but the principles of tonality were not relinquished...The distinctive achievement of Debussy was not so much his novel, ambiguous harmony; it was his recognition of the fact that since an advanced stage in harmonic development had been reached the older forms of music could not be maintained.' Lockspeiser, *Debussy: His Life and Mind, vol. 2* (London: Cassell and Company, 1965), 230–231.

[34] René Lénormand, *A Study of Twentieth-Century Harmony (Étude Sur L'harmonie Moderne), a Treatise and Guide for the Student-Composer of Today* Herbert Antcliffe (trans.), (London & Boston: J. Williams The B. F. Wood, 1940).

[35] Oscar Thompson, *Debussy: Man and Artist*, (New York: Dover, 1967), 242.

As the harmonic elements consisted of such invalidations, a larger context was necessary for a productive analysis, but many early analyses simply didn't provide enough musical context to adequately explain the music. After submitting a draft of what would become *Etude sur l'harmonie moderne* to the composer, Lénormand was famously chided by Debussy, who, although referring to the analysis as 'extremely accurate and almost implacably logical,'[36] stated that the author was 'sometimes ruthless in divorcing… quotations from their context, because then they lose almost all their "curiosity value."'[37] Debussy went on to warn that Lénormand should 'consider the untrained hands that are going to fumble their way carelessly through your book, using it only to finish off all those beautiful butterflies that are already a little bruised by analysis.'[38]

The analyses in Lénormand's study do prefer to look at harmony in isolated instant: illustrations show instances of consecutive fifths in 'Chansons de Bilitis'[39] the 'chord of the seventh' in *Pelléas*, and upper structure harmonies such as the ninth and the eleventh in *Children's Corner*.[40] Lénormand, however, was not as interested in analyzing the organic progress of a composition as much as he was in explaining the various harmonies that were taking place in what he considered a modern, yet

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[36] Claude Debussy, *Debussy Letters*, François Lesure (trans.) and Roger Nichols (ed.), (London: Faber, 1987), 259.

[37] *Ibid.*, 260.

[38] *Ibid.*, 260.

[39] René Lénormand, *A Study of Twentieth-Century Harmony (Étude Sur L'harmonie Moderne), a Treatise and Guide for the Student-Composer of Today* Herbert Antcliffe (trans.), (London & Boston: J. Williams The B. F. Wood, 1940),48.

[40] *Ibid.*, 100–104.

transitional movement in *fin-de siecle* France.[41] Lenormand's study, might therefore be considered little more than a 'straw man' with which Debussy can illustrate the deficiencies of music theory. Although guilty of extrapolating instances of modern harmonic concepts and discussing them in a vacuum devoid of context, *Étude sur l'harmonie moderne* makes no excuses for such a study, acknowledging that the role of the theorist is often reduced to a 'grammarian,' stating that:

> The most daring composers are all technicians of the greatest ability. Those who unite to such mastery the greater gift of a truly musical temperament bring themselves naturally to the first rank. The others, complicating harmony simply with the pleasure of the grammarian, class themselves rather among the theorists than among the creators, which nevertheless assures them an important place.[42]

The study shouldn't be discounted, as it is one of the earliest examples of a treatise on the modern structures. But Mcfarland correctly states that

> while these are obviously integral elements in Debussy's harmonic language, their identification does not constitute an analysis of his music, only a step towards that end.[43]

Although he was the recipient of the composer's somewhat harsh invective, Lénormand was not the first to analyze Debussy's music in such a way. In 1908, Archibald Davison published the first dissertation on Debussy's music. In a similar vein to Lénormand's work, Davison reduced the music to a number of elements responsible for the

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[41] Regarding modernity, Lenormand believed that the role of the composer was 'to manifest their sensibility in a new language, to write something other than that which has already been written.' Regarding the transitional nature of the music covered in the study, Lenormand states that 'we must ask the young harmonist who may read this little book to consider it as a document of transition between the treatises of the past and those of the future, as a sort of inventory of modern harmony; as a landmark planted in a vast field of sonorous vibrations which musicians have been indefatigably clearing for more than twenty-five centuries.' *Ibid.,* x.

[42] Lénormand, *Étude Sur L'harmonie Moderne*, ix.

[43] Mark McFarland, 'Claude Debussy and the Concept of Chromatic Harmony in His Late Works' (PhD Thesis, University of California Santa Barbara, 1997), 1.

composer's coloristic sounds.[44] Similar explanations of upper-structure harmonic elements (such as the ninth and eleventh) were credited as being indispensable to the style, but where Lenormand illustrates a few selected instances, Davison points out each occurrence in a number of early works, including *Prélude L'aprés midi d'un Faun* and *Pelléas et Mélisande.*

This is followed by an accounting of seventh chords and 'the consistent placing together of the factors in close position,'[45] and the instances of chromatic alteration and successive 6/4 chords.[46] The results are a list of occurrences of certain sonorities, and nothing else. Despite acknowledging that there is a 'definiteness of procedure'[47] in the compositions, context and coherence are ignored; the focus is on the sonorities themselves. To Davison, a syntactical perception was impossible. He stated that:

> we listen in vain for progressions and cadences with which we are familiar. It is all new. We cannot analyze as we listen, and the effect is general rather than particular.[48]

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[44] Davison states at one point that, 'almost every composer has his trick of speech; D'Indy employs the skip of the major seventh: Grieg is forever dropping from the seventh to the fifth of a scale: and Schubert was fond of juggling the third. So from close observation of Debussy's harmonic system, I am led to believe that the fundamental and most characteristic chord which he employs is *the chord of the ninth in its fundamental position.'* Archibald Davison, 'The Harmonic Contributions of Claude Debussy' (PhD Thesis, Harvard University, 1908),57–58 (Emphasis in original) In fact, Davison refuses to make Lénormand's concession that Debussy was the recipient of centuries of harmonic evolution and study, stating that 'no composer has ever resembled him in method, and although critics are fond of tracing this or that influence in his music, such a course is futile, since he is so completely individual that he holds not the least tie with the music of the past nor, indeed, with that of the present.' (8) He goes on to state that, 'we realize at once that [Debussy's music] is no imitation of anything else, so it cannot be merely marking time in the progress of art.' (47)

[45] *Ibid.* 90–91.

[46] *Ibid.*, 91 and 99, respectively.

[47] *Ibid.*, 55.

[48] *Ibid.*, 14–15.

It was not until the Schenkerian approaches of Salzer and Katz, as well as Danckert's functional approach, that Debussy's music was analyzed in terms of function and large-scale structure.[49]

1.3 Debussy, Bergson, and the 'Cult of Fluidity'

Louis Laloy wrote in 1914 that Debussy had a 'secret correspondence' with philosopher Henri Bergson, and Laloy continued to say that 'such a music could not be produced except in the same environment as such a philosophy, and vice versa.'[50] In fact, if one uses Bergson's philosophy of process as a way of viewing Debussy's compositional style, the nature of the music (and its perception) makes more sense. Henri Lefebvre asks, 'is there something in common between the philosophy of Bergson, impressionistic painting, and the music of Debussy?'[51] There are obviously common concepts between them, most notably what Lefebvre refers to as the 'cult of fluidity,'[52] an interest in the continuously changing element that had become more widely discussed at the turn of the 20th-century.[53]

Temporal perception is at the center of Bergson's philosophy. Lindsay states that in Bergson's philosophy,

> time is represented as a homogenous medium like space, but one of dimension, the moments of which are of the nature of points in space. Yet this is time as we measure it, not time as we experience it, and time is measured only through spatial relations. Time as experienced has the

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[49] Werner Danckert, *Claude Debussy*; Adele T. Katz, *Challenge to Musical Tradition*, (New York,: A. A. Knopf, 1945); Felix Salzer, *Structural Hearing; Tonal Coherence in Music*, (New York: C. Boni, 1952).

[50] Louis Laloy, 'La Musique chez soi:M.Henri Bergson et la Musique,' *Comoedia* (Fevrier-Mars 1914), quoted in Jann Pasler, 'Debussy, *Jeux*: Playing with Time and Form' in *19th-Century Music* Vol. 6, No. 1 (Summer, 1982), 60–75 (74).

[51] Henri Lefebvre, 'Knowledge and Social Criticism' in *Philosophic Thought in France and The United States: Essays Representing Major Trends in Contemporary French and American Philosophy,* Marvin Farber (ed.), (Albany, NY: State University of New York Press, 1968), 281–300 (285).

[52] *Ibid.,* 285.

[53] Lefebvre points out that Dedekind and Cantor were investigating continuity in mathematical terms at this point, as well. *Ibid.,* 285.

> multiplicity of physical states, and is not something which can be counted.[54]

Bergson's philosophy on the experience of process can be seen as a descendent of Germanic organicism, and Husserlian phenomenology. Because of the nature of temporality, 'everything is constantly in the process of becoming the completed entity that it will eventually be.'[55] Bergson's concept of *durée,* which he defines as 'the development of a thought that gradually changes as it takes shape,'[56] is at the heart of his concept of process, which he believed could be applied to the music of Debussy. The philosopher considered Debussy's compositions to be 'a music of *durée,* in its use of continuous melody which accompanies and expresses the unique and uninterrupted stream of dramatic emotion.'[57]

Bergson's temporalism presents two elements of time that are intertwined with temporality in Debussy's music: perceived change and 'coherence through memory.'[58] Time is not an absolute object, but is the result of the perception of change. Similarly to Husserl's temporalism, the perception of time consists of both projection and retention, and an ever-changing present, and in order for the future to exist in Bergson's philosophy, 'it and the present must be contained within the past...every past action contains the 'seeds' of every future event.'[59] The second element is an extension of this, as Bergson stated, 'the succession between present and past requires a form of

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[54] A.D. Lindsay, The Philosophy of Henri Bergson (Port Washington, N.Y: Kennikat Press, 1911), 125 quoted in Kent Cleland 'Musical Transformation as a Manifestation of the Temporal Process Philosophies of Henri Bergson' (Ph.D Dissertation, University of Cincinnati, 2003), 65.

[55] Cleland, 'Musical Transformation as a Manifestation of the Temporal Process Philosophies of Henri Bergson,' 90.

[56] Henri Bergson, *Oeuvres Complétes,* (Paris, 1970), 783, cited in Pasler, Debussy's *Jeux*, 74–75.

[57] Henri Bergson, *Mélanges* (Paris: Presses Universitaires de France, 1972), 844. Cited in Kinariwala, 'Debussy and Musical Coherence,' 210.

[58] *Ibid.,* 65

[59] *Ibid.,* 96

"consciousness." This linking consciousness is memory.'[60] Bergson's concepts are not alien to music theory. Reti's emphasis on the immediate in his theory of thematic process led to his dependence on memory to be a force of cohesion.[61] Bergson wrote that 'there is no perception which is not full of memories' eventually leading to a 'plurality of moments.'[62] The importance of memory in perception is not limited to the long-term, but is therefore relevant in the immediate present as well (immediate memory for Bergson extended also to the perception of linguistic syntax, stating that 'anyone who approaches. . . the classical problem of the relations of soul and body,' writes Bergson in *Matter and Memory*, 'will soon see this problem as centering upon the subject of memory, and even more particularly upon the memory of words.'[63]

Knowing this, it's conceivable that the Bergsonian concepts regarding the past and present are apparent in even the least linear of Debussy's compositions.[64] Laloy's comment on the impossibility of Debussy's music without Bergson (and vice versa) seems entirely apt when viewed within this context, and the resulting discussions on rhythm (and form, for that matter) will use Bergson's temporalism as a logical basis. He writes that,

> Pure duration is the form which the succession of our conscious states assumes when our ego lets itself live, when it refrains from separating its present state from its former states. For this purpose it need not be entirely absorbed in the passing sensation or idea; for then, on the contrary, it would no longer endure. Nor need it forget its former states: it is enough that, in recalling these states, it does not set them alongside its actual state

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[60] Henri Bergson, *Duration and Simultaneity: With Reference to Einstein's Theory*, Leon Jacobson (Trans.) (Indianapolis: The Bobb-Merrill Co., Inc., 1965), 48.

[61] For a discussion of this, see Cleland, 'Musical Transformation as a Manifestation of the Temporal Process Philosophies of Henri Bergson,' 104.

[62] Henri Bergson, *Matter and Memory*, trans. by Nancy Margaret Paul and W. Scott Palmer (New York: Zone Books, 1999), 34.

[63] *Ibid.*, 13 quoted in Justin Beplate, Joyce, Bergson, and the Memory of Words in Modern Language Review, Vol. 100, no. 2 (April, 2005), 298–312 (299).

[64] 'A succession of qualitative states which melt into and permeate one another" (Henri Bergson, *Time and Free Will*, F.L. Pogson (trans.) (New York, 1910), 100 quoted in Pasler, Debussy's Jeux, Playing with time and form," 75

> as one point alongside another, but forms both the past and the present states into an organic whole, as happens when we recall the notes of a tune, melting, so to speak, into one another.[65]

Within the context of these Bergsonian notions of process, continuity, and fluidity, the early analyses of Debussy's music (focusing largely on the 'vertical' harmonic elements) would seem to be out of place. Despite this, many analyses of the composer's music (such as those focusing on the Schenkerian structure of certain pieces, or those viewing the music as being derived of pitch-class interactions) have taken similarly architectonic approaches. The approaches employed by many theorists in the middle of the 20th-century (such as Eimert and Barraqué)[66] focused on the thematic growth of the composition, but this emphasis on growth was sometimes at the expense of the larger structures within the piece, foresaking the more traditionally rhetorical elements of the composer's music. By focusing on process through viewing the potentialities of each parameter, one can view the music as a collection of processes, the combination of which allows for a synoptic comprehension of the piece.

1.3.1: Implication as Process

The present study analyzes such processes in Debussy's music through parametric implication, which, it could be argued, is a theory that focuses on the perception of process. An analysis of a composition as being comprised of the prolonging of full closure until the completion of the piece is viewing it as what Whitehead would refer to as a 'continuous becoming' (as opposed to 'being').[67] While Hasty's theory of rhythmic projection (discussed in Chapter 4) has been noted for its inclusion of process-

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[65] Bergson ,*Time and Free Will*, 100 quoted in Michael L. Klein, 'Debussy's *L'isle Joyeuse* as Territorial Assemblage', *19th-Century Music* 31/1 (2007), 28–52 (43).

[66] Herbert Eimert, 'Debussy's *Jeux,*' in *Die Reihe* 5 (1961), 3–20, and Jean Barraqué, *Debussy,* (Paris, Éditions du Seuil, 1962)

[67] Vere C. Chappell, 'Whitehead's Theory of Becoming,' in *Journal of Philosophy,* 58/19 (1961), 516–528.

philosophy into its foundation, the concepts are already inherent in other theories of musical potentialities.[68]

Meyer's discussion of melodic implication focuses on the role of continuous expectation in a composition, and Lerdahl's harmonic attraction allows one to view the harmonic element of a composition as a continuous tensing and relaxing until the piece concludes. In employing his own form of Meyer's theory, Narmour argues that any analysis should be forced to view a piece as a fluid process, and that the major deficiency of previous methodologies lies in their inability to do so. He writes that, 'the nature of music demands that all theorists involve themselves with diachrony in a real sense,'[69] and continues to state:

> the temporal aspect of music has to be treated as a virtual characteristic, untrammeled by rationalism. I my view, Hegelianism in history, Gestaltism in psychology, Lamarckism in evolutionary theory, Chomskyism in linguistics, and Schenkerism in music theory are all similarly defective.[70]

The alternative to these *post-hoc* systems is one that would emphasize the fluid processes of the piece. Narmour considers the implication-realization model to be the needed alternative, which allows for a view of continuous process based on the postponing of closure within the individual parameters. Such analyses would seem to fit Debussy's music quite appropriately, as they are in alignment with the composer's desire for 'fluidity' while nevertheless encompassing more traditional elements (such as harmonic function, tonal closure, melodic return to a tonic, and regularity of pulses).

1.4: Musical Expectation: An Objective Analysis of a Subjective Experience

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[68] Justin London discusses the correlation between Hasty's theory and Bergson and Whitehead's process at length. 'Hasty's Dichotomy' in *Music Theory Spectrum* 21/2 (1999), 260–274.

[69] Eugene Narmour, *Beyond Schenkerism: The Need for Alternatives in Music Analysis* (Chicago: University of Chicago Press, 1977), x.

[70] *Ibid.*, x.

Before embarking on an analysis of musical expectation, it would be beneficial to give a general background on the universality of music, which can then lead to a more specific discussion of musical expectation. While the present study does not attempt to make assertions that all listeners will perceive a piece in the same way, using terms such as 'expectation,' 'closure,' and even 'perception' imply a certain degree of universality. The primary reason for choosing to study musical expectation, however, is not to understand how every listener perceives one of Debussy's compositions. Instead, it is meant to analyze how Debussy exploits various norms to create ambiguity, fluidity, stasis, and propulsion. In doing so, the present work looks to recent cognitive studies to examine these norms, and the possible implications they may have on a larger theory of Debussy's music. The reason this study is necessary, however, is the fact that the composer's music *is* so inherently ambiguous, a quality which will naturally lead to multiple readings of a composition. While the analyses presented here attempt to provide the most reasonable explanations for how Debussy's music can work in a manner that transcends the nature tonality or atonality; whether the analysis is functionality or nonfunctional, it is not meant to be a statement on how every listener will hear the music.

The first objection to arise from such an analysis is typically the varying nature of musical expectation. Obviously, different cultures generate different schematic (learned) expectations within their respective listeners. For example, an avid concertgoer in the nineteenth-century obviously has a different musical background than one living in the modern-day. While these schematic expectations may differ, however, certain universalities are present that can lead to a consistent type of veridical (or intra-opus) expectations.

Throughout the 19th and 20th centuries, a number of ethnomusicological studies had come to the conclusion that the vastly different cultures throughout the world

produced music that were unable to be compared with one another.[71] Early ethnomusicologists considered the notion of musical universals implausible, but in the past fifty years, research into the topic has increased (largely as a result in the interest and rise of universal grammar in linguistics).[72] John Dewey noted that events could be experienced differently by everyone involved, but that there were underlying constants. A poem, like a piece of music, can be understood differently by each reader, yet there is still a general experience which all readers would have.

He writes that there are

> common patterns in various experiences, no matter how unlike they are to one another in the details of their subject matter. There are conditions to be met without which an experience cannot come to be. The outline of the common pattern is set by the fact that every experience is the result of interaction between a live creature and some aspect of the world in which he lives.[73]

Similarly Meyer writes that

> [i]t is not enough...for the listener to know that in Western music of the past three hundred years a particular sound term, the dominant seventh chord, creates an expectation that another particular sound term, the tonic chord, will be forthcoming. The expectation must have the status of an instinctive mental and motor response, a felt urgency, before its meaning can be truly comprehended.[74]

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[71] See Hewitt Pantaleoni, *On the Nature of Music*, (Oneonta, N.Y.: Welkin Books, 1985), and David Reck, *Music of the Whole Earth*, (New York: Scribner, 1977).

[72] Bruno Nettl notes that, 'When I was a student I was taught that any attempt to generalize about the music of the world should be countered by an example falsifying that generalization. I was taught to reject the notion that all of the world's musics had anything in common. But by the 1970s all this had changed.' in 'An Ethnomusicologist Contemplates Universals in Musical Sound and Musical Culture' in *The Origins of Music,* (Cambridge, MA: MIT Press, 1999), 463–472 (463).

[73] *Ibid.,* 309.

[74] Leonard B. Meyer, *Emotion and Meaning in Music*, (Chicago: University of Chicago Press, 1956), 61.

Patel explains a number of musical commonalities across various cultures in his book *Music, Language, and the Brain.*[75] Most scales (even in Eastern cultures) contain a similar number of tones per octave (generally between five and seven). Additionally, Bruno Nettl notes that most cultures 'rely heavily on an interval of about 2 semitones in size in the construction of melodies.' [76][77] Similarly, interval sizes within scales tend to be quite similar. Asymmetric scales are much more common than symmetric ones, and in a 1999 study,[78] subjects were 'better at detecting such changes in the asymmetric scales, even though both scales were unfamiliar.'[79] Research by Balzano suggested that unequal steps between pitches 'conferred a psychological advantage, allowing for tones to have different functions within the scale, such as a reference tone.'[80] This hints at the notion that a lack of symmetry assists the ability to process musical information. Such a concept is interesting considering Debussy's predilection for symmetric scales (namely, whole-tone and octatonic), and would lead one to conclude that a primary factor in the ambiguous nature is related to the preference for asymmetry, and Debussy's avoidance of it.

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[75] Aniruddh D. Patel, *Music, Language, and the Brain*, (New York: Oxford University Press, 2008). For a discussion of Patel's work as it applies to music analysis see the review of the book by the present author in Daniel Shanahan, 'Review of Aniruddh D. Patel's *Music, Language, and the Brain*', *Music Theory Online* 15/5 (2009).

[76] Bruno Nettl, 'An Ethnomusicologist Contemplates Universals in Musical Sound and Musical Culture', in *The Origins of Music*, N.L. Wallin, B.Merker, S. Brown (ed.), (Cambridge, MA: MIT Press, 2000), 463–72.

[77] Sandra Trehub Glenn Schellenberg, S. Kamenetsky 'Infants' and Adults' Perception of Scale Structure', *Journal of Experimental Psychology: Human Perception and Performance* 25 (1999), 965–75. Cited in Patel, *Music, Language, and the Brain*, 21.

[78] Sandra Trehub Glenn Schellenberg, S. Kamenetsky 'Infants' and Adults' Perception of Scale Structure', *Journal of Experimental Psychology: Human Perception and Performance* 25 (1999), 965–75. Cited in Patel, *Music, Language, and the Brain*, 21.

[79] *Ibid.*, 21.

[80] G.J. Balzano, 'The Pitch Set as a Level of Description for Studying Musical Pitch Perception', in *Music, Mind and Brain: The Neuropsychology of Music*, M Clynes (ed.), (New York: Plenum Press, 1982), 321–251. Discussed in Catherine Stevens, and Tim Byron, 'Universals in Music Processing', in *The Oxford Handbook of Music Psychology*, Susan Hallam, Ian Cross, Michael Thaut (eds.) (Oxford and New York: Oxford University Press, 2009), 16.

Patel notes that various studies have shown infants to be aware of Gestalt principles in music, 'show a priority of contour over precise intervals'[81] and are able retain intervals with 'small-integer frequency ratios (e.g., the perfect fifth), among other things.[82] Universality is not limited to the basic cognition of a musical system, and is quite possibly inherent in the nature of perceptual grouping in music. Deutsch notes that it is highly likely that there is a 'set of mechanisms that enable us to form linkages between some elements and that inhibit us from forming linkages between others.'[83] These 'linkages' align with many of the grouping principles originally described by the gestalt psychologists. A number of studies have shown that the grouping of certain tones can be related to the principle of good continuation, as tones with 'unidirectional frequency changes were easier to order than were those whose frequency changes were bidirectional.'[84] Grouping is likely a method the brain uses to facilitate the retention and storage of musical elements and it has been suggested that, 'these processes may be a basic property of the mammalian nervous system, and thus a likely contender for a universal in music processing.'[85] Theories descended from such gestalt groupings could therefore be thought of as steeped in psychological, cross-cultural universals.

This could be expanded upon by noting that a theory of expectancy built upon such universals helps to better understand how composers have exploited such phenomena. Debussy's music is intentionally vague, not due to a total dissolution of tonality in any sense, but how he delays closure by toying with inherent musical

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[81] Patel, *Music, Language, and the Brain*, 379.

[82] Harwood's study also found a number of universals in music processing, such as octave generalization, pitch perception, and similar scale step sizes in Diane L. Harwood, 'Universals in Music: A Perspective from Cognitive Psychology,' *Ethnomusicology*, 20/3, (September, 1976), 521–533.

[83] Diana Deutsch 'Grouping Mechanisms in Music,' *The Psychology of Music* (2nd edn), Diana Deutsch (ed.), (San Diego: Academic Press, 1999), 299–348 (299).

[84] *Ibid.*, 320.

[85] Stevens, 'Universals in Music Processing,' 15.

principals, such as asymmetry (two of his most used sonorities, the augmented triad and the whole-tone scale are composed solely of symmetric structures).

There are believed to be a number of innate qualities in music, which lead many psychologists to believe that universals are present from birth. While the common understanding was once that long-term exposure to certain types of music was 'largely responsible for adults' implicit knowledge of music,'[86] a number of studies have confirmed the number of innate qualities in the listener's ability to perceive musical elements. Trehub performed a test in which a number of tones were played from loudspeakers to infants, who were rewarded by a visual display if they responded (by turning toward the loudspeaker). The study concluded that, infants' 'perception of music-like patterns is remarkably similar to that of adults.'[87] Infants were able to understand transpositional similarity, melodic phrases with awkward rhythms were less easily understood than those with more traditional rhythms,[88] and there was a preference for perfect fifths and fourths rather than tritones. Interestingly, the study confirmed a number of theories that unequal scalar steps facilitate the ability to process music.[89] Infants were less able to process a scale with equal steps, (the whole-tone scale) leading Trehub to conclude that, 'priority for unequal over equal steps in scales qualifies as another processing universal.'[90] This would seem to confirm the Balzano study

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[86] Sandra Trehub, 'Human Processing Predispositions and Musical Universals', in The *Origins of Music*, N.L. Wallin, B.Merker, S. Brown (ed.), (Cambridge, MA: MIT Press, 2000), 427–48 (427).

[87] Discussed in *Ibid.,* 428.

[88] Trehub describes the study as follows: To identify the best of several 'good' rhythms, the patterns were presented in pairs to musically untrained adults, who were required to choose the better rhythm. A comparable procedure was used to ascertain the worst of the 'bad' rhythms. The most preferred and least preferred versions served as 'good' and 'bad' rhythms for six-month-old infants. Half of the infants were required to detect a pitch and rhythmic changes in the context of adults' preferred rhythm, which suggests a natural bias for certain rhythmic forms. Of interest, the 'good' rhythm exemplified gestalt grouping principles and tone durations related by small integer rations; the 'bad' rhythm did not. *Ibid.*, 435.

[89] *Ibid.*, 433–434.

[90] *Ibid.*, 434.

mentioned above and further supports the notion that ambiguity and expectation in Debussy's music might be grounded in his use of symmetric scales.

When analyzing a piece of music with foundations such as 'surprise' and 'expectation' the natural question tends to be that of repeated hearings. This issue, often referred to as 'Wittgenstein's puzzle,'[91] focuses on how a listener can continually be 'surprised' by something he or she knows is happening. Wittgenstein wonders why we would want to hear a piece such as a Haydn minuet if it holds no surprises for us. Dowling and Harwood's response is that of a continuous stream of varying points of information, stating that a piece is 'full of schematic violations on the subconscious level' which simply allow for multiple processings.[92]

Walton's radical answer to the question takes an opposing viewpoint; he doesn't believe the issue is a multiplicity of unfulfilled expectations, but that the listener's expectations (for example, a tonic following a dominant) is entirely 'fictional,' and that music is 'a prop in a game of make believe.'[93] He draws a comparison with literature, writing that

> [t]he reader of *Moby Dick* realizes from the very beginning that fictionally Ishmael lived to tell about the disasters he witnessed. And it is fictional of the reader that he knows Ishmael survived.[94]

The fictional outcome need not be mysterious in order to create suspense, and the same holds true in music.

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[91] W. Jay Dowling and Dane L. Harwood, *Music Cognition*, Academic Press Series in Cognition and Perception. (Orlando: Academic Press, 1986), 220. See Ludwig Wittgenstein, *Lectures and Conversations on Aesthetics, Psychology, and Religious Belief*, Cyril Barrett (ed.), (Oxford: Blackwell, 1966). The actual term varies. Huron refers to it as 'Wittgenstein's puzzle' while Margulis prefers 'Wittgenstein's paradox.' Huron, *Sweet Anticipation,* 225. Elizabeth Margulis, 'Surprise and Listening Ahead: Analytical Engagements with Musical Tendencies' in *Music Theory Spectrum,* 29/2 (2007), 197–217 (212).

[92] Dowling and Harwood, *Music Cognition*, 220.

[93] Kendell L. Walton *Mimesis as Make-Believe: On the Foundations of the Representational Arts* (Cambridge MA: Harvard University Press, 1990), 265.

[94] *Ibid.,* 266.

Meyer's conclusion stems from the hypothesis that music requires multiple forms of comprehension that are often interlinked, and that these multiple connections are often missed when a piece is first heard. He states that

> [l]istening to music is a complex art involving sensitivity of apprehension, intellect, and memory...to comprehend the implications of a musical event fully, it is necessary to understand the event itself clearly and to remember it accurately. Hence it is only *after* we come to know and remember the basic axiomatic events of a work–its motives, themes, and so on–that we begin to appreciate the richness of their implications. It is partly for these reasons that a good piece of music can be reheard and that, at least at first, enjoyment increases with familiarity.[95]

Meyer's listening involves a constant interaction with the formal, kinetic-syntactic, and referential elements in music. The formal elements are occupied with synoptic comprehension of the piece as a whole; the kinetic-syntatic position focuses more the dynamic elements, such as development, tension/repose, stability/instability; the referential element being that which evokes emotion from extra-musical experience.

Edward Cone's theory is similar to Meyer's in that it stresses the need for multiple hearings (or readings). His theory is grounded in literature, and begins with the notion that the comprehension of a mystery story (in this instance, 'The Adventure of the Speckled Band) is attained after three 'readings.'[96] The first reading, which, 'need not, of course, be literally that,'[97] is any reading 'based on total or partial ignorance of the events narrated, whether one is actually reading a story for the first time, or is making a renewed attempt to 'get' a story previously read but imperfectly comprehended'[98] It is 'innocent of analysis' while the purpose of the second reading is solely analytical.[99] In the second reading, there is 'an intentional forgetting...for if one is really to appreciate a

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[95] Meyer, 'On Rehearing Music,' 46.

[96] Edward T. Cone 'Three Ways of Reading a Detective Story–or a Brahms Intermezzo' in *Music: A View from Delft* Robert P. Morgan (ed.), (Chicago: University of Chicago Press, 1989), 77–112 (79).

[97] *Ibid.*, 79

[98] *Ibid.*, 79.

[99] *Ibid.*, 80.

narrative as such, one must concentrate on each event as it comes, trying to suppress from consciousness those elements meant to be concealed until some later point in the story.'[100] The third reading is considered to be the 'ideal reading.'[101]

Huron takes a more biological approach, positing that the 'paradox' is a result of two 'independent neurophysiological paths related to expectation.'[102] The first path (the thalamo-amygdala' path) is fast-track response, which offers immediate reactions, while a slower (thalamo-cortico-amygdala) path 'represents a slow and careful appraisal' of the stimulus.[103] Huron suggests that this is why a deceptive cadence can continue to seem so despite the fact that the piece has been heard many times. Similarly, Jamshed Bharucha's differentiation between schematic and veridical expectations (the former being an automatic reaction to a learned, cultural element, while the latter is a context-based expectation for the next immediate event)[104] can be a cause. Different responses can arise from the schematic expectation as do from the veridical, and there is a 'deception' on one level, but not the other. All of the aforementioned theories share the same relevance to the present study: there are musical universals, which can be treated as norms. While all listeners will experience a piece differently, and come to expect different things from a composition, the studies of cognitive universals in music can be used to analyze these 'norms,' which are either accepted or subverted in a piece before being interpreted by the listener.

1.5 The *Préludes* as a Microcosm of Debussy's Compositional Style

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[100] *Ibid.,* 80.

[101] *Ibid.,* 81

[102] Huron, *Sweet Anticipation,* 226.

[103] *Ibid.*, 226

[104] Jamshed Bharucha, Peter Todd, 'Modeling the Perception of Tonal Structure with Neural Nets', in *Music and Connectionism*, Peter and Gareth Loy Todd (ed.), (Cambridge, MA: MIT Press, 1991), 128–39.

The two books of *Préludes* serve as an excellent point from which one can view the composer's music, both because they are indicative of the composer's developed period, and they occupy a place in his career at which he had developed his personal style and was about to return to the more neo-Classical elements that defined his early compositions (perhaps most notably the late Sonatas). As such, the *Préludes* demonstrate, on a small scale, many of the more traditionalist aspects of Debussy's compositional style (a frequent adherence to standard –often ternary– formal constructions, as well as triadically based compositions, such as 'Bruyères' and 'La fille aux cheveaux de lin'), in addition to pieces exhibiting more malleable forms. Pomeroy writes:

> the genre's characteristic brevity also proved conducive to compositional experimentation...resulting in some of Debussy's furthest departures from traditional tonal practice. At the same time, the *Préludes* serve well to introduce, in their more circumscribed formal context, many tonal and formal techniques to be encountered on a larger scale in the orchestral movements.[105]

The *Préludes* exemplify many of the analytical issues presented in Debussy's large-scale pieces (and his catalogue, in general). For example, a number of analysts have focused on the inherent organicism of *La Mer* and *Jeux,*[106] but many of the elements discussed in these compositions (for example, the prototypical themes Eimert discusses) can be seen in the *Préludes,* as well (there is an 'organic' analysis of 'Les sons et les parfums tournent dans l'air du soir' in Chapter 2).[107] As many analytical issues present

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[105] Boyd Pomeroy, 'Toward a New Tonal Practice: Chromaticism and Form in Debussy's Orchestral Music' (PhD Thesis, Cornell University, 2000), 23.

[106] See Barraqué, *Debussy*, and Eimert, 'Debussy's *Jeux*', respectively.

[107] In this instance, the term 'organicist' refers to the idea that a basic prototype can develop into multiple manifestations of the piece, in order to create a developing form. Obviously, this invocation of 'organicism' is quite general. Schenker's early theories (as espoused in *Der Tonwille*) were quite organicist, despite the neo-Schenkerian's more architectonic use of the theorist's ideas. For a discussion of this, see Robert Snarrenberg, 'Competing Myths: The American Abandonment of Schenker's Organicism,' in *Theory, Analysis and Meaning in Music*, Anthony Pople (ed.), (Cambridge: Cambridge University Press, 1994), 29–56.

in the *Préludes* are similar to a number of other compositions, I have at times analyzed pieces that exemplify these issues best, but are not from either of the two books. For example, one of the best examples of a denial of expectations within one parameter (which is commonly done in the *Préludes*) is 'Pour Les huit doigts' from the collection of *Études* (discussed in Chapter 6). Similarly, an excellent example of the metric dissonance prevalent in the *Préludes* comes from the Violin Sonata. As such, the conversation allows for an inclusion of pieces from outside of the collection when necessary.

A study of the metric elements of the *Préludes* demonstrates a similar variety, encapsulated within the two books. Simon Trezise writes that, by looking at the two books, one is given 'a rounded view of Debussy's treatment of meter. These works accurately reflect many aspects of Debussy's music.'[108] Indeed, Debussy demonstrates a variety of rhythmic and metric ideas in the *Préludes,* such as the fluctuating metric ideas in 'Voiles,' metric conflicts of 2/4 and 4/4 in 'Des Pas sur la neige' and the relatively conservative rhythmic ideas pieces as tonally disparate as 'La Fille aux cheveaux de lin' and 'Ce Qu'a vu le vent d'Ouest.'

There is a similar degree of tonal variety within the collections. Pomeroy devises a 'tonal continuum' to discuss the varying levels of tonality in the *Préludes,* consisting of:

- *Préludes* of non-triadic structural basis
- *Préludes* of triadic structural basis, exhibiting an (almost always) clearly defined tonic, but lacking in certain features traditionally associated with normative tonal forms (such as a structural dominant)

[108] Simon Trezise, 'Debussy's 'Rhythmicized Time", in *The Cambridge Companion to Debussy*, Simon Trezise (ed.), (Cambridge, UK: Cambridge University Press, 2003), 232–55 (237).

- *Préludes* exhibiting fully formed tonal structures (structural tonic-dominant relations: linear and harmonic elaborative techniques reminiscent of earlier tonal music).[109]

This theory of continua is expanded here to include the range of formal, melodic, and rhythmic structures in the *Préludes,* and, where possible, the chapters are organized using this concept as a guiding principle. A continuum avoids the hinderance of delineations and divisions, yet allows for a placement within the larger context of the composer's works. The multiplicity of analyses makes a straightforward categorization of many of these pieces impossible. For example, when discussing 'Brouillards,' Nadeau wrote that there were tonal elements that gave the piece a strong diatonic underpinning,[110] while Schnebel wrote that it consisted of:

> no theme, no development; no traditional form; no counterpoint, but no so-called harmony either; neither 'melody' nor 'accompaniment'; no main and subsidiary voices; neither definitely diatonic tonality nor chromatic tonality.[111]

Both Schnebel's and Nadeau's analyses are enlightening, but one views the piece as an extension of tonality, while the other discards any notion of tonality from the outset. Nevertheless, Pomeroy's continuum facilitates a discussion of the nature of a piece in relation to the larger whole, and it forms a sound basis for a the structure of a discussion of the music.

Debussy signed the contract for the first book of *Préludes* with Durand on February 7th, 1910, and they were published later that year (although many were composed in 1909).[112] Most of the second book, which was published in 1913, was

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[109] Boyd Pomeroy, 'Debussy's Tonality: a Formal Perspective' in *The Cambridge Companion to Debussy,* Simon Trezise (ed.), (Cambridge: Cambridge University Press, 2003), 155–78 (165). Pomeroy's analyses are discussed in more depth in Chapter 4.

[110] Roland Nadeau, '*Brouillards:* A Tonal Music',' in *Cahiers Debussy* 4–5 (1980), 38–50.

[111] Schnebel, 'Brouillards: Tendencies in Debussy,' (39).

[112] Claude Debussy, *Correspondance, 1872–1918*, François Lesure, Denis Herlin and Georges Liébert (eds.) (Paris: Gallimard, 2005), 1244–1245.

written in 1912.[113] For convenience, the pieces are listed below, although the present study is by no means a comprehensive analysis of all twenty-four pieces. Instead, it views the treatment of implication, projection, and attraction through the prism of the *Préludes,* using exemplary pieces as a means of demonstrating the techniques employed by the composer on a consistent basis. At times, piano pieces that are most indicative of these techniques are not even from the *Préludes,* but are discussed . Nevertheless, the *Préludes* serve as a stable starting point for a discussion of implication in the composer's music.

[113] For a complete dating of the *Préludes,* see Roy Howat (ed.), Claude Debussy, *Préludes Pour Piano Oeuvres Completes De Claude Debussy*, Roy Howat (ed.), vol. 5, *Oeuvres Completes De Claude Debussy* (Paris: Editions Costallat & Durand, 1985).

Prélude	Book I (1910)	Book II (1913)
1	Danseuses de Delphes	Brouillards
2	Voiles	Feuilles mortes
3	Le vent dans la plaine	La puerta del Vino
4	Les sons et les parfums tournent dans l'air du soir'	Les fées sont d'exquises danseuses
5	Les collines d'Anacapri	Bruyères
6	Des pas sur la neige	Général Lavine – eccentric
7	Ce qu'a vu le vent d'Ouest	La terrasse des audiences du clair de lune
8	La fille aux cheveaux de lin	Ondine
9	Le sérénade interrompue	Homage à S. Pickwick Esq. P.P.M.P.C
10	La cathédrale engloutie	Canope
11	La danse de Puck	Les tierces alternées
12	Minstrels	Feux d'artifice

Example 1.1: A List of Debussy's Préludes

Chapter 2: Conformational, Generative, and Discontinuous Forms in The Préludes

2.1: Introduction

Debussy's treatment of form is somewhat paradoxical. The composer frequently attempts to create new formal structures, comprised of a continuous development, constantly progressing until the piece concludes. This development, however, is contradicted by a strict adherence to many of the more traditional rhetorical forms. Debussy famously stated that:

> One architect would never dream of reproaching another for having used the same kind of stone as himself. Nonetheless, would he not be shocked to find formal similarities in the work of a colleague? It is evidently not the case in music, where a modern composer can copy the forms of some classical work without anyone turning a hair. He's even to be congratulated for it! (Respect for tradition manifests itself in some very strange ways.)[1]

Despite such protestations, Debussy does adhere to traditional formal schemes quite frequently. Howat writes that,

> in one respect it's odd that Debussy has long been touted as a formal iconoclast, for in practice few composers show us so exactly what they're doing – so long as we don't decide in advance what we're expecting to find.[2]

In analyzing Debussy's forms, one is able to see how the composer is achieving this delicate balance of ambiguity and certainty. The composer uses traditional forms as a

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[1] Debussy, *Debussy on Music,* 283-84.

[2] Roy Howat, *The Art of French Piano Music: Debussy, Fauré, Chabrier* (New Haven, Yale University Press, 2009), 39 Howat's earlier study of Debussy's formal structures convincingly explains the role of the golden section in the composer's music, and is perhaps the most landmark study of the composer's formal structures. As it is largely derived from poietic elements rather than esthestic (compositional intent rather than the role of perception), it unfortunately falls outside of the purview of the current discussion. The perception of forms based on golden sections hasn't been studied at length, although Howat's work is of primary importance for understanding the compositional choices Debussy makes in his architectonic structures. Roy Howat, *Debussy in Proportion: A Musical Analysis* (Cambridge: Cambridge University Press, 1983).

springboard for melodic and harmonic digressions in some pieces, while in others he uses a series of 'cues' to form a cohesive whole out of a seemingly organic structure.

This chapter will discuss both the traditionalist and modernist aspects of the composer's formal structures, discussed as a dichotomy between 'form as structure' or 'form as process' (distinguished by Westphal as *Form* and *Formung*).[3] Zbikowski similarly makes the distinction between 'musical works which could be regarded as manufactured things that comprised discrete°and inherently static components,'[4] and 'instances of quasi-abstract communication that [are] unfolded dynamically in time.'[5] Kinariwala notes that, '[Debussy's] goal is to make it difficult for us to perceive the work as an object, to make it easy to follow along as each event occurs in a continual "becoming."'[6] Debussy's treatment of form seems to be able to be categorized as the use of either a conformational form, such as the ternary and rondo pieces, or as generative (a constantly changing, malleable structure), such as the pieces comprised of 'developing variations'[7] followed by a reprise.

In the *Préludes,* this 'continual becoming' often exists within schematic form, referred to by Parks as 'morphological' (as opposed to 'kinetic'),[8] and frequently as static (as opposed to dynamic),[9] but the present study uses the dichotomy of

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[3] James Webster, 'Formenlehre in Theory and Practice' in *Musical form, Forms, Formenlehre* Pieter Bergé (ed.), (Leuven: Leuven University Press, 2009), 123-139 (123).

[4] Lawrence Zbikowski, *Conceptualizing Music: Cognitive Structure, Theory, and Analysis*, (Oxford: Oxford University Press, 2002), 299.

[5] *Ibid.*, 299.

[6] Neela Delia Kinariwala, 'Debussy and Musical Coherence: A Study of Succession and Continuity in the *Préludes*' (PhD Thesis, University of Texas at Austin, 1987), 11.

[7] This Schoenbergian term seems apt due to the seemingly constant growth in many of the *Préludes,* and Parks uses this term as well in referring to the same structures, (see Parks, *The Music of Claude Debussy*). Nevertheless, the application of Schoenbergian terminology to Debussy's will be done with caution.

[8] Parks, *The Music of Claude Debussy*, 211–255.

[9] This duality is perhaps explained in the most depth by Joshua Banks Mailman, 'Temporal Dynamic Form in Music: Atonal, Tonal, and Other' (PhD, Eastman School of Music, 2010).

'generative' and 'conformational.'[10] This is mostly due to the fact that the use of 'static' elicits the notion of architectonic structures, while dynamic connotes the 'continual becoming' Kinariwala is discussing, but conformational form in Bonds's sense relates to the *a priori* assumptions that Debussy was playing against, while 'generative' allows for a more organic connotation.

The *Préludes* frequently rely on traditional formal scheme, often employing a variant of a standard ternary (ABA') form. Debussy, however, is quite flexible in his use of this form, most notably the concept of full return. Pomeroy notes that, among those with ternary designs, some compositions (such as 'La cathédrale engloutie,' 'Nuages' and 'La Puerto del vino') are closed, with an obviously delineated structure, while others (such as 'Danseuses de Delphes') are less obviously ternary, with fewer cadential markers between sections.[11]

In addition to the ternary forms, Debussy sometimes employed more open-ended structures, as in 'Des pas sur la neige'[12] in which a coherent structure is generated by a recurring three note idea through the entirety of the piece. At times a seemingly standard form can hold similarly repeating structures within it, as in the nested ABA' structure of 'Feuilles mortes.' The composer was fond of rondo forms, as in 'Brouillards' and 'La vent dans la plaine,' as well as in through-composed structures such as 'Ondine.'[13]

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[10] This terminology is taken from Mark Evan Bonds, *Wordless Rhetoric: Musical Form and the Metaphor of the Oration*, (Cambridge, MA.: Harvard University Press, 1991).

[11] Boyd Pomeroy, 'Debussy's Tonality: A Formal Perspective,' in *The Cambridge Companion to Debussy*, Simon Trezise (ed.), (Cambridge: Cambridge University Press, 2003), 155–78 (164).

[12] Parks refers to the form of this piece as strophic, which seems to be a fitting description. Parks, *The Music of Claude Debussy.*, 225. The use of such open-ended structures could quite possibly be connected with the composer's use of motivic 'cyclicism' in his larger works, influenced by Franck and his disciples at the Conservatoire. In smaller-scale works, however, it is preceded most notably by Schubert's 'Der Erlkönig' and *Gretchen am Sprinnrade.*

[13] *Ibid.*, 225

The organic nature of Debussy's music pervades his thought through many of the *Préludes*. Dismissing the use of static forms for analysis, Charru notes that in the *Préludes*,

> any architectural framework—a blinding mirage for those who believe that it is what holds the work together—is denied. Only the work's internal movement ensures its coherence. Relieved of any useless props, it pulls itself together by way of its rhythm: what holds it together is not its contour, but the interaction of its internal forces which give it its life as a unified, living world.[14]

Assuming he is referring to conformational boundaries of form when he writes 'useless props,' it would appear that Charru believes that *any* formal delineation of Debussy's music would be counterproductive, instead arguing for an analysis of the linear, 'form as process.' The two methodologies, however, can quite easily coexist.

Conformational forms rely on schematic expectations, many of which can be thwarted at any point. One knows the potential structure of a piece in sonata form, just as one will come to expect a returning A section in a rondo (assuming the listener is familiar with the genre). Dynamic form, however, is constantly playing with the evolution of expectations generated from within the composition (enacting veridical expectations).[15] On the other end of this 'formal continuum' are the forms that emphasize discontinuity. Cone refers to these instances as 'stratifications,' which he

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[14] 'Le cadre architectural – mirage aveuglant pour ceux qui croient saisr en lui ce qui la fait tenir – est nié omme cadre. Seul son mouvement intériur assure sa coherence. Déssaisie d'inutiles etais, elle se ressaisit en son rythme: elle tient non par ses contours, mais par le jeu des forces qui l'engendrent comme un monde vivant et unifié.' In 'Une analyse des 24 Préludes pour le piano de Claude Debussy' in Phillipe Charru, 'Musical Movement in the rhythm of the form: an analysis of the 24 *Préludes* for piano' in *Analyse Musicale* 12 (1988), 63-88 (64).

[15] The terminology at this point can be somewhat confusing, as definitions are sometimes applied liberally. Dynamic form refers to forms that are not static, analogous to what Bonds calls 'generative form' (the opposite of 'conformational form.' I have used the term 'veridical expectations' at this point to define those expectations that are generated from within a composition, but it should be noted that Huron prefers to call veridical expectations 'dynamic expectations,' as they are in constant flux. By employing the alternatives of both terms (generative form and veridical expectations), this confusion is avoided altogether. See Bonds, *Wordless Rhetoric: Musical Form and the Metaphor of the Oration*, (Passim), and David Huron, *Sweet Anticipation: Music and the Psychology of Expectation*, (Cambridge, MA: MIT, 2006), 226.

defines as 'apparent discontinuities which interrupt the musical flow.'[16] Kinariwala uses Cone's terminology to analyze discontinuity in the *Préludes,* but Wheeldon discusses them by invoking Stockhausen's 'moment-form' terminology.[17] Debussy frequently disrupts the linear logic of the piece with such brief 'moments,' seeming to prefer discontinuity to continuity. The present study discusses the consequences of such discontinuities on large-scale formal perception (as much as large-scale perception can exist in the *Préludes,* at least). All of the *Préludes* hold together as a cohesive unit, despite many attempts to disrupt linear logic. Interestingly, these forms do not exist in isolation. For example, a piece fitting into the confines of a ternary ABA' form can contain discontinuities (as well as the elements of organic process discussed above). Therefore a continuum of overlapping constructions would befit the formal multiplicities of many of the pieces.

This chapter discusses the analytical writings regarding Debussy's formal structures, and questions the psychological factors for perceiving the composer's forms as cohesive structures. In discussing the perception of such forms, it attempts to explain the structural coherence in pieces ranging from the traditional (rhetorical), to the linear (progressive), and finally the discontinuous (consisting of moment-forms).

2.1.1 'Form as Structure' and 'Form as Process': a Brief History

Before discussing Debussy's treatment of form as both 'conformational' and 'generative,' a brief digression into the thought of both views would be warranted. The

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[16] Edward T. Cone, 'Stravinsky: The Progress of a Method,' *Perspectives of New Music* 1/1 (1962), 18–26 (18).

[17] Neela Delia Kinariwala, 'Debussy and Musical Coherence: A Study of Succession and Continuity in the *Préludes*' (PhD Thesis, University of Texas at Austin, 1987); Wheeldon, 'Discontinuity in the Late Works of Claude Debussy'. Similarly, Mary Wennerstrom discusses a 'block approach,' and distinguishes between 'procedures of contrast' and 'procedures of connection.'The former consists of this 'block' approach, while the later focuses primarily on motivic linking. Mary Wennerstrom, 'Form in 20th Century Music,' in *Aspects of 20th Century Music*, Richard Delone, (ed.), (Englewood Cliffs, NJ: Prentice-Hall, 1975), 1–64. I use the terminology of 'stratification' and 'moment-form' somewhat informally, invoking both 'stratification' and 'moment-form' at points.

theories of 'form as structure' and 'form as process' were disseminated widely in the nineteenth century as a result of a concentrated effort to institutionalize music theory (and the arts and humanities in general) in both France and Germany. Through this institutionalization, the ideas of two theorists (Antoine Reicha and A.B. Marx) were given an advantage in exposure throughout their respective countries.

The influence of rhetorical form in the latter half of the 19th-century began to take shape in the first part of it. The Church in France was much less influential after the nation's Revolution, and as a result the pedagogical system that taught music in the churches and cathedrals fell apart. In 1795, the Conservatoire opened in Paris, and included a provision in its charter stating that all texts used in the courses had to have been written by the faculty. Zbikowski notes that, 'because of the political power that eventually accrued to the Conservatoire, the texts that it adopted became the core of a national music curriculum.'[18] When Reicha published his treatises on theory and composition, he began by classifying the basic structures of music (beginning with the motive, leading up to phrase and sentence, etc.), which extended to a theory of larger musical forms.[19] The early teachings treated form as structure, 'consisting of various components that could be assembled to create musical compositions.'[20] Form, according to Reicha, was built upon a *coupe*, which literally meant a cup or container, as in

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[18] Lawrence Michael Zbikowski, *Conceptualizing Music: Cognitive Structure, Theory, and Analysis*, (Oxford: Oxford University Press, 2002), 300–301.

[19] The primary texts are Anton Reicha, *Cours De Composition Musicale, Traité Complet Et Raisonné D'harmonie Pratique*, (Paris,: Chez Gambaro, 1818); Anton Reicha, *Traité De Haute Composition Musicale*, (Paris: Zetter, 1824);Anton Reicha, *Traité De Mélodie, Abstraction Faite De Ses Rapports Avec L'harmonie, Suivi D'un Supplément Sur L'art D'accompagner La Mélodie Par L'harmonie, Lorsque La Première Est Prédominante. Le Tout Appuyé Sur Les Meilleurs Modéles Mélodiques, Par Antoine Reicha*, 2. éd. edn, (Paris,: A. Farrenc, 1832). Later published as Anton Reicha, Carl Czerny, Arnold Merrick and John Bishop (eds. and trans.), *Course of Musical Composition: Or, Complete & Methodical Treatise of Practical Harmony*, (London: R. Cocks);Anton Reicha and Peter M. Landey, *Treatise on Melody*, Harmonologia Series No. 10 (Hillsdale, NY: Pendragon Press, 2000). For a discussion of the evolution of Reicha's thought, see Simon P. Keefe, 'Antoine Reicha's "Dialogue": The Emergence of a Theoretical Concept', *Acta Musicologica* 72/1 (2000), 43-62.

[20] Zbikowski, *Conceptualizing Music,* 301.

something which contained musical ideas. Bonds states that this concept 'conceives of form, in a word, as a mold, as a pattern that can be represented synoptically, rather than through time.'[21] Therefore it is not surprising that Reicha was the first to represent form diagrammatically, as he did in *Traité de Haute Composition Musicale*.[22] As a result of the prominence of the Conservatoire (as well as the prominence of Reicha), these theories were taught throughout France for decades to come. The emphasis placed on such rhetorical forms by the Conservatoire no doubt influenced Debussy's thought, and perhaps facilitated his reactionary responses toward it.

While Marx's early organicist school of thought viewed form in a completely different way than Reicha's, the advent of the German school paralleled the French in many respects.[23] He established a dualism of conformational/generative (which he would term *Kunstform* and *Form),* and he similarly treated form 'from the perspective of the composer rather than...of the listener.'[24]

Marx's writings on form were heavily indebted to the organicist schools of thought that were beginning throughout Germany in the nineteenth-century, perhaps most notably in Berlin. The University of Berlin was founded in 1810 by a number of prominent professors from the University of Halle, which had been indefinitely suspended under Napoleonic rule. This new university was 'loosely modeled on the ideals associated with...Friederich Schiller, Johann Gottlieb Fichte, and Friederich von

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[21] Bonds, *Wordless Rhetoric: Musical Form and the Metaphor of the Oration.* 147.

[22] Bonds notes that, 'The use of schematic diagrams...exercises a subtle but significant influence on the manner in which form is perceived. In its search for lowest common denominators, Reicha's *grande coupe binaire* suggests that the tonal outline of a movement is the constant element in the equation, that harmony is now the basis of form, and that the *coupe* is a vessel for melodic ideas.' *Wordless Rhetoric,* 152.

[23] A history of these two modes of schools of national thought is presented in Zbikowski, *Conceptualizing Music*, 300–05. For an in-depth discussion of the influence of the Berlin school on organicist thought, see David L. Montgomery, 'The Myth of Organicism: From Bad Science to Great Art', *The Musical Quarterly* 76/1 (1992), 17–66.

[24] Bonds, *Wordless Rhetoric,* 153.

Schelling'[25] and the university became the most influential concentration of German organicism. When discussing form in literature, Schlegel (who had lectured in Berlin between 1801 and 1804 prior to the formalization of the University) wrote:

> Form is mechanical when it is imparted to any material through an external force, merely as an accidental addition, without reference to its character...Organic form, on the contrary, is innate; it unfolds from within, and achieves that for which it was destined simultaneously with the fullest development of the seed...In the fine arts, just as in the province of nature–the supreme artist–all genuine forms are organic, i.e., determined by the content of the work of art.[26]

When Marx published his *Die Lehre von der musikalischen Komposition, praktisch-theoretisch* in 1837, he noted that, '[i]n this we have found the opposition that thoroughly permeates all music: Rest and Motion, Tonic and Scale.'[27] Similarly, Marx's position in Berlin exposed him to the philosophy of many of the founders of 'nature philosophy' (such as the aforementioned Fichte and Schelling), all of whom were increasingly influenced by advances in botany.[28] This eventual incursion of contemporary scientific thought to music theory is reminiscent of the influence of Newtonian physics and Rameau's gravitational ideas in his *Traité.* Such philosophers began to focus on a concept of vegetation and organic process, in which 'ideas are seeds...and they will put forth complete and fully articulated intellectual constructs°the flowers of invention–that could never be produced by more mechanical means.'[29]

As the ideas of both dynamicism and organicism began to be disseminated throughout Germany, it became one of the most influential elements of Germanic music

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[25] Zbikowski, *Conceptualizing Music*, 302.

[26] Schlegel *Vorlseungen uber dramatische Kunst und Literatur,* in his *Kritische Schriften und Briefe,* vol. 6 pt 2 Edgar Lohner (ed. and trans.), (Stuttgard: W. Kohlhammer, 1967), 109–110. Cited in Zbikowski, *Conceptualizing Music,* 146.

[27] Adolph Bernhard Marx, *Die Lehre von der musikalischen Komposition, praktisch-theoretisch* (Leipzig: Breitkopf and Hartl, 1841), 1–27. cf Zbikowski, *Conceptualizing Music,* 303

[28] Zbikowski, *Conceptualizing Music,* 303.

[29] *Ibid.*, 303.

theory in the early nineteenth century. In his later writings, Reicha would adopt a more dynamic concept of form, forsaking the previously rigid approach he had written about in his earlier works. At the conservatoire in the mid-nineteenth century, this abandonment of a static view of form would be continued and further explored by his student, César Franck. As such, those primarily responsible for the dissemination of rhetorical or organic views on form (or conformational and generative, if the definitions can be expanded as such), can be directly linked to Debussy's studies at the Conservatoire. Debussy often held views that were the antithesis of this Germanic organicism,[30] especially as it encompassed 'developmental' form, but nevertheless it influenced his writings. It could be argued that his use of organicist ideas was directly related to his training at the Conservatoire, where his early uses of conformational forms were also displayed.

2.1.2: The Perception of Musical Form

When studying the perception of form in Debussy's music, one is faced with the juxtaposition of perceiving a long-term structural coherence, as well as the discontinuous aspects the composer's displays. The study of form is frequently a study of comprehension. Schoenberg stated that,

> form in the arts, and especially in music, aims primarily at comprehensibility. The relaxation which a satisfied listener experiences when he can follow an idea, its development, and the reasons for such development is closely related, psychologically speaking, to a feeling of beauty. Thus artistic value demands comprehensibility, not only for intellectual, but also for emotional satisfaction.[31]

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[30] Edward Lockspeiser believes that Debussy reacted against German 'developmental' philosophy in all aspects of his writing, stating that, 'thematic or harmonic development, in the form of a musical argument ruthlessly pursued, demands a firmer, less ambiguous harmonic structure, and it was no doubt for this reason that Debussy particularly distrusted musical development as a method of composition.' Edward Lockspeiser, *Debussy: His life and mind,* (Cambridge: Cambridge University Press, 1965), 231.

[31] See Schoenberg, 'Composition in Twelve Tones,' 215. Carpenter and Neff point out that Schoenberg's theory of form was comprised of comprehensibility (*Fasslichkeit*) and coherence (*Zussammenhang*), Arnold Schoenberg, *The Musical Idea and the Logic, Technique and Arts of its Presentation,* Patricia Carpenter and Severine Neff (ed.), (Bloomington, Indiana University Press), 22. Both focus on the perception of form as a binding element (and therefore primarily a dynamic construct).

Form is often regarded as nothing more than the means by which a piece achieves such 'comprehensibility,' and attempts by composers in the twentieth-century to 'establish individual yet coherent grammars'[32] could be seen as a dissolution of what Kramer refers to as the '*a priori* of continuity.'[33] He writes:

> The entire edifice of Western music had been built on the assumption that one event leads to another, that there is implication in music: Western composers have believed for centuries in the metaphor of musical motion. The decline of tonality contained the seeds of destruction of this myth; the temporal discontinuities of certain early twentieth-century works confirmed that motion is not absolute...[34]

Continuing with the concept of a 'well-formed context' a brief discussion of the retrospective nature of form would be warranted at this point. In fact, a number of studies have considered the perception of form to be *entirely* retrospective. Clarke writes:

> The primary character of the perceptual present is that the contents of the present are active and directly available, whereas memories must be retrieved–must be transformed from a state of inactive storage to current awareness. This strongly suggests that it is not possible to have any direct apprehension of form, but that a sense of form becomes available only through a retrospective, and in some sense deliberate act of (re)construction.[35]

Therefore, much of the research regarding the perception of form could aptly be described as research into musical memory, especially when regarding non-schematic forms.[36] When Schoenberg stated that the comprehension of form was the product of

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[32] Celestin Deliège, 'On Form as Actually Experienced', *Contemporary Music Review* 4/1 (1989), 101–15, (105).

[33] Jonathan D. Kramer 'Moment Form in Twentieth Century Music' in *The Musical Quarterly,* 64/2 (1978), 177–194, (177).

[34] *Ibid.,* 178.

[35] Eric F. Clarke 'Rhythm and Timing in Music' in *The Psychology of Music* (2nd Edn.) Diana Deutsch (ed.), (London: Academic Press, 1999), 474–500 (476).

[36] Boulez notes that, 'formerly, the perception of a form was based on immediate memory and on an *a priori* "listening angle." Now perception is based on para-memory, so to speak, and on an *a posteriori* "listening angle."' (Boulez, *Points de repére* Paris: Bourgois/Seuil 1981, p. 88) cited in Celestin Deliege, 'On Form as Actually Experienced,' 109.

'comprehensibility through memorability,'[37] he was referring to both schematic memories, and memories generated from within the piece. Such memories can be specific, but in terms of formal comprehension, they are often general. Snyder writes that:

> Musical long-term memories and expectations are thus often structured in terms of general categorical schemas such as scale-steps, durational categories, etc. This means that listeners tend to not have exact detailed memories of music, but more generalized memories about the kinds of events that were heard; hence a listener's repertoire of categories of musical events (knowledge in memory) will affect what they can and do remember.[38]

The discontinuity introduced by Debussy through forms could be seen as impeding the ability of the listener to perceive coherence in the piece. Linearity facilitates a listener's understanding of the syntactical relationships in music. Snyder distinguishes between two categories of music in relation to memory: the first

> attempts to exploit long-term memory by building up hierarchical and associative mental representations of large time structures,' while the second 'attempts to sabotage recognition and expectation by frustrating recollection and anticipation, thereby intensifying the local order of the present.[39]

The recollection of the piece can be sabotaged in one of two ways. The first is through information strategies, which either force the listener to process too much information (via a multiplicity of stimuli, dense musical runs, unanticipated events, etc.) or those which generate too little information, through 'the bare minimum of contrast necessary to sustain interest.'[40] The second form of sabotage is a 'memory length

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[37] Schoenberg, 'Brahms the Progressive,' in *Style and Idea: Selected Writings of Arnold Schoenberg,* Leonard Stein (ed.), (Berkeley: University of California Press, 1985), 398–442 (399).

[38] Snyder 'Memory for Music' in *The Oxford Handbook of Music Psychology,* 107–117 (109).

[39] Bob Snyder, *Music and Memory: An Introduction*, (Cambridge, Mass.: MIT Press, 2000), 234.

[40] *Ibid.*, 236

strategy,'[41] which incorporates events that 'exceed the limits of short-term memory.'[42] Debussy's music aims at sabotaging the memory of a piece through both means, with the 'moment forms' serving as the obvious saboteurs for the long-term recollection of 'episodic' events.

Musical memory, as discussed by Snyder, can be further broken down into two types: episodic (which relates to certain events) and semantic (which pertains to a 'general knowledge of facts').[43] The retrospective perception of Debussy's *Préludes* utilizes both facets of musical memory to construct a long-term coherence. While the 'moments' interrupt the linearity of a piece, and therefore hinder the perception of 'protensive' form, they can serve as 'episodes' in retrospective perception acting as cues in aiding the comprehension of the piece. The semantic memory is utilized through the 'conformational' forms discussed earlier. Debussy's cursory use of formal scheme allows the listener to categorize the piece into comprehensible elements.

2.2: The Role of Conformational Forms in the *Préludes*

Debussy's employment of ternary, conformational forms constitutes what is perhaps the most perceptible end of the 'formal continuum.' This is unsurprising, as 'closed' forms, employing a return of the opening material at the end have long been considered the most accessible of forms. For example, Dahlhaus's view on formal perception in general seems to overlap with a foundational definition for conformational form. He writes that 'musical listening proceeds from the idea of a closed shape to which details are related as if they were features defining what underlines them.'[44] This 'closed

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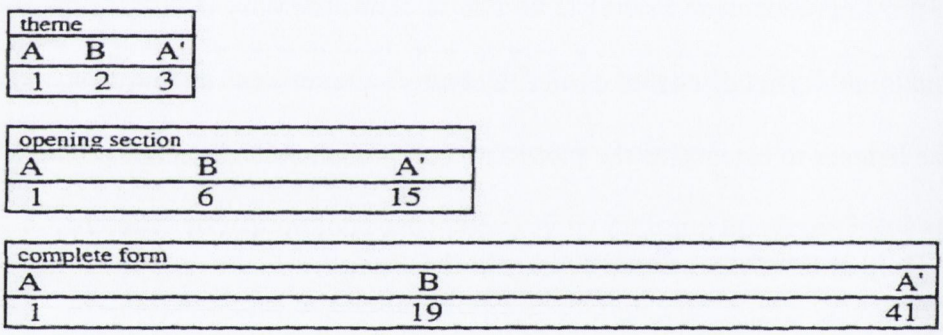
[41] *Ibid.*, 235

[42] *Ibid.*, 235.

[43] Snyder reasons from a purely psychological perspective, which would argue that such elements of musical memory are extensions of one's general abilities at memorization. As such, these divisions could be seen as being a universal. While there are obvious differences between each listener's ability to remember musical events, such divisions (episodic, semantic, echoic, etc.) are seen as being consistent among all listeners. See *Ibid.*, 108.

[44] Carl Dahlhaus, *Esthetics of Music*, (Cambridge: Cambridge University Press, 1982), 78.

shape' is comprised of 'firm boundaries and definite articulations' that allow the piece to be 'grasped as a whole.'[45] To Dahlhaus, coherence is dependent upon the nature of *a priori* constructs that allow the listener to perceive the work as 'not altogether different from a visible object.'[46] Many of the formal outlines in the two books of *Préludes* are simple, often ternary (ABA, ABA', or a variant) structures that would belie the frequently complex developments they contain. 'Feuilles mortes', for example, is a simple ternary structure, but the overall tripartite division is even further compartmentalized into three at both subsequent levels, containing a ternary theme inside a ternary opening section, inside the ternary piece.[47]



Example 2.1: Reproduction of Wheeldon's Analysis of Nested Ternary Structure of 'Feuilles mortes'[48]

[45] *Ibid.*, 77

[46] *Ibid.*,78

[47] Ternary design is discussed as part of a larger 'Golden Section' in Roy Howat, *Debussy in Proportion: A Musical Analysis*, (Cambridge: Cambridge University Press, 1983), 2–3. It is, by no means, unique to Debussy. These encapsulated ternary structures occur in many of Brahms's *Intermezzi,* preceded by some of Mendelssohn's *Songs without Words* (as well as many others). Howat similarly points to this in Debussy, stating that 'the initial ABA segment often suggests a smaller ternary scheme within a larger one, creating the sense of a smaller structural wave followed by a larger one, while the 'C' coda then completes a reciprocal smaller ternary echo round the recapitulation.' in Roy Howat, *The Art of French Piano Music,* 39.

[48] This example is taken from Marianne Wheeldon, 'Interpreting Discontinuity in the Late Works of Claude Debussy' (PhD Thesis, Yale University, 1997), 22.

In Debussy's early works, the sections were quite clearly delineated. Parks notes that in the early piano works,

> the boundaries of large sections are often marked by key signature changes combined with contrasts in the general character of thematic material and its setting, as well as changes in the parameter of tempo, meter, register, successive-attack activity, and loudness. Phrases and periods usually are defined by initiation and completion of melodic contours, which harmonic cadences sometimes support (though cadences become increasingly rare as Debussy's style matures). Melodic closure is usually effected by a pause, either in the form of a final note of longer duration, or of a rest. Alternatively, repetition and recurrence may signal the initiation of a new phrase and, by implication, completion of the previous one.[49]

In working with such schematic forms in the later piano works, however, Debussy was able to undermine the role of many of these conformational concepts. Berman notes that the choice of ABA' itself seems to be a conscious decision to employ a schema that is 'clearly perceptible, and thus not yet overthrown.'[50] The final A section in the ternary design is sometimes heard almost as parody in the context of the severely estranged B section that preceded it.[51] For example, when the opening theme of 'Bruyères' returns in the final measures, it is perhaps more surprising than a continuing development. Such use of extrinsic expectations obviously leads one to question the relevance of musical rhetoric in the perception of Debussy's forms.[52] When discussing rhetoric and form Mark Evan Bonds states that:

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[49] Parks, *The Music of Claude Debussy,* 211.

[50] See Laurence D. Berman, '*Prélude to the Afternoon of a Faun* And *Jeux*: Debussy's Summer Rites', *19th-Century Music* 3/3 (1980), 225–38.

[51] Celestin Deliége notes that, 'It is no coincidence that Debussy, an opponent of abstraction, never sought to escape the schematic constraints of tradition: nor is it a coincidence that he usually worked with the simplest of these, thereby revealing the feebleness of their effect on the concrete form he sought. in 'On form as actually experienced,' 102.

[52] Rhetoric in this sense is meant that which 'determines the rules by which the artistic expressions within a particular work are concatenated, according to the end to be achieved.' (Koch, *Musikalisches Lexikon*, 'Rhetorik,' 92, cited in Mark Evan Bonds, 53. Similarly, Schilling states that 'by rhetoric of music one understands that body of knowledge pertaining to composition by which individual melodic sections are united into a whole according to a particular goal and standard.' Schilling, Universal-Lexicon der Tonkunst, 7 Vols (Stuttgard:Kohler, 1841) *Rhetorik*, also cited in Bonds, *Wordless Rhetoric: Musical Form and the Metaphor of the Oration*, 134.

> form is the manner in which a work's content is made intelligible to its audience. Conventional patterns, by providing listeners with points of reference and predictability, facilitate the presentation of a content that necessarily varies from work to work.[53]

Debussy's work often allows the listener some sense of 'reference and predictability' with the concluding section, as a sort of 'bookending' to frame the composition, allowing for the perception of structural coherence in the most fundamental way. Similarly, it allows the listener to perceive the process of completion, which Kofi Agawu refers to as the 'beginning-middle-end paradigm.'[54] While allowing for this predictability, Debussy's more generative pieces, along with those containing 'moment forms' (see below) could be considered a continuation of early attempts to divorce art from this rather Aristotlean philosophy of 'beginning-middle-end.'[55]

2.2.1: Extensions of Ternary Form: Developments, Hybrids, and Extensions

In the *Préludes* Debussy favors the ternary (ABA') design, and uses it with 'inexhaustible variety.'[56] Pomeroy notes that the first distinction one can make with these ternary designs is simply between 'open,' with the final A section ending away from the original tonic, or 'closed' in which there is a full return.[57] The line between these 'open' and 'closed' forms (or generative and conformational) is frequently blurred in the *Préludes.* Firstly, the final A sections frequently contain a progressive quality,

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[53] *Ibid.*, 5

[54] See V. Kofi Agawu, *Playing with Signs: A Semiotic Interpretation of Classic Music*, (Princeton, N.J.: Princeton University Press, 1991). Similarly, Cone uses the analogy of throwing a baseball, which contains the three acts: throwing, in motion, and being caught. Edward T. Cone, *Musical Form and Musical Performance*, 26–27. Leydon argues that the tripartite divisions are 'archetypical of classical narratives,' pointing to Greimas's study of narrative. She writes that 'It may be simply this tripartite structure that Debussy senses as the "classical" aspect of the work's form, rather than its correspondence to the three main sections of the classical sonata movement.' Rebecca Leydon, 'Narrative Strategies and Debussy's Late Style' (PhD Thesis, McGill University, 1996) 154.

[55] See Aristotle's theory of tragedy in *Poetics,* Gerald F. Else (ed. and trans.) (Ann Arbor, MI: University of Michigan Press, 1967), 30.

[56] Pomeroy, 'Chromaticism and Form in Debussy's Orchestral Music,' 163.

[57] *Ibid.* 164

leading away from closure rather than toward it. For example, in 'Canope' the return of the opening material contains more tonal differentiation than perhaps even the 'B' section. Secondly, the line between an 'open' and 'closed' structure is often blurred by thematic material. For example, 'General Lavine: eccentric' might nominally be considered a 'closed' ternary form, but it does not have the complete subdivision between the 'B' and the final 'A' which one might expect.[58] In fact, some analysts have posited that the middle section should more aptly be considered a derivation of the 'A' section, rather than a new section in itself.[59] The form is in many ways reminiscent of 'La danse de Puck', in that the primary themes are used as structural guiding points to lend a sense of cohesion to the piece. [60] These extensions are manifested in a number of ways: there can be progress within the ternary structure, or a hybrid return, in which the recapitulation consists of both expositional and developmental material, or through an extension of the developmental section (with a BCB section, for example) and an emphasized recapitulation (with two A sections). The present study views 'La fille aux cheveax de lin' and 'General Lavine: eccentric' as the first category. The former is a ternary design, but with extensions that lead to the perception of a continuously developing A section. The latter is somewhat more progressive, in that it is a constantly

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[58] The ternary concept could be expanded in 'La Cathedrale Engloutie' which is often thought to be comprised of an ABACBCA form, could be seen as consisting of two successive ternary structures on the local level, and allows for the same sort of return to A after a development on the larger scale as a smaller scale ternary would. This is hardly revolutionary, but it illustrates an attempt on Debussy's part to remain tied to the concept of exposition-development-recapitulation, while actively widening the gap between exposition and development.

[59] See Charru's analysis in Phillippe Charru, 'Musical Movement in the Rhythm of the Form: An Analysis of the 24 *Préludes for Piano,*' 25. This is a similar approach to that of Parks and Day-O'Connell's analyses of 'La fille aux cheveaux de lin,' respectively in *The Music of Claude Debussy* and 'Debussy, Pentatonicism, and the Tonal Tradition,' in *Music Theory Spectrum,* 31/2 (2009), 225–261.

[60] It is quite possible that Debussy's use of ternary form was a decisive factor for cohesion in itself. Eric Clarke notes that 'it is not implausible that the structure of a great deal of music might reflect a very general scheme in which material is introduced over approximately the first third of the work, developed over the middle third, and then driven toward closure over the final third.' Eric Clarke, 'Rhythm and Timing in Music,' 478. The standard schematic concept of exposition-development-recapitulation is so ingrained in the listener that, despite the need to break away, Debussy used it as a way of holding the piece together, almost as a sort of framing device.

progressing piece (using motives as a means of coherence, in a fashion similar to Eimert's discussion of *Jeux*),[61] but fits within the confines of a ternary design. The final two pieces viewed as extensions of ternary form are 'Canope,' which exhibits Parks's 'hybrid' design, and 'La danse de Puck,' which exhibits an extended reprise form (a large-scale ternary form, if ternary can be defined to mean exposition-development-recapitulation, as the development is multi-sectional).

'La fille aux cheveaux de lin' contains an example of a reprise-based structure within a ternary design.[62] The exposition of the piece begins somewhat ambiguously, with an opening emphasis being placed on a G♭ triad before the realization of a vi^7 on the second beat. This then returns harmonically to G♭ in mm.3-4, creating a vi-I motion from the opening four measures before the arrival of the cadence to E♭ in m.7. When the cadential G♭ does arrive in m.11, however, it promptly begins the development that is thematically and tonally distant from the A section. The B section begins with a largely pentatonic melody, until it concludes with an emphasized E♭, returning to the mediant relationship presented at the beginning of the piece before concluding on the C♭ sonority hinted at in m.16.

The development of the piece seems to emphasize its distance from the exposition by ridding itself of overly tonal elements. The 'A' section ends with a modulation to C♭, and a cadence on E♭. This blurred line helps to further distance the thematic material from the middle section. Additionally, there is less goal-directed movement in the 'B' section. What is typically a place for a development of the theme has been overturned in favor of the final section, which returns to the home key. The original theme is now

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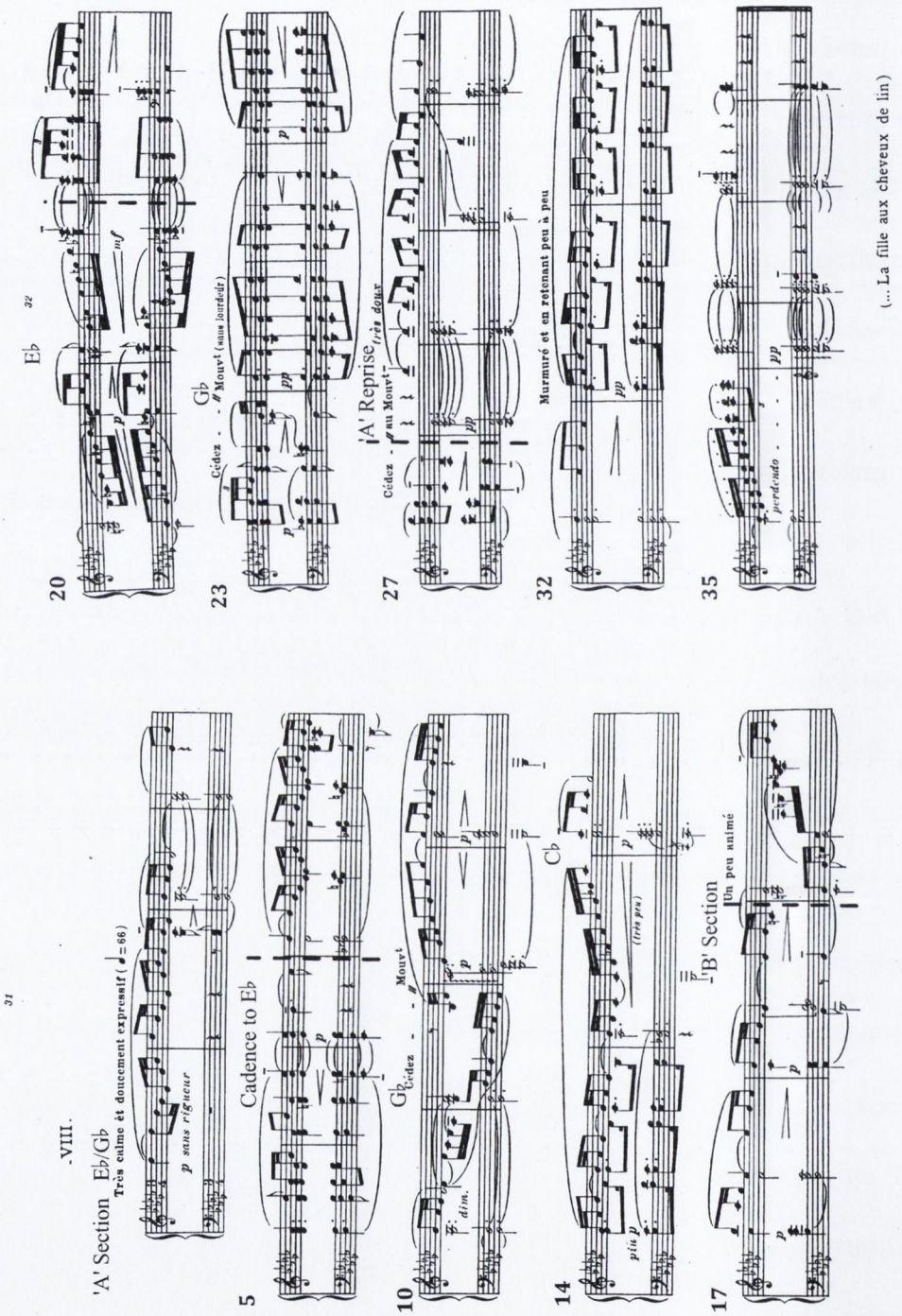
[61] Herbert Eimert, 'Debussy's *Jeux*', *Die Reihe* 5 (1961), 3-20 (*Passim)*

[62] This analysis differs from Parks's who views this piece as largely the result of 'developing variation' followed by a reprise. Although it is not very clearly defined, I do think there is a discernable B section in this piece. Similarly, Jeremy Day-O'Connell's analysis of this piece treats it as a continuously developing A section from mm.1–23, with mm.15–23 consisting of a modulatory section and a climax and transition section. Jeremy Day-O'Connell, 'Debussy, Pentatonicism, and the Tonal Tradition', *Music Theory Spectrum* 31/2 (2009), 225–61 (251); Parks, *The Music of Claude Debussy*, 221.

harmonized at m.28. This leads into new material in mm.33-35, before leading into the plagal cadence at m.35.

The new material in this final section has led some to consider this a 'C' section rather than a reprise,[63] but the emphasis on the harmonic foundations as well as the return of the theme should be enough to constitute a reprise. The final section, however, is truncated, as the material in mm.28–30 (an echoing of the theme in mm.1–3 and 8–10 but rhythmically displaced), is now truncated, and leads directly into the material from m.13-15. Such truncation in the final section, along with the elongation in the final measures of the opening 'A' section, helps to distance the goal-directed thematic material from the rather static 'developmental' section.

[63] See Phillippe Charru, 'Musical Movement in the Rhythm of the Form,' 25.



Example 2.2: Formal Division of 'La fille aux cheveaux de lin'

'General Lavine: eccentric' provides a similar reprise based structure, coexisting with elements of progressive form. The introduction in the first ten measures lays out a number of thematic elements of the piece, but the ternary nature of the piece begins at

m.12, which is halted at m.18 with might be considered a 'stratification' before the piece moves into a pentatonic section in mm.19–23. This then leads into a new section at m. 24, and another digression from mm.30–35.[64] At this point, the theme from m.12 returns for four measures, but is this time interrupted with new material, before the material in mm.47–57 takes control. At this point, there is a return in the triadic element presented throughout the first sections, and the opening material returns in m.70 until the introduction returns in m.101. These simple structures seem to be less than an obligatory reference to the schematic designs from which Debussy was trying to break free, and more of a way of creating structural 'cues' for the listener to hold on to. In this respect, 'General Lavine: eccentric'[65] might be thought of as a progressive form with ternary tendencies, rather than a ternary piece with progressive tendencies (as 'La fille aux cheveaux de lin' might be considered).

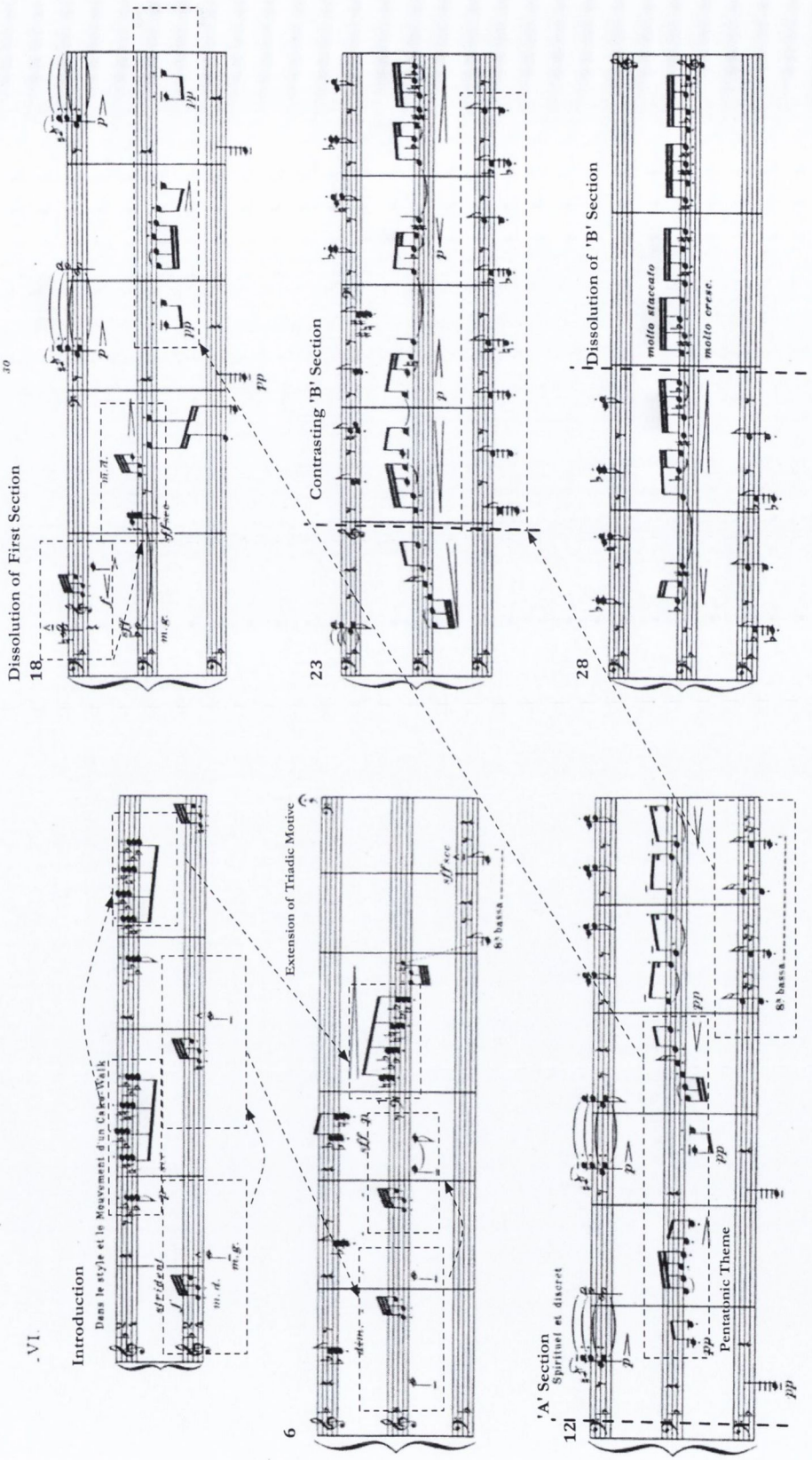
[64] I am hesitant to refer to this opening material as an introduction. It returns (to some degree) in m.46, and again in the final measures (mm.101–109). In this respect, it is acting somewhat as a strophic element, of perhaps the A of a rondo. As the complete thematic material starts in m.12, however, I would consider introduction to be one of the best terms, although somewhat flawed.

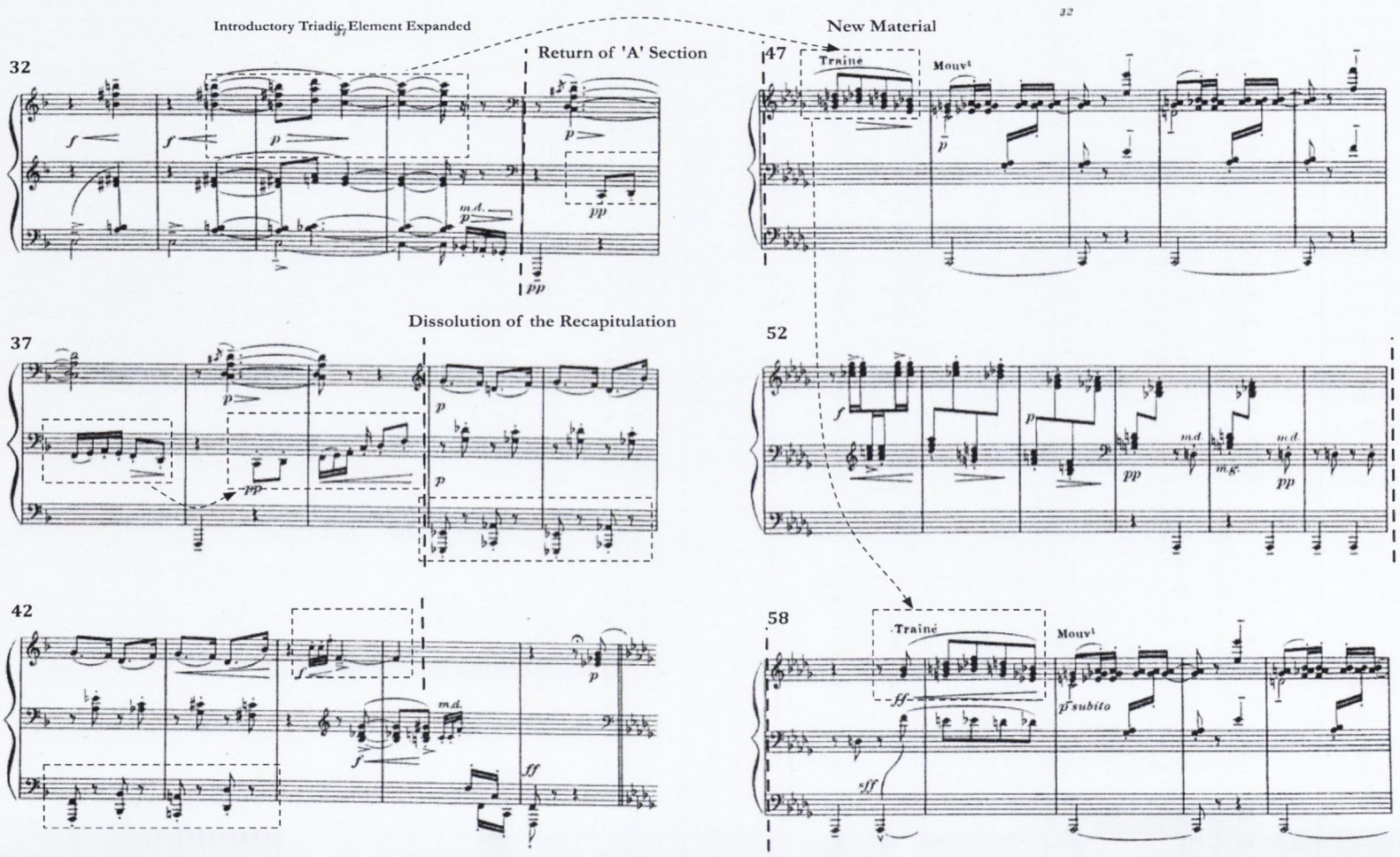
[65] It could be suggested that this formal juxtaposition of progressive and ternary, conformational elements is in reference to the title of the piece, allowing for an entirely new level of interpretation of the piece.

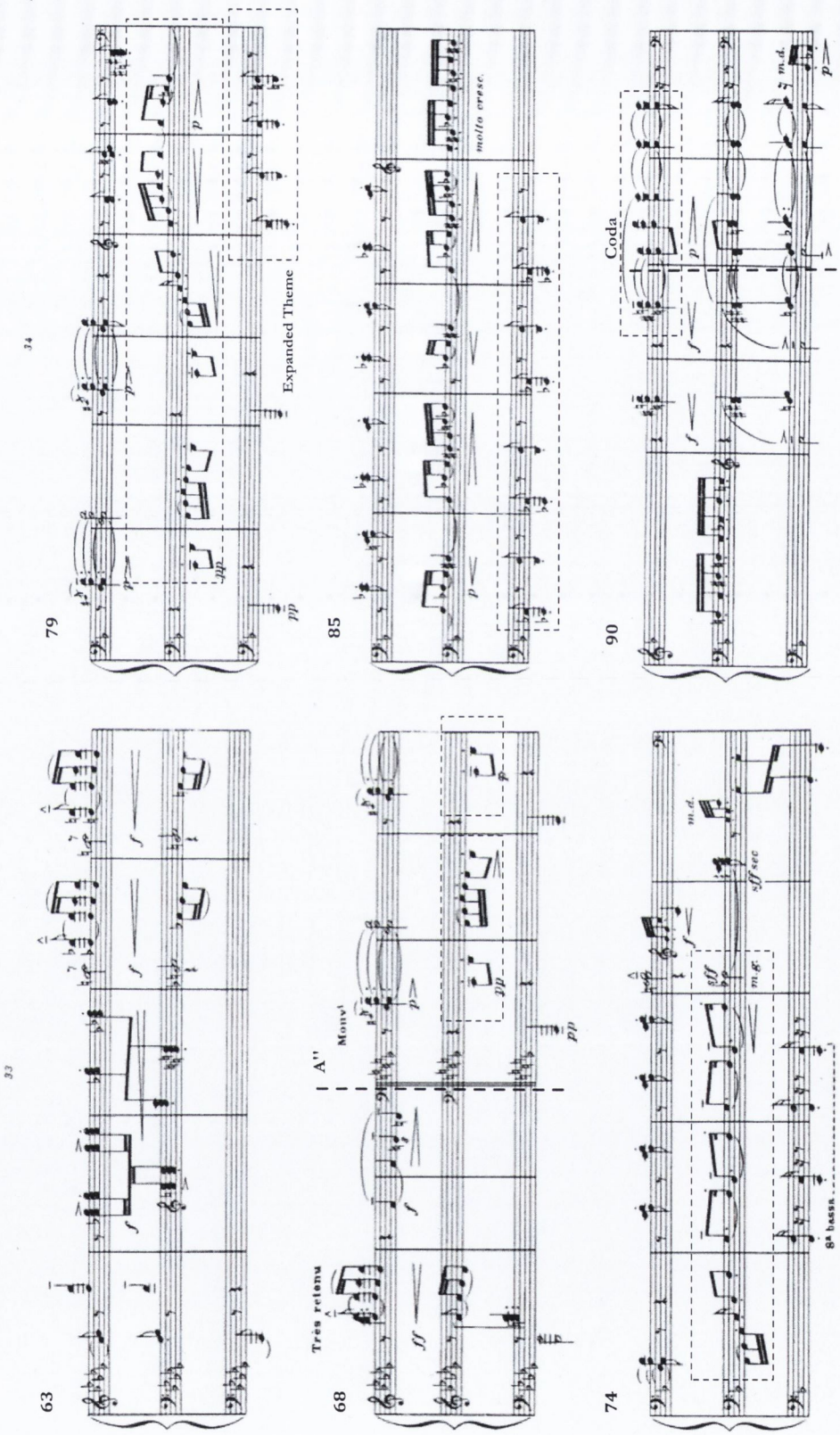
Introduction		mm.1–11
A	1st Theme	mm.12–17
	Interruption	mm.18–23
	2nd Theme	mm.24–29
	Transition	mm.30–35
A' (B?)	1st Theme	mm.36–46
	3rd Theme	mm.47–58
A''	1st Theme (now developed)	mm.59–70
	1st Theme(expanded)	mm.71–92
Coda	Original Thematic Material	mm.93-100
Introduction'		mm.101–109

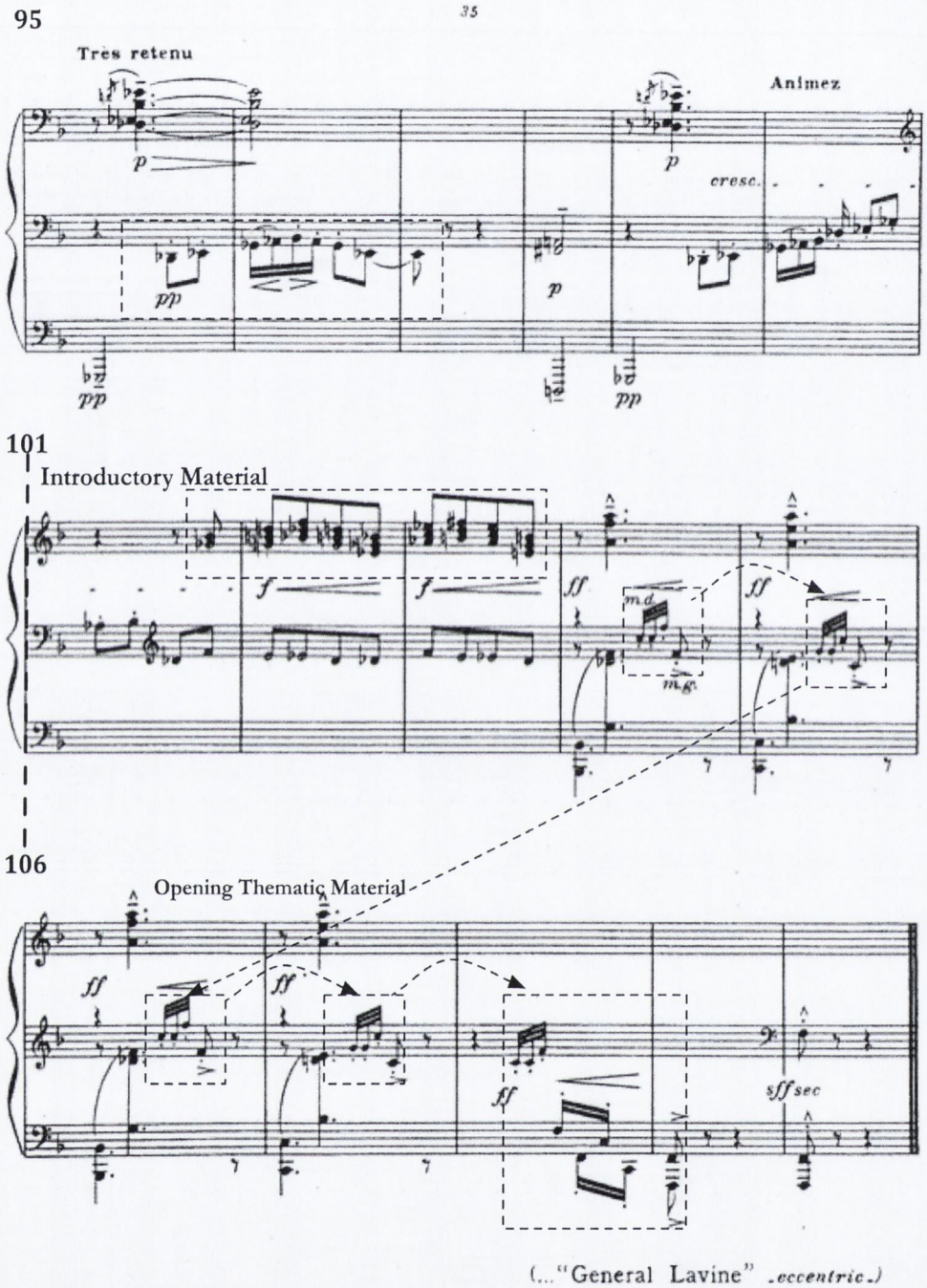
Example 2.3: Structural Layout of 'General Lavine: eccentric'[66]

[66] For an analysis of the harmonic and modal elements of this piece in alignment with these structural boundaries, see Charru, 'An Analysis of the 24 *Préludes*,' 23–27.


VI.
Introduction
Dans le style et le Mouvement d'un Cake-Walk
Extension of Triadic Motive
'A' Section
Spirituel et discret
Pentatonic Theme
Dissolution of First Section
Contrasting 'B' Section
Dissolution of 'B' Section
molto staccato
molto cresc.


Introductory Triadic Element Expanded
Return of 'A' Section
New Material
Dissolution of the Recapitulation
32
37
42
47
52
58
Traine
Mouvt
p subito


Expanded Theme
molto cresc.
Coda
A''
Très retenu
Mouv.t
8a bassa



Example 2.4: 'General Lavine: eccentric'

Linda Cummins makes the connection between these authors and Debussy in *Debussy and the Fragment,* and illustrates the importance of this beginning-middle-end

paradigm, approached in the *Préludes* through ternary forms.[67] Cummins writes that the 'frames' of a composition serve to 'isolate the work–separating it from what came before and what comes after.'[68] To negate this structure by undermining the return section (such as through the 'hybrid' return in 'Canope') is to create a fragment. A number of authors from Cervantes to Sterne used fragmentary narratives in their works, forcing the reader into a sense of confusion, from which comprehension emerges fully only when a previously misled (and, in the case of *Don Quixote*, simply flawed) narrator was finally able to piece everything together at the end. Montaigne referred to his *Essais* as 'a work made of parts, mere decoration, a grotesque.'[69] In a somewhat similar fashion, Mallarmé writes: 'always omit the beginning and the end of what you write. No introduction, no finale.'[70]

This is by no means unique to Debussy. Ternary structure is frequently undermined in the 19th century, as composers such as Chopin and Schumann negate return with off-tonic endings, or altered openings. For example, Rosen points out that 'Im wunderschönen Monat Mai' from Schumann's *Dichterliebe* begins with an off-tonic opening, and similarly finishes outside of the primary key.[71] Perhaps this is one of the most striking aspects of Debussy's use of ternary form: the surprising degree of conformity in these conformational forms. Despite the frequent number of pieces by earlier composers that attempt to negate this sense of return, Debussy employs it frequently and conservatively at points. When the ternary form is undermined, it is done with what Parks refers to as a 'hybrid' ternary, (in which the final return is a mixture of

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[67] *Ibid.*, 64.

[68] *Ibid.*, 63.

[69] Linda Cummins, *Debussy and the Fragment*, (Amsterdam: Chiasma, 2006), 29.

[70] Stéphane Mallarmé, *Mallarmé: Selected Prose Poems, Essays, and Letters,*, Bradford Cook (trans.) (Baltimore: Johns Hopkins Press, 1956) 82. Cited in Cummins, *Debussy and the Fragment*, 64.

[71] Charles Rosen, *The Romantic Generation*, (Cambridge, Mass.: Harvard University Press, 1995), 79–80.

both the expositional and the contrasting sections).[72]

In 'Canope,' (seen in Example 2.5), the A and B sections are delineated with reasonable clarity, with a change in texture at the structural break, but the reprise of the first section at m.27 quickly gives way to elements of the B section, creating a form that is not quite ternary, as its recapitulating final section is actually a hybrid. Such extensions of ternary form are seemingly in alignment with Varèse's later view that purely ternary structures were restrictive of organic process, and a piece could only be truly organic if it attempted to extend the notions of traditional 'historical' forms.[73] Such extensions of ternary form were common in the *Préludes.* For example, the often discontinuous 'Ce qu'a vu le vent d'Ouest' (discussed in more depth in Chapter 5) is a largely ternary structure, but contains a series of interpolated 'moments.'[74] Cummins equates such interpolations of a standard structure with the 'interpolated stories' of Cervantes and Petrach, stating that

> The creators of fragments–Debussy and Chopin included–could and often did make wholes, not fragments; we must remember that the intentional fragment is just that–intentional–and...allows the author to transcend what cannot be resolved or contained in the forms and means available. We should not accept *Don Quixote* without the interpolated stories, or *Kater Muss* separated into its two narratives, or Schlegel's fragments organized by topic, or Petrarch's *Canzoniere* with added prose narrative...[75]

Yet the structure of 'Ce qu'a vu le vent d'Ouest' remains ternary on the whole, despite such interpolations. In that way it is similar to a linear narrative with interspersed 'moments.' The piece can hardly be considered 'moment' form, although it is comprised of such interruptions.

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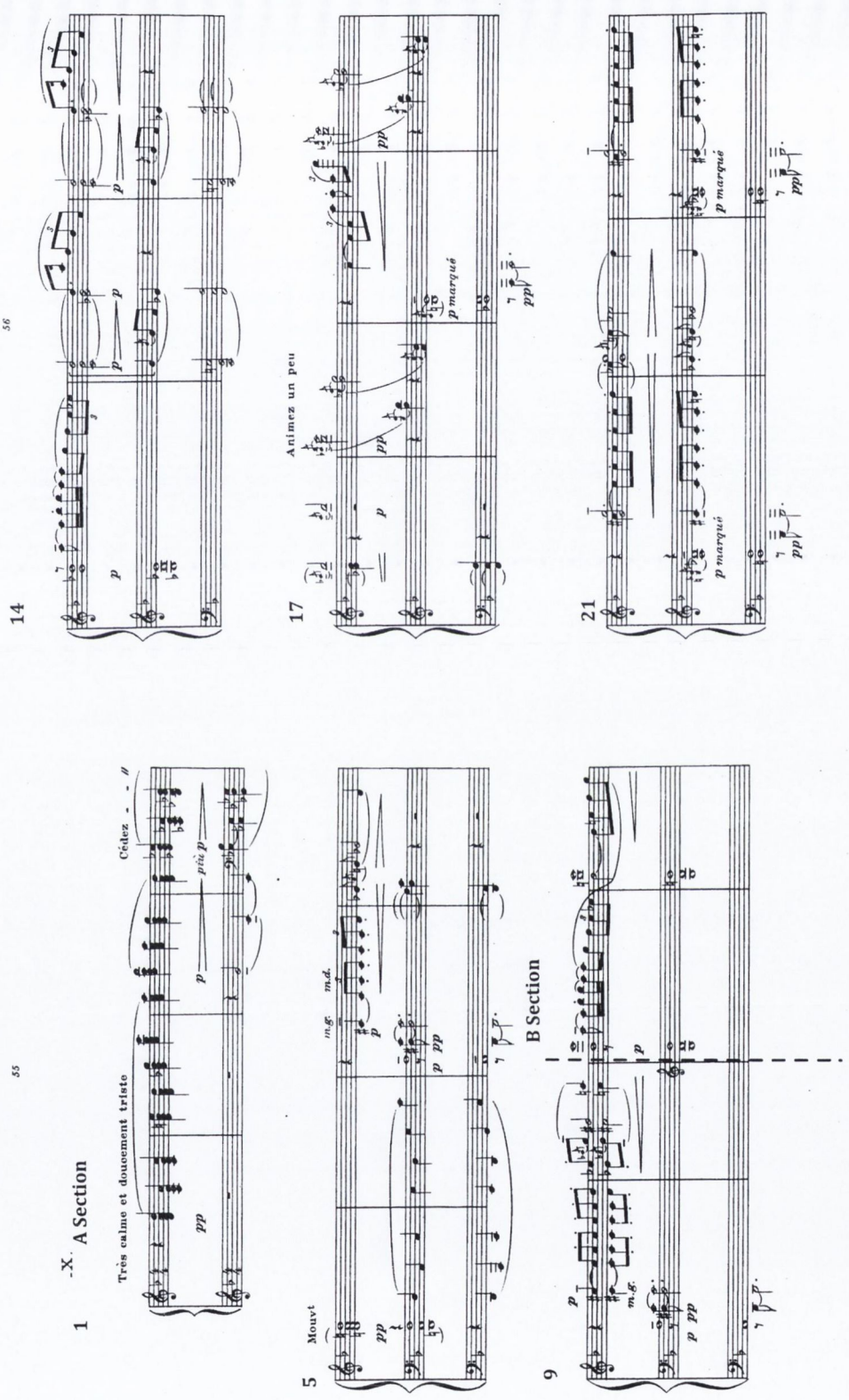
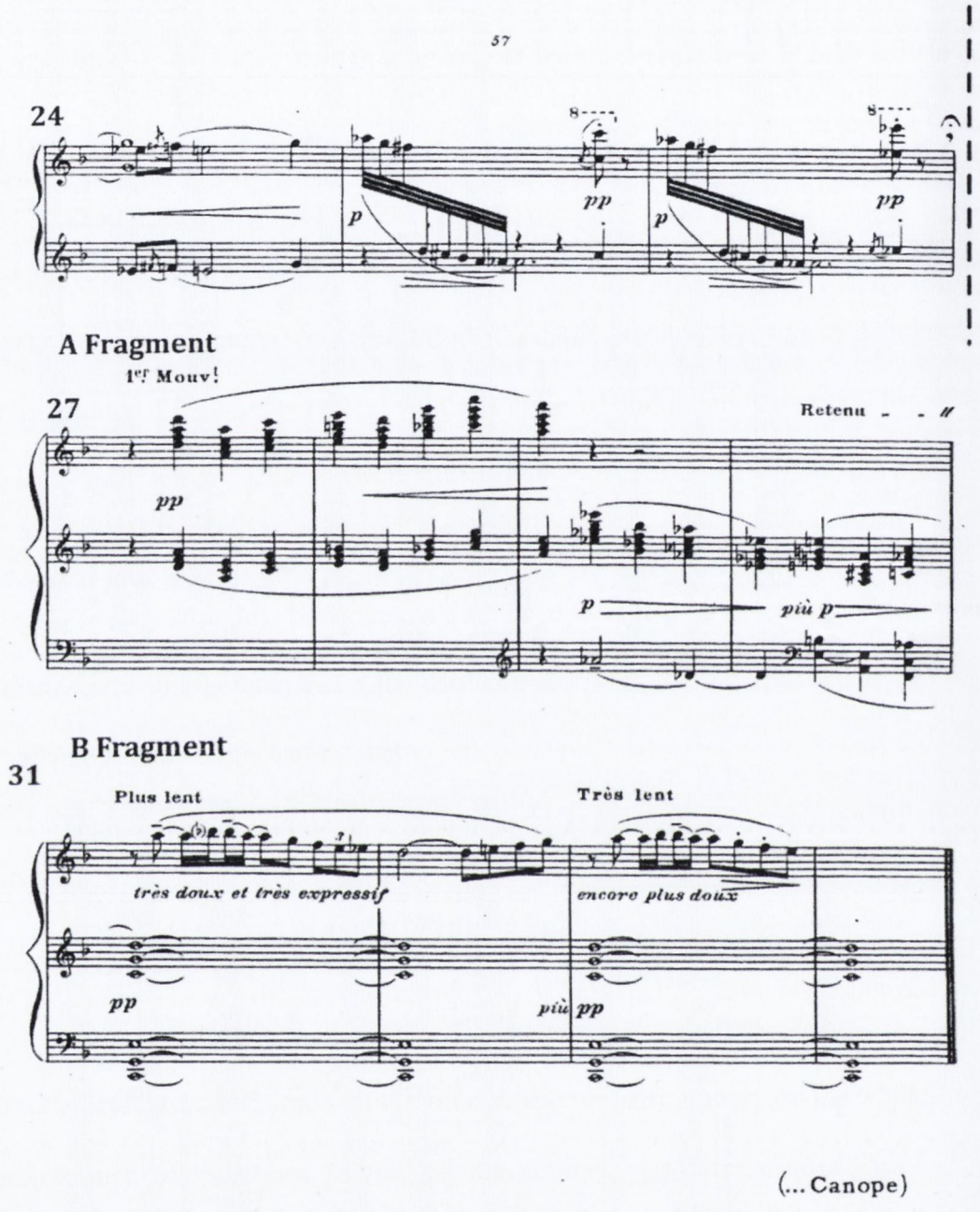
[72] Parks's hybrid archetype includes 'Voiles' along with 'Canope' and 'Pour les arpeges composés'. In *The Music of Claude Debussy,* 224.

[73] Varèse characterized form as 'either the result of a process' or 'a rigid box of definite shape.' Discussed in Jonathan W. Bernard, *The Music of Edgard Varèse*, (New Haven: Yale University Press, 1987), 21.

[74] See Wheeldon's discussion of this in Wheeldon, 'Discontinuity in the Late Works of Claude Debussy,' 31–41.

[75] Cummins, *Debussy and the Fragment*, 158.


-X-
A Section
Très calme et doucement triste
Cédez
B Section
Mouvt
Animez un peu
p marqué

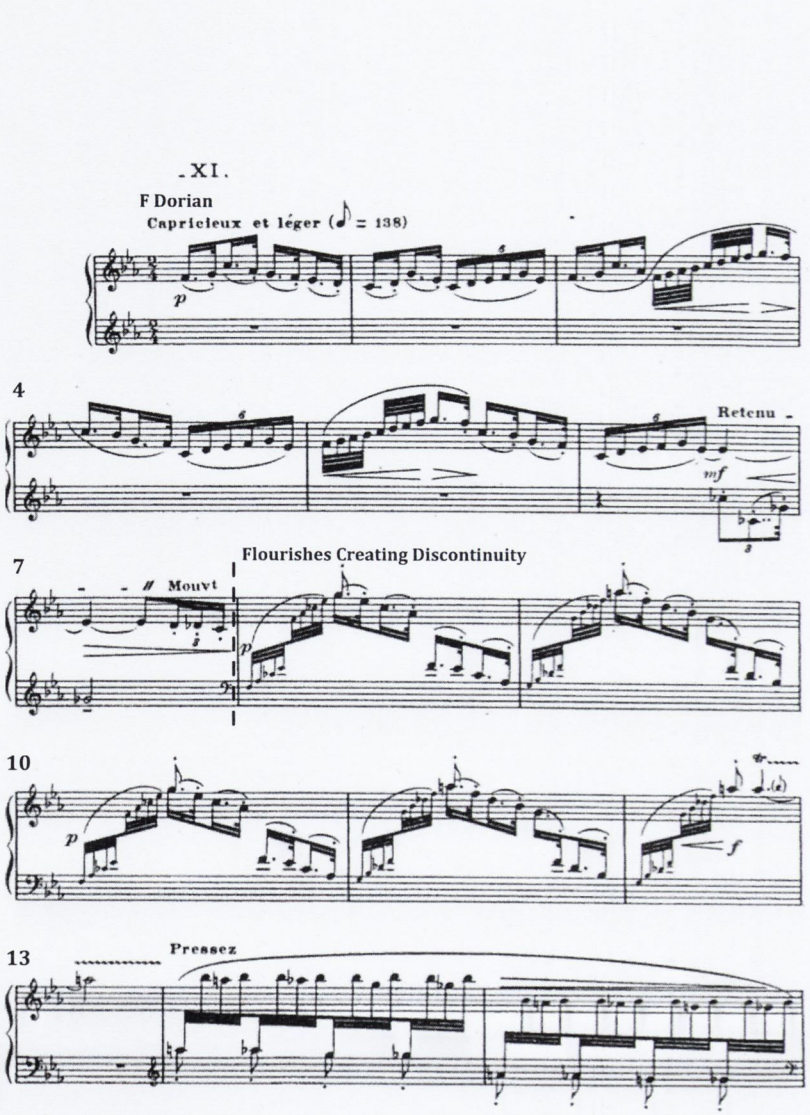


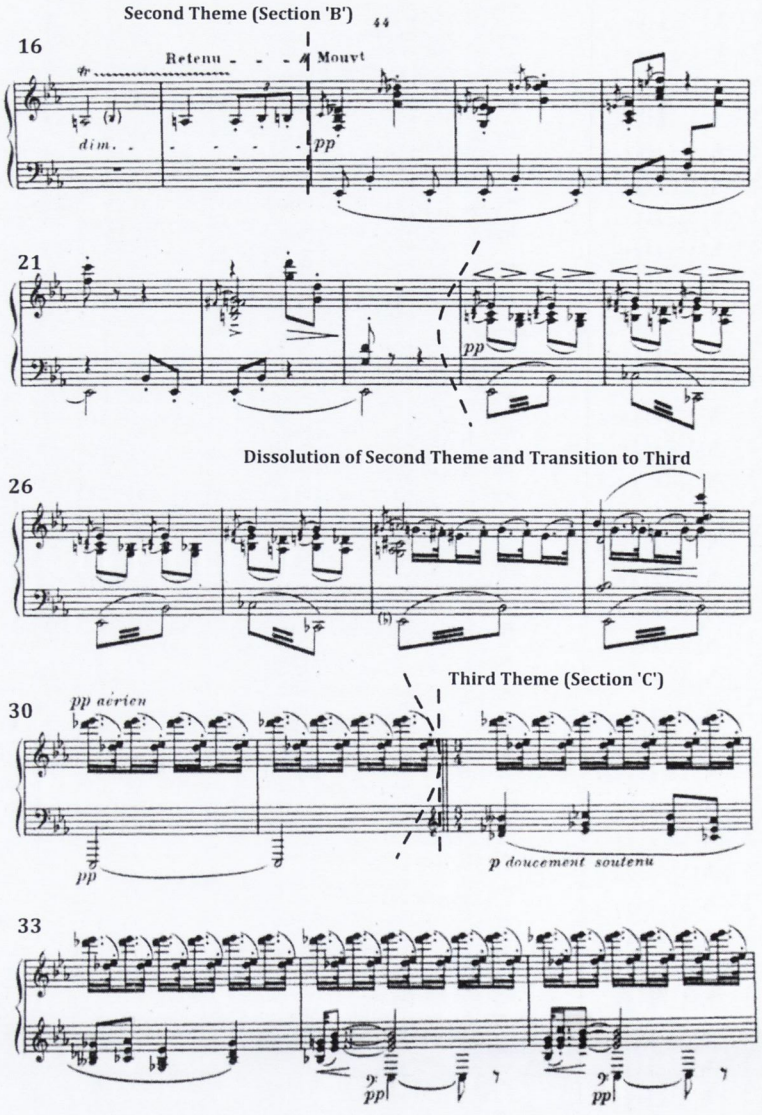
Example 2.5: Hybrid Ternary Form in 'Canope'

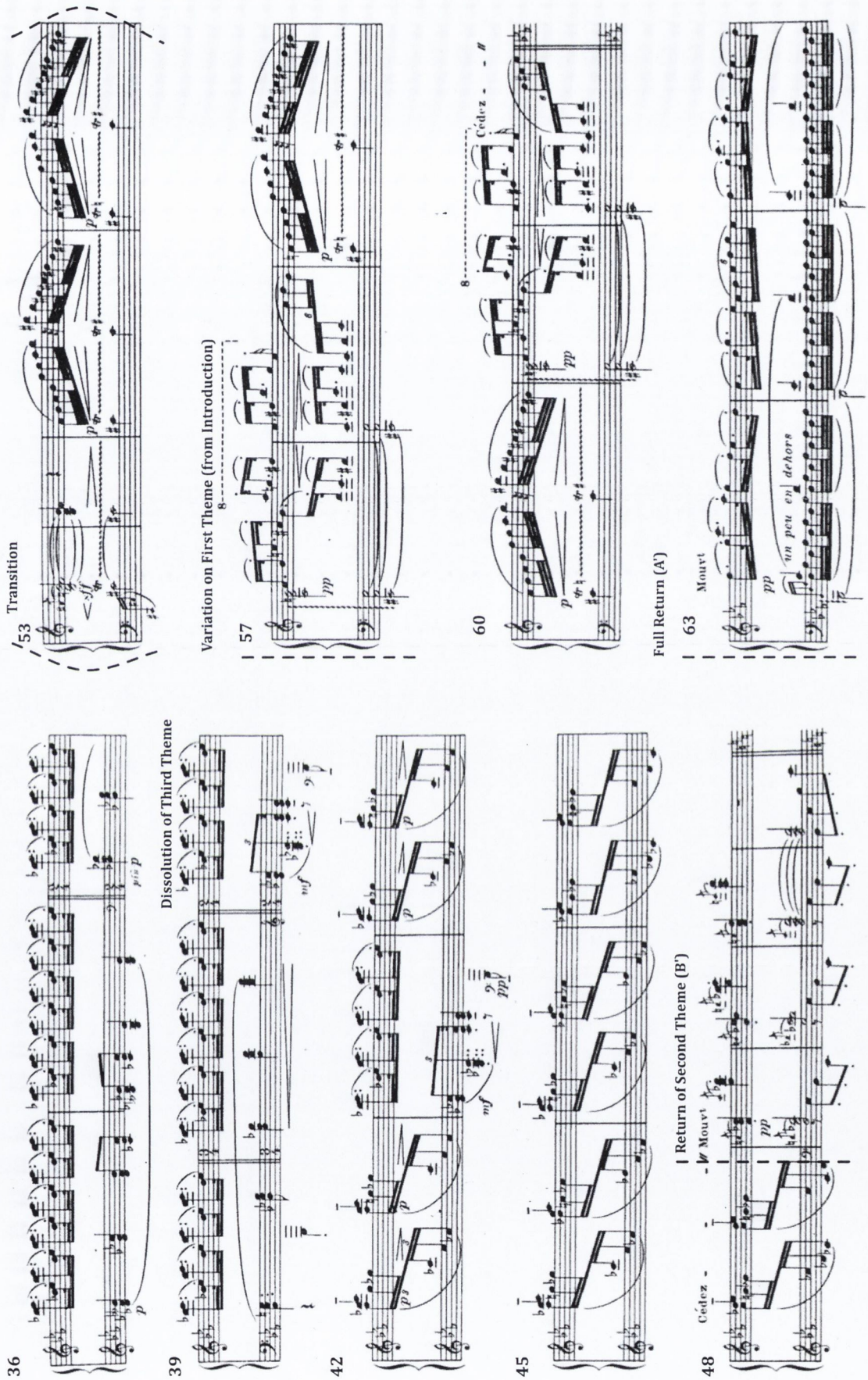
Perhaps the most extended use of a reprise-based form is 'La danse de Puck,' which is conformational, yet complex. The primary themes of the piece are used as structural points, but the content that follows each is a development in itself. The opening F-Dorian theme occurs in mm.1–7, but the flourishes in mm.8–17 create a sense of discontinuity. When the second theme arrives in m.18, the development can only take

place for a few measures until it starts to develop into what will become the third theme at m.32 through a gradual dissolution beginning at m.24. The third theme (section C) presents itself for eight measures until it begins to dissolve into a pentatonic flourish at m.41.

When the second theme returns at m.49, the 'C' section (like the two sections preceding it) hardly seems fully developed. The second theme is not even allowed a full return before a transition begins in m.53, followed by a variation on the first theme in m. 57, and a full return in m.63. This return also dissolves when the pentatonic device arrives in m.71 followed by the whole-tone flourishes in 81. The first theme returns in the coda in m.87, creating a sense of symmetry amongst the various thematic disruptions. As a result, the piece could be thought of as being comprised of an ABCB'A'A'' form, an extension of the reprise form of the other pieces discussed, with both an extended developmental section and an extended (perhaps emphasized) return.


- XI.
F Dorian
Capricieux et léger (♪ = 138)
p
4
Retenu
mf
Flourishes Creating Discontinuity
7
Mouvt
p
10
p
f
13
Pressez


Second Theme (Section 'B')
16
Retenu
Mouvt
dim.
pp
21
pp
Dissolution of Second Theme and Transition to Third
26
Third Theme (Section 'C')
30
pp aérien
pp
p doucement soutenu
33
pp
pp


Transition
Variation on First Theme (from Introduction)
Full Return (A')
Dissolution of Third Theme
Return of Second Theme (B')
Cédez -
Mouvt
un peu en dehors

Example 2.6: Sectional Analysis of 'La danse de Puck'

A	1st Theme	mm.1–7
		mm.8–17
B	2nd Theme	mm.18–31
		mm.32–40
C	3rd Theme	mm.41–48
B'	2nd Theme	mm.49–52
		mm.53-62
A'	1st Theme	mm.63-66
	transition	mm.67–71
	1st theme	mm.71–80
A''	1st Theme	mm.87–96

Example 2.7: The Formal Layout of 'La danse de Puck' with Transitional Sections

This piece fits strangely into the continuum of Debussy's formal practices in the *Préludes.* The various thematic points in the piece could allow the listener to perceive the piece as being structurally symmetrical, but the divergences create the somewhat odd formal structure of ABCBAA, but with transitions between each.[76] These disruptions are not akin to either Stockhausen's 'moments' or Cone's similar

[76] This is similar to an arch-form, perhaps most frequently associated with Bartók, but this is lacking a climactic section. Alternatively, one might classify it as an incomplete rondo.

'stratifications.'[77] They are processes within a conformational form. Because of this, Parks lists this piece as being a 'rondo-derived morphological plan,' consisting of seventy-one measures of 'developing variation' followed by two reprises.[78]

While there is an obvious use of conformational forms in the *Préludes,* the selected pieces exhibit how generative elements can exist with structural boundaries. The motivic design of 'General Lavine: eccentric' creates a progressive piece within ternary elements, and 'La danse de Puck' extends this through multi-sectional while maintaining the fluidity and interaction of thematic and motivic material that might be seen in a solely 'generative' piece. The following section examines these progressive forms in more depth.

2.3: Generative Form in the *Préludes*

In contrast with those *Préludes* that rely on a conformational, schematic form, many of the pieces can be seen as being more of a 'form as process' than 'form as structure' (to return to Webster's terminology).[79] Similarly, to *Jeux* (1913), these pieces contain motivic elements that are developed throughout, and that allow the piece to cohere despite a lack of sectional boundaries. The generative concept of growth, an essential element to many of these pieces, is in alignment with the focus of organicist theory on the growth of an idea rather than formal delineations.[80] This would therefore seem to be

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[77] Cone, 'Stravinsky: The Progress of a Method,' 18.

[78] Parks, *The Music of Claude Debussy,* 222–223.

[79] James Webster, 'Formenlehre in Theory and Practice', in *Musical Form, Forms, and Formenlehre*, Pieter Bergé (ed.), (Leuven: Leuven University Press, 2009), 123-39.

[80] The various applications of organicism in Debussy's music are in alignment with Gurney's phenomenological view of form. He writes: In poor music, note after note and phrase after phrase seem to present themselves trivially and pointlessly; but in music we enjoy, as we progressivelygrasp the form, the sense of absolute possession, of oneness with it; the cogent and unalterable rightness of every step in our progress, may produce the most vivid impression of triumphal advance.' Edmund Gurney, *The Power of Sound* (New York, Basic Books, 1966), 331.

a reasonable paradigm in which to frame an analysis of many of Debussy's works. Boulez believed that the lack of architectonic elements in Debussy's music created a series of 'successive distributions'[81] that created a counterintuitive perception of the form. This was preceded by Varèse, who believed that music could not be made to fit inside a 'rigid box of definite shape.'[82] The schematic division of a work faced similar opposition dating back to Samuel Taylor Coleridge, who wrote:

> The fact that we divide a work of art into parts, a poem into scenes, episodes, similes, sentences, or a picture into single figures and objects, background, foreground, etc...annihilates the work, as dividing the organism into heart, brain nerves, muscles and so on turns the living body into a corpse.[83]

Many of Debussy's *Préludes* can be seen as similarly organic, issuing a similar disavowal of such divisions, instead focusing on a prolonged development of the primary theme, until the notion of succession is lost completely. The previous section focused on the nature of perception within the confines of a schematic form. The very nature of recapitulation allows for a more tonally adventurous development, a fact that Debussy exploited in many of these extended forms. How, then, does one perceive the structure of piece that defies any notion of 'conformational' form?

As Debussy's music became less dependent on a predetermined formal layout, form became less of a tangible element than before. Barraqué stated that:

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[81] He stated that: 'One must go through an entire work in order to become aware of its form; that form no longer is architecturized, but is *woven*; said otherwise, there is no distributive hierarchy in the organization of 'sections' (statics: themes; dynamics: developments), but there are successive distributions in the course of importance. One understands that such a sense of form can only run counter to auditory habits shaped through contact with three centuries of "architectural" music...' Pierre Boulez, *Notes of an Apprenticeship*, lst American edn, (New York,: A. A. Knopf, 1968), 201. Trezise notes that Debussy's music contains 'unprecedented levels of exposition of new material, or material only loosely derived from previous elements.' Simon Trezise, *Debussy: La Mer*, (Cambridge: University of Cambridge, 1994), 52.

[82] Bernard, *The Music of Edgard Varèse*, 21.

[83] Samuel Taylor Coleridge, *Biographia Literaria*, John Shawcross, (ed.), (London: Oxford University Press, 1965) 171. Cited in Ruth A. Solie, 'The Living Work: Organicism and Musical Analysis', *19th-Century Music* 4/2 (1980), 147–56 (148).

> In Debussy, form can no longer be understood as a successive acquisition-process that proceeds by linking ideas together: rather, ideas are linked by amalgamation and elliptic trains of thought. The opposition of forces does not necessarily occur through the recognition of literal thematic structures, but through *poetic mutations*, situations in which the 'theme-objects' create areas of neutrality.[84]

Barraqué therefore considered such conformational notions of form, consisting of 'general archetypes' and 'signposted directions,'[85] useless when applied to Debussy's works, which 'create their own fate.'[86] Eimert, writing in 1961, noted that 'one can see what Debussy's musical form no longer is; much harder to say what it is.'[87] A traditional analysis no longer worked, and melodic structures behaved in a way unbefitting of standard analysis. When discussing *Jeux,* Eimert states that

> concepts such as antecedent and consequent are no longer applicable. If one tried to apply them, one would have to say that the themes of *Jeux* are made up wholly of antecedents.[88]

The structure of a piece would arise out of independent, immediate relationships, as well as the fluctuations of various types of parametric movement. Eimert goes on to say that these fluctuations 'form a whole system of waves, arising from time that is not organized but organic.'[89] This 'organic' approach to form in Debussy's music, which

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[84] 'Chez Debussy, la *forme* ne peut plus étre comprise comme une succession ou une acquisition progressive par enchaínements d'idées, mais par des amalgames, des cheminements elliptiques, l'opposition de forces ne reposant pas nécessairement sur la reconnaissance de structures thématiques littérales, mais impliquant le passage de l'une á l'autre a *themes-objets* crée des zones de neutralite.' Jean Barraqué, 'Debussy's *La Mer*: Or 'the Birth of Open Forms, an Essay in Comparative Methodology,'*Analyse Musicale* 12 (1988), 15–62 (16).

[85] *Ibid.,* 15.

[86] *Ibid.,* 15. 'les grandes oeuvres devraient s'inventer un destin propre et'

[87] Herbert Eimert, 'Debussy's *Jeux*', *Die Reihe* 5 (1961), 3-20 (3).

[88] *Ibid.*, Similarly, Barraqué notes that *Jeux,* 'consists of the co-existence of exposition and development in an uninterrupted gush that allows the work to propel itself without the aid of a pre-established model.' In Debussy's *La Mer* or the birth of open forms: an essay in comparative methodology: musical form considered not only as an archetype but as a precursor in Barraqué, 'Debussy's *La Mer*,' 15.

[89] Eimert, 'Debussy's *Jeux*,' 17.

focuses on 'vegetative, breathing, movement'[90] has continued to play an active role in the analysis of the composer's treatment of form.[91]

Eimert discussed an 'ornamental kinetic form' in his early writings, a concept embodying the notion of movement and fluctuations being used to create an overall structure.[92] Parks would later apply this concept, as well as Berry's concepts of acceleration and deceleration of form when discussing 'kinetic' form in Debussy.[93] He explains that:

> kinetic form arises from the organization of discontinuities and imparts the sense of motion that is such an important aspect of musical experience. In morphological form, stability engenders continuity; in kinetic form, changes engender continuity.[94]

Motion driven by discontinuities is perhaps the most important concept in the writings on 'kinetic' form. Ernst Kurth, whose early 20th-Century energeticist writings influenced much of the later work by the Darmstadt school, noted that '[t]he fundamental content of melody is, in the psychological sense, not a succession of tones...but rather the element of *transition* between the tones...transition in motion.'[95] While the idea of 'kinetic' form is certainly influenced by these writings of the early twentieth century, there are some definite distinctions. For example, Kurth largely

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[90] *Ibid.*, 16.

[91] In his book on form ('Free approaches to musical form' chapter), Berry makes a point of stating, 'no form is really free, since a plan which gives order and coherence to a musical work must incorporate many of those concepts and principles which are at the roots of all of the traditional forms of music. (436) Such 'vegetative' or 'organic' concepts of form might be able to be seen as residing between the extremes of formal schemas and the somewhat illogical 'free' form. Wallace Berry, *Form in Music* (Englewood Cliffs, NJ: Prentice-Hall, 1966), 283-321.

[92] Eimert, 'Debussy's *Jeux,*' 11.

[93] Parks, *The Music of Claude Debussy,* 233, Wallace Berry, *Structural Functions in Music* (Englewood Cliffs, NJ: Perntice Hall, 1976) and 'Rhythmic Accelerations in Beethoven' in *Journal of Music Theory,* 22 (1978),177–236. *Passim.*

[94] *Ibid.,* 233.

[95] Rothfarb, 'Energetics' in *The Cambridge Companion of Western Music Theory* (Cambridge: Cambridge University Press, 2004), 927–955 (940).

associated kinetic energy with melody, while assigning 'potential' energy to the harmonic parameter. Nevertheless, Kurth's notion of 'escalatory and de-escalatory undulations that shape the musical flow'[96] undoubtedly influenced the later writings of Eimert on form.

Both Eimert's 'vegetative' and Parks's 'kinetic' forms embrace movement and treat the pieces in a diachronic fashion. While the latter spends some time on *Prélude l'apres midi d'un Faune*, 'Sirenes,' and 'Nuages,' at one point they both focus on the concept of motion-driven form in *Jeux.* These views are not as bound by thoughts of coherence as they are of process. The organicist thought of the Darmstadt school and the energetics of Kurth fall into this category, as do analyses of narrative trajectory in instrumental music. Eimert's writing on Debussy focused on the 'endless variation'[97] of the composer's music. In *Jeux* the Darmstadt school found a piece seemingly free of preconceived structure, but still able to form a cohesive unit.[98]

The writings on Debussy by the Darmstadt school might be described as an examination into the linearity and process of the composer's music.[99] Eimert begins by noting the faults in applying the 'standard concepts of musical theory to Debussy' noting that, 'to describe Debussy's music, a fluctuating middle layer of concepts would

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[96] *Ibid.*, 942.

[97] Eimert, 'Debussy's *Jeux*,' 4.

[98] As Lockspeiser notes, Jeux is one of the few pieces of which Debussy discussed the form, having written that, 'A connecting link between the various episodes does exist...a subtle link perhaps, but it is nevertheless there.' Quoted in Edward Lockspeiser, *Debussy: His Life and Mind. Vol.2, 1902–1918*, (Cambridge UK: Cambridge University Press, 1978), 175.

[99] The clearest example of such is perhaps when Schnebel writes that in 'Brouillards,' 'there is no theme, no development, to traditional form; no counterpoint, but no so-called harmony either; neither 'melody' nor accompaniment'; no main and subsidiary voices; neither definitely diatonic tonality nor chromatic tonalityΔSo it is a question of processes. That is, the single element is not to be subordinated, as a part, to a dominant unit (for example, a certain note of a certain length as the first component of a theme made up of a number of similar components) Dieter Schnebel, 'Brouillards Tendencies in Debussy' in *Die Reihe,* Vol. 5 (Bryn Mawr, Pennsylvania: Presser, 1959), 33-39 (33).

have to be specially discovered.'[100] Eimert's analysis is at once organic and linear, focusing on the nature of explaining that, 'Debussy attaches more value to linear writing than to the character of a melody.'[101] To Eimert, the interest in *Jeux* lies in the similarities that might not be directly perceived by the listener, as they lie beneath elements of discontinuity. He states that:

> No bloom on Debussy's legendary tree is quite like another, and yet, they all belong to the same tree. If Webern said 'the same and yet ever different' the reverse holds good in Debussy: ever-different elements appear within the same unitary wave-movement, and in the process, what is markedly different is manifested in motives and themes that are striking, whereas 'the same' is often hidden in the latency of the wave-principles that are at work, and is hardly recognized by the listener.[102]

Schnebel presents a similar analysis of 'Brouillards' in which the composition is broken down into a process of interconnecting stages that is an attempt at 'sound composition, which tries to combine sounding elements into superior units – indeed units of any kind.'[103] The analysis has the same organicist undercurrents as Eimert's, considering the entire piece to be 'based on a simple melodic line - a simple fourth motif. This is polyphonised and, as it were, split up into layers.'[104] The analysis is effective, but unlike Eimert's, it illustrates very little about the inner workings of the piece, simply stating that it is an early attempt at a 'composition with sounds.'[105]

In his analysis of Debussy's form, Parks examines a number of morphological forms in Debussy's smaller-scale pieces, and examines a 'nontraditional' form which consists of Eimert's appropriation of Schoenberg's 'developing variation', followed by

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[100] Eimert, 'Debussy's *Jeux,'* 3.

[101] *Ibid.*, 9.

[102] *Ibid.,* 13.

[103] Dieter Schnebel, 'Brouillards: Tendencies in Debussy,' *Die Reihe* 6 (1964), 33-39 (37).

[104] *Ibid.,* 38.

[105] *Ibid.,* 36.

a reprise. This, structure, which Parks assigns as an archetype, appears in a number of Debussy's *Préludes,* which all seem to deal with the material in similar ways.[106]

In 'Danseuses de Delphes' Debussy develops the opening material, presented in mm.1–4, by first adding the triads in the right hand on the offbeat when the theme returns in m.1–8. At the conclusion of the second iteration, the material in m.10 is extended into m.11. This is then used as a sort of 'pivot point' whereas the pitches in m. 11 are echoed in m.13 after a buildup in m.12. After this is repeated in m.14, the opening theme returns, this time with an altered melody in the left hand. The descent that occurs in m.4 is this time replaced with a cluster in the higher register, which then becomes an A♭-major triad in m.18 and G and F-major triads in mm.19 and 20, respectively. The material in m.21 is a minimal take on that which was presented in m.6 and m.15, and it leads into a harmonic reprise of the opening in m.25, which is extended until the final bar. Parks notes that similar compositions, in which the content of the piece is comprised solely of the theme and its continuing development, also occurs in 'Eventail' and, quite famously, *Jeux.*[107]

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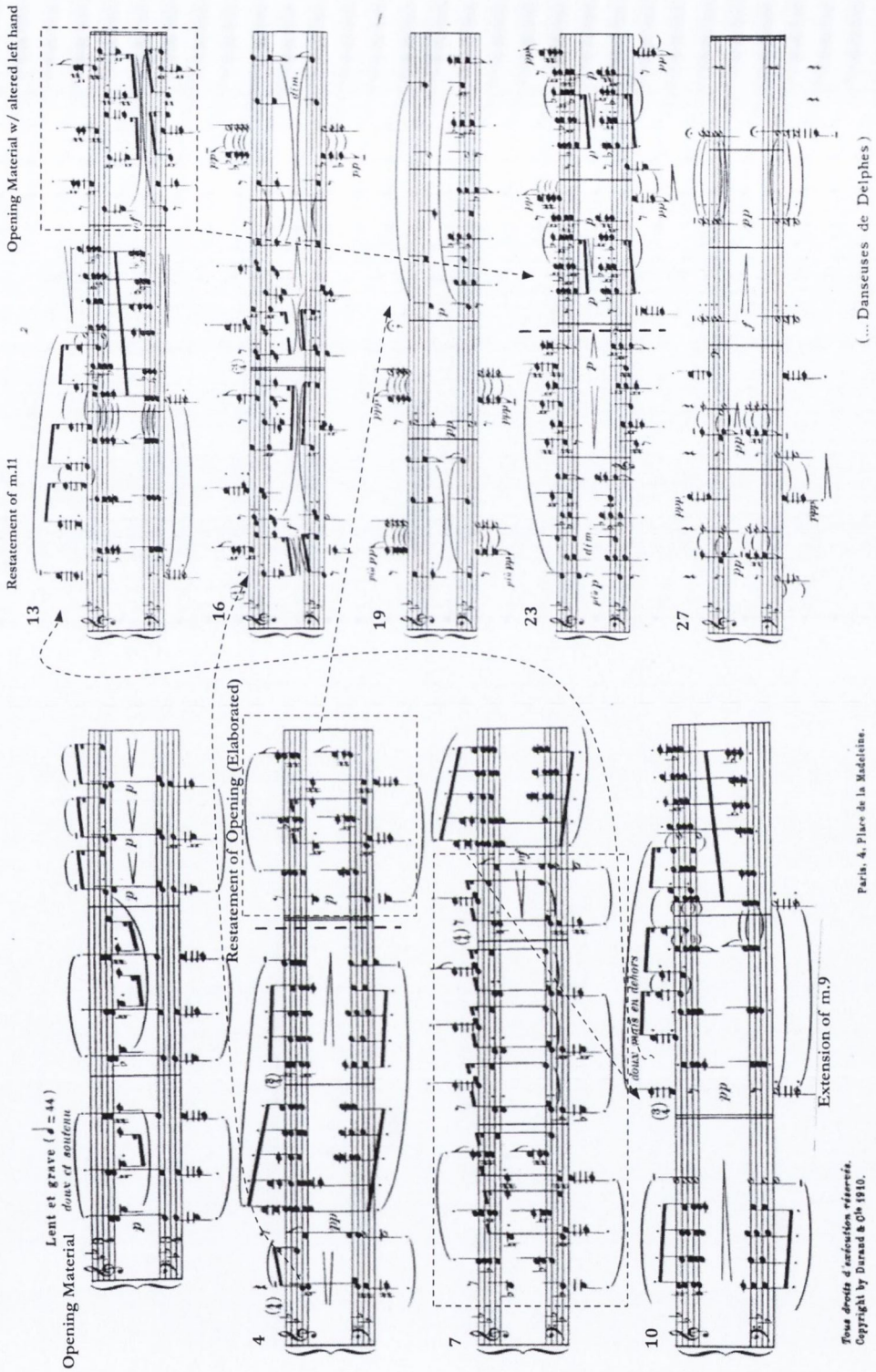
[106] Parks, *The Music of Claude Debussy*, 222.

[107] *Ibid.*, 222–223.



Example 2.8 Developments in 'Danseuses de Delphes'

Another example of such developments in the *Préludes* can also be seen in 'Les sons et les parfums tournent dans l'air du soir,' in which Debussy develops a number of musical gestures from what can be thought of as a single 'basic prototype' (to use the organicist terminology).[108] The opening gesture is used as a reference point throughout the composition, and is expanded upon and truncated until the end, while the stepwise, quarter note, harmonic structures (beginning with an alternation between B♭ and B-natural, but dominated by movement between G and F) could be thought of as the second portion. The 'primary prototype' is completed with the ascending thirds gesture that first takes place in the mm.5–6. Example 2.9 illustrates how, once this first prototype is presented, the rest of the piece can be seen as a growth from it. In addition to the melodic structures, harmonic structures arise from pitch progressions throughout the piece, as well as parallel voicings (and similar intervallic structures).

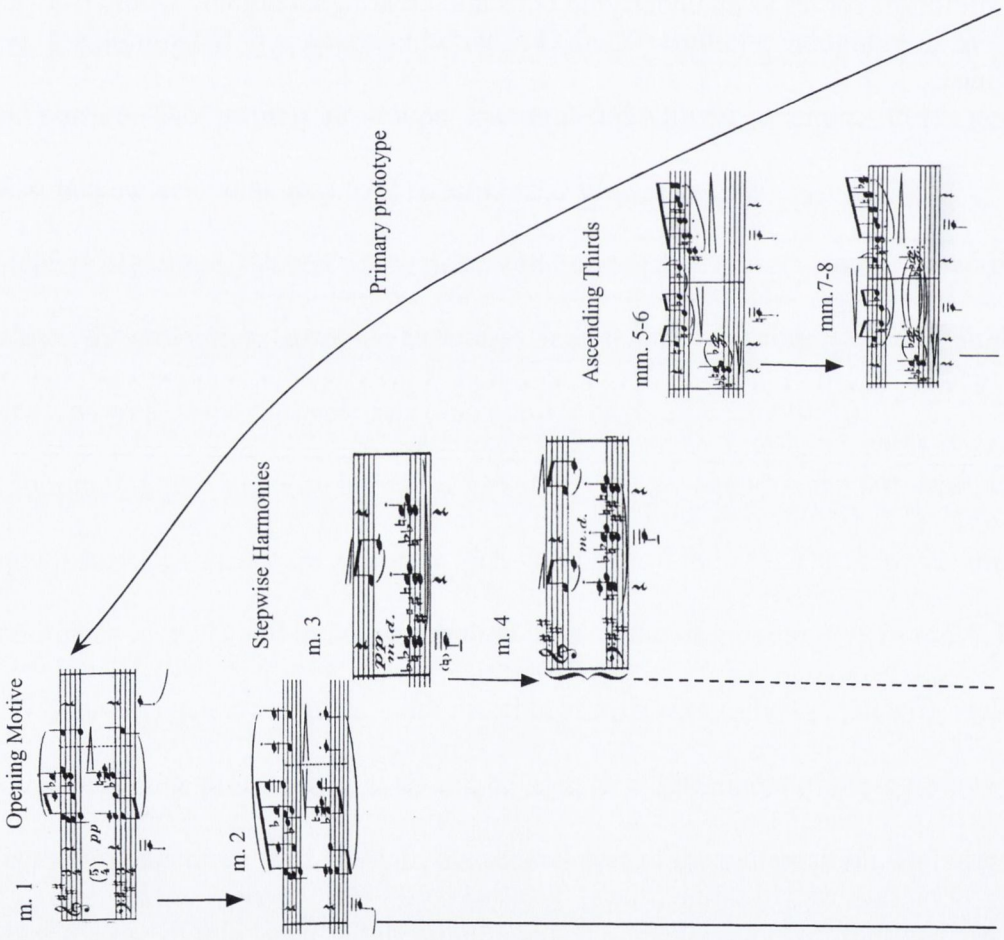
In mm.9–13 the stepwise harmonic structures are presented in the left hand, while the right introduces a melodic gesture which will be used in m.15. The stepwise motion also continues in m. 18 and m.20, which then links to the original motive in m.24. Later, in m.29 this sequence is extended, with matching harmonies (albeit extended), and the quickly descending structures in m.40 can be seen as a descendent of these gestures. This is the first occurrence of many in the second part of the composition. Debussy increases the use of this 'seed' while simultaneously developing other motives. In m. 25, the idea is transposed, but Debussy harmonizes it in the same manner (although with an A in the bass rather than a B♭). It continues throughout the piece, and even the final

[108] It should be noted that such analyses are very similar in method to those of 'developing variation,' and as such there will be a bit of a methodological overlapping between the current analyses and those of Chapter 3. The concepts are intertwined at a number of points, but I hope to have presented them in such a way that avoids the redundancy that is somewhat unavoidable in a study that splits music into the various parameters.

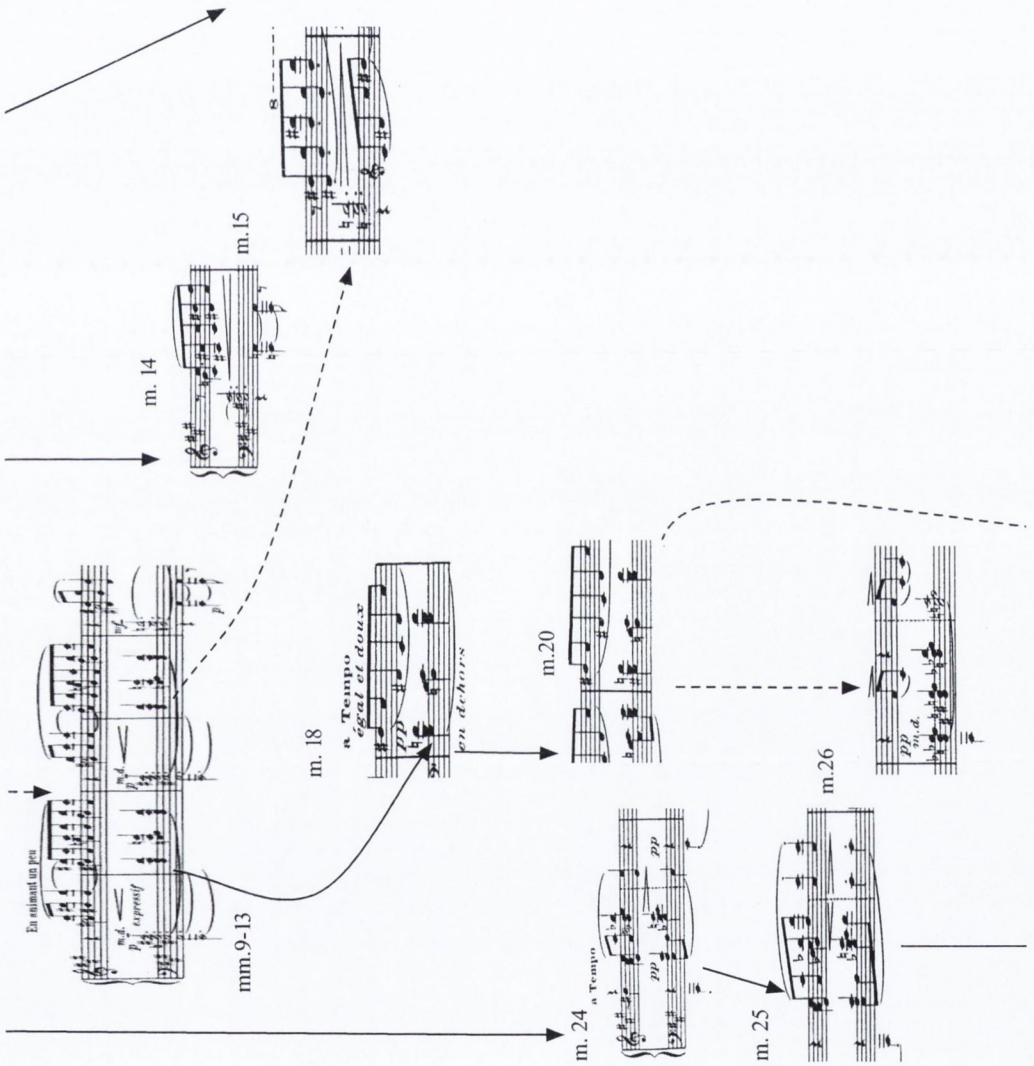
measures contain a similar additive gesture, as well as a series of high C♯s, reminiscent of the original motive. This motive is at times truncated, as in m.44, or extended, as in m.46.[109] This extension could therefore be perceived as a link from the previous gestures, into the final ideas of the piece.

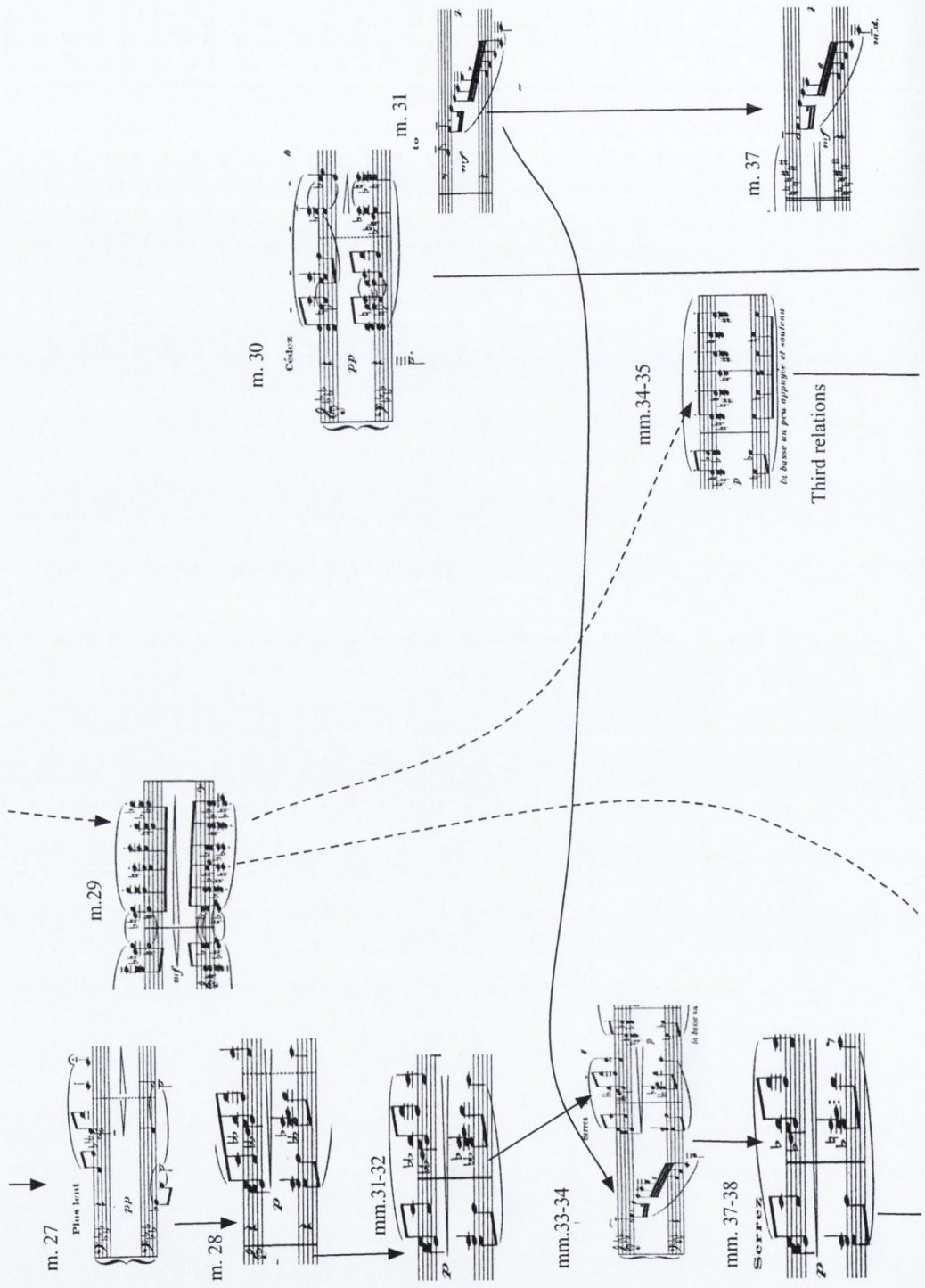
Not all 'growths' are as obvious. The third relationships in m.35 (a progression of G-B♭-G-E-C), which are themselves a textural and rhythmic descendent of m.29, are repeated in m.48, but in a different rhythmic and tonal context. Similarly the harmonies in the fourth measure are used later in m.26, although changed rhythmically. The prototype serves as an underlying constant, creating an organic whole from a simple idea.

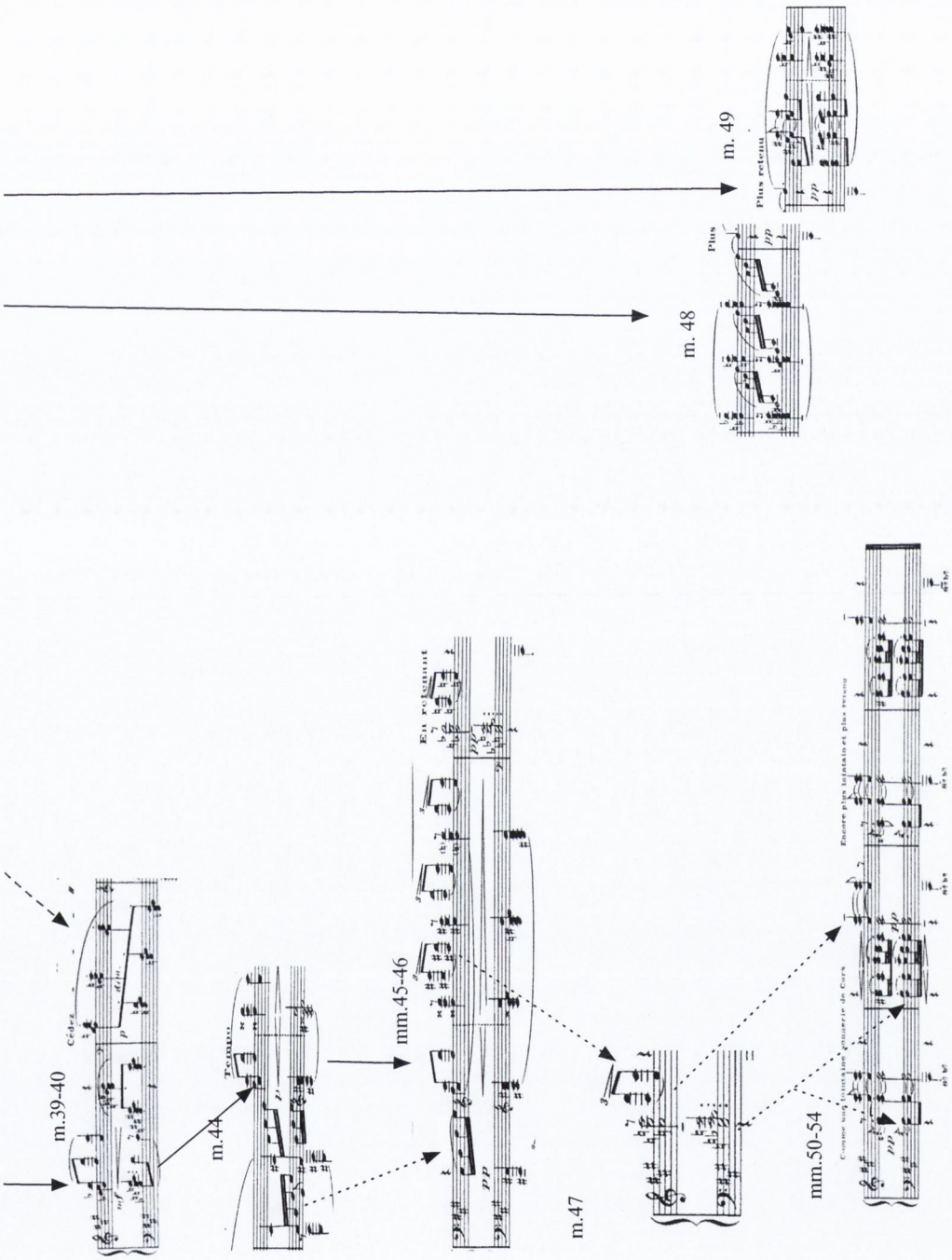
[109] Diana Deutsch uses this section as an example of the Gestalt principle of common fate, as the listener is able to hear the common fate of each pitch through the sequence of chords, even though the intervals vary. Despite the repeated G, Deutsch posits that a listener might likely hear the descent of voices. Diana Deutsch, 'Grouping Mechanisms in Music', in *The Psychology of Music*, (2nd edn.) Diana Deutsch (ed.), (London: Academic Press, 1999), 299–342 (340).



Example 2.9 Organic Development in 'Les sons et les parfums tournent dans lair du soir'


m. 14
m.15
m. 18
m.20
m.26
mm.9-13
m. 24
m. 25
En animant un peu
a Tempo
égal et doux
en dehors
a Tempo


m. 27
Plus lent
m. 28
m.29
mm.31-32
m. 30
Cédez
m. 31
to
mm.33-34
mm.34-35
Third relations
m. 37
mm. 37-38
Serrez


m. 49
Plus retenu
m. 48
Plus
m.39-40
Cédez
m.44
Tempo
mm.45-46
En retenant
m.47
mm.50-54
Encore plus lointain et plus retenu

2.3.1: The Perception of Continuous Development Through 'Cues'

Such recurring motivic elements allow for the cohesion of form on a larger level. It could be argued that these instances serve as 'cues,' similar to Rosch's 'cognitive reference points' which allow for sustained interest in a listener (or reader).[110] This concept was first proposed by Ernst Kurth, who believed that form was perceived as the result of 'basic pillars' (*Grundpfeiler*), which permitted an 'unorthodox spanning of a tonal gap.'[111] Kurth's 'pillars' consisted of tonal structures that were related to each other, allowing the motion between these two points to diverge from traditional tonal elements even further. In Debussy, I would argue that these points (which I will refer to as cues, to invoke Deliège and Melen's more recent psychological studies, discussed below) are simple motivic devices, such as the ones discussed in 'Les sons et les parfums tournent dans l'air du soir.'

Deliège and Melen build upon Rosch's 'cognitive reference points' to propose the theory that long-term musical perception is facilitated by a series of 'cues,' based on the principles of both sameness and difference. In this respect, a 'cue' could be a motivic construction, or a discontinuous 'moment,' which is discussed below. Their 'cue-abstraction theory' notes that, 'instead of storing each group in memory, it is suggested that the listener selects salient cues that are themselves incorporated in the groups.'[112]

While linearity is not always a primary factor in Debussy's formal constructions, his pieces do rely quite heavily on what might be considered to be perceptual cues. In this light, 'General Lavine: eccentric' (discussed above) begins to look like a

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[110] Eleanor Rosch, 'Cognitive Reference Points,' in *Cognitive Psychology* 7 (1975), 532–47. *Passim.*

[111] Cited in Geoffrey Chew, 'Ernst Kurth, Music as Psychic Motion and 'Tristan Und Isolde': Towards a Model for Analysing Musical Instability,' *Music Analysis* 10/1/2 (1991), 171–93 (178).

[112] Irène and Melen Deliège, M., 'Cue Abstraction in the Representation of Musical Form', in *Perception and Cognition of Music*, John Sloboda, Deliège, Irène, and Juslin, Patrik, (ed.), (Sussex: Psychology Press, 1997),387–412 (392). Rosch posited a similar concept of cognitive reference points, and the aural cues in Deliege's study draw's heavily on Rosch's early theories. Eleanor Rosch, 'Cognitive Reference Points', *Cognitive Psychology,* 7 (1975), 532–47.

composition filled with such 'cognitive reference points.' The opening ornament in the left hand that begins the piece in the introduction develops into a binding element when it returns in mm.18 and 19, and when it closes the phrase in m.46 (and the piece in mm. 105–109). Similarly, the steady rhythm in the left hand begins at m.16 but only lasts for the measure before being interrupted. It returns in mm.24–29 and 40–43, 75–76, and 83-88. The varying lengths, along with the varying contexts in which the gesture appears, adds weight to the idea that this cakewalk rhythm is more of an allusion to the style than a rhythmic necessity, and could be thought of as a cue. The melody in the left hand at m.12, which is reinstated at mm.20, 37, 79, and 95, acts a reference point as well, as do the ascending triads by thirds in mm.2 and 4, 46–47, 59, and 101–102 (and possibly their transformed versions at mm.34 and 91. The piece is not made coherent through tonal means, or by means of the cursory static ternary form, but rather through the interplay of the various 'cognitive reference points' throughout the composition.

Perhaps an even more compelling use of such thematic cues would be the *Prélude* 'Les collines d'Anacapri,' in which there is a basic 'bell motif' that recurs throughout the composition, and which serves as a unifying element.[113] The piece presents an interesting case-study of form: on the one hand, despite an overriding sense of interruption, it creates coherence through cues, while on the other it creates a source of progressive tension despite very few departures from its original key. Jankélévitch seemed to consider it an epitome of interrupted form when he wrote:

> all of Debussy's piano preludes are more or less interrupted serenades, interrupted tarantellas ('Les collines d'anacapri'), interrupted habaneras (La puerta del vino, *Iberia)*, the interrupted cantilena of the oboe in *Gigues*– these are other instances of the same ascetics.[114]

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[113] The term 'bell motif' is Schmitz's, who uses it in his thematic description of the piece. E. Robert Schmitz, *The Piano Works of Claude Debussy*, (New York: Dover, 1966), 143.

[114] Jankélévitch and Abbate, *Music and the Ineffable*, 43.

In this instance, the piece's 'interruptions' are offset by what Schmitz refers to as the 'bell motif,' which 'is of great importance from [a] unifying standpoint, nearly an ostinato or pedal figure.'[115] As can be seen in the Example 6.9, the structure is comprised of three main themes, and their various alterations, along with the 'bell motif.' Structural sections are shaded in, while transitional sections are left white.[116]

mm.	Thematic Layout	Form
1–2	Bell Motif	Intro
3-4	Tarantella' Hints of Theme 1	
5–6	Bell Motif	
7–11	Transition into Theme 1	
12–24	Theme 1	A
24–31	Extension of Theme 1/Transition	
31–39	Theme 2	B
39–43	Theme 2 (Change in Register)	
43-48	Theme 2 (Change in Register)	
49–65	Theme 3	C
63/65	Bell Motif	Intro
66–67	Bell Motive (Now in Diminution)	
68–72	Theme 1	A'
73-74	Bell Motif (Now in Diminution)	
74–80	Theme 1	
80–86	Theme 2 (Overlapping w/ Theme 1)	B'

[115] Schmitz, *The Piano Works of Claude Debussy,*' 143.

[116] This is derived from Schmitz's formal outline. Tymoscko makes a similar thematic division. *Ibid.,* 144. Dmitri Tymoczko, 'Scale Networks and Debussy,' *Journal of Music Theory,* 48/2 (2004), 219–94 (250).

mm.	Thematic Layout	Form
83/84	Bell Motif	
86–93	Bell Motif (In Diminution)	C
94–96	Return to B-major	Coda

Example 2.10: Thematic Structure of 'Les collines d'Anacapri'

The first eleven measures consist of the presentation of this 'bell motif,' followed by a transition into the first theme, which is then expanded upon. When the piece has run through iterations of three themes, Debussy returns to the 'bell motif' in mm.63 and 65, and a form of it in mm.66–67. The increasing frequency of return in the piece coincides with the slight shift away from the tonic B-major area. I would argue that this motif is a cue which allows the listener to perceive the piece as a synoptic whole, despite variances in tonal and thematic elements.

David Kopp presents a very different analysis of the structure of the piece (more precisely, he presents three). Perhaps his most accessible analysis is an A-B-A-B-A form, with the formal divisions being mm.1–20 (A), mm.20–64 (B), mm. 64–74 (A), mm.74–81 (B), mm.84–96 (A). This division, is a largely accentual one: Kopp divides the underlying B-major diatonic collection into 'hard, soft, and middle,' depending on the pentachord subset stressed (the pentachord without $\hat{3}$ or $\hat{7}$ in the diatonic set is considered soft, without $\hat{4}$ or $\hat{7}$ is medium, and without $\hat{1}$ or $\hat{4}$ is 'hard').[117] This first division marks the onset of the 'soft' collection, treating it as a sort of 'home' key, being the source of the least amount of tension.

Alternatively, Kopp provides another reading in which the 'middle' is associated with tonic, and the piece is a progressive 'soft-middle-hard' structure (mm.

[117] David Kopp, 'Pentatonic Organization in Two Piano Pieces of Debussy,' in *Journal for Music Theory,* 41 (1997), 261–87 (267).

1–32, mm.32–64 and mm.64–96, respectively).[118] Although somewhat reductive, the invocation of this tripartite division of the B-major scale depicts the progressive tension of the piece in a beneficial manner, allowing for a division not dependent on the thematic divisions, as Schmitz's is.

Whatever the structural layout division is, this piece exhibits a return to a primary motivic device as a means of creating coherence and unity. This would be categorized as a cue-based on sameness under Deliège and Melen's definition. Similarly, Debussy treats interruptions as elements of cohesion at times, as well as instances meant solely to create discontinuity.

2.4: Discontinuous Forms in the *Préludes*

Somewhat paradoxically, the analyses of organic continuity overlap with those focusing on the discontinuous elements of Debussy's music. For example, *Jeux* and 'Brouillards' have received analyses focusing on both the interjected 'moments' within the pieces, and their linear continuity. Both pieces are indicative of a number of later works, in which discontinuity is a fundamental element of the structure of the composition, but *Jeux* was able to embrace this new type of structure while nevertheless adhering to various factors of cohesion.[119] While it was referred to as 'endless variation' by Eimert, Boulez referred to aspects of the piece when discussing 'musical pointillism,' and it

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[118] *Ibid.*, 266. Kopp's third reading divides the piece into three cycles (mm.1–64, mm.64–84 and mm.84–96).

119 In her article on time and form in *Jeux,* Pasler noted that, '*Jeux* lies at the crossroads of change in aesthetic values from the need for continuity to the desire to create discontinuity. While most nineteenth-century music is characterized by continuity and 'organic growth,' *Jeux* embraces both continuity and discontinuity.' Jann Pasler 'Debussy, *Jeux*: Playing with Time and Form,' in *Nineteenth-Century Music*, 6/1 (Summer 1982), 75.

contained a number of elements that Stockhausen would term 'moment form.'[120] *Jeux* was, for many post-war theorists and composers, precedent that validated their own compositional tendencies. Wheeldon notes that Stockhausen's analysis in 'Von Webern zu Debussy' (*Bemerkungen zur statistischen Form*)

> arose not only from the need to elucidate compositional procedures in *Jeux*, but also from the need to explicate and justify his own compositional procedures in *Zeitmasse, Gruppen*, and *Gesang der Jünglinge.*[121]

Despite this self-interest, (or perhaps because of it), the Darmstadt analyses provide an unparalleled insight into the nature of Debussy's formal procedures and their influence on later twentieth-century thought. The notion of moment form, although 'anachronistic'[122] does complement the notion of the immediate in Debussy's music. Wheeldon points out that the second book of *Préludes* contains many similar elements of discontinuity as *Jeux*, and that Stockhausen's term 'moment form' would be a fitting descriptor for a number of the compositions.[123] Stockhausen defines a moment as 'every formal unit that is recognizable by personal and unchangeable characteristics.'[124] This focus on the immediate goes even further with Pieter van den Toorn, who asks:

> why burden ourselves with analytic-theoretical schemes of 'continuity' or

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[120] Herbert Eimert, 'Debussy's *Jeux*,' 4. Pierre Boulez, *Stocktakings from an Apprenticeship*, Paule Thevenin (ed.), Stephen Walsh (trans.), (Oxford: Oxford University Press, 1991), 155. Karlheinz Stockhausen, 'Moment form,'in Heppo Heikinheimo, *The Electronic Music of Karlheinz Stockhausen*, Brad Absetz (trans.), (Helsinki: Acta Musicologica Fennica, 1972), 142. An excellent summary of the theoretical discourse on Debussy's discontinuity can be found in Marianne Wheeldon's PhD dissertation, 'Interpreting Discontinuity in the Late Works Of Claude Debussy' (Yale University, PhD Thesis: 1997), 8–18.

[121] Wheeldon, 'Distontinuity in the Late Works of Claude Debussy,' 11–12. It is not necessarily limited to *Jeux*. Alain Poirier notes that Barraque's analysis of La Mer 'reflects his own notions of composition as used in his own work in his reading of Debussy' in 'The constant renewal of history: An Introduction to the analytic thinking of Jean Barraqué' in *Analyse Musicale* 9–15: (abstract),. Schnebel points out that 'much of Debussy's work is reminiscent of electronic music' in Schnebel, 'Brouillards', 39.

[122] Wheeldon, 'Discontinuity in the Late Works of Claude Debussy,' 18.

[123] *Ibid.*, 12.

[124] Cited in Heppo Heikinheimo, *The Electronic Music of Karlheinz Stockhausen* Brad Absetz (trans.), (Helsinki: Acta Musicologica Fennica, 1972), 142. Discussed in Wheeldon, 'Discontinuity in the Late Works of Claude Debussy,'16.

> 'coherence' which, if not entirely inapplicable, cannot be the most advantageous (the most compelling or instructive) since they ignore this most telling and conspicuous feature? Why not accept abrupt 'block' juxtaposition and the referential implications, and proceed accordingly?[125]

Simply 'accepting block juxtaposition' is not entirely adequate in understanding the implications such elements might have on the perception of the listener. While an antecedent might frequently imply a consequent in traditional structures, a consequent in 'moment forms' is often not reliant on the implications of the previous instant.[126] Kramer defines these moments as 'self-contained entities, capable of standing on their own yet in some nonlinear sense belonging to the context of the composition.'[127] This creates a perception devoid of the 'well-formed context'[128] necessary for a proper understanding of the linear aspects of a piece.

When 'momentary impulsions' occur in music the forward propulsion of the composition is halted and the syntax is interrupted. An excellent example of this occurs in 'Brouillards.'[129] After the arrival of the melodic fragment in the m.38 we are confronted by an interruption (labeled using Cone's term 'stratification') in m.40, which interrupts the motion recently created. This eliminates the context that was created and

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[125] Pieter van den Toorn, 'Some Characteristics of Stravinsky's Diatonic Music,' *Perspectives of New Music,* 14/1 (1975), 104–138 (112).

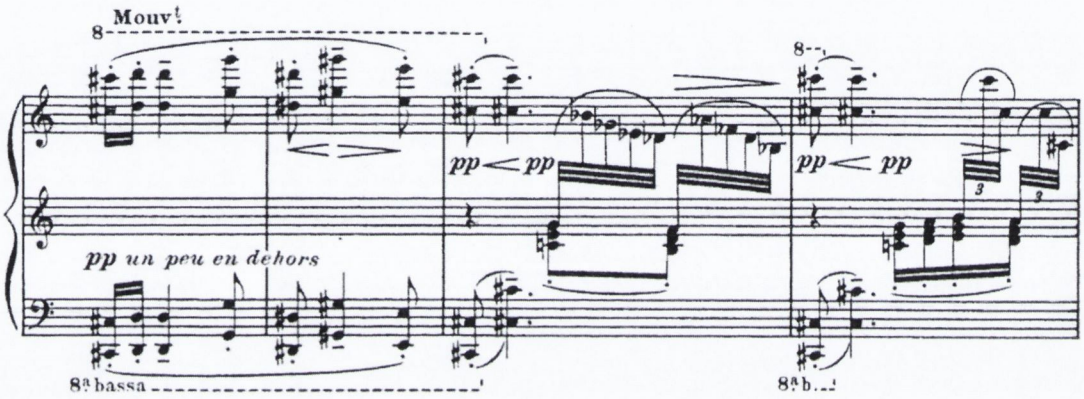
[126] Hekinheimo, *The Electronic Music of Karlheinz Stockhausen*, 120. Quoted in Wheeldon 'Discontinuity in the Late Works of Claude Debussy,' 38.

[127] Jonathan D. Kramer, *The Time of Music: New Meanings, New Temporalities, New Listening Strategies*, (London: MacMillan, 1988), 207.

[128] see David Lewin, 'Music Theory, Phenomenology, and Modes of Perception', *Music Perception* 3 (1986), 327–92.

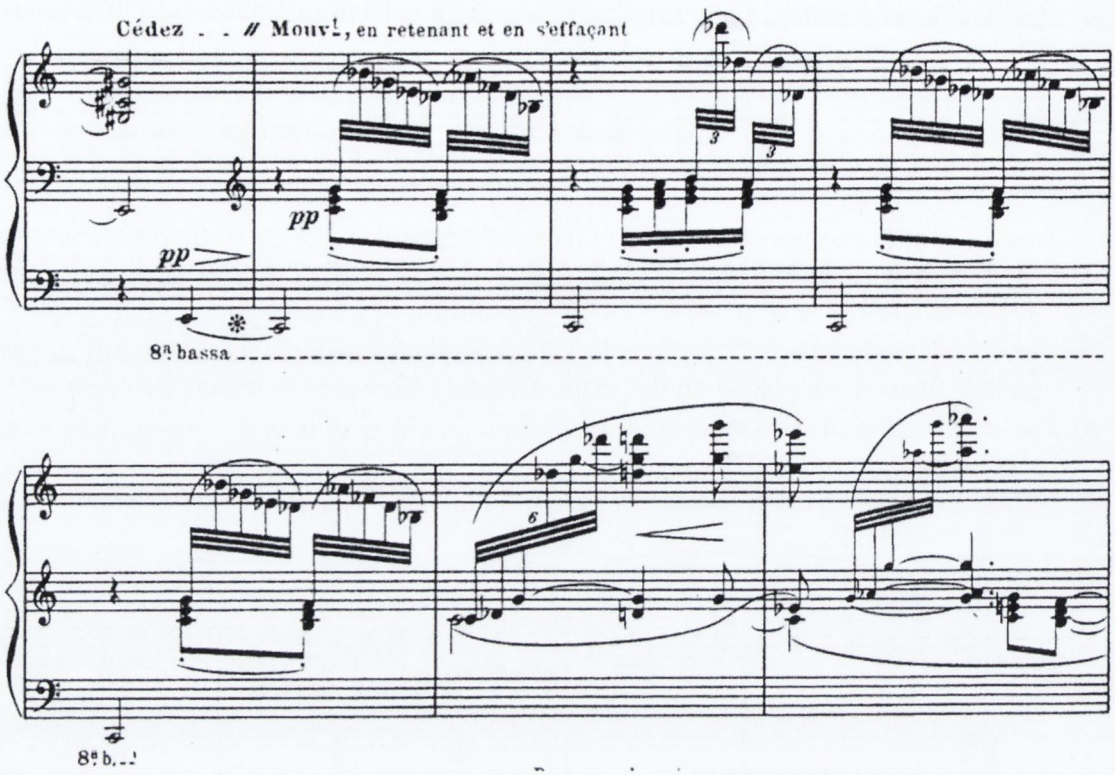
[129] Wheeldon's analysis of 'La terrasse des audiences du clair de lune' describes three 'moments,' the first taking place in mm.10–12, followed by a second in mm.25–28, which is immediately followed by a third in mm.28–31. Wheeldon, 'Discontinuity in the Late Works of Claude Debussy,' 63-101.

leads to a weakening of any implicative properties.[130] In m.43 Debussy then interrupts another motivic element before it can develop, but this time the 'momentary impulsions' are fragments from the opening melodic phrase, which has been retained throughout the composition despite its brief exposure to begin with. In Debussy's case, this produces the desired effect, as his dissolution of a tonal syntax might allow for a greater focus to be placed on the extra-musical references to which the composer is alluding.



Example 2.9:Interpolated Moments (Stratifications) in 'Brouillards' mm.18–21

[130] Kinariwala presents an analysis of 'Brouillards,' which illustrates a 'block approach.' On the perception of the form she states that, 'A perception of the piece as a stratified form finds a succession of distinct blocks or layers of sound that are equal in weight or importance. Although these successive strata (which may vary in length and may or may not recur later in the piece) are not as carefully defined with regard to their functions within the entire structure, neither are they totally self-contained moments devoid of any interrelationships.' Kinariwala, 'Debussy and Musical Coherence,' 144.



Example 2.11: Interpolated Moments (Stratifications) in 'Brouillards' mm.42–48

In examples 2.10 and 2.11, the lack of an implicative force is due to the fact that there is rarely a 'well formed-context' to use David Lewin's term. This context is formed by the ability to retain events, which have already occurred, as well as to project the development based upon both the present action and the events retained. An instance in the present cannot be properly analyzed in isolation, but within a constantly shifting perspective containing both protention and retention, (to invoke Husserlian terminology) in which implications and memories are in constant flux.[131]

Dahlhaus, who, as mentioned earlier, viewed coherence as dependent on conformational aspects of form, believed that the perception of the whole was built largely around this concept of protension, stating that, '[t]he anticipated whole is analogous to the visible presented whole.'[132] His notion of anticipation, however,

[131] See Edmund Husserl, *On the Phenomenology of the Consciousnes of Internal Time (1893-1917), Collected Works, vol. 4*, John B. Brough (ed. and trans.), (Dordrecht ; Boston: Kluwer Academic Publishers, 1991), *Passim.*

[132] Dahlhaus, *Esthetics of Music*, 78.

depended on a linear logic not present in Debussy's moment forms. Dahlhaus writes that:

> Insofar as musical works of art are grasped as such – not merely drifted through as if they were potpourris – each detail, just perceived, exists not for its own sake but rather as a component of some whole that listeners consciously anticipate. While a listener is discerning individual parts, his esthetic interest – elaborating and realizing itself through the experience of the details –always aims partially or even primarily at the comprehensive form. Details must be grasped as functions of the whole form, in order to attain unimpaired musical reality.[133]

The 'conscious anticipation' is frequently disrupted when 'moment' forms are invoked, and perception of coherence would therefore be severely hindered. The question then becomes: how can coherence, the result of an anticipated whole, exist despite such disruptions in logic?

2.4.1: The Perception of Coherence in Moment Forms

In his essay 'Progressive Temporality in Music'[134] Lippman considers coherence in music to be dependent upon a certain amount of temporal progress in music, of which there are three types. The first is succession and continuity, followed by motivation (impulsion) and a logical relationship between motives and phrases. It could be argued that, by using such moment forms, Debussy is ridding the compositions of any sort of progressive temporality by favoring the successive over the continuous, and doing away with both impulsion and linear logic between phrases. Nevertheless, the pieces cannot be classified as wholly static (devoid of Lippman's progressive temporality), as there is a cohesive if not continuous element to the compositions. Schoenberg noted that, 'large forms develop through the generating power of contrasts.'[135] Such differentiation in

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[133] *Ibid.*, 78.

[134] Edward A. Lippman, *The Philosophy and Aesthetics of Music* (Lincoln: University of Nebraska Press, 1999), 44.

[135] Arnold Schoenberg, *Fundamentals of Musical Composition*, Gerald Strang (ed. and trans.), (New York: St. Martin's Press, 1967), 178.

Debussy does not serve to distinguish between structural or formal elements, but often contains reiterated elements from previous sections as a means for imposing coherence.[136] In doing so, however, the composer emphasizes the moment-to-moment relationships. Carpenter points out that

> reiteration emphasizes differences; it focuses attention on small-scale detail, on 'texture.' Recurrence emphasizes similarities and articulates more far-reaching relations of overall structure.[137]

Cone distinguishes two modes of perception: synoptic comprehension and immediate apprehension.[138] The former is concerned with the perception of the whole; the entire form and structure, while the latter focuses mainly on 'primitive elements, and their closest interrelationships.'[139] Cone likens immediate apprehension to Whitehead's philosophy of perception, which states that, 'a factory...is an organism exhibiting a variety of vivid values. What we want to train is the habit of apprehending such an organism in its completeness.'[140] The simultaneous perception of both the immediate and the whole is crucial to the perception of musical form, but with Debussy the act of 'becoming' dominates the 'object' itself. Debussy's use of 'endless

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[136] Similarly, Schoenberg wrote in *The Musical Idea* that sonority itself could be thought of as 'a formative element-and [a] means of coherence.' While Debussy would most likely not be amused by the incorporation of Schoenberg's theories of coherence to explain his music, the writings of the latter, in particular his writings on cohesion and developing variation, are an appropriate fit for many of the works of the former. Debussy's use of motivic development is inherently organic, and to deny its indebtedness to the same composers Schoenberg was writing about, merely because of Debussy's anti-Austro/ Germanic rhetoric, would be to deprive the music of an inherently suitable means of analysis. Similarly Walter Frisch's work on 'developing variation' in Brahms might seem to be an anachronistic application of Schoenberg's writings, although somewhat more historically justified. See Arnold Schoenberg, *The Musical Idea and the Logic, Technique and Art of Its Presentation*, Patricia Carpenter and Severine Neff, (ed.), (Bloomington: Indiana University Press, 2006), 145. Walter Frisch, *Brahms and the Principle of Developing Variation,* (Berkeley: University of California Press, 1990).

[137] Patricia Carpenter, "The Musical Object" *Current Musicology 5* (1967),56–87. 80. Nicholas Ruwet makes a similar point, stating that duplication is used as a means for uniting disparate elements in Debussy's music. See Nicolas Ruwet 'Note sur les duplications dans l'ouevre de Claude Debussy' in *Revue belge de Musicologie,* 16/1 (1962), 57–70 (*Passim*).

[138] Edward T. Cone, *Musical Form and Musical Performance*, (New York: W. W. Norton, 1968)., 88

[139] *Ibid.,* 89.

[140] Cone, *Musical Form and Musical Performance*, 89.

variation'[141] forces the listener to focus on the immediate relationships in a perceptual state in which context is at best secondary.

While moments can be seen as elements that disregard linear logic in music, they are not necessarily discontinuous. Deutsch has conducted a number of studies[142] which focus on the role of interspersions in memory. Listeners were given two notes, played five seconds apart, and were asked if they were the same. When there were no interruptions, they were correct 100 percent of the time. When there *were* interruptions, however, their score dropped to 68 percent. It is therefore safe to conclude that such interruptions in musical logic do indeed have a detrimental effect to the memory and general comprehension of a piece of music by a listener.[143]

2.4.2: The Perception of Climax in Moment Forms

Moment forms are meant to be a hindrance on climax and process. Kramer noted that the primary goals of such instances were the 'flattening out of climaxes' and the 'elimination of the dramatic curve.[144]' Stockhausen stated that they

> do not aim toward a climax, do not prepare the listener to expect a climax, and their structures do not contain the usual stages found in the development curve of the whole duration of the normal composition: the introductory, rising, transitional and fading stages.[145]

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[141] Eimert, 'Debussy's *Jeux,*' 4.

[142] Diana Deutsch, 'Tones and Numbers: Specificity of Interference in Immediate Memory', *Science* 168/939 (1970), 1604–5. 'Auditory Memory', *Canadian Journal of Psychology* 29/2 (1975), 87–105, 'Interference in Memory between Tones Adjacent in the Musical Scale,' *Journal of Experimental Psychology* 100 (1973), 228–31; 'Disinhibition in Pitch Memory', *Perception and Psychophysics* 17, (1975), 320–24.

[143] See John A. Sloboda, *Generative Processes in Music: The Psychology of Performance, Improvisation, and Composition*, (Oxford & New York: Oxford University Press, 1988), *Passim.*

[144] Kramer, *The Time of Music,* 202.

[145] Stockhausen 'Moment Form' 198–199 Translated in Heikinheimo, *The Electronic Music of Karlheinz Stockhausen,* 120. cf Wheeldon 'Disctoninuity in the Late Works of Claude Debussy,' 16.

In many ways, this is also true of the *Préludes* containing frequent moments. For instance, 'Ondine' is one of the most anticlimactic of the set, seeming to burn out as a result of the frequent interruptions. 'La fille aux cheveaux de lin' similarly contains a number of frequent climaxes that quickly fade away. As the melody reaches a climactic point in m.16, it quickly recedes (and similarly avoids an overly climactic point in mm. 22). For the most part, however, progression toward a climax is a frequent occurrence in the *Préludes* despite such 'interruptions.' The beginning of the contrasting B section in 'Voiles' is an undeveloped moment (although it is immediately repeated), which serves as a buildup to a climax later in the piece. The progression toward such climaxes is an integral point when discussing form.

2.5: Conclusion

Lockspeiser believed Debussy's formal aesthetic to be a reactionary response to what might be considered primarly organic notions of form.[146] Nevertheless Debussy was influenced by both organicist and conformational forms, and this chapter has attempted to illustrate that, in his need to escape the Austro/Germanic compositional tradition, he frequently opted for discontinuous forms. By viewing examples of all three in the composer's works, one is left with a greater understanding of the elements of cohesion involved in the *Préludes.*

Adherence to formal archetypes while actively pursuing an 'organic process' allows for multiple interpretations of a compositions formal structures. This chapter has attempted to discuss the various approaches of formal analysis applied to Debussy's music, separated as either a 'form as structure' or a 'form as process' method and, in doing so, it has discussed the nature of the perception of the formal aspects of the composer's music. Despite their brevity, the *Préludes* allow Debussy to explore

[146] Edward Lockspeiser, *Debussy: His Life and Mind,* (Cambridge: Cambridge University Press, 1978), 231.

innovative formal structures, many of which are analogous to the composer's larger compositions. In presenting an analysis of many of the *Préludes* within a 'formal continuum' I have attempted to illustrate the breadth of the composer's formal style, and provide some justification for the perception of coherence in such forms.

3.1 Introduction

Early Debussy criticism is full of comments focusing on the lack of melody in the composer's music. Writing in 1904, Louis Elson wrote that *Prélude à l'après-midi d'un faune* 'avoided all trace of soothing melody,'[1] while in 1907 Hugo Schlemüller wrote that, in *Pélleas et Mélisande,* 'Debussy has definitely discounted all melody.'[2] In 1927, Satie's jokingly titled *Les Commandements du catéchisme du Conservatoire,* placed between 'thou shalt adore Debussy only' and 'thou shalt abstain from planning ever' was the directly stated 'Though shalt never be melodious, in fact or by condonement.'[3] Debussy's melodic style was, at best, misunderstood and, at worse, thought to be nonexistent.

Perhaps one of the reasons for such misinterpretations is the fact that Debussy writes melodies that are frequently regarded as more harmonic than melodic. This ambiguity is so prevalent in the composer's music that Jaroncinski felt compelled to coin the term 'autonomous sound complexes' to refer to elements which 'horizontal structures' that 'cannot be described as melodic at all.'[4] More recent analyses of the melodic element of the composer's music is more kind, placing him as an iconoclastic pioneer for his melodic innovations. In *A History of Melody,* Szabolcsi states that 'West European music of the thirties and forties should not look for its pioneer and precursor

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[1] Louis Elson, *Boston Daily Advertiser,* February 25, 1904 cited in Nicolas Slonimsky, *Lexicon of Musical Invective: Critical Assaults on Composers Since Beethoven's Time,* (New York and London: Norton, 2000), 92.

[2] Hugo Schlemüller, *Signale* Berlin, 24 April, 1907 in Slonimsky, *Lexicon of Musical Invective,* 95.

[3] Eric Satie, *Le Semaine Musicale,* Paris 11 November, 1927 in Slonimsky, *Lexicon of Musical Invective,* 103

[4] Stefan Jarocinski, *Debussy: Impressionism and Symbolism*, (London: Eulenburg, 1976), 141.

in Schoenberg, but rather in Claude Debussy.'[5] The composer's melodic style was at first an extension of both Fauré's song-style and Wagnerian leitmotif, but eventually became the a primary proponent of the 'regressive renaissance through which Western music renewed itself from ancient forms of diatonicism.'[6]

The evolution of Debussy's melodic style is summed up concisely by Robert Schmitz in 1966, who writes:

> In his early period, and later in some specific instances, we will find innumerable romantic, easy melodies of the more conventional design, an organized theme; but the more he asserts his own style the more developed the long, supple fluid line of plainsong and of some of the early folksongs, which completely replaces and eliminates the chatter of repetition and development. The single continuous theme, neat and precise despite its suppleness evolves steadily in long phrases, never returning upon itself. It is compact, and within its lifespan it creates its own deductive development. In this aspect it partakes not only of the Gregorian inspiration but also of the continuous flow and broad flight of the melodic conception of Bach.[7]

Briscoe writes that Debussy's use of 'immediate [melodic] transformation,' in which a melody is immediately developed into a new theme, a constantly mutating element that seems to shun direct repetition, was 'the most forward-looking' device of the composer's early period.[8] Many of the analyses of Debussy's melodic style have been restricted to such generative motivic devices, but are approached from one of a number

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[5] Bence Szabolcsi, *A History of Melody* Cynthia Jolly and Sára Karig (ed.), (London: Barrie and Rockliff, 1965), 190.

[6] *Ibid.*, 191.

[7] Schmitz, *The Piano Works of Claude Debussy*. 33 The composer's fondness for Bach's melodic style is obvious in the two 'Arabesques,' and the composer once stated that 'no one could go further than Bach in the matter of freedom and fantasy in both composition and form.' Claude Debussy, *Lettres À Son Éditeur, Publiées Par Jacques Durand*, (Paris: Durand, 1927), 127. translated in William John Peterson, 'Debussy's 'Douze Études': A Critical Analysis' (PhD Thesis, University of California, Berkeley, 1981) 87. Debussy's admiration for Bach is well-documented. In a questionnaire filled out on February 16, 1889, he wrote that his favorite composer's were Palestrina, Bach and Wagner. Debussy, Lesure, Herlin and Liébert, *Correspondance, 1872–1918*, 67. Debussy was similarly fond of Bach's harmonic adventurousness, writing: 'The old Bach, which contains all the music, you have to believe it, made fun of all the harmonic formulas.' (Le vieux Bach, qui contient toute la musique, se moquait, croyez-le bien, des formulas harmoniques) in 'Debussy au Journal Musica (October 1902), cited in *Ibid.*, 690.

[8] James R. Briscoe, 'Debussy's Earliest Songs', *College Music Symposium* 24/2 (1984), 81–95 (92).

of angles. Many take Briscoe's point of view, believing that the immediate repetition of motivic structures is quite rare, and one should instead focus on motivic transformation (in a type of Schoenbergian motivic analysis). Alternatively, many analyses treat Debussy's motivic design as a force of unity, and focusing solely on the repetition of motives (in a fashion similar to the paradigmatic analyses employed by Nattiez and Ruwet).[9] Additionally, thematic analyses tend to focus on the defining of either structural boundaries, leitmotivic connotations, or scalar implications.[10] Debussy's evolving compositional style led away from traditional melodic constructions in search of something that could express the more emotional and lyrical depth. He wrote that he

> wanted to dispense with parasitical musical phrases...Melody, if I dare say so, is antilyrical. It cannot express the varying states of the soul, and of life. Essentially it is suited only to the song that expresses a simple feeling.[11]

Despite the composer's protestations against the antilyrical, however, many have accused him of similar crimes. Schneider wrote in 1902 that

> when a person has something natural to say, the musical phrase is natural; it becomes lyrical only when necessary. M. Debussy repudiates lyricism in a continuous stream, because one is not lyric in life, one becomes lyric only at certain decisive moments.[12]

The analyst of Debussy's melodic constructions is therefore faced with a conundrum: should one analyze Debussy's melodies as derived from such 'parasitical musical phrases,' through motivic or thematic development, dependent upon the very tonal

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[9] Jean Jacques Nattiez, *Fondements D'une Sémiologie De La Musique*, 10/18 (Paris: Union générale d'éditions, 1975), Eimert, 'Debussy's *Jeux*,' *Passim.*

[10] See McFarland's analyses of *Khamma* and 'Ondine'Mark McFarland, 'Claude Debussy and the Concept of Chromatic Harmony in His Late Works' (PhD These, University of California Santa Barbara, 1997), 58–90. Wenk discusses the leitmotivic role in *Pelléas* at length in Wenk, *Claude Debussy and Twentieth-Century Music.*

[11] Debussy, *Debussy on Music,* 80.

[12] Louis Schneider, 'M. Claude Debussy' *La revue Musicale (d'histoire et critique musicale)* (April 1902) Cited in Déirdre Donnellon, 'Debussy as Musican and Critic', in *The Cambridge Companion to Debussy*, Simon Trezise (ed.), (Cambridge, UK: Cambridge University Press, 2003), 43–60 (48).

principles Debussy was rebelling against, or as simply Jarocinski's 'autonomous sound complexes.'[13] Many of Debussy's later works (notably the chamber sonatas) return to the classical structures from earlier in the composer's career, largely as a part of the renewed respect for the 'French Classicists' Rameau and Couperin.[14] Despite this return to traditional elements, Debussy employs what Caplin refers to as 'loose' phrase construction, which, as Somer writes,

> introduces the possibility...of asymmetrical segments and groupings, significant modulatory activity and chromaticism, phrases lacking cadential closure, and phrases or groups comprising diverse or contrasting motives or textures.[15]

This chapter illustrates the benefits and pitfalls of both motivic and thematic development, and posits a third way based on melodic implication and attraction. It argues that, while Debussy's motivic and thematic constructions frequently serve as unifying elements (such as the instances of motivic return that featured prominently in the cue-based analysis of Chapter 2), they also serve to further destabilize the piece, creating an increase in ambiguity, thereby prolonging closure. Additionally, I would argue that the non-congruence of the melodic parameter with both rhythmic and harmonic parameters creates progress despite functionality, and the implicative nature of Debussy's melodies creates the motion needed in the compositions.

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[13] Jarocinski, *Debussy: Impressionism and Symbolism*, 141.

[14] Kelly writes that, 'Debussy was certainly portraying himself as an inheritor of French Baroque traditions by conceiving them as a set of six sonatas...' in Barbara L. Kelly 'Debussy's Parisian affiliations' in *The Cambridge Companion to Debussy*, Simon Trezise (ed.), (Cambridge: Cambridge University Press, 2003). 25–42: 40. Wheeldon discusses Debussy's wartime patriotism and performances at length in *Debussy's Late Style*, (Bloomington: Indiana University Press, 2009), 7–19.

[15] Somer, 'Musical Syntax in the Sonatas of Debussy: Phrase Structure and Formal Function,'73. William Caplin, *Classical Form: A Theory of Formal Functions for the Instrumental Music of Haydn, Mozart, and Beethoven*,(Oxford: Oxford University Press, 1998), 84–86.

3.2 Motivic Construction

Many (arguably, the majority) of the melodies in the *Préludes* are growths from relatively minute motivic devices. This seems odd given the composer's professed distaste for certain motivic designs. He famously wrote that he hoped to compose music

> free from themes and motives, or formed on a single continuous theme, in which nothing interrupts and which never returns upon itself.[16]

He continued to say that he abhorred the *leitmotif,* as well as the 'incessant restatement of identical themes.'[17] I would argue that Debussy's preferences for a 'continuous theme' impedes perception to some degree (as a lack of periodicity and 'traditional' phrases creates uncertainty), and that the composer creates an environment where the listener is able to focus on nothing more than the immediate present, which is often a very basic motivic device. When writing to Ernest Closson in 1907, Belgian composer Paul Gilson described Debussy's motives as those which would force the listener to focus on the immediate, rather than allow for any synoptic perception, stating:

> Incidental clauses are linked together as motives in a tapestry but then suddenly the whole scheme is broken (For no other reason than that a new idea is desirable) though the original motive may be taken up later...Perhaps, then it is a useless task to undertake, this matter of 'constructing' and organizing a work of music as a whole, of compelling oneself to follow a preconceived plan, or of kneading and rekneading the music so that it should assume certain architectural proportions, since when all this is done the listener will grasp very little of the overall plan and he will be affected by the impression of the moment.[18]

The analyses presented attempt to illustrate Debussy's treatment of motive, and illustrate how the motivic constructions in many of the composer's works create the immediate perception to which Gilson was referring.

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[16] Cited in Oscar Thompson, *Debussy, Man and Artist,* (New York: Dover, 1967),103.

[17] *Ibid.,* 103

[18] Cited in Lockspeiser, *Debussy: His Life and Mind,* 232.

According to Schoenberg, motivic construction (and the developing nature of melody in general) often determines the formal coherence of a composition, He writes:

> [e]ven the writing of simple phrases involves the invention and use of motives, though perhaps unconsciously. Consciously used, the motive should produce unity, relationship, coherence, logic, comprehensibility, and fluency.[19]

Motivic construction, according to Schoenberg, can be quite general, being defined as 'any rhythmicized succession of notes.'[20] In Debussy's melodic writing, the most basic motivic elements can be seen to be a binding element of the piece (exemplified by the cyclicism of the many of the multi-movement works). Ruwet believes that Debussy uses melodic repetition to unite disparate compositional elements, and his paradigmatic analyses of the composer's works focus on the repetition of a basic motivic structure. For Ruwet (as well as Nattiez), meaning is derived from repetition, and this repetition allows for coherence.[21] The recurring motivic elements create the coherence and structure necessary for the piece to bind together as a whole. In smaller works, however, they are seen simply as referents, ideas to be developed, transformed or dissolved.

Similarly, Reti's analysis of 'La cathédrale engloutie' illustrated the transformative nature of a three note motive (the first notes of the melody, D-E-B), can be transformed and altered (the two variants being D-E-A and D-E-G) along with a second motive (the E-C# which first arrives in m.7).[22] Although it is expertly developed, and may account for deep-level motivic cogerence, Reti's analysisfails to account for the practical limitations a listener might encounter when attempting to perceive these cellular mutations. It provides multiple instances of the original motive at

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[19] Arnold Schoenberg, *Fundamentals of Musical Composition*, Gerald Strang (trans.) and Leonard Stein (ed.), (London: Faber, 1967), 8.

[20] *Ibid.*, 9.

[21] See Nicolas Ruwet,,'Note sur les duplications dans l'ouevre de Claude Debussy,' *Revue Belge de Musicologie,* 16/1 (1962), 57–70. Jean Jacques Nattiez, *Fondements D'une Sémiologie De La Musique*, (Paris: Union générale d'éditions, 1975).

[22] Rudolph Réti, *The Thematic Process in* Music (London: Faber and Faber, 1961), 194–206.

once, and it demonstrates instances of the motive in retrograde or inversion. These elements were almost certainly not a conscious decision (given Debussy's emphasis on the sonorous, rather than preconceived compositional plan) and are not a factor for perceived coherence. While these motivic devices can frequently act as unifying elements, they can also serve to create disillusionment (thus serving an opposite function to the 'cues' previously discussed). Before discussing the use of motive as a means of defamiliarization, however, a brief discussion of the role of motive as unifying device in the *Préludes* is warranted.

3.2.1: Motivic Return in 'La Puerto del vino'

As both Wheeldon and Fulcher have noted, there are a number of similarities between Debussy's earlier cyclic forms and those of Franck.[23] As a young student at the Conservatoire, Debussy attended Franck's organ class for roughly six months. While Debussy may have often found himself at odds with what he referred to as the 'bande å Franck,'[24] it was most likely the group that surrounded Franck rather than the composer himself. When writing to Chausson, he exclaimed 'how stupid these people are. One would have to be a very weak-minded person to fall for any of this.'[25]

Nevertheless, an overwhelming portion of Debussy's chamber music (as well as much of the orchestral music, such as *La Mer*) is heavily indebted to Franck's compositions. Wheeldon's notes the similarities between *Psyche* (1886) and Debussy's

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[23] Marianne Wheeldon, 'Debussy and La Sonate Cyclique' in *The Journal of Musicology,* 22/4 (Autumn, 2005), 644–679 (659), and Jane F. Fulcher, *French Cultural Politics and Music* (Oxford: Oxford University Press, 1999), 24–35.

[24] James Briscoe, 'Debussy, Franck, and the Idea of Sacrifice' in *Revue belge de Musicologie/Belgisch Tijdschrift voor Muziekwetenschap,* 45 (1991), 27–39 (35).

[25] Edward Lockspeiser, *Debussy: His Life and* Mind (London: Casel, 1962), 125. See also Briscoe, 'Debussy, Franck and the Idea of Sacrifice,' 35.

Printemps (1887), [26] as well as Debussy's *String Quartet in G Minor*, a piece almost structurally identical to Franck's *String Quartet in D Major*. As can be seen in Example 3.1, Debussy creates a cyclic structure in his quartet by utilizing both thematic and timbral relationships rather than a solely thematic relationship. While the multi-movement works invoke thematic relationships between movements, I would argue that, in the smaller pieces, the relationships are merely motivic connections.[27]

Debussy undoubtedly used Franckist elements in works additional to the *String Quartet.* Lionel de La Laurencie noted that the *Nocturnes* were 'incomparably more accentuated manifestation of cyclism' than the cyclic compositions of either Berlioz or Liszt.[28] The set structure of the Franckist school, however, was perhaps disconcerting to Debussy, as he began to express disdain for such formulaic structures, and express contempt for the methodical pedagogical style of the Conservatoire.[29] In 1901, Debussy stated that

> there is no question of any such thing as 'form,' or, at least any forms there are have such complexity that they are impossible to relate to the accepted forms – the 'official' ones.[30]

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[26] Wheeldon, 'Discontinuity in the Late Works of Claude Debussy,' 647.

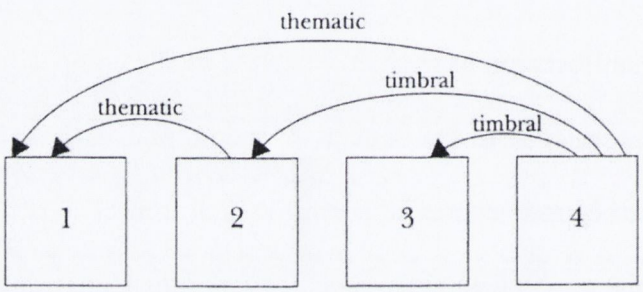
[27] Recall that Schoenberg defines motive as 'any rhythmicized succession of notes,' (*Fundamentals,* 8), while he assigns a more classical definition of theme, stating that 'a complete musical idea or theme is customarily articulated as a period or a sentence.'(21).

[28] Lionel de La Laurencie, 'Un Moment Musical: Notes sut l'art de Claude Debussy' in *Le Courrier Musical,* 1 March 1904, 147. See also Sharon Gelleny 'Cyclic Form and Debussy's Nocturnes' in *Cahiers Debussy* 20 (1996), 25–40 (26).

[29] Wheeldon posits two theories for Debussy's original adherence to Franck's style. The first being that the composer was legitimately enamored with the elder composer's music, while the second is that Debussy may have been a keen 'social climber,' aware that his pieces would be more likely to be played (at the prestigious *Société Nationale*, nevertheless) were the pieces to reflect Franck's style. Wheeldon, 'Debussy and La Sonate Cyclique,' 646.

[30] Claude Debussy, from '*The Nursery,* Poem and Music by M. Mussorgsky' *La Revue blanche* (15 April 1901), quoted in Francois Lesure and Richard Langham Smith, (eds.) *Debussy on Music* (New York: Alfred A. Knopf, 1977), 20–21.

He would similarly state that 'music is not, in its essence, a thing which can flow within a rigorous and traditional form. It is *de couleurs et de temps rhythmes.*'[31] Gelleny notes how, while the *Nocturnes* as a whole are quite cyclical and structured, they also contain a number of reactionary responses to such French concepts of form. Rather than the typical fast-slow-fast structure, *Nocturnes* contain a slow-fast-slow. The piece is also lacking in a typical conflict and resolution, but instead returns to the same state of ambiguity experienced in the beginning.[32]



Example 3.1 Thematic Return in the String Quartet Between Movement in Debussy's String Quartet in G Minor (Reproduction from Wheeldon, 'Debussy and La Sonate Cyclique')[33]

Debussy continued to experiment with cyclic forms throughout his career, with later pieces such as *Images* (1910–1912) containing similar structural elements. Pasler notes that

> in Debussy's music, the past can also be said to 'melt into and permeate' each present moment, in that motives return in ever-new variants in *Jeux*, as do timbres, meters, and rhythmic patterns. These recurrences give the work its coherence.[34]

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[31] Quoted in Jann Pasler, 'Debussy's *Jeux*: Playing with Time and Form,'" *19th Century Music* 6/1 (1982), 60–75 (72).

[32] Gelleny, 'Cyclic Form and Debussy's *Nocturnes,*' 38.

[33] Taken from Wheeldon 'Debussy and La Sonate Cyclique,' 648 also discussed in Briscoe 'Debussy, Franck, and the Idea of Sacrifice,' 28.

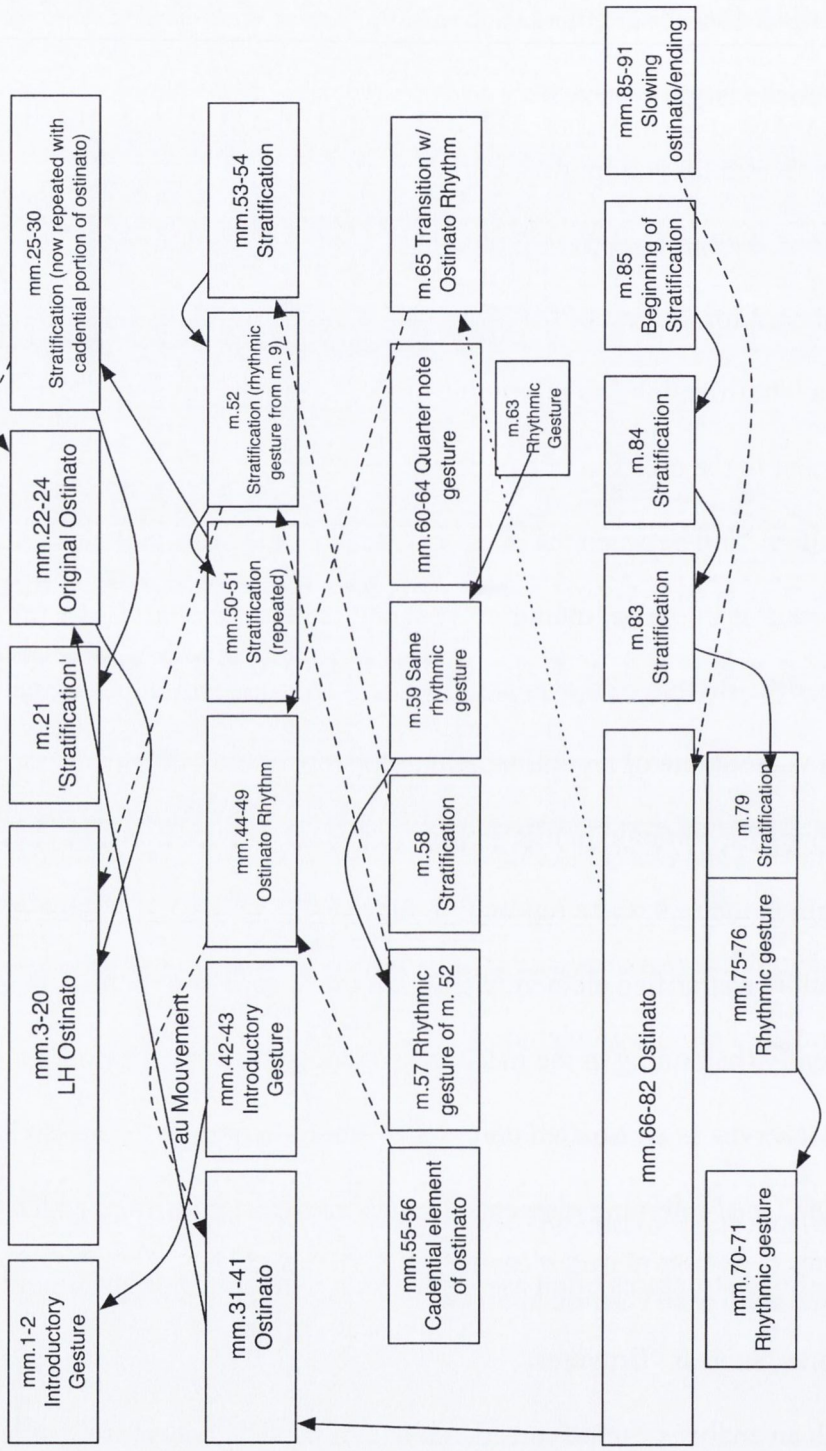
[34] Pasler, 'Debussy's *Jeux:* Playing with Time and Form,' 75.

The notion of motivic return inherent in cyclicism can be applied to a number of the single-movement piano pieces as well. While it can hardly be defined as 'cyclic,' as a single-movement piece hardly requires such motivic return, it does share the same sense of iteration seen in the larger works. In 'La puerta del vino' from the second book of *Préludes,* even a seemingly unimportant introductory gesture returns in the second portion of the piece. As can be seen in Example 3.2, Debussy uses an ostinato in the left hand as a springboard for the rest of the piece. What might originally be heard as an interruption (or a 'stratification,' to return to Cones's terminology) in m.21, turns out to be a central element in the creation of a coherent structure.

After the alternation between the opening ostinato and 'stratified' elements, the opening gesture returns in the beginning of what is often labelled the 'B' section. Debussy then uses the rhythm of the ostinato, yet no other element of it, to create a sense of binding without one of repetition. Rhythmic repetition without harmonic or melodic recurrences are common in this piece. A triplet rhythm, followed by two eighth-notes begin in the m.9, to be repeated in mm.17–18, 52, 59, 63, 70 and 75. The original interruption, a stratified element disrupting the linear logic of the composition, returns so frequently (beginning in the m.21 and repeating nine times before the piece concludes), that it serves as an isolated unit of structural importance. Example 3.2 illustrates the number of returning elements throughout the composition, which lacks the concretely defined structures often associated with many of Debussy's more conservative works, such as 'Bruyères.'

While such an analysis can be considered one of musical coherence, Debussy employs motivic dissolution, and gradually increasing frequency of irregular phrases in many of the small-scale works to create ambiguity. Empson's second criterion for 'ambiguity' occurs when 'two or more alternative meanings are fully resolved into

one.'[35] In the following instances, Debussy creates a degree of ambiguity by allowing motives and phrase structures to dissolve into one element.



Example 3.2 Motivic Return in 'La puerta del Vino'

3.2.2: Motivic and Thematic Structure in 'Hommage à Rameau'

[35] William Empson, *Seven Types of Ambiguity*, (2nd edn.) (London: Chatto and Windus, 1947), 48.

Briefly stepping away from the *Préludes,* one can find more examples of similar motivic designs, although now utilized very differently, in the second piece from the first set of *Images* (1905), 'Hommage à Rameau.' Much of what has been written about the piece pertains to the 'modal and harmonic elements of the piece as a means of representing the earlier composer.'[36] Similarly, the motivic analysis focuses on the restatement of the theme at the fifth, as a sort of nod to a fugal composition.[37] Motivically, however, the piece is an exercise in 'unity in variety.'[38] The opening statement provides an unaccompanied exposition of a main theme (illustrated as Figure A in Example 3.3), followed by a two bar continuation in m.3. Such a thematic grouping (2+2), consisting of an antecedent-consequent is a somewhat rare occurrence in Debussy (although the composer's predilection for frequently asymmetrical two-bar phrases has been discussed by many),[39] and it begins to dissolve as the piece progresses. This atypical conservative thematic structure could in itself be an 'hommage à Rameau.' When the second idea is presented in m.5 (Figure B), it is rhythmically generated from the first idea, but is repeated via a sequence in m.6, which allows for a contraction of the subject-answer type of repetition between the two (in another possible nod to Rameau's time), the answer is harmonized with an accented Phrygian ♭II and ♭III). This sequence continues downward in m.7, but is now displaced leading into the tonicization of the dominant (D♯) in m.8. The period structure is not entirely characteristic (it doesn't employ the parallel periods that Rothstein discusses), but it

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[36] Schmitz, *The Piano Works of Claude Debussy*, 105. Schmitz notes that the piece has 'a refined and transmuted eighteenth century style, rendered piquant by a freedom of progressions in which the harmonic conscious Rameau would have been delighted.' *Ibid.,* 105. Howat conducts a formal analysis of the piece, believing it to be a ternary form with a coda and 'subtly masked' recapitulation. *Debussy in Proportion,* 140–144.

[37] *Ibid.,* 106.

[38] This phrase is used by Bonds in *Wordless Rhetoric,* 98, citing Junker Betrachtungen uber Mahlerey, *Ton-und Bilhauerkunst* (Basel: K.A. Serini, 1778), 82–83.

[39] For example, see Simon Trezise, *Debussy: La Mer*, (Cambridge: Cambridge University Press 1994), 77–84.

does contain the 'repetition or closely related variant' of mm.1–2 in mm.3–4, as well as the 'distantly related variants' in the middle section.[40] While Rothstein notes that the diminution of the phrase, which creates a rhythmic acceleration towards the end of the period, is quite common, it doesn't occur in this instance, and the phrase is actually expanded.[41]

The opening idea returns in m.10, but with an alteration in m.11, and the continuation is now repeated before a third theme, (Figure C, an abbreviation of an idea compared to the opening two-bar theme) begins at m.14.[42] This motive is metrically displaced beginning at the end of m.15, and continues until m.18. At this point, the continuation is connected to a linking statement that leads into a rather Brahmsian (in the sense that there is an emphasized '3 against 2' rhythm) transitional section.

At the completion of this section, Figure A returns in m.26, now transposed up a perfect fourth, but the continuation remains at the same pitch (except for the second measure of the continuation, which is displaced an octave). This motive (Figure A) is truncated at m.31, and what was the resolution of it in the opening measures is now an extended continuation. After an extension on this idea until m.38, there is a linking phrase to a condensed form of the melody in m.45 over a D pedal point.[43] The condensed idea from m.31 returns in m.52, but at this point the continuation is replaced with a cadenza-like section until m.58, at which point Figure A returns in its original form, along with its continuation in full and followed by Figure B in its original state.

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[40] William N. Rothstein, *Phrase Rhythm in Tonal Music*, (New York.: Schirmer,1989), 26. James Hepokoski similarly points out the aversion to traditional phrase structure, writing that Debussy 'filtered out a reliance on explicit periodicity from his musical style.' James Hepokoski, 'Formulaic Openings in Debussy, *19th Century Music* 8/1 (Summer, 1984), 44–59 (51).

[41] *Ibid.,* 26. Phrase expansion is discussed in 65–101.

[42] mm.1–13 could be thought of as a ternary structure nested within the opening 'A' section of the piece. The 2+2 followed by a five measure B section (breaking down to something along the lines of 1+1+3, but not strictly in adherence with metric lines) and a recapitulation in mm.10–13.

[43] Schenker called this type of motive linking *Knüpftechnik.* See Heinrich Schenker, *Harmony*, Oswald Jonas (ed.), Elisabeth Mann Borgese (trans.), (Cambridge, Mass.: MIT Press, 1973), 9–10.

Figure A quickly dissolves in the final measure of the piece (although fragments are present in m.68–73).

In 'Hommage à Rameau' Debussy uses a symmetrical phrase structure as a referent to an external, historical design of phrase structures. This clear design is quickly altered as the themes are truncated, metrically shifted and the melodic and harmonic relationships are altered (the most obvious being the transposition of the opening motive in m.26, followed by a continuation at the same pitch, altering the relationship between the two by making fugal relationship one of a displaced major second). While this piece is quite conservative, it illustrates Debussy's tendency to gradually obscure a clearly delineated motive (with symmetrical phrasing) as the piece progresses. While the motivic designs are concisely stated at the outset, the elaborations *between* the motives increase as the piece continues, and the structural importance of the motives seems to fade, until the final return when there is an abundance of the opening figure.

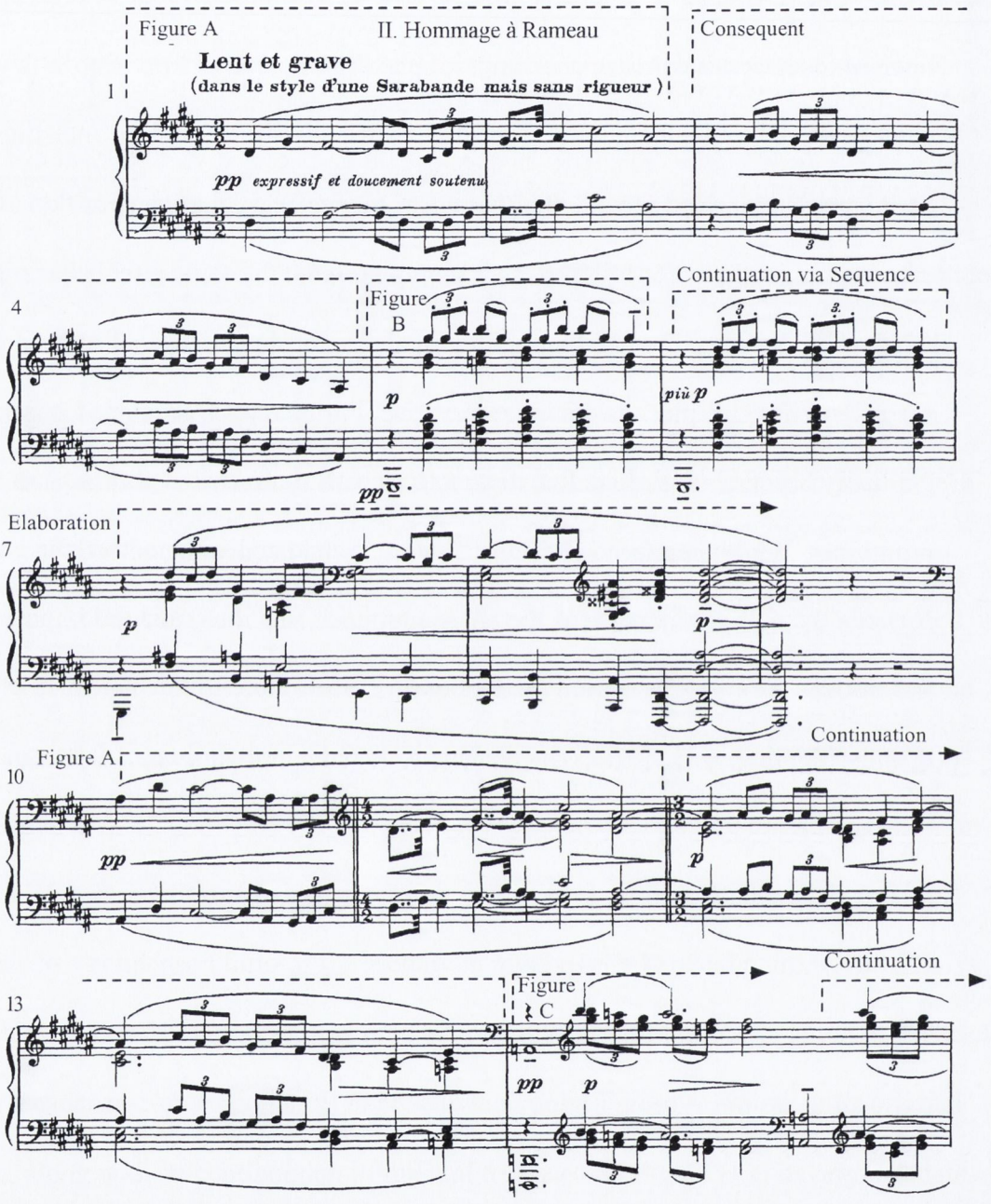
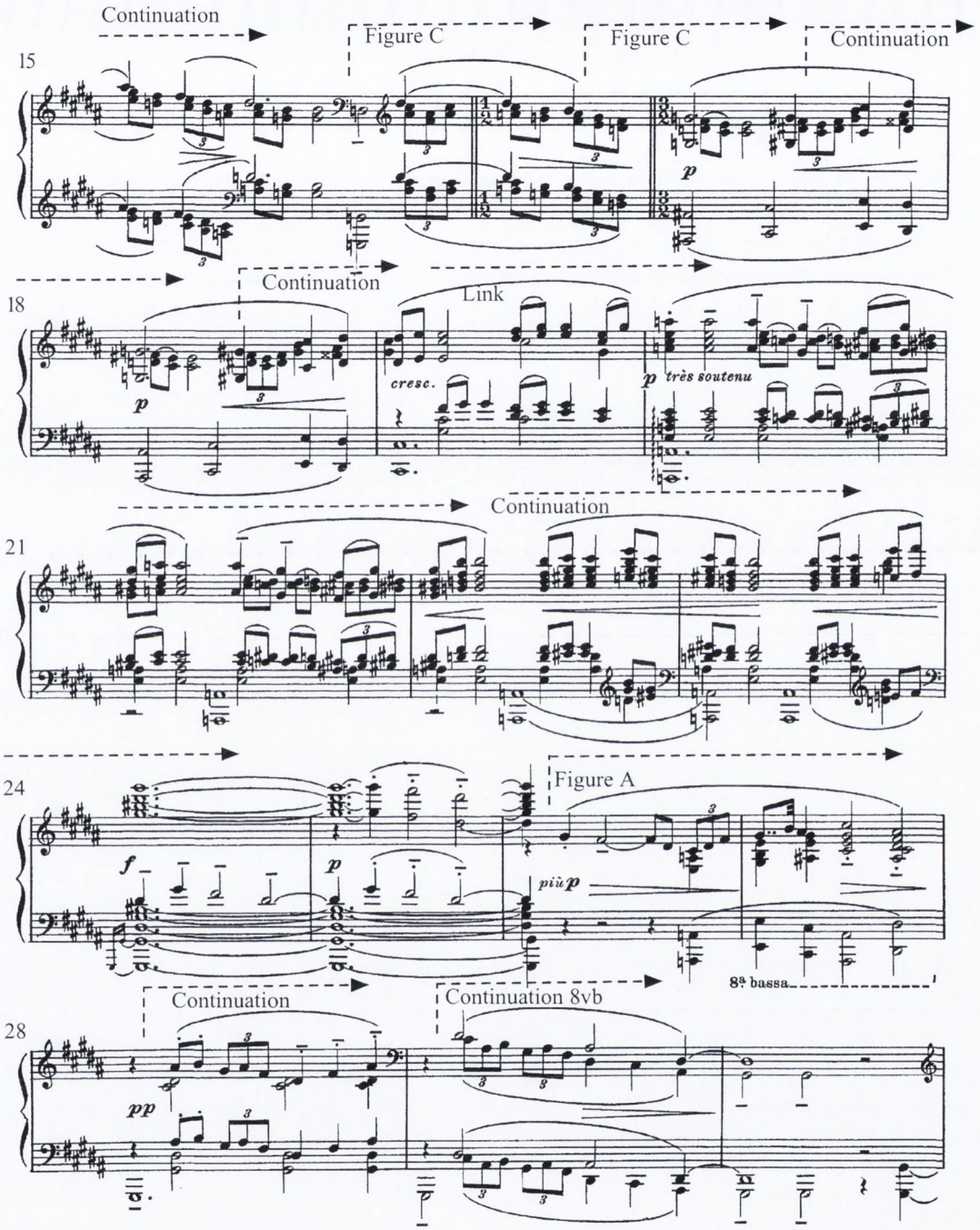
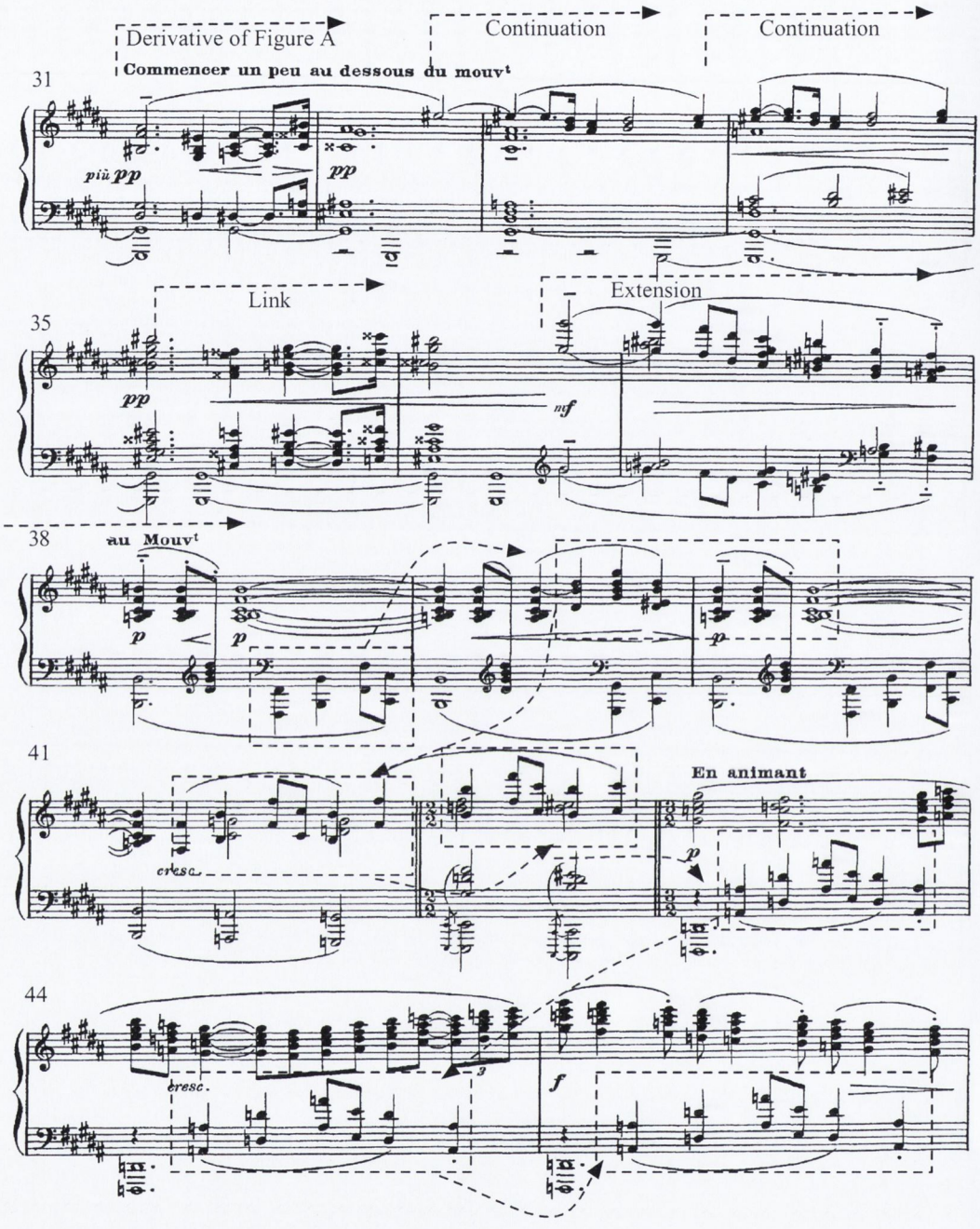
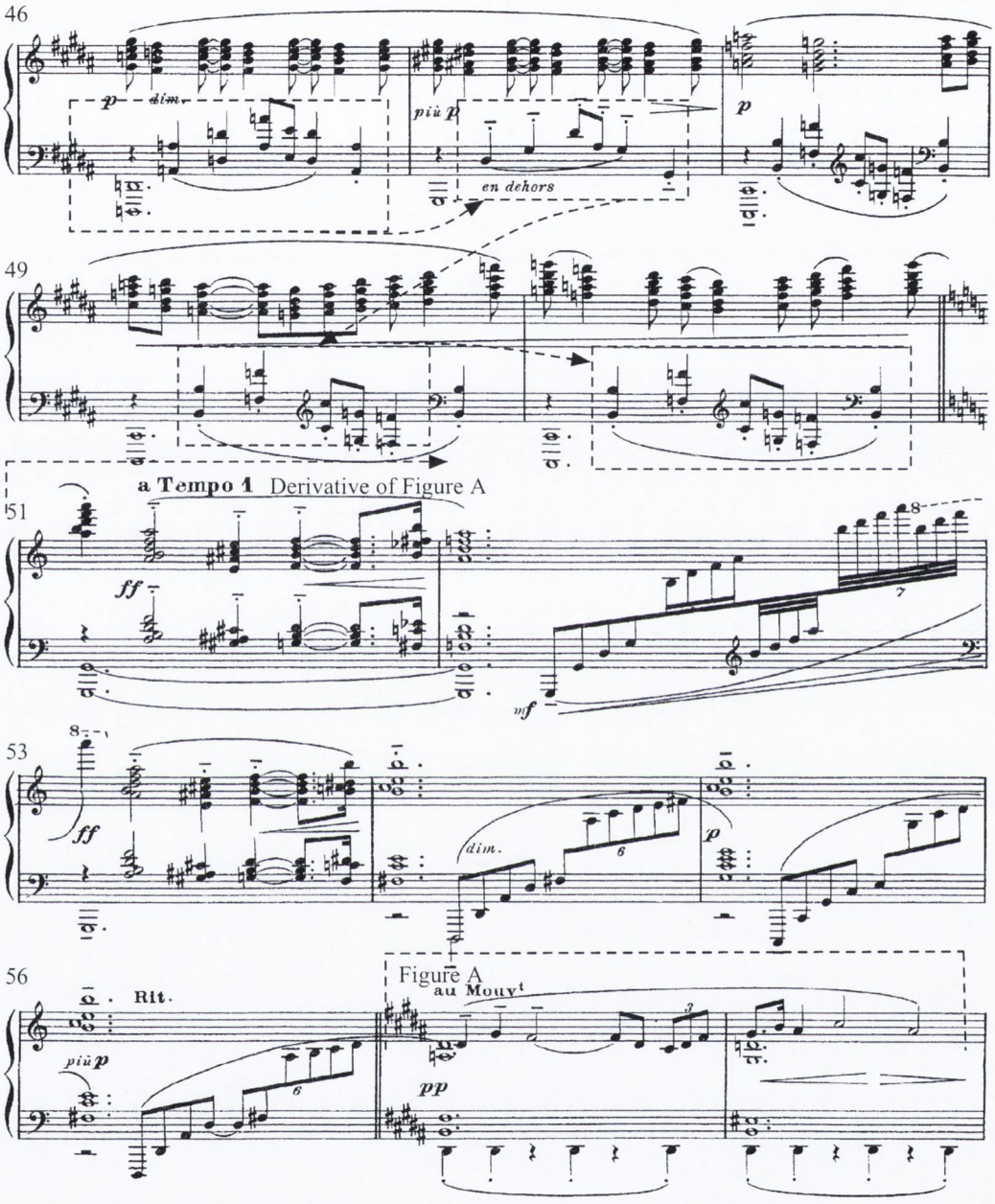
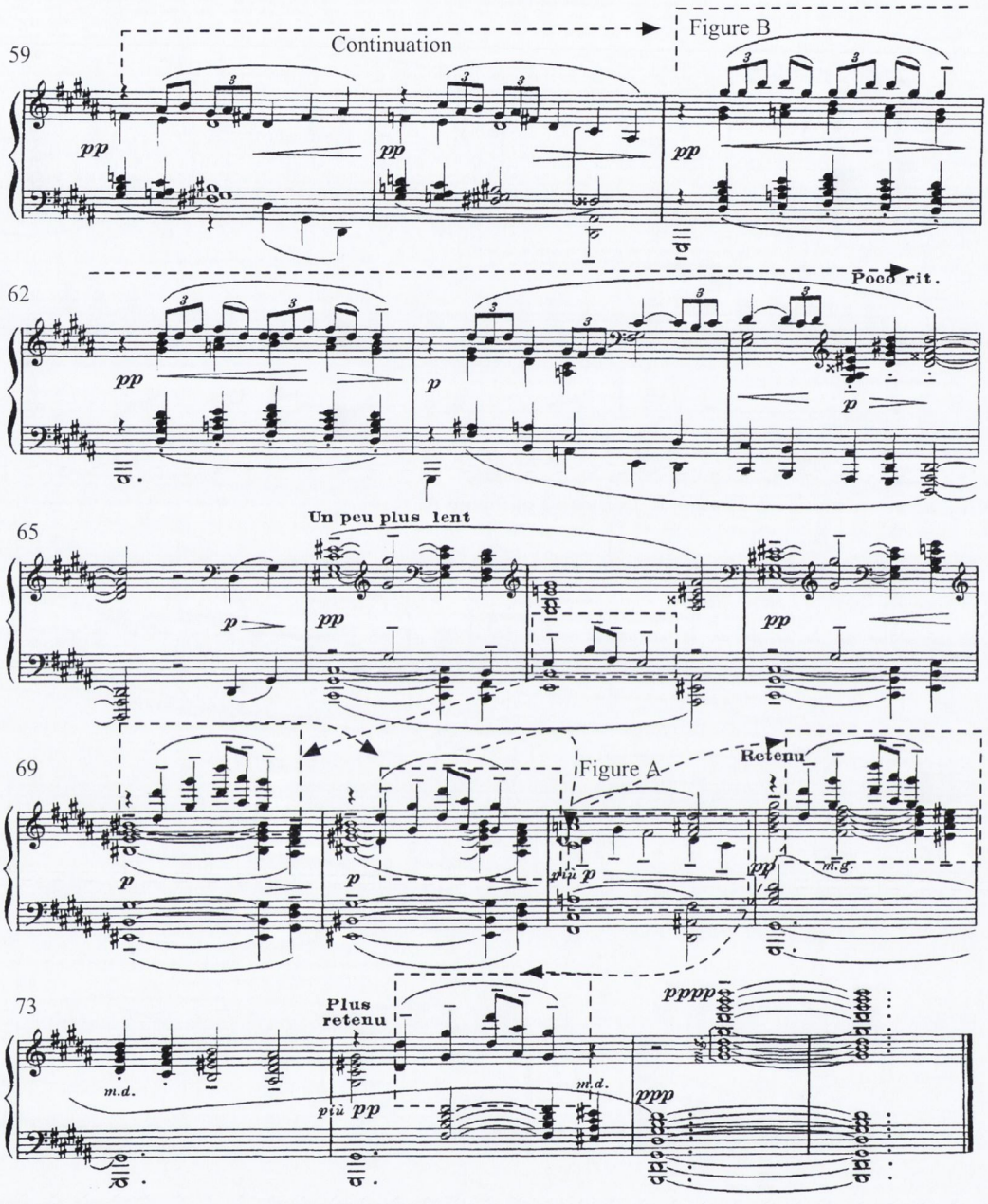


Figure A
II. Hommage à Rameau
Consequent
Lent et grave
(dans le style d'une Sarabande mais sans rigueur)
1
pp expressif et doucement soutenu
Continuation via Sequence
4
Figure B
p
più p
pp
Elaboration
7
p
p
Continuation
Figure A
10
pp
p
Continuation
13
Figure C
pp
p


Continuation
Figure C
Figure C
Continuation
15
Continuation
Link
18
cresc.
très soutenu
Continuation
21
Figure A
24
più p
8ª bassa
Continuation
Continuation 8vb
28


Derivative of Figure A
Continuation
Continuation
Commencer un peu au dessous du mouvt
31
più pp
pp
pp
Link
Extension
35
nf
38
au Mouvt
p
p
p
41
cresc.
En animant
p
44
cresc.
3
f


46
p dim.
più p
en dehors
p
49
a Tempo 1 Derivative of Figure A
51
ff
mf
53
ff
dim.
p
56
Rit.
più p
Figure A
au Mouvt
pp



Example 3.3 Motivic and Thematic Structure of 'Hommage à Rameau'

3.2.3: The Idée Commune and Fluctuating Phrase Structures of 'L'échelonnement des haies'

As previously mentioned, many of the works composed in both the early and late stages of Debussy's career display a number of traditional phrase structures (the former displaying a compositional style indebted to Franck and the latter being the composer's somewhat neo-classicist stage). Somer writes, that 'a study of Franck reveals a persistent loyalty to a number of eighteenth-century syntactical traditions that also surface in the works of Debussy.'[44] The 'motto-like theme' and the cyclic structure of Debussy's *Printemps* produced such similarities to Franck's *Psyché* that Briscoe concluded 'that Debussy modeled directly upon that work.'[45] Despite the composer's frequent adherence to traditional styles, the functions of phrases in Debussy's music are often blurred to the point where such notions as 'sentence' or 'period' are almost irrelevant. Rothstein's concept of 'period' entails a hierarchical structure, in which there is some sort of antecedent-consequent relationship, and might therefore seem somewhat inapplicable to Debussy's music. Although admitting that the two phrases can be used to 'denote any two phrases that exhibit some kind of interdependence,'[46] he writes:

> an *antecedent*...will always feature a half cadence as its goal. A *consequent* will begin more or less as the antecedent did, and it will either proceed to a full cadence in the same key (a regular consequent) or end with a half or full cadence in a different key (a modulating consequent).[47]

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[44] Somer, 'Musical Syntax in the Sonatas of Debussy: Phrase Structure and Formal Function,' 69.

[45] James R. Briscoe, 'Debussy, Franck, and the "Idea of Sacrifice,"' 32.

[46] Rothstein, *Phrase Rhythm in Tonal Music*, 18 (emphasis in original).

[47] *Ibid.*, 18.

As such instances are rare in Debussy's music, the usage of this terminology will comply with the former (less restrictive) definition.

Periodic barriers are infrequent in Debussy's small-scale pieces; the composer prefers a fluctuating return of truncated or expanded versions of a principle theme. This is by no means unique to Debussy, and was even written about at lengthin previous centuries. In 1808 Alexandre Choron wrote that 'in every composition *there is one subject* without which the work cannot exist...Viewed in this manner composition is the art of discoursing upon a subject.'[48] He refers to this as the 'law of sustaining the theme.'[49] Outside France, the concept of a *Hauptsatz* (the movement's central idea or an *idée commune*) gained traction among theorists. Schiebe wrote in 1737 that such an idea was 'necessary in all musical works; the entire course [of a work] must inelectuably result from it.'[50] Similarly, Marpurg wrote that

> in every musical work there must be something that projects slightly above the rest. This something, whether it appears immediately at the beginning, in the first section, or in the second, I call the *Hauptsatz,* which through repetitions, transpositions, imitations, and fragmentations must be manipulated. The passages that arise in different fashions from the processes serve to preserve the unity of a musical work.[51]

While this allows for the more organically constructed melodic structures for which Debussy is known, it poses a problem for the perception of thematic construction. Periodicity allows the listener to process the melodic unit as a whole, rather than requiring them to contextualize the piece on a larger scale. It allows for a certain amount of rhetorical logic to comprehended. Ernst Gottlieb Baron writes:

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[48] Alexandre Etienne Choron, *Principes de composition des écoles d'Italie, 3 vols* (Paris: Le Duc, 1808, I xviii, emphasis in the original Quoted in Bonds, *Wordless Rhetoric: Musical Form and the Metaphor of the Oration*. 93.

[49] cited in Bonds, *Wordless Rhetoric,* 93.

[50] Scheibe, *Critscher Musikus*, 82, cited in Bonds, *Wordless Rhetoric*, 93.

[51] Friedrich Wilhelm Marpurg, Kritische Briefe uber die Tonkunst,no.85 (7 November, 1761, 161) cited in Bonds, *Wordless Rhetoric,* 98.

> A melody must have certain incisions. Thus, where there are no incisions (commas, semicolons, periods, etc.), as in an oration, the sense and understanding become muddled; this impedes one from grasping what is intended, especially if one cannot distinguish beginning, middle, and end from one another, or perceive any symmetry among these parts.[52]

According to Baron's definition, Debussy is breaking all of the primary rules for melody. There is an obvious lack of incisions. Periods, sentences, etc. are not present in their standard forms, yet there is little of the 'muddling' of difficulty 'grasping what is intended' that Baron warns against.

L'échelonnement des haies' from the *Trois mélodies* (1891) presents an example of Debussy's use of fluctuating phrase structure, while also demonstrating the importance of a consistent motivic structure (in this instance, it is intervallically based, consisting of the treatment of a perfect 4th). Invoking Rothstein's terminology, a three-bar 'presentation' enters in m.5, followed by a one-bar 'continuation.'[53] This 3+1 construction continues with the phrase in mm.12–15, as well as in mm.17–20, as seen in Example 3.4. The accenting is shifted throughout, as the first two phrases begin on the offbeat, and the third commences at the end of m.16.

The first presentation begins with an ascent from the B to the E (with a passing C♯); the perfect 4th in essence defines this iteration of the phrase, which also concludes with a descending perfect 4th in m.7. While the extensions are lacking in intervallic variety, being more utterances than consequents, the intervallic differentiation defines the presentations. The second statement in m.12 also emphasizes the interval, but is now

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[52] Ernst Gottlieb Baron, *Abriss einer Abhandlung von der Melodie,* 8, Cited in Bonds, *Wordless Rhetoric*, 96.

[53] Rothstein, *Phrase Rhythm in Tonal Music*, 7.

restated a semitone lower. It has more intervallic variety in the presentation (with the continuation to F♯) and less in the extension (with no intervallic variety).[54]

When the third form of the phrase arrives just before m.17, the continuation beyond the perfect fourth is repeated, but it is now used as a binding element during the modulation to E♭ (in the opening of the phrase in m.17 and directly in m.18). The interval is only hinted at from this point on: the E♯→G♯→A in mm.27 and the G♯→B♯ seem to hint toward the return of the motive, but it never returns. This is similar to what Schoenberg refers to as 'liquidation,' which 'consists in gradually eliminating characteristic features, until only uncharacteristic ones remain, which no longer demand a continuation.'[55] In Schoenberg's liquidation, motives are repeated until they 'become associated with particular rhetorical functions and order.'[56] In the harmonic process from C♯-minor through the middle section in E♭ is held together with an intervallic

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[54] This second statement seems to be the furthest from the opening. While the third takes place in a distant key, the melody takes place on the fifth of the chord, followed by the root (the first is the seventh followed by the root) and the perfect fourth in m.18 moves from the root of a V♯5 to the root of I in E♭. In the second statement, however, the emphasis is on the upper structure 13 and 9 (an emphasis that would also be used on the concluding sonority, which places an E major triad against a C♯ major triad.

[55] Schoenberg, *Fundamentals of Musical Composition,* 58. Schoenberg's liquidation seems to be the antithesis of the common conception of melodic elaboration. Schenker obviously considered motive to be of an ornamental nature, and Gurney considered melody to undergo for a gradual realization of itself, rather than its dissolution, writing: 'When a melody is familiar to us we realize it by a gradual process of advance along it, while yet the whole process is in some real manner present to us at each of the successive instants at which only a minute part of it is actually engaging out ears.' Edmund Gurney, *The Power of Sound*, (Bristol, England: Thoemmes Press, 1999), 165.

[56] Nicola Dibben and Alexandra Lamont, 'Motivic Structure and the Perception of Similarity', *Music Perception* 18/3 (2001), 245–74, (248). See also Lawrence Zbikowski, 'Musical Coherence, Motif, and Categorization. 'Ibid. 17/1 (1999), 5–42. and Pieter van den Toorn, 'What's in a Motif? Schoenberg and Schenker Reconsidered', *Journal of Musicology* 14/3 (1996), 370–99. Van den Toorn argues that a motif is not necessarily represented as an ideal whole at the outset, but could achieve their form as the result of gradual repetition.

process which achieves the 'liquidation of motival [sic] obligations'[57] only when there is a return to the E-major region in m.26.[58]

[57] I am applying the term 'liquidation' somewhat informally at this point. Schoenberg refers to it when discussing development, stating that 'the purpose of liquidation is to counteract the tendency toward unlimited extension. 'Schoenberg, *Fundamentals of Musical Composition*, 30 and 59.

[58] A somewhat similar instance of 'liquidation' occurs in the first movement of *Printemps* (1887). The opening theme is first presented in isolation by the flutes and the piano, and again in m.9. It is then orchestrated further in mm.13–16, and the now recognizable descending major second plays a prominent role in m.21 at the conclusion of the section. Debussy first breaks the recognition of this interval by chromatically altering it in m.23, the alteration of which allows the A♯ from the previous section to carry over into the next. Hints of opening motive recur in m.45, as the descending major second is once again given prominence at the close of the section. When the *andante molto espressivo* begins in m.48, the theme is somewhat inverted, although the descending major second has now become an ascending minor third. This variant of the thematic variants persist throughout much of this second section until the first theme returns in m.118. The rhythmic structure becomes expanded in m.133, and continues until m.140. *Printemps* demonstrates very little of 'Debussy's persistent preference for asymmetrical and open-ended phrase structures,' [Avo Somer, 'Musical Syntax in the Sonatas of Debussy: Phrase Structure and Formal Function' in *Music Theory Spectrum* 27 (Spring, 2005), 67-95:(67).] It does, however, illustrate the fact that the composer was considering thematic devices in a nontraditional way. The theme is comprised of a two-bar antecedent followed by a two-bar consequent, which then dissolves gradually throughout the piece. In essence, the opening of the piece seems to be a continual *defamiliarization* of the opening material.

TROIS MÉLODIES

N° 3.

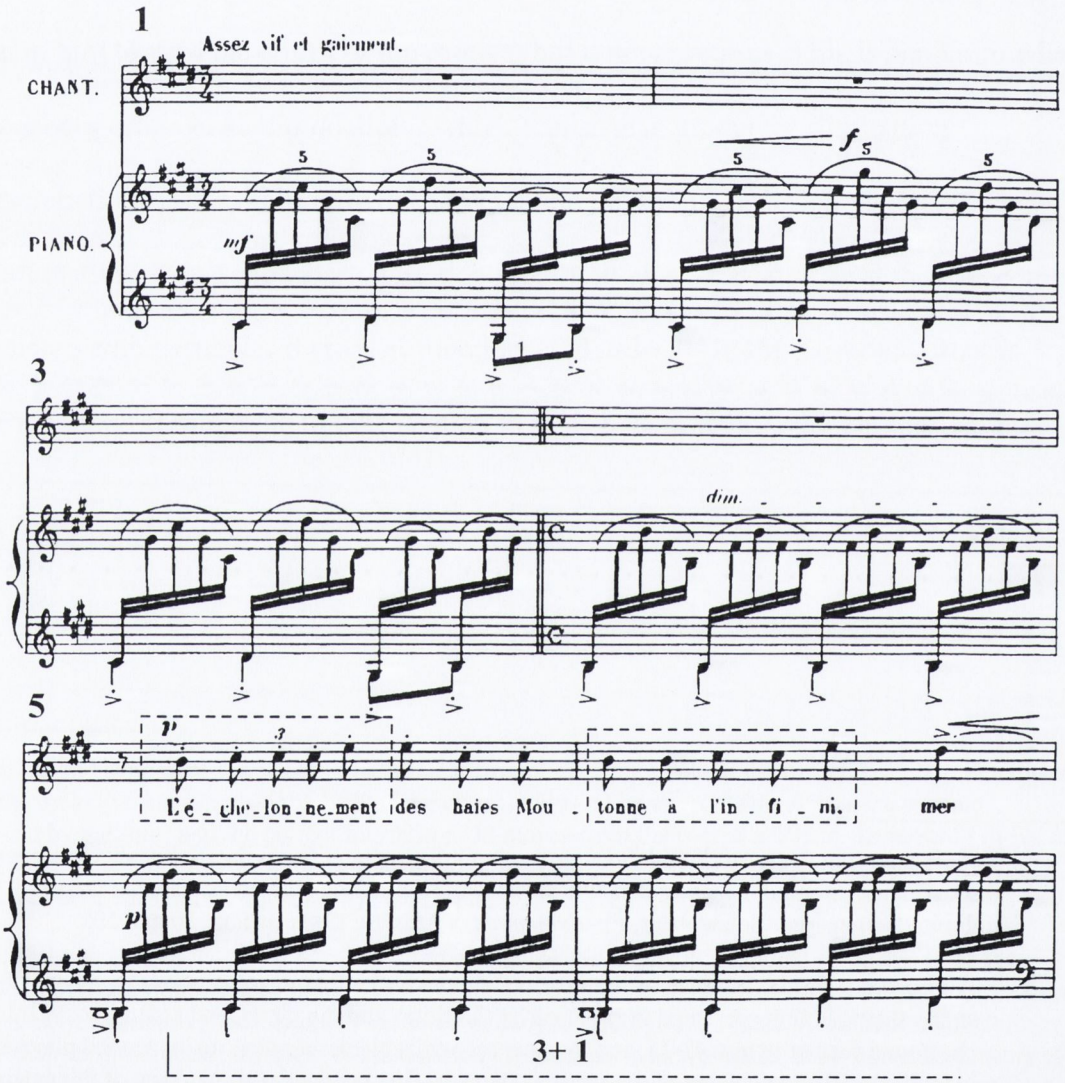
à ROBERT GODET.

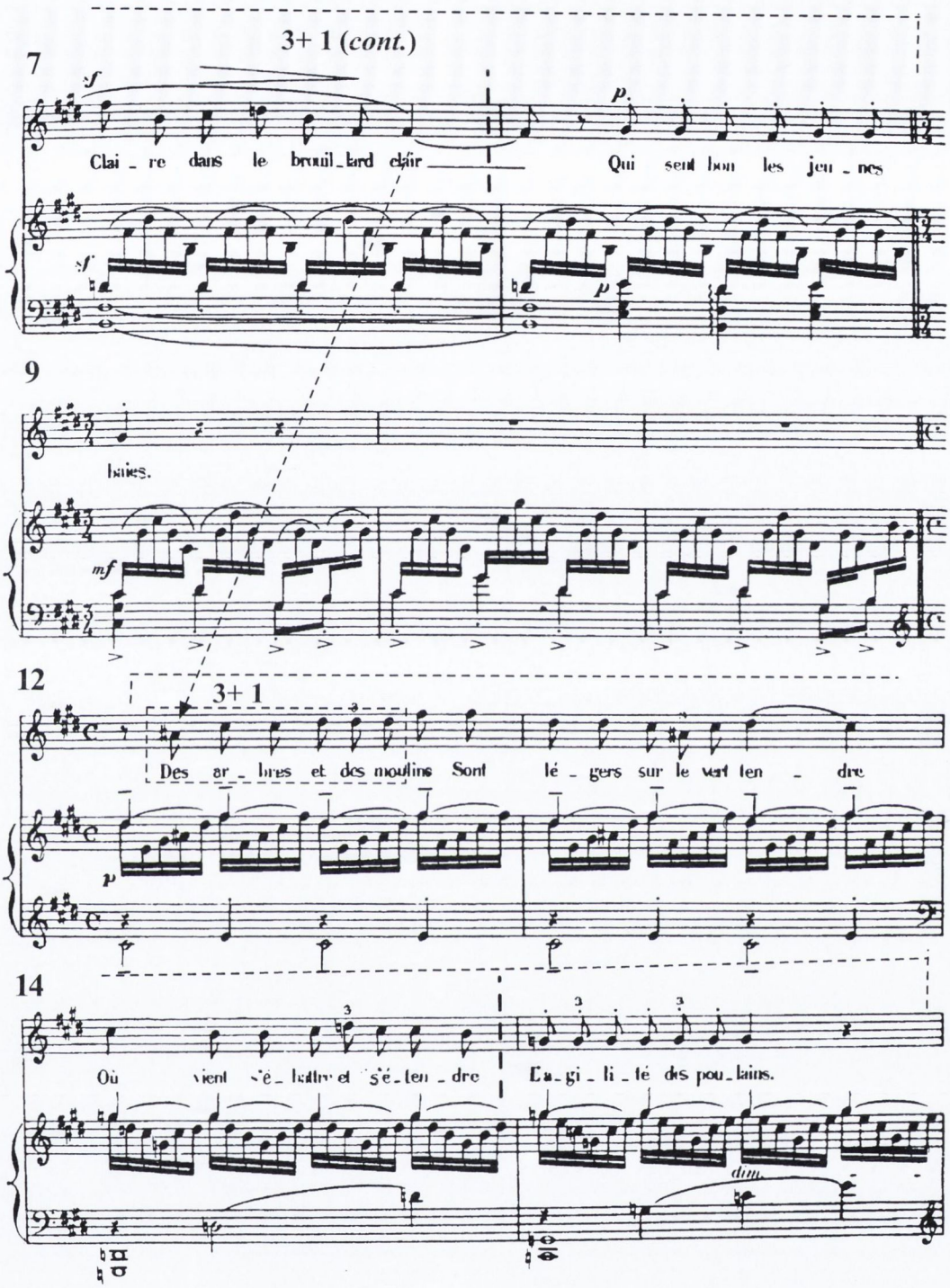
Poésie de

PAUL VERLAINE.

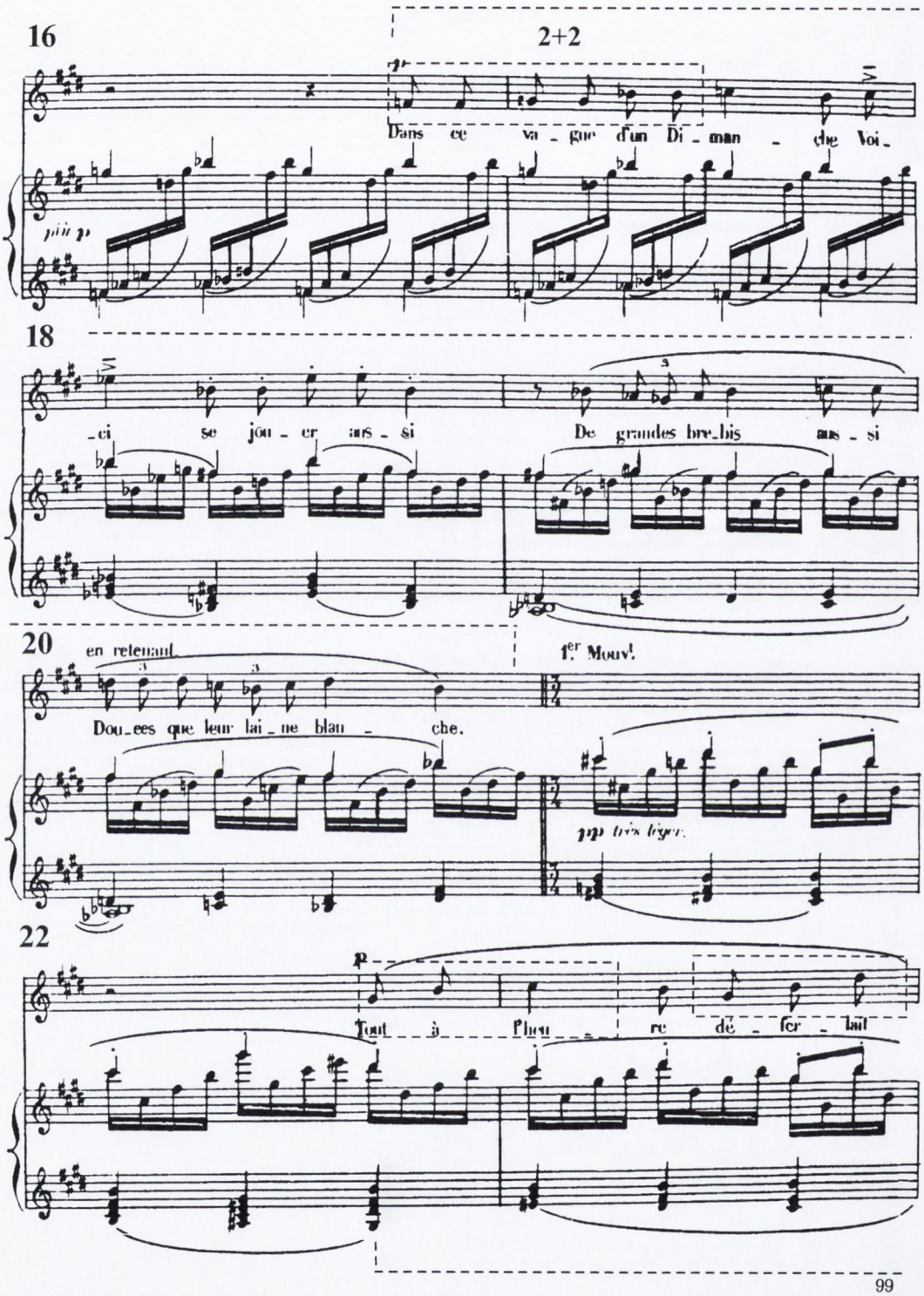
Musique de

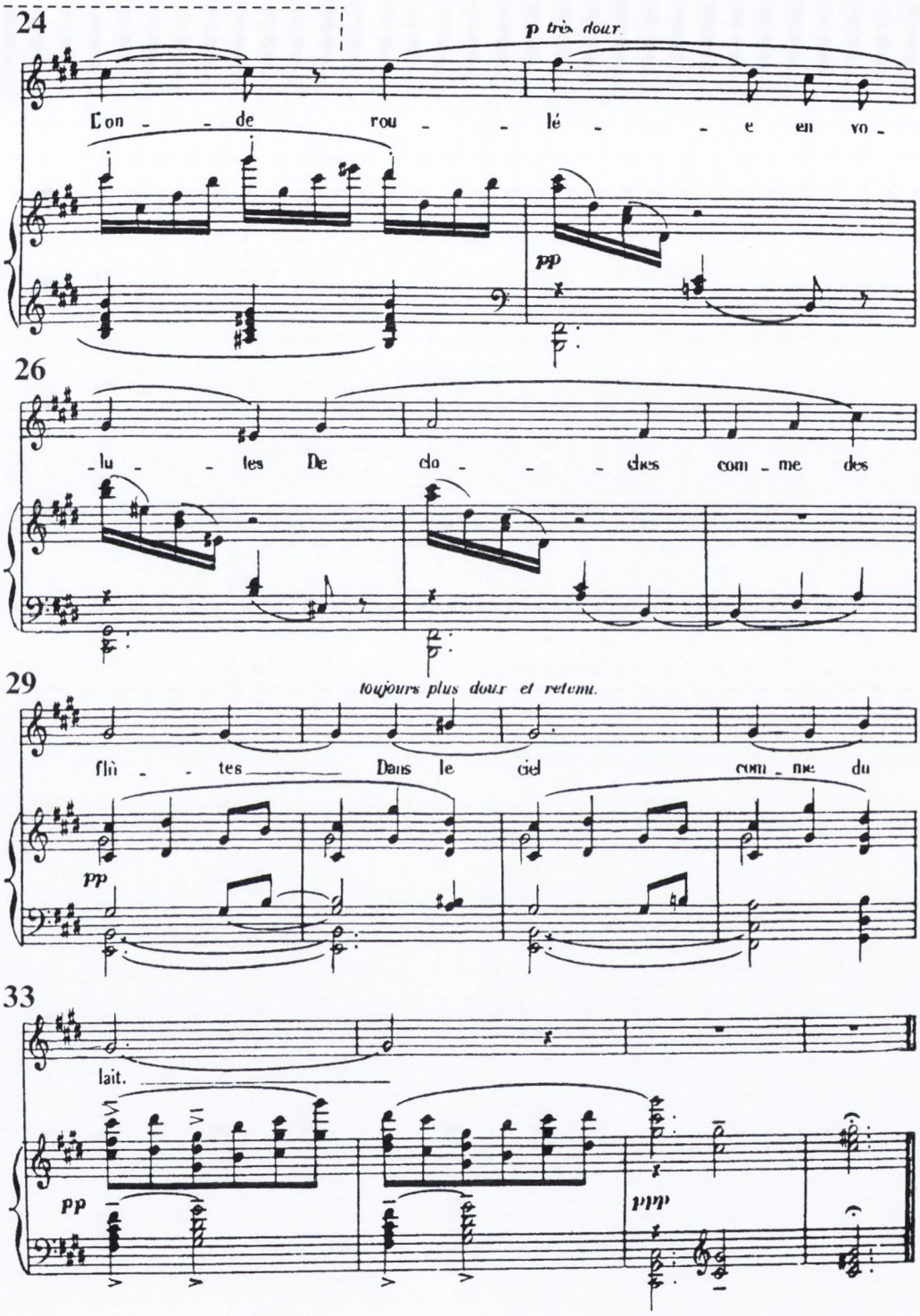
CL. DEBUSSY.




3+ 1 (cont.)
7
Clai _ re dans le brouil_lard clair
Qui sent bon les jeu _ nes
9
baies.
12
3+ 1
Des ar _ bres et des moulins Sont lé _ gers sur le vert ten _ dre
14
Où vient s'é _ battre et s'é _ ten _ dre
L'a _ gi _ li _ té des pou _ lains.
dim.

98


16
2+2
Dans ce va - gue d'un Di - man - che Voi -
18
-ci se jou - er aus - si De grandes bre-bis aus - si
20
en retenant
Dou-ces que leur lai - ne blan - che.
1er Mouv!
22
Tout à l'heu - re dé - fer - lait
99



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Example 3.4: Motivic Dissolution in 'L'échelonnement des haies'

As has been illustrated by the analyses of 'Hommage à Rammeau' and 'L'échelonnement des haies,' Debussy creates both unity and ambiguity through

motivic means. Such analyses, however, view the motivic progression as a *post-hoc* concept, analyzing the piece synoptically. In order to analyze Debussy's treatment of melodic ambiguity as a system of potentialities, a more implicative system should be invoked.

3.4 The Need for a Study of Melodic Implication

While a gradual dissolution in the motivic and phrasing constructions can be seen as one of his many 'forms of deception,' it fails to explain the amorphous nature of the melodic structures themselves. On the surface, Debussy's melodies frequently lack the attributes considered necessary to convey long-term expectation. As we have seen, phrases frequently lack symmetrical elements, thematic development is superceded by the prevalence of a minute melodic idea, and these motives might not 'develop' at all, instead dissolving before sometimes being restated. Yet, they frequently conform to what theories of melodic implication would have us believe. When a melodic continuation is inhibited, it does effect the nature of the progression on a larger scale. To illustrate this, the present study will use the theories of melodic expectancy of both Meyer and Narmour, and will discuss how Debussy's melodies subvert expectation as a means of ensuring both coherence and process; unity and ambiguity.

3.4.1 Meyer's Early Theory of Expectation

Leonard Meyer's theory of expectation, first proposed in his *Emotion and Meaning in Music*, is based on the assumption that 'emotion or affect is aroused when a tendency to respond is arrested or inhibited.'[59] The theory, which is derived from the 'conflict

[59] Leonard B. Meyer, *Emotion and Meaning in Music*, (Chicago, University of Chicago Press, 1956), 14.

theory of emotions'[60] proposed by Dewey, uses the basic Gestalt principles of Prägnanz, good continuation, and closure. Prägnanz can be reduced to 'the better the psychological organization, the less likely is it that expectation will be aroused.'[61] Meyer writes:

> The mind when left to operate on its own, as it does in the case of remembered patterns and organizations, will improve those figures which are not as 'good' as they might be...The converse of this is also true: good organization, stable shapes, will resist change and will tend to remain constant even in changes of the stimulus condition.[62]

The 'law of good continuation' states that 'a shape or pattern will, other things being equal, tend to be continued in its initial mode of operation.'[63] For example, a descending melodic line would likely be expected to continue its descent until something interferes with it. Finally, closure (or completeness) occurs because the 'the mind, governed by the law of Prägnanz, is continually striving for completeness, stability, and rest.'[64] Therefore, gaps (melodic, structural and otherwise) must be filled. Leaps should resolve, and a rest in a piece (such as a rhythmic pause in the middle of a phrase) is considered to be an unexpected interruption.

The role Dewey's 'conflict theory' plays in music is open for debate. Bowman notes that 'conflict is nether necessary nor sufficient to emotion: there is emotion that is not caused by conflict, and conflict that does not generate emotion.'[65] While conflict might not be necessary for emotion, Meyer's view that emotion arises from the

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[60] Discussed in John Dewey, 'The Theory of Emotion' in *Psychological Review,* I (1894), 553–569; II (1895), 13–32, and in R.P. Angier, 'The Conflict Theory of Emotions' in *American Journal of Psychology,* (1927), 390–401.

[61] Meyer, *Emotion and Meaning in Music*, 87.

[62] *Ibid.*, 87.

[63] *Ibid.*, 92.

[64] Meyer, *Emotion and Meaning in Music,* 128.

[65] Wayne D. Bowman, *Philosophical Perspectives on Music*, (Oxford: Oxford University Press, 1998), 176.

suppression (or realization) of expectation is extremely useful in Debussy analysis. It allows for a discussion to take place on the process of the melodic parameter in such a way that can make sense of the musical structures without reliance on phrase studies, sentence structure, etc. It illustrates the progress of melodic structures that have only a tangential relationship with traditional concepts of tonality, resolution, and structure.

A concise example of Debussy's tendency to disrupt melodic expectation occurs in the opening measures of 'Hommage à S. Pickwick Esq. P.P.M.P.C.' The melody begins with a descent from G-D, which would imply either a continuation of the triad down to B, or a return up to E. Instead, the C that occurs at this point subverts these expectations. As the piece continues, the triadic process from C to A could imply an F triad in root position or a second inversion A-minor triad. Instead, Debussy continues with the sequence, which is also a likely possibility.

This leads into what could be a stepwise descent, but is interrupted with the leap from G to C in m.4. This stepwise motion eventually does occur as the C ascends, but there is a gap in the phrase at the next measure. This gap in itself leads to a denial of implication. Meyer defines a structural gap as something that 'occurs when something is felt to be left out,' but mentions that something of this sort 'might be considered a disturbance in continuity rather than a structural gap (his example is from Haydn's Symphony no.104 in D major).'[66] The fact that this gap is only rectified with a subversion of the ascending C-F, however, fails to do much to realize this implication. As the phrase seems to begin again on the downbeat of m.6, either a triadic implication or scalar motion might be expected, but Debussy gives an ascending fifths motive. This short phrase rarely realizes any implications, which allows for both process and ambiguity.

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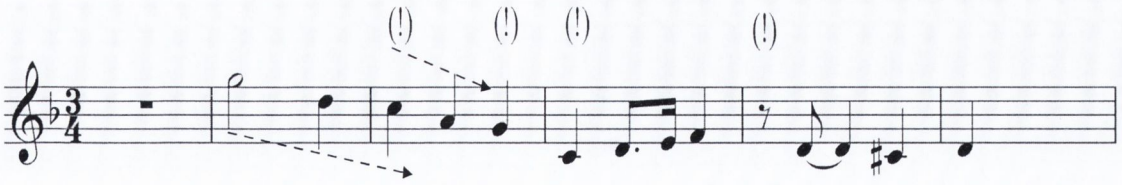
[66] *Ibid.*, 130.



Example 3.5: Denials in expectation in the opening of 'Hommage à S. Pickwick Esq. P.P.M.P.C. The denials are signified by (!).

3.4.2 Narmour's Implication-Realization Model

Narmour's 'implication-realization model,' which prefers Meyer's later use of the term 'implication' over 'expectation' as a means of 'sidestepping the subjectivism' of the earlier theory,[67] reduces Meyer's theory of expectation to the basic hypothesis of A + A = B, and A + B = C.[68] Similarity implies a continuation of similarity, and differentiation leads to further differentiation. In terms of intervals he writes that 'small intervals (unison, m2, M2, m3, P4) imply continuation and that large intervals (P5, m6, M6, m7, M7,m9 etc.) imply reversal.'[69] Narmour distills Meyers concepts into three basic ideas, Process (signified by P), Duplication (D) and Reversal (R). Intervallic Duplication (ID) may occur, as well as intervallic and registral process (IP and VP, respectively), and registral or near registral return (aba and aba', respectively) Narmour's work allows the analyst to view moment-by-moment implications on the immediate level. Most implications take place within a short timespan (often three notes), allowing for a discussion of the implicative nature of music on the most cellular level.

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[67] *Ibid.*, 183. This step away from the psychological has been questioned by some, who prefer the inherently psychological aspects of the previous terminology. (See Lerdahl, *Tonal Pitch Space*, 170.) I would argue that both implication and expectation focus on similar enough aspects for them to be used somewhat interchangeably, one being the more objective variant. Therefore, while I will prefer 'implication' over 'expectation' I will continue to use both terms.

[68] This is discussed throughout *The Analysis and Cognition of Basic Melodic Structures,* and is summarized *The Analysis and Cognition of Melodic Complexity,* 1–4. Meyer's later work preferred to use the term 'implications' over 'expectations', and Narmour continues with this logic. As Margulis notes, the change in terminology was 'an attempt to bypass the mess cognitive interface between sound and prediction, in favor of directly connecting score to response via objectively specifiable norms.' Margulis, 'Surprise and Listening Ahead: Analytical Engagements with Musical Tendencies' in *Music Theory Spectrum* 29 (2007), 197–217 (198).

[69] Narmour, *The Analysis of Melodic Complexity,* 16.

Narmour's work differentiates between a 'bottom-up' system of processing, (which assumes that certain principles of music are universal and innate), and a 'top-down' approach (which is learned and culturally specific).[70] Narmour thinks that both approaches work simultaneously with one another, stating:

> That we hear the start of a major scale *as* a major scale evinces top-down processing since, from an ascending initial C-D-E, we envision both a continuation and a conclusion contexted in a highly specified durational, metric, intervallic, registral, and scale-step complex of hierarchically related events. However, were such a C-D-E suddenly to veer off into, say, a quarter-tone system at a tempo three times as fast and in 5/16 meter, we would accurately perceive those changes, since, simultaneously, our bottom-up processing always attends individually to the elements constituting separate parameters.[71]

Schellenberg further clarified Narmour's theory by noting that many of its principles – namely intervallic difference, proximity, and closure – are redundant. Similar results could be obtained from a simpler study of the implicative property of melodic events, which would be largely constrained to two-note instances. This two-note paradigm was also utilized by Cuddy and Lunney in their study of the implicative nature of certain melodies.[72] Cuddy and Lunney tested Narmour's model by asking listeners (both trained and untrained) to rate various continuations. The study showed that there was no difference between the trained and untrained listeners, and that Narmour's concepts of

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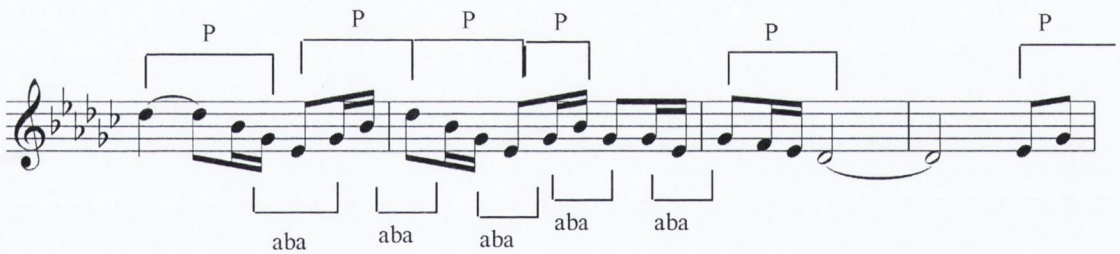
[70] Similarly, Meyer made the distinction of 'embodied' meaning as opposed to 'designative' meaning. Nattiez uses the terms 'intrinsic' and extrinsic referring,' while Jacobson prefers 'introversive' and 'extroversive semiosis.' It is not entirely different from the dichotomy of veridical and schematic expectations discussed in Chapter 1. Patel, who prefers the terms 'intramusical' and 'extramusical' discusses the various terms in *Music, Language, and the Brain,* (Oxford, UK: Oxford University Press, 2008), 306. Leonard B. Meyer, *Emotion and Meaning in Music* (Chicago: University of Chicago Press, 1956), Jean Jacques Nattiez, *Music and Discourse: Toward a Semiology of Music,* Carolyn Abbate, (trans.) (Princeton, NJ: Princeton University Press, 1990), Roman Jacobson, *Selected Writings* (vol. 3) (The Hague: Mouton), 704–705.

[71] Eugene Narmour, *The Analysis and Cognition of Melodic Complexity: The Implication-Realization Model*, (Chicago: University of Chicago Press, 1992), 11.

[72] Lola L. Cuddy and C.A. Lunney, 'Expectancies generated by melodic intervals: Perceptual judgments of melodic continuity' in *Perception and Psychophysics,* 57 (1995), 451–462 (*Passim*). Glenn Schellenberg, Sandra Trehub and S. Kamenetsky, 'Infants' and Adults' Perception of Scale Structure,' *Journal of Experimental Psychology: Human Perception and Performance* 25 (1999), 965–75, (*Passim*).

proximity, registral return, and intervallic differentiation were essentially shown to be true.

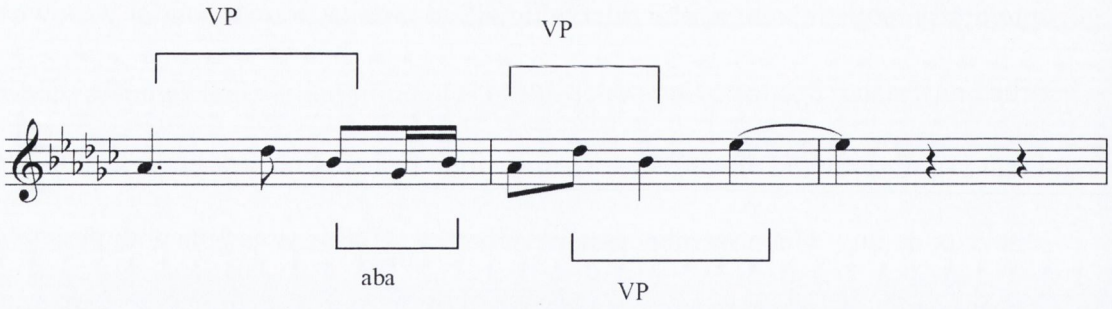
To illustrate Narmour's concepts, it might be beneficial to return to 'La fille aux cheveux de lin,' which was discussed in Chapter 1. Debussy begins with monophonic triadic motion in the right hand. As this is motion in the same direction, with intervals of less than a perfect fourth and with little intervallic differentiation, it is safe to consider this a process, defined as a continuation of similar events (such as a descending scale or, in this instance triadic descent). This is then followed by an exact registral return, which is signified by 'aba.' Note how the melody begins with an exchange of process and registral returns. On this very local level, Debussy is setting up expectations. In m.3, when the pitch classes that have been set up to be a registral return are instead a process, the implication in the melody is denied. Debussy creates a cadence in this section, thereby providing a sense of closure in one parameter, yet continued implication in the next.[73]



Example 3.6 Implicative tendencies in mm.1–4 of 'La fille aux cheveaux de lin'

Debussy abandons this pattern in the next phrase, beginning with what Narmour refers to as 'registral process,' which is given the symbol of 'VP.' This then leads into an exchange between registral return and intervallic process, which are very similar in nature. The final measures of the phrase are similar to the first few measures, with interlaced gestures of process and registral return.

[73] Narmour refers to this as 'parametric noncongruence.' In *Beyond Schenkerism,* Narmour writes that, 'parametric processes create networks of relationships often noncongruent with one antother.' *Beyond Schenkerism,* 146–147.



Example 3.7: Implicative tendencies in mm.5–7 of 'La fille aux cheveaux de lin'

Narmour defines registral process as a process in the same direction 'whose intervallic motion crosses the boundary' of his stated concept of similarity.[74] They often lead to reversal, as large intervallic leaps have a tendency to. Distinguishing between an 'intervallic process' and a 'near registral return' can be somewhat more trying. An intervallic process 'realizes intervallic implication but denies registral implication.'[75] In the example from m.5 of 'La fille aux cheveux de lin' the interval nearly returns, but is in the middle of a continuation, and can therefore not be considered a return as a near registral return (or aba') would. Narmour's method enables the analyst to parse the various levels of musical implications at the most immediate musical level.Unfortunately, the system is often weighed down by its own taxonomical constructions. By taking into account Narmour's earlier work, *Beyond Schenkerism*, the analyst is able to incorporate the thorough nature of the later works, with the graphical representation and allotment for alternative expectations.

Narmour notes that, 'the structure of a work is a result of its implications, its realizations *and* its nonrealizations,' and continues to write:

> [b]ehind the actualized events of every work, there exists a "structure" of *unrealized* implications which contribute to the "depth" of the piece and to the richness of our experience with it.[76]

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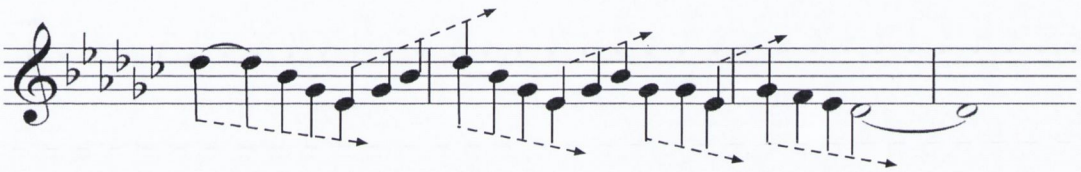
[74] *Ibid.*, 24.

[75] *Ibid.*, 370

[76] Eugene Narmour, *Beyond Schenkerism: The Need for Alternatives in Music Analysis*, (Chicago: University of Chicago Press, 1977), 184.

To demonstrate the unrealized implications, Narmour incorporates 'shadowgraphs' that show the nature of the melody and its possible alternatives. The previous example of 'La fille aux chevaux de lin' contains a number of such instances. In the opening measure, the triadic movement could imply either similarity in structure, or interval, as well as the possibility of a reversal. If it were to imply a continuation of structure, the final E♭ would instead be a D♭, completing the triadic descent a full octave. The fact that this triadic completion doesn't occur, creates the first ambiguity of the piece. The instance in the third measure (discussed earlier) could be viewed as having a number of alternatives as well, including a triadic descent down to C♭, or the prepared return to G♭.

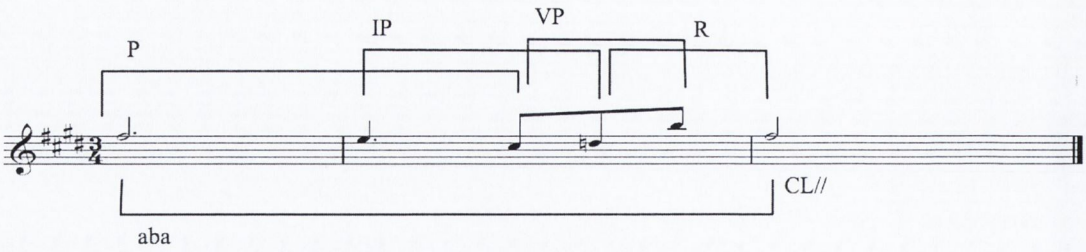


Example 3.8: Alternative Potential realizations in mm.1–4 of 'La fille aux cheveaux de lin'

3.4.3 Implicative Motives in 'Feuilles mortes'

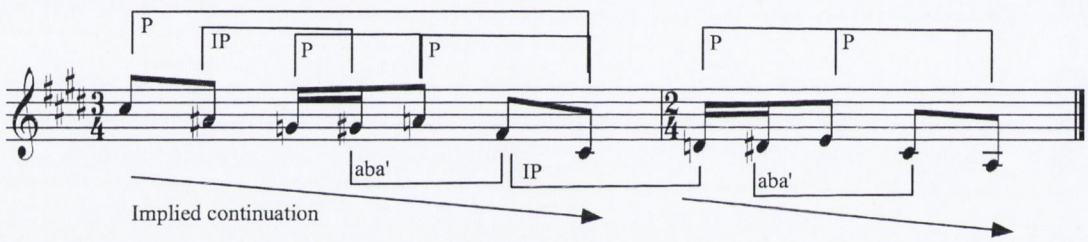
To analyze the interplay of motivic continuation and closure, I have chosen to analyze the eight primary motivic elements of 'Feuilles mortes.'[77] The opening of the piece contains a motivic return, illustrating closure (represented by CL//) in the first two measures. The opening process is linked with an intervallic process from the D♯→C♯→D. This is then linked to a registral process from C♯→D→B, followed by a reversal from D→B returning to F. This closure is undermined, however, by the harmonic parameter.

[77] Parks lists ten themes in the piece, but I have left two out. His 'Theme C' is entirely duplicative, and his Gy is a transposition of his Gx. Parks, *The Music of Claude Debussy*, 79.



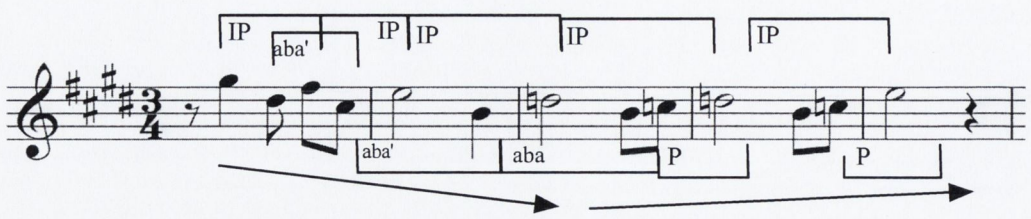
Example 3.9 Implicative tendencies in mm.1–3 of 'Feuilles mortes'

The second theme consists of multiple 'nested' processes that connect to form a larger level of continuation. Although the G→G♯→A is transposed to D→D♯→E, creating a static motive (which later turns into an ostinato), Debussy places this within a larger collection of processes, implying continuation.

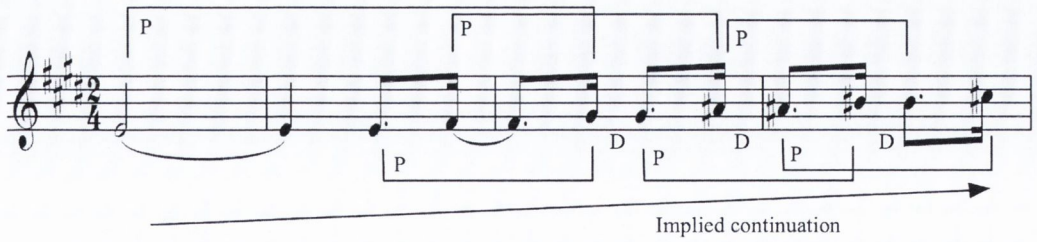


Example 3.10 Implicative tendencies in mm.4–5 of 'Feuilles mortes'

Debussy discards the notion of melodic process (continuation) in exchange for intervallic process (a change in intervallic size but in the same direction) and registral (or near-registral) return (interestingly, it highlights the octatonic collection utilized in this section). This creates less implication at the start of the phrase, which is counterbalanced by the sequential process at the end of the phrase.

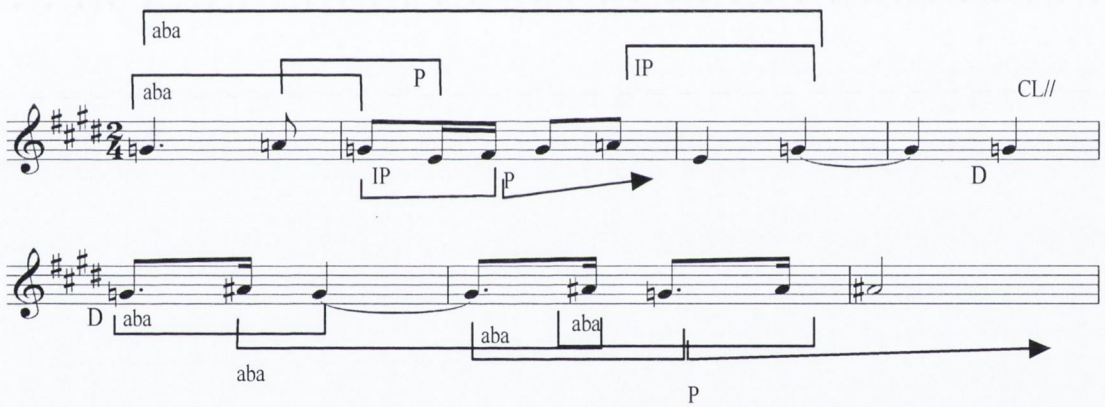


Example 3.11 Implicative tendencies in mm.9–12 of 'Feuilles mortes'



Example 3.12 Implicative tendencies in mm.22–25 of 'Feuilles mortes'

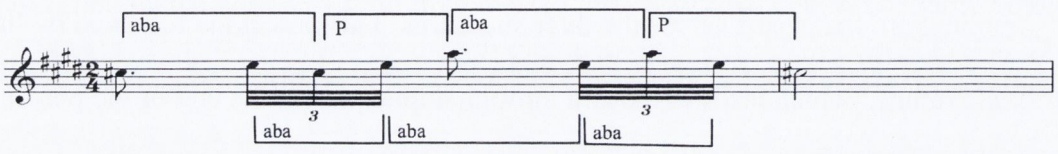
This is followed by a series of processive elements, leading to a 'large scale implication' that spans across the three measures. This process is followed by 'large-scale return,' which leads to closure through duplication at the end of the phrase. At this point, the closure leads to implication with the end of the phrase consisting of a process of G→A→A♯.



Example 3.13: Implicative Tendencies in mm.26–32 of 'Feuilles mortes'

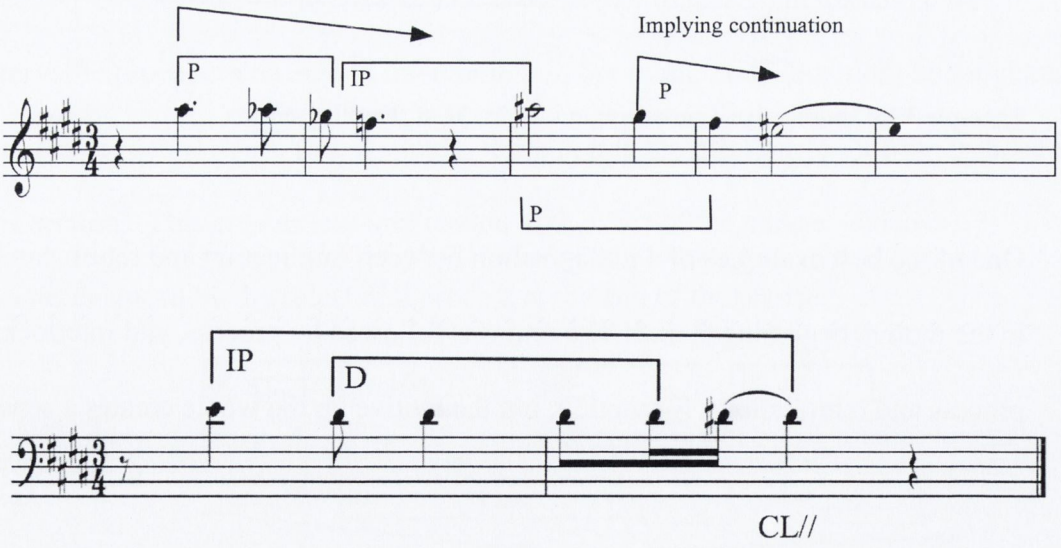
One of the best examples of a juxtaposition between implication and return can be seen in the motive beginning at m.31.The return is followed by process, and interlocking of process and return allows for motion, but the motive on the whole creates a sense of

return.



Example 3.14 Implicative Tendencies in mm.32–33 of 'Feuilles mortes'

The continuation that begins at m.48 continues; a process becomes an intervallic process, which leads to more implication. The final closure is achieved as this process (through intervallic process) leads to duplication, which in turn leads to a sense of closure.



Example 3.15 Implicative Tendencies in mm.49–53 of 'Feuilles mortes'

The implicative model discussed here will provide the foundation for the melodic analyses in Chapter 6. To discuss the perception of melody as solely the result of its implicative tendencies, however, would be one-sided. In order to provide a more thorough interpretation of melodic perception, we must discuss both melodic implication and gravitation, which has been used as a means of analyzing both attraction and tension.

3.5 Melodic Attraction

Debussy's preference for the immediate sonority of melody makes his music somewhat unbefitting to an analysis of the long-term implications of melodic structures.[78] If one is to view the nature of tension and repose in his melodic writing, it might first be beneficial to look at the nature of melodic hierarchy that might be present within such immediate contexts. Melodies have tendencies within a set hierarchical construct, as has been shown by a number of psychological tests (discussed later in this chapter). Bharucha discusses the role of melodic gravity and posits an 'anchoring principle' which creates the binary opposition of 'unstable tone' and 'anchor.'[79] Such a dichotomy is quite traditional (being the basic foundations of consonance and dissonance), but while theory texts are often concerned with how the dissonance is both approached *and* resolved, Bharucha states that 'what comes *after* the dissonance is, however, more important than what comes before, from the cognitive point of view.'[80]

The tests demonstrated the listener's preference for motion, as Bharucha notes that the 'unstable tone is perceived as having a dynamic character, setting up a vector

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[78] For a discussion of Debussy and temporalist philosophy, namely Bergson's idea of the immediate, see Chapter 1.

[79] Jamshed J. Bharucha, 'Anchoring effects in music: the resolution of dissonance' in *Cognitive Psychology* vol.16 (1984), 485–518.

[80] *Ibid.*, 487.

pointing in the direction (ascending or descending) of the expected anchoring.'[81] The test affirmed the concept of a will toward anchored tones, as well as the fact that listeners tend to hear tones hierarchically.[82] Listeners were more confused when stable tones were replaced with unstable ones, and that gravitational pull toward a stable tone was more ambiguous. To put it another way, a listener would consider $\hat{7}$ to be closer to the tonic if it leads to it than away from it ($\hat{7}\rightarrow\hat{8}$ rather than $\hat{8}\rightarrow\hat{7}$).

One of the most significant studies regarding the stability of tones within a key was the experiment conducted by Krumhansl and Kessler.[83] In it, the listeners were subjected to a short harmonic sequence, which was then followed by a brief pause and a tone from the chromatic scale (referred to as a 'probe tone'). The listeners were then asked to give the tone a grade between one and seven (the higher the number, the better the fit). The results (which can be seen in the Example 3.16) are what music theory would suggest: the octave is followed by a perfect fifth, followed by the third and extending to the diatonic scale. These tests allow psychologists (and later, music theorists) to quantify the relative stability of the tones in the chromatic scale.

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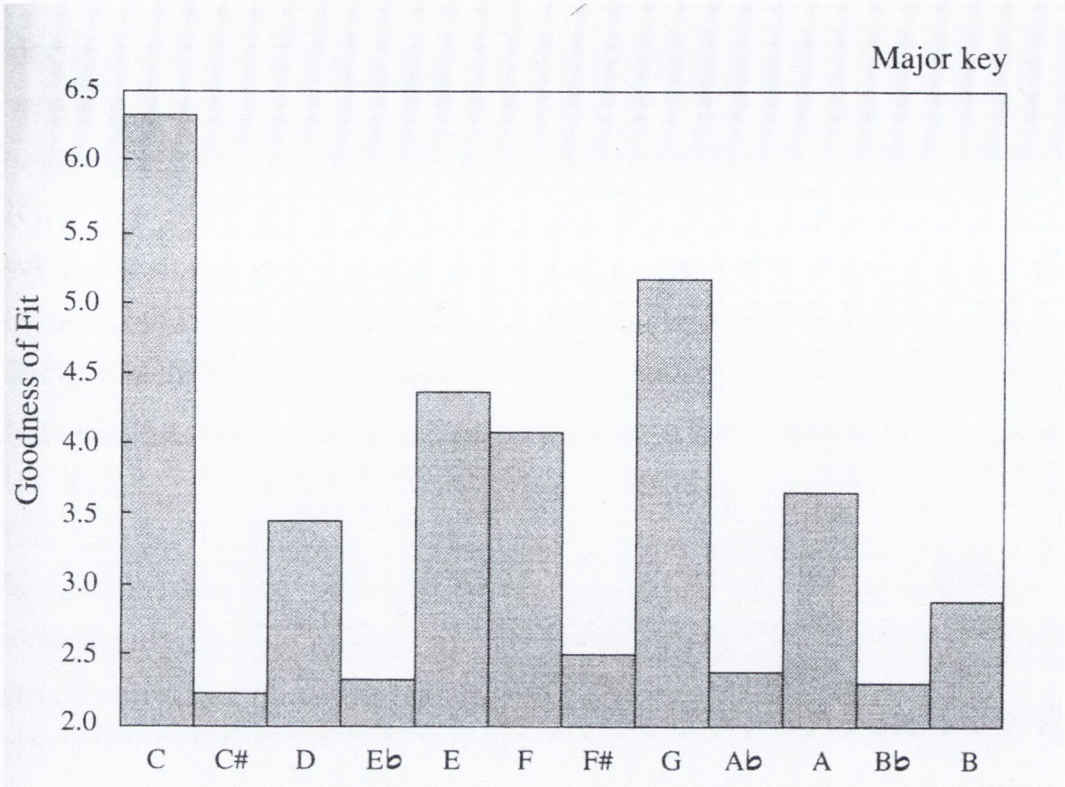
[81] *Ibid.*, 487.

[82] Jamshed Bharucha, 'Event Hierarchies, tonal hierarchies, and assimilation: a reply to Deutsch and Dowling' in *Journal of Experimental Psychology: General* 113 (1984), 421–425; Carol L. Krumhansl 'The psychological representation of musical pitch in a tonal context' in *Cognitive Psychology* 11 (1979),346–374; and Carol L. Krumhansl and R.N. Shephard, 'Quantification of the hierarchy of tonal functions within a diatonic context' in *Journal of Experimental Psychology: Human Perception and Performance,* 5 (1979), 579–594.

[83] Carol L. Krumhansl and Edward J. Kessler, 'Tracing the Dynamic Changes in Perceived Tonal Organization in a Spatial Representation of Musical Keys,' in *Psychological Review* 89 (1982), 334–368.



Example 3.16 Reproduction of Krumhansl and Kessler's Key Profiles[84]

These psychological studies confirm what theorists have suggested for centuries. Rameau viewed pitches as having a gravitational pull toward the tonic and Schenker used the Schopenhauer-like phrase of a 'will of tones' to describe the natural progression of a melody.[85] The hierarchical nature of the tonic (if only temporary), along with Bharucha's anchoring principles, allows for melody to be viewed not as solely linear implications, but as a confluence of stability and progressive expectation. Lerdahl uses both Bharucha's anchoring tests and Krumhansl and Kessler's key profiles as foundations for his concept of 'tonal pitch space.' He notes that

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[84] Krumhansl and Kessler, 'Tracing the Dynamic Changes' graph taken from Huron, *Sweet Anticipation,* 151.

[85] Discussed in Thomas Street Christensen, *Rameau and Musical Thought in the Enlightenment*, Cambridge Studies in Music Theory and Analysis, vol. 4 (Cambridge and New York: Cambridge University Press, 1993). Schenker 1921–1924 The history of tonal attraction theories is discussed in depth in Lerdahl, *Tonal Pitch Space.* 166–167.

> the basis of anchoring...is the psychological need for an unstable pitch to be assimilated to an immediately subsequent proximate and stable pitch, which is its cognitive reference point.[86]

While these key profiles allow for a hierarchy to be established, Lerdahl allows for a certain degree of modularity by using the chord as the basis for musical context, rather than the overarching key. Margulis notes that this is an important distinction, stating that:

> Were the space configured merely to key, a melodic F♯ in C major, even over a V/V, would possess the highest possible tension value. In Lerdahl's version. during a V/V in C major the pitch space gets reconfigured in a way that assigns F♯ a lower tension value. Consider a case in which the harmony changed to V/V not before, but at the same time the F♯ appeared in the melody. When the previous note sounded, the listener was presumably unaware of the future harmonic turn. She would have formulated her predictions about the next melodic pitch based on a pitch space oriented to the previous harmony, within which F♯ might have been unstable indeed.[87]

More relevant to the present study, Lerdahl's focus on the immediate allows for a hierarchical analysis of melody which takes into account the relationships of tonal attraction (which Debussy exploits to create ambiguity) without restricting itself to a unified home key. As illustrated in Example 3.17, Lerdahl posits that, while the octave is the most stable relationship, it is followed by triadic and diatonic relationships before eventually reaching the full chromatic scale. This is extended to the law of melodic attraction, which quantifies such gravitational pull, stating that:

> $\alpha(p_1 \rightarrow p_2) = s_2/s_1 \times 1/n^2$, where p_1 and p_2 are pitches, with $p_1 - p_2$; $\alpha(p_1 \rightarrow p_2)$ = the attraction of p_1 to p_2; s_1 = the anchoring strength of p_1 and s_2 = the anchoring strength of p_2 in the current configuration of

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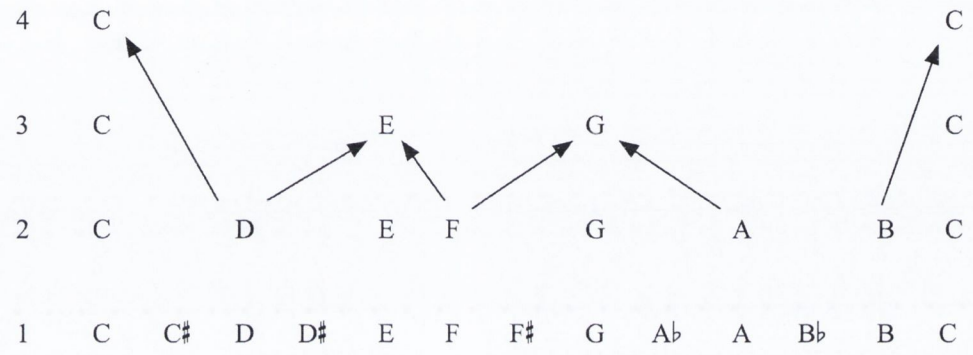
[86] Fred Lerdahl, *Tonal Pitch Space* (Oxford, UK: Oxford University Press, 2001), 161. Lerdahl is alluding to Rosch's study of cognitive reference points, which posited that horizontal, vertical and 45° angled lines act as reference points when a viewer is looking at a painting. Similarly, focal colors serve as reference points, while mixed colors are seen as unstable. Eleanor Rosch, 'Cognitive reference points' in *Journal of Experimental Psychology: General,* Vol. 104, (1975), 192–233.

[87] Elizabeth Hellmuth Margulis, 'Melodic Expectation: A Discussion and Model' (PhD, Columbia University, 2003), 58

the basic space; and n = the number of semitone interval between p_1 and p_2. (The stipulation $p_1 - p_2$ avoids denominator of 0.)[88]

Put more clearly, the attraction level of a pitch can be measured by calculating the level of the second pitch (the value on the left), placed over the value of the first pitch. This is then multiplied by distance (in semitones), which is squared.[89]



Example 3.17: Neighboring Attractions in I/C context[90]

The anchoring strength is used as the basis of Lerdahl's quantification of melodic attraction. While the strength changes because of tonal relationships, he notes that in the context of 'tonic' it 'yields plausible results.'[91] The rule accurately predicts the logical melodic motion of a number of unstable tones (for example, $\hat{7}\rightarrow\hat{8}$ is rated quite highly, as are $\hat{2}\rightarrow\hat{1}$ and $\hat{4}\rightarrow\hat{3}$). By generating such an analysis from an example from Debussy's work one is able to see how the composer treats stability in his melodic writing. It allows for a system that creates a hierarchical, yet modular approach to melody.

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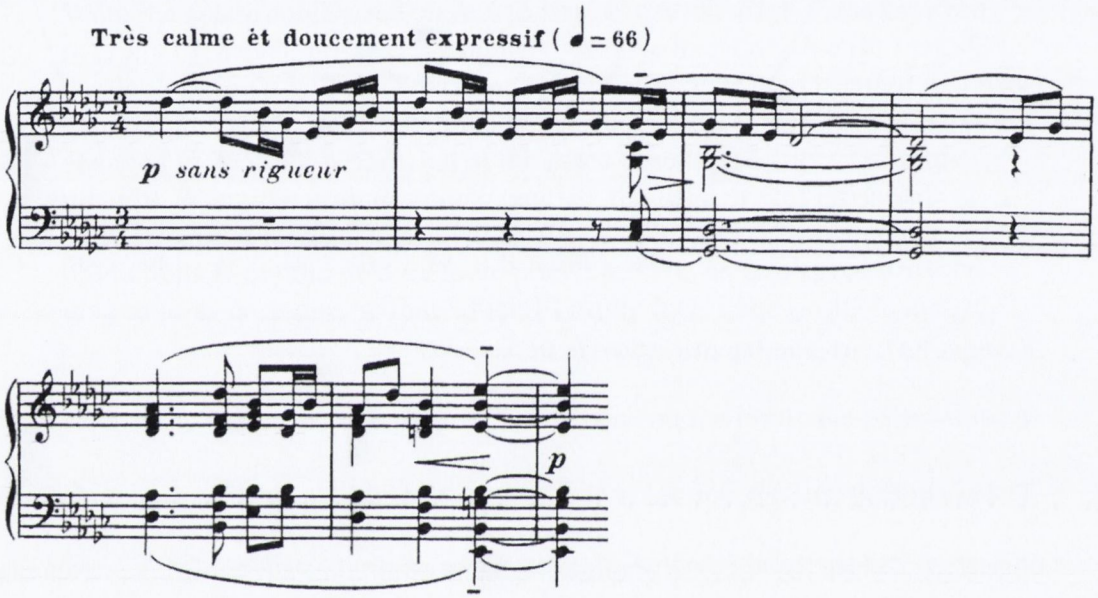
[88] Lerdahl, *Tonal Pitch Space*, 163.

[89] Lerdahl writes that 'In the spirit of Newton's inverse-square law (gravitational attraction between two masses is inversely proportional to the square of the distance between them), intuitions of anchoring appear to be modeled more accurately if the distance between the two pitches is squared. *Ibid.* 163.

[90] *Ibid.*, 162.

[91] *Ibid.*, 163

The analysis below (displayed in Example 3.21 and 3.22) uses Lerdahl's theory of melodic attraction to quantify the perceived melodic stability in the opening of 'La fille aux cheveaux de lin.' The phrase could possibly be heard as being in either the G♭ tonal context (as the first three notes are the tonic triad and there is cadence onto the tonic in m.3), or in the vi/G♭ (E♭ minor) context (the gravitational 'pull' of the opening outlines the vi^7 chord, and it cadences on E♭ major at the end of m.6).



Example 3.18: mm.1–6 of 'Les filles aux cheveaux de Lin'

An argument could be made that the V chord should create the context in m.5, due to the fact that it is accented on the downbeat. The frequent return to I, however, without the allowance of any transitions without the tonic involved, allows for the possibility that the melody in mm.5–6 can also be calculated in the I/G♭ context. As both the D♭ and B♭ are in the third level, and there are three semitones between them, the attraction of D♭ to B♭ can be calculated from 3/3 x 1/3^2 or 1/12 (.083). Example 3.21 illustrates the calculations of the opening six measures of the piece.

4	G♭												G♭
3	G♭				B♭			D♭					G♭
2	G♭		A♭		B♭	C♭		D♭		E♭	E	F	G♭
1	G♭	G	A♭	A	B♭	C♭	C	D♭	D	E♭	E	F	G♭

Example 3.19: Hierarchy in I/G♭ Context

4										E♭			
3	G♭				B♭					E♭			
2	G♭		A♭		B♭	C♭		D♭		E♭	E	F	G♭
1	G♭	G	A♭	A	B♭	C♭	C	D♭	D	E♭	E	F	G♭

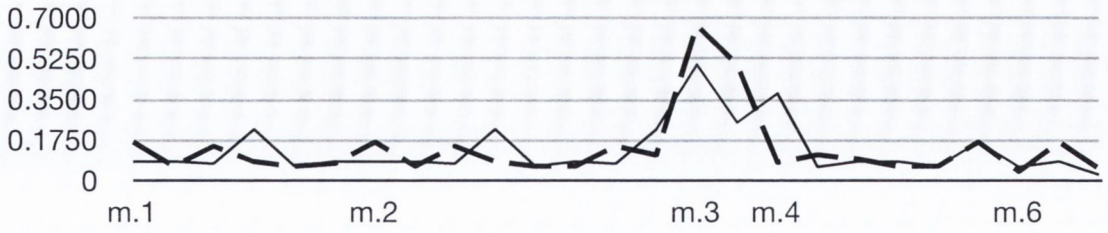
Example 3.20: Hierarchy in vi/G♭ Context (the same as E♭ natural minor)

Measure	Transition	Calculation	G♭ Context Attraction	E♭ Context Attraction
m.1	D♭→B♭	$3/3 \times 1/3^2$	1/12 (.083)	1/6 (.167)
	B♭→G♭	$4/3 \times 1/4^2$	1/12 (.083)	1/16 (.0625)
	G♭→E♭	$2/4 \times 1/3^2$	2/27 (.074)	4/27 (.148)
	E♭→G♭	$4/2 \times 1/3^2$	2/9 (.222)	1/12 (.083)
	G♭→B♭	$3/4 \times 1/4^2$	1/16 (.0625)	1/16 (.0625)
	B♭→D♭	$3/3 \times 1/3^2$	1/12 (.083)	2/27 (.074)
m.2	D♭→B♭	$3/3 \times 1/3^2$	1/12 (.083)	1/6 (.167)
	B♭→G♭	$4/3 \times 1/4^2$	1/12 (.083)	1/16 (.0625)
	G♭→E♭	$2/4 \times 1/3^2$	2/27 (.074)	4/27 (.148)

Measure	Transition	Calculation	G♭ Context Attraction	E♭ Context Attraction
	E♭→G♭	4/2 x 1/3²	2/9 (.222)	1/12 (.083)
	G♭→B♭	3/4 x 1/4²	1/16 (.0625)	1/16 (.0625)
	B♭→G♭	4/3 x 1/4²	1/12 (.083)	1/16 (.0625)
	G♭→E♭	2/4 x 1/3²	2/27 (.074)	4/27 (.148)
	E♭→G♭	4/2 x 1/3²	2/9 (.222)	1/9 (.111)
m.3	G♭→F	2/4 x 1/1²	1/2 (.5)	2/3 (.667)
	F→E♭	2/2 x 1/2²	1/4 (.25)	1/2 (.5)
m.4	E♭→D♭	3/2 x 1/2²	3/8 (.375)	2/25 (.08)
m.5	A♭→D♭	3/2 x 1/5²	3/50 (.06)	1/9 (.111)
	D♭→B♭	3/3x1/3²	1/12 (.083)	3/32 (.094)
	B♭→G♭	4/3 x 1/4²	1/12 (.083)	1/16 (.0625)
	G♭→B♭	3/4 x 1/4²	1/16 (.0625)	1/16 (.0625)
	B♭→A♭	2/3 x 1/2²	1/6 (.167)	1/6 (.167)
m.6	A♭→D♭	3/2 x 1/5²	3/50 (.06)	1/25 (.04)
	D♭→B♭	3/2 x 1/3²	1/12 (.083)	1/6 (.167)
	B♭→E♭	4/3 x 1/5²	2/75 (.027)	4/75 (.053)

Example 3.21: Melodic Attraction Ratings for mm.1–6 of 'La fille aux cheveaux de lin'

The abnormally low attraction rates at the completion of m.6 are due to the tonicization of E♭ at this point. If the context is altered here to be a tonicization of the vi chord, the final two transitions go from 1/12 (.083) and 2/75 (.027) to 1/6 (.167) and 4/75 (.053). Example 3.22 illustrates the attraction levels throughout this melody, and the dotted line represents the attractions in the E♭ context.



Example 3.22 Attraction Levels in mm.1–6 of 'La fille aux cheveaux de lin.' The solid line represents the attraction levels in a G♭ context, while the E♭ context is signified by the dotted line.

As can be seen in Example 3.22, both analyses illustrate a similar arch, with the transition having the most attraction rating being the G♭→F in the second measure, the first break away from triadic movement. The attraction levels in the vi/G♭ context, however, illustrate the gravitational pull toward E♭ in m.1 with greater accuracy. Whereas the G♭ analysis shows the transition with the most attraction in this measure to be the E♭ to G♭, the second analysis illustrates the peak as the seventh chord resolves on E♭. Similarly, it realizes the peak at the beginning of m.2 as the motive begins again. In this second measure, the G♭→E♭ transition is obviously given more weight in the vi/G♭ context, while the opposite is true in the I/G♭ context. An understandable discrepancy occurs in m.4, as the E♭→D♭ is given a higher rating than in the vi/G♭ context. Obviously a $\hat{6}\rightarrow\hat{5}$ would be a greater attraction then a $\hat{1}\rightarrow\hat{7}$ (as the former indicates a resolution to a strong tone, while the latter presents an instance in which the tonic moves toward the leading-tone), but it is interesting to note that the context has shifted to the tonic context. This rather ambiguous phrase is typical of Debussy's melodic writing. Overly implicative transitions (such as $\hat{7}\rightarrow\hat{8}$ and $\hat{4}\rightarrow\hat{3}$) are avoided to created this tonal ambiguity.[92]

[92] The melody is repeated in a new context in m.8, this time with a G♭ with a lowered 7th (not functioning as a dominant 7th, but rather a coloristic form of the tonic). As it is lacks a differing harmonic function from the previous I/G♭ analysis, it would provide similar attraction principles to the previous analysis.

The opening measures of 'Canope' demonstrate similar ambiguities, and illustrate the strength of using Lerdahl's melodic anchoring analysis in the modal context in which Debussy's melodies often occur.[93] The descending perfect fourth with which the piece begins is seen as a rather weak attraction, while the E→D in m.2 is obviously quite strong (in D-Dorian). Similar attractions are found in the E♭→D transition, which remains relatively constant despite the modal interchange in m.4 (the invocation of E♭, A♭, and B♭ doesn't phase the attraction levels much, as the progression is still toward the return of the D in m.5. The A→G is given a relatively high attraction level, despite it being the relatively uncommon $\hat{5}\rightarrow\hat{4}$ transition. The stepwise motion, however, compensates for this.

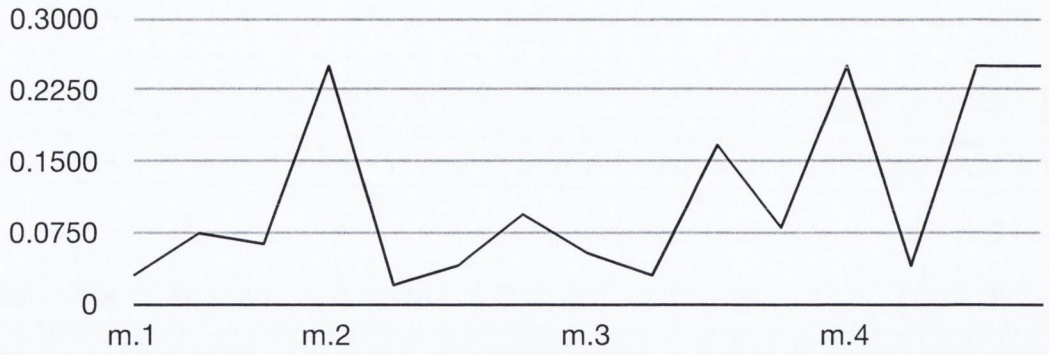
[93] A complete analysis of this piece is featured in Chapter 6.

4	D												D
3	D			F				A					D
2	D		E	F		G		A		B	C		D
1	D	E♭	E	F	G♭	G	A♭	A	B♭	B	C	D♭	D

Example 3.23 Attraction Levels in i/D Dorian.

Measure	Transition	Calculation	Attraction Ratings
m.1	D→A	3/4 x $1/5^2$	3/100 (0.03)
	A→C	2/3 x $1/3^2$	2/27 (0.074)
	C→E	2/2 x $1/3^2$	(1/16) 0.063
m.2	E→D	4/2 x $1/2^2$	(1/4) 0.25
	D→G	2/4 x $1/5^2$	(1/50)0.02
	G→C	2/2 x $1/5^2$	(1/25) 0.04
	C→A	3/2 x $1/4^2$	(3/32) 0.094
m.3	A→D	4/3 x $1/5^2$	(4/75) 0.053
	D→A	3/4 x $1/5^2$	(3/100) 0.03
	A→G	2/3 x $1/2^2$	(3/8) 0.167
	G→D	4/2 x $1/5^2$	(2/25) 0.08
m.4	D→E♭	1/4 x $1/1^2$	(1/4) 0.25
	E♭→A♭	1/1 x $1/5^2$	(1/25)0.04
	A♭→B♭	1/1 x $1/2^2$	(1/4) 0.25
	B♭→D	4/1 x $1/4^2$	(1/4) 0.25

Example 3.24: Melodic Attraction in mm.1–4 of 'Canope'



Example 3.25: Attraction levels in mm.1–4 of 'Canope'

Viewing the opening melody of 'Canope' melody as a linear series of attractions allows the analyst to view highly implicative points. In doing so, the motion of the rather ambiguous opening melody is made more obvious. Similarly, one can calculate melodic tension through the attraction equations, as the two (on the local level) are inversely related. If one quantifies the attraction and tension levels, the points of highest implication within the melodic parameter are more easily understood.

3.5.1 Melodic Tension

If one expands upon Dewey's aforementioned 'conflict theory of emotions' it might follow that the inverse of musical attraction is tension. Should two instances have a high attraction to one another, an expectation has been fulfilled. Conversely, if a second instance was not the result of a high level of attraction, more tension might be created. A high attraction rating illustrates an increased tendency of the musical element to proceed to the next. If there is a low attraction rating between the events it creates more tension. A number of theorists, such as Joseph Swain, have considered tension to be the primary factor for musical meaning.[94] Similarly, Meyer notes that:

> music is a dynamic process. Understanding and enjoyment depend upon the perception of and response to attributes such as tension and repose, instability and stability, and ambiguity and clarity.[95]

Zuckerkandl discusses tension at an extremely local level, describing it as 'arising from the balance between stable and unstable tones,'[96] a concept which is central to Lerdahl's theory of tonal tension. Musical tension can also be seen as arising from a number of parametric influences. Hindemith constructed his theory of harmonic fluctuation as an extension of 'harmonic gravity.'[97] Such fluctuations arose out of either a change in gravity or a directional shift. His fluctuation graphs illustrated the levels of tension in a harmonic progression. A progression with non-harmonic tones generated high levels of tension, as did shifts in key and tonality. It not only assisted with shifts in tonality, but allowed Hindemith to explain varying levels of tension despite functions which are

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[94] See Joseph Peter Swain, *Musical Languages*, (New York: W.W. Norton, 1997). *Passim.*

[95] Leonard B. Meyer, *Music, the Arts, and Ideas: Patterns and Predictions in Twentieth-Century Culture* (Chicago: University of Chicago, 1967), 43.

[96] Victor Zuckerkandl, *Man the Musician,* (Princeton, NJ: Princeton University Press, 1973), 99.

[97] Paul Hindemith, *The Craft of Musical Composition*, 4th edn, Arthur Mendel and Otto Ortman (ed.), (New York ; London: Schott, 1968), 115.

seemingly static.[98] In 1968, he wrote that, 'only in the harmonic fluctuation have we an explanation for the varying harmonic tension of different chords on the same root.'[99]

Hindemith's equation of tension with gravity, however, was by no means unique. More recently, Snyder has noted that, 'generally, the "higher" the levels of particular musical parameters are in relation to other points in a piece, the "more tension" they are said to have.' This tension is then said to be resolved by a 'lowering' of these parametric values.[100] Ernst Kurth considered the transformation of tension to be the underlying basis of music, and considered the purpose of music analysis to be to 'observe the transformation of certain tension processes into sounds.'[101] Kurth believed that tension created by chromaticism was more effective than melodic alterations, and that 'this is so precisely because of its tension, which presses onward in a certain direction as it emanates from individual tones [and spreads out] over the entire chord (as 'potential energy').'[102] More applicable to the present study, he believed that the absence of such tensions led to an 'impressionistic effect'[103] in Wagner, and he explores the nature of tension in 'impressionist' composers. He did differentiate between 'tension chords' and 'absolute chords,' which were in direct opposition with one another.[104]

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[98] *Ibid.*, 115.

[99] *Ibid.*, 120.

[100] Snyder, *Music and Memory*, 112.

[101] From Rothfarb, 'Energetics,' 942.

[102] Ernst Kurth, *Selected Writings* Lee Rothfarb (ed.), (Cambridge, UK: Cambridge University Press, 1991), 106.

[103] *Ibid.*, 105

[104] In fact, the idea of contrast, direct opposition, and tension being the catalyst of a musical composition is at the heart of the philosophy of energetics in music, which emphasized the role of force and movement, as well as musical logic, and an emphasis on form. For more on energetics, see Rothfarb, Cambridge History

Meyer notes that there are actually two distinct types of tension. The first, would be 'the result of the empathetic physiomotor behavior that listeners experience,'[105] which arises as a result of tension in the 'secondary parameters.'[106] The secondary parameters are those such as tempo, dynamics, contour, which do not necessarily relate to the harmonic, melodic or rhythmic structure of the composition. Similarly, Krumhansl noted that the fluctuations in tempo were primarily a result of changes in these secondary (rather than primary) parameters..[107] Meyer hypothesizes that such features relate to more innate parts of the mind, while primary parameters appeal to 'mental tension.'[108] This difference between types of parameters is important, in that Meyer's statement implies that one can be universal (and therefore innate) while the other is learned. This would explain why Krumhansl's studies found such parameters to be the greatest instigators of tension, and similarly found no difference between trained and untrained musicians.[109] The present study found similar results, and most changes were the result of such registral, dynamic, or contour driven shifts.

Margulis discusses the nature of musical tension as arising from three separate types of occurrences.[110] She first states that tension can be a result of expectation. She notes that, 'highly predictable events (those with high expectancy ratings) generate little tension, but extremely unpredictable events (those with low expectancy ratings)

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[105] Meyer, 'Commentary' in 1996 Music Perception, 473

[106] *Ibid., 472*

[107] Carol Krumhansl, 'A perceptual analysis of Mozart's piano sonata K. 282: Segmentation, tension, and musical ideas' in *Music Perception* vol. 13 (1996), 401–432.

[108] Meyer, 'Commentary' in *Music Perception* vol. 13 (1996), 473.

[109] Carol Krumhansl, 'A perceptual analysis of Mozart's piano sonata K. 282: Segmentation, tension, and musical ideas', 428.

[110] Elizabeth Hellmuth Margulis, 'Melodic Expectation: A Discussion and Model' (Ph.D Thesis, Columbia University, 2003), 150.

generate considerable tension.'[111] The second as arising through the denial of implications. Obviously, if a melody implies something which doesn't occur, it generates tension. The third tension-creating factor is instability. Margulis notes that

> unstable events generally produce more tension than stable ones because strong expectations (and high values for tension) occur when a proximate pitch is also stable - a situation that does not typically apply after a stable event.[112]

By discussing melodic attraction, an analysis can present melodic tension in a quantifiable manner, allowing for the piece to be viewed as a structure constantly in flux between tension and relaxation (in a similar fashion to Zuckerkandl's previously mentioned analyses). While the analyses of Chapter 6 primarily invoke Meyer and Narmour's method, using the attraction principles allows for a voice-leading analysis of the harmonic structures, the inverse of which provide measurements of harmonic tension. The simultaneous presentation of melodic implication and harmonic attraction allows for a multivalent analysis of the potentiatities in the *Préludes.*

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[111] *Ibid.,* 150.

[112] *Ibid.,* 150.

3.6: Conclusion

The elements that comprise Debussy's melodic style are much more complex than simply 'autonomous sound complexes.'[113] They serve to create motion within the piece, generate implications despite perceptually static harmonies, and often serve as a force of coherence despite tonal and rhythmic disparity. This chapter has looked at Debussy's forms of melodic defamiliarization, through a decrease in motivic clarity, a continued instability in terms of phrase structure and length, and his treatment of the implicative aspects of melody. In discussing the various forms in which the melodic elements of Debussy's compositions create ambiguity, this chapter has attempted to provide an explanation for the continual subversion of expectations in the *Préludes* that serve to generate such ambiguity.

The present study has argued for an implicative approach, which views the immediate events as a continuous subversion of expectations, and have addressed the possibility of an approach based on melodic attraction. As Debussy's melodies rarely rely on traditional forms (antecedent-consequent, etc), a discussion of the immediate nature of Debussy's melodies allows for a more in depth analysis of the composer's music, outside of the confines of traditional theory.

[113] Jarocinski, *Debussy: Impressionism and Symbolism*, 141.

Chapter 4: Metric Ambiguity: Displacement, Dissonance, and Interrupted Projections

4.1: Introduction

Andreas Heusler wrote that, 'rhythm is the organization of time in parts accessible to the senses.'[1] The 'organization of time' seems to be conceptually similar to what Debussy referred to as 'rhythmicized time': a view of temporality as a continuous, formless entity which rhythm allows us to perceive.[2] Roy Howat's analysis of Debussy's larger formal structures is largely dependent on the 'audible pulse...maintained throughout the piece.'[3] He, however, points to one of the main difficulties in analyzing meter in Debussy when he writes that 'the main impediment to measuring any piece by its pulse is, naturally, any suspension of that pulse.'[4]

Although Debussy's music frequently employs these fluctuating meters (in which the experienced meter shifts in duration), it frequently returns to traditional metric concepts (such as accented downbeats). This juxtaposition only serves to create more ambiguity in Debussy's music, it nevertheless illustrates the composer's tenuous relationship with metric constructions of the 19th-Century. Trezise writes:

> Debussy's treatment of rhythm shows many more congruities with the nineteenth century than, for example, his treatment of harmony: the flattening out of climaxes implicit in moment form and the destruction of the 'beginning-middle-end' logic of the dramatic curve.[5]

While Debussy's use of a referential meter has allowed analysts to view his music from

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[1] Andreas Heusler, *Deutsche Vergeschichte*, vol. 1 (Berlin: de Gruyter, 1925). cited in Curt Sachs, *Rhythm and Tempo*, (New York: Norton, 1953), 15.

[2] Claude Debussy and François Lesure, *Debussy Letters*, Roger Nichols (trans.) (London: Faber, 1987), 184.

[3] Roy Howat, *Debussy in Proportion: A Musical Analysis*, (Cambridge: Cambridge University Press, 1983), 17.

[4] *Ibid.*, 18.

[5] Simon Trezise, 'Debussy's 'Rhythmicised Time", in *The Cambridge Companion to Debussy*, Simon Trezise (ed.), (Cambridge, UK: Cambridge University Press, 2003), 232–55 (234).

a hypermetric viewpoint, his use of metric displacement and accentual shifts creates a form of rhythmic expectation that can only be described as innovative. As a result, the composer's music has also been the subject of a number of analyses of dynamic, or projective rhythm.

The purpose of this chapter is to provide an overview of both 'rhythm as structure' and 'rhythm as process' (to adapt the duality introduced in Chapter 2 pertaining to form). While both are effective analytical tools, I argue for a theory of rhythmic potentiality (best discussed in terms of Hasty's metric 'projection'), which I argue has perceptual benefits, as well as an ability to view meter as the implicative process. In doing so, meter can be viewed as a process (which I argue was Debussy's intent), and analyzed in conjunction with studies of melodic and harmonic implication and attraction, respectively.

4.1.1: A Note on Terminology

Before engaging in an analytical discussion on the rhythmic and metric aspects of a number of Debussy's *Préludes,* it would be best to clarify a number of terminological issues that will be encountered. The first distinction one should make is between what David Epstein refers to as 'chronometric' and 'integral' time.[6] The former refers to regularity of beats (cognitive studies discussed later in the chapter refer to as an 'internal clock') while 'integral' time is formed by the experience at hand. Parks expands on Epstein's 'integral' time, but prefers the term 'experiential' time.[7] Despite the varying terminology, it is important to stress that there is frequently a difference between the notated meter, and the meter one perceives. For this reason, the clearest

[6] David Epstein, *Beyond Orpheus: Studies in Musical Structure*, (Cambridge, Mass.: MIT Press, 1979), 56.

[7] Richard S. Parks, 'Structure and Performance: Metric and Phrase Ambiguities in the Three Chamber Sonatas', in *Debussy in Performance*, James Briscoe (ed.), (New Haven: Yale University Press, 1999), 193–224.

option seems to be the route taken by Oravitz, who simply refers to both 'time signature' (being the notated, chronometric time) and the 'meter,' which always refers to the experiential time.[8]

Joel Lester defines 'beat' (which is, for all intents and purposes, synonymous with 'pulse') as that which 'mark[s] off functionally equivalent spans of time.'[9] The components of meter are therefore these events equally spaced, timespans of equal duration. In this chapter I will follow Hasty's definition of meter, whereby one event suggests the duplication of an event of a similar duration. If this second event takes place, a meter has been created. This is the basis for his theory of projection (discussed below) and leads Hasty to state that 'projection is nothing more than meter,' and continuing to state that 'projection and meter are one.'[10] Metric hierarchies exist when multiple metric structures (or projections) can fall within a greater periodic structure in which a projection is met. Both meter and hypermeter can be perceived (as will be discussed below), and while Debussy frequently avoids temporal regularity to the degree that would allow 'structural' hypermeter, it nevertheless is a component of the current metric discussion.

4.1.2: Rhythmic and Metric Characteristics of the Préludes

The rhythmic characteristics of the *Préludes*, like the pieces themselves, vary widely. 'Danseuses de Delphes' maintains a somewhat consistent tactus throughout (with the occasional extension), and 'Ce qu'a vu le vent d'Ouest,' maintains its notated meter throughout, but experiences metric displacements (such as the implied 4/4 beginning on

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[8] Michael Oravitz, 'Metric Patterning and Its Effects on Phrasing and Form in Selected Debussy *Préludes*' (PhD Thesis, Indiana University, 2005), 12.

[9] Joel Lester, *The Rhythms of Tonal Music*, (Carbondale: Southern Illinois University Press, 1986).

[10] Christopher Hasty, *Meter as Rhythm*, (New York: Oxford University Press, 1997), 91.

the second beat of mm.8–10), and frequent discontinuities throughout the piece that hinder the regularity of the meter, both notated and perceived). 'Des pas sur la neige' has been viewed as a contrasting of a displaced 4/4 melody against a 2/4 ostinato.[11] As a result of these disparities, any theory of meter in the *Préludes* would therefore be too vague to offer any form of useful analytical tools.

Nevertheless, Debussy does include a number of elements in his solo piano works (as well as many chamber compositions) that reflect his rhythmic compositional style as a whole. The first distinction one has to make is the difference between notated and experiential meter. Debussy frequently employs regularity that is at odds with the notated bar lines (the example cited above from 'Ce qu'a vu le vent d'Ouest' being just one example). Metric notation is by no means irrelevant; Parks writes that the composer's 'attention to detail in his notation, everywhere remarkable, is no less so with regard to metric accents.'[12] A metric analysis using notation as an *a priori* starting point, however, would be misguided. The experiential meter is too often at odds with the notated (and referential) meter for this to be considered beneficial. A second distinction would be the role of the prosodic concept of 'weak' and 'strong' accents in more 'traditionally' rhythmic compositions, and their role in Debussy's music, in which they are quite often undermined, much like the tonal analogs of stability/instability or consonance/dissonance that Debussy also subverts.

4.2: Hypermetric Views of Rhythmic Analysis

The interaction of multiple metric levels is constantly present in the way we listen to music. In many aspects, a formal period (in accordance with Schoenberg's definition), would create a hypermetric level as well as a multi-measure idea (for example, an eight-

[11] See Trezise, 'Debussy's 'Rhythmicised Time,'' 248–50.

[12] Parks, *The Music of Claude Debussy*, 301.

measure antecedent-consequent would most likely imply two four-bar hypermetric units).[13] As the previous chapter illustrated, however, Debussy's music often lacks this typical phrasing structure; an omission that leads to an ambiguity on the hypermetric level as well as the melodic (and formal) level. The fluctuating phrase lengths of 'Hommage à Rameau,' for example, would likely hinder the ability of meter to exist in a regular fashion. Yet meter does function occasionally on multiple levels in Debussy's music. As will be demonstrated below, one of the primary factors for ambiguity in 'Minstrels' is a juxtaposition of an iambic (weak-strong) accent on one metric level, with a trochaic (strong-weak) accent on another.

Many theorists have viewed the perception of time as hierarchical. Zuckerkandl wrote that the listener was constantly perceiving two levels: a stream of events, and a continuous stream of time.[14]This is not unlike the differentiation between 'chronometric' and 'integral' time, which will be discussed later in the chapter. Kramer argues that music is perceived hierarchically when he writes:

> I suggest that we (or at least I!) really can, and really do, hear hierarchically...and I believe that we hear on deeper levels...up to that of entire movements.'[15]

Hierarchical views of tonality (most obviously those advocated by Schenker and his disciples) have been extended by many theorists to accommodate metric hierarchies. Forte writes that

> Schenker's comprehensive view of harmony and voice leading, embodied in the general concept of structural levels, offers a rich foundation for the study of rhythmic features...[16]

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[13] Schoenberg, *Fundamentals of Musical Composition*, 21.

[14] Victor Zuckerkandl, *Man the Musician: Sound and Symbol, Volume Two*, (Princeton, N.J.: Princeton University Press, 1976), 232–233.

[15] Jonathan D. Kramer, *The Time of Music: New Meanings, New Temporalities, New Listening Strategies*, (New York: Schirmer Books, 1988), 117.

[16]Allen Forte and Steven E. Gilbert, *An Introduction to Schenkerian Analysis*, (New York: Norton, 1982), 239.

Some Schenkerian views on meter allow for a reduction of meter until it can encompass an entire movement. Yeston, Westergaard and Komar argue that meter is not perceived in a 'bottom-up' nature (in which the perception of meter leads to the perception of hypermeter), but rather a 'top-down' approach, in which meter is unfolded from an overarching hypermetric structure (similar to the unfolding of a structural triad in Schenkerian theory).[17] Such reductions are not necessarily realistic views of the way a listener perceives a metric structure. I would argue that they hear accents at the immediate level (Cooper and Meyer state that it is the original duration, this immediate level, that sets up metric expectation for the remainder of a composition),[18] but a listener is not likely to be able to perceive the long-term metric hierarchies as the piece is unfolding. Firstly, a number of psychological tests (such as those carried out by Nicholas Cook, as well as earlier research conducted by Paul Fraisse)[19] have discredited the notion that a listener might have the ability to hear such long-term relationships. Not only has the listener's ability to perceive the retention of key throughout an entire movement been questioned, but the perception of an extended hypermetric structure creates a relationship which goes beyond the durations that studies have suggested are able to perceived.[20] If such a long-term perception of meter is possible, it is through the use of immediate events. Studies by Clarke and Schulze have pointed out that listeners are able to perceive metric structure by classifying them as one of a number of rhythmic

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[17] Maury Yeston, *The Stratification of Musical Rhythm*, (New Haven: Yale University Press, 1976). Peter Westergaard, *An Introduction to Tonal Theory*, (New York: Norton, 1975). Arthur J. Komar, *Theory of Suspensions; a Study of Metrical and Pitch Relations in Tonal Music*, Princeton Studies in Music, 5 (Princeton, N.J.,: Princeton University Press, 1971). For a more in-depth critical discussion of Schenkerian theories of metric structure, see Bruce Finley Taggart, 'Rhythmic Perception and Conception: A Study of Bottom-up and Top-Down Interaction in Rhythm and Meter' (PhD Thesis, University of Pennsylvania, 1996), 244.

[18] Grosvenor Cooper and Leonard B. Meyer, *The Rhythmic Structure of Music*, (Chicago: University of Chicago Press, 1960), 3.

[19] Nicholas Cook, *Music Analysis and the Listener*, (Oxford: Clarendon, 1989);Paul Fraisse, *The Psychology of Time*, (Westport, Conn.: Greenwood Press, 1975)

[20] See Nicholas Cook, 'The Perception of Large-Scale Tonal Closure', *Music Perception* 5 (1987, 197–205. *Passim.*

categories (each one of them being a short, easily perceptible rhythmic structure).[21] The notion of a hypermetric structure spanning an entire movement, let alone spawning the more perceptually immediate metric structures (rather than the other way around), seems to force a theory on a somewhat imperceptible notion of meter.[22]Secondly, the application of Schenker's tonal theory to rhythm is a construction of later theorists; a digression from the original writings that rarely focused on rhythm or meter. Kerman writes:

> It is hard to get around the fact that even though a certain dynamism is built into the ideas of the 'unfolding' of the *Ursatz*, Schenker says virtually nothing about rhythm, durational proportions, or any other temporal questions. Basically, and despite various protestations to the contrary, his model of music is as static as that of the thematicists.[23]

For this reason, the present discussion will take a 'bottom-up' approach, focusing on the metric events of the immediate event over the construction of a hypermetric unit that would span the piece (such larger hyprmetric structures are avoided through Debussy's avoidance of formal sentence/period relationships, anyway, as discussed above).

While Schenker himself never mentioned a possible extension of his tonal theory to the rhythmic domain, his older contemporary, Hugo Riemann did write extensively on theories of meter. Riemann's theory of metric accent was hierarchical with a strong-weak dichotomy, but whereas most theorists (Schenker included) viewed the beginning

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[21] Eric Clarke, 'Categorical Rhythm Perception: An Ecological Perspective', in *Action and Perception in Rhythm and Music*, A. Gabrielsson (ed.), (Stockholm: Royal Swedish Academy of Music, 1987), 19–34; H. Schulze, 'Categorical Perception of Rhythmic Patterns', *Psychological Research* 51 (1989), 10–15. Discussed in Eric Clarke, 'Rhythm and Timing in Music', in *The Psychology of Music*, Diana Deutsch (ed.), (London: Academic Press, 1999), 473–500 (489–91).

[22] This is not to pigeonhole all bottom-up theories of rhythm as focused on the perception of long-term metric perception. While many go as far as to illustrate the hypermetric elements of large-scale structures (e.g. movements, etc.), many (such as Justin London and Lerdahl and Jackendoff) suggest that hypermeter can be perceived within a 'band' that can occur within larger groupings. Justin London, *Hearing in Time* (Oxford: Oxford University Press, 2004), 88–99. Fred Lerdahl and Ray Jackendoff, *A Generative Theory of Tonal Music,* (Cambridge, MA: MIT Press, 1983), 316.

[23] Joseph Kerman, *Contemplating Music: Challenges to Musicology*, (Cambridge, Mass.: Harvard University Press, 1985), 84.

to be strong, Riemann, viewed metric accent as end-accented.[24] Nevertheless, it was comprised of multiple hierarchical levels of this weak-strong structure, enveloping long-term musical structures.

The concept of hierarchical metric structures grew out of the influx in analytical musical thought of the nineteenth century. Taggart writes that 'in the nineteenth century, theories of musical structure became more analytical and, as a result, more hierarchical.'[25] The hypermetric analyses in the following discussion view meter to be malleable (as would be necessary in an analysis of Debussy's metric structures). Parks views hypermeter as being defined by dynamic accents, and Trezise aims to illustrate the fluidity of experiential time through the use of larger metric structures. Neither methodology adheres stringently to the reductive views of meter discussed above, but they do follow the same premise of hypermetric construction.

4.2.1 A Cognitive Basis for a Hierarchical Rhythmic Model

The human brain often anticipates a hierarchy in rhythm. Patel notes that in a study he and his colleagues performed, participants listened to 'metrically ambiguous' musical patterns and were asked to 'impose a downbeat in a particular place.'[26] The study concluded that when a note was considered to be a downbeat, there was an increased amount of neural activity. Patel concludes that 'these results suggest that the perception of meter involves the active shaping of signals by a mental periodic temporal-accentual

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[24] Discussed in William Caplin, 'Theories of Musical Rhythm in the Eighteenth and Nineteenth Centuries', in *The Cambridge History of Western Music Theory*, Thomas Street Christensen (ed.), (Cambridge Cambridge University Press, 2002), 657–94 (686–91).

[25] Taggart, 'Rhythmic Perception and Conception: A Study of Bottom-up and Top-Down Interaction in Rhythm and Meter,' 226.

[26] Patel, *Music, Language, and the Brain*, 105.

scheme.'[27]

Early research considered experiential time to be similar to chronometric time, postulating an internal clock that allowed a listener to perceive a meter. Povel's 'clock model' believed that listeners were automatically inferring time intervals when a fixed beat was made present.[28] This was expanded in 1985 to encompass multiple periodic levels, allowing for a hierarchy of fixed beats.[29] The experienced time, however, is not chromometric (to return to Epstein's terminology).[30] Listeners can perceive instances of equal duration to be different. Kramer notes that:

> Psychologists have shown that subjective time does not generally equal clock time. In the process of experiencing and then remembering lengths of time, we alter them. It is misleading, however, to think of subjective time alterations as distortions. Subjective duration is more relevant to the understanding of music than is duration measured by a clock. [31]

In addition to not really being a subjective reality, this concept allows for very little change, and can be applied only to music of a fixed tempo. As Large and Jones note, 'this prediction comes at a cost. The fixed beat structure of the clock model is not robust enough to [deal with] even small perturbations in a rhythmic pattern.'[32] In the clock model, 'the perceiver moves from state to state, where each state includes a representation of past temporal structure as well as the anticipation of future events.'[33]

Clarke writes that a metric hierarchy allows the listener to better process the

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[27] *Ibid.*, 106. The full study can be found in Iversen, J.R., Repp, B.R. And Patel, A.D. (2006) 'Metrical interpretation modulates brain responses to rhythmic sequences' in M. Baroni, A.R. Addessi, R. Caterina, M. Costa, Proceedings of the 9th International Conference on Music Perception and Cognition (ICMPC9), Bologna, Italy, 468.

[28] D.J. Povel and P. Essens, 'Perception of temporal patterns' in *Music Perception,* 2 (411–440).

[29] *Ibid., Passim.*

[30] Epstein, *Beyond Orpheus: Studies in Musical Structure.*, 56.

[31] Kramer, *The Time of Music: New Meanings, New Temporalities, New Listening Strategies*, 327.

[32] E.W. Large and Mari Riess Jones, 'The dynamics of attending: how people track time-varying events.' in *Psychological Review*(1999), 119–159 (122). Cited in Justin London, *Hearing in Time: Psychological Aspects of Musical Meter*, (Oxford: Oxford University Press, 2004), 20.

[33] *Ibid.*, 20–21.

amount of information a piece displays, stating that 'hierarchic organization employing units with constant or simply related durations resolves the need for an additive counting process.'[34] The existence of this hierarchy was considered to be theoretically important as well. Kramer writes:

> music with unequivocal metric accents is metrical at all levels, even when those accents are unevenly spaced. Just as the number of hyperbeats in a hypermeasure is critical to the perceived duration of the hypermeasure, so the quality and strength of metric accents is a determinant of metric hierarchy.[35]

Kramer, however, acknowledges the fact that hierarchic perception cannot exist in isolation, and proposes two distinct areas of rhythmic perception: cumulative listening (in which listeners process the constants of music) and timing listening (where they perceived hypermeter).[36] The perception of the rhythmic structure of a composition, he believes, is a confluence of the two systems working in conjunction with one another.

In addition to studies of the general hierarchical perception of rhythm, there have also been a number ofstudies pertaining to the hierarchy of beats within the bar. These have tended to show that listeners do hear such metric hierarchies. Most notably, Palmer and Krumhansl have done tests in which they confirmed the theoretical metric hierarchies of both 4/4 and 3/4. In these tests, listeners were asked to assign values based on 'goodness of fit' for each tone and where it was placed.[37] Many preferred those that fell on the first beat, followed by the third, fourth, and second, followed by non-beat pulses.[38] Similarly, David Huron has found that hierarchies exist in terms of hypermetric structure, as listeners in his test responded to phrase points in the first

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[34] Eric F. Clarke, 'Levels of Structure in the organization of musical time' in *Contemporary Music Review,* (1987), 211–238, (231), Quoted in Kramer, *The Time of Music,* 349.

[35] Kramer, *The Time of Music,* 365.

[36] *Ibid.,* 373.

[37] Caroline Palmer And Carol Krumhansl, 'Mental representations of musical meter' in *Journal of Experimental Psychology: Human Perception and Performance* 16/4 (1990), 728–741.

[38] *Ibid., Passim.*

thirty-two bars of Haydn's String Quartet op.54, no.1 with a similar ratio of the beats of a single measure.[39] Huron concluded that 'metric hierarchy extends beyond the individual measure.'[40] While such conclusions might seem obvious, the empirical verification is necessary for a cognitive study.

While Debussy's music exhibits regularity that would aid in metric perception, it subverts the notion of metric regularity just as often. A hierarchical view of meter requires both a certain degree of consistency *and* the ability to differentiate between strong and weak attack points.[41] Through the use of metric dissonance, or misplaced meter/hypermeter Debussy's music is often difficult to perceive as a rhythmic hierarchy.

4.2.2: Parks's Hypermetric Analyses

The rhythmic analysis Parks employs in the final chapters of *The Music of Claude Debussy* (as a digression from the focus on pitch-collections that dominates the study) was one of the first studies of Debussy's treatment of rhythm, most notably his treatment of metric fluctuation. The analyses use 'dynamic' accents as a means of illustrating metric fluctuations on multiple levels in the music (although they are not limited to the loud-soft dichotomy, as texture is a factor as well). He notes that, 'dynamic accents tend to be stronger than other types because their perception derives directly from sensation, with a minimum of reflection and comparison.'[42] This, however, is not an entirely valid reason. Firstly, all accents, not just dynamic ones, are directly derived from sensation, be they accents derived from structural placement,

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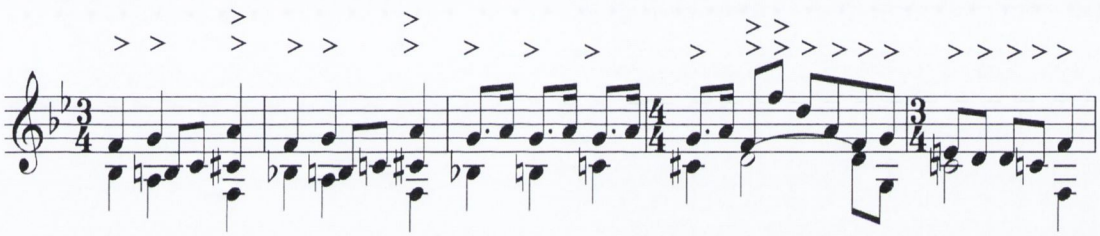
[39] Huron, *Sweet Anticipation: Music and the Psychology of Expectation*, 180.

[40] *Ibid.*, 180

[41] Kramer notes that 'What is needed to make meter sufficiently multileveled for such alterations to be understandable within the hierarchy is not only a degree of regularity but also some principle(s) that enable us to distinguish between strong and weak time-points on several hierarchic levels. In *Time of Music,* 350.

[42] Parks, *The Music of Claude Debussy*, 238.

harmonic or melodic factors, or expectations set up from within the composition. To consider something more detectable to the senses because of its dynamic is not taking into account the nature of auditory responses to temporal, harmonic, or pitch-driven factors, (or the various forms of inherent expectation). Secondly, by creating a metric analysis derived from dynamic accent, instances arise which aren't metric at all, as in Parks's analysis of 'Danseuses de Delphes.' In the third measure, the beginning of a new second level meter begins just as the second level accent finishes, not allowing for a full account of the metric elements at play. It would therefore seem that this is more a dynamic, rather than metric, analysis.[43]



Example 4.1 Parks Analysis of Metric Accents in 'Danseuses de Delphes'[44]

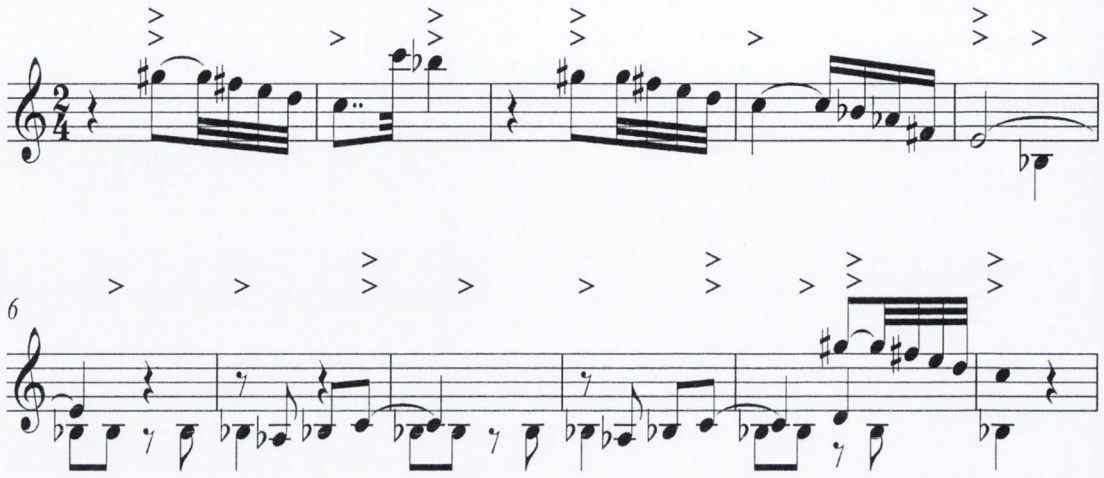
Parks analyzes 'Voiles' as consisting of two metric levels and states that 'the fluctuations of durations across metric units in both levels are carefully calculated and contribute much to the overall effect of objects floating slowly by at slightly different speeds.'[45] The primary accent is displaced throughout the first twelve measures by one

[43] Lerdahl and Jackendoff make this distinction in *A Generative Theory of Tonal Music.* They delineate three types of accent: phenomenal, structural, and metrical. A phenomenal accent occurs when 'moments of musical stress in the raw signal serves as "cues" from which the listener attempts to extrapolate a regular pattern of metrical accents. If there is little regularity to these cues, or if they conflict, the sense of metrical accent becomes attenuated or ambiguous.' A metrical accent is 'any beat that is relatively strong in its metrical context' while a structural accent is 'an accent caused by the melodic/harmonic points of gravity in a phrase or section–especially by the cadence, the goal of tonal motion.' As Debussy regularly uses one type of accent to subvert the metric implications of another, it would seem that a proper metric analysis would incorporate the interplay of all three types, which is what the following analyses attempt to do. Parks's method, however, seems to rely *solely* on phenomenal accents, and therefore presents a somewhat one-dimensional view of Debussy's approach to meter. Lerdahl and Jackendoff, *A Generative Theory of Tonal Music,* 17.

[44] *Ibid.*, 290–91.

[45] *Ibid.*, 297.

beat, and Parks chooses to use the eighth note as the primary unit. The first hypermetric unit is that of four units then, followed by a contraction to three in the left hand in m.5.



Example 4.2 Parks's Metric Accents in 'Voiles' mm.1–10[46]

Similarly, Parks's analysis of 'Le vent dans la plaine' comes to similar conclusions as his analysis of 'Voiles.' He states that it

> derives its metric complexity from its multiplicity of levels whose tendencies contradict one another, and from the frequent exits and entrances of lower levels.[47]

This contradiction, however, isn't as apparent as in the opening of 'Voiles.' Parks considers the lowest metric level to be the sextuplets in the first eight measures, followed by the eighth-note units beginning in m.3. He notes that the second level 'consistently alternates long and short durations and is sometimes absent.'[48] The highest level is seemingly imperceptible, and Parks concedes that 'most metric activity takes place within the first three levels.'[49] Therefore, it might be argued that Parks is not entirely consistent with his metric levels throughout.

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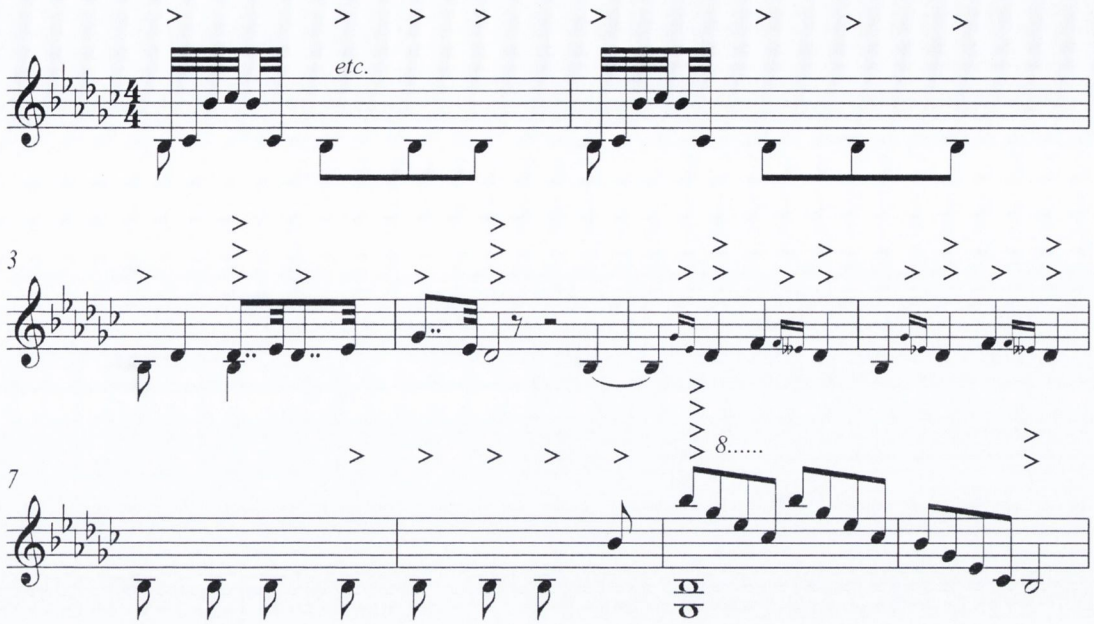
[46] *Ibid.*, 291 and 97.

[47] *Ibid.*, 297.

[48] *Ibid.*, 297.

[49] *Ibid.*, 297



Example 4.3 Parks's Metric Analaysis of 'Le vent dans la plaine mm.1–10

Both 'Voiles' and 'Danseuses de Delphes' are only given two levels of metric hierarchy, yet there is an obvious sectional break in both. Nevertheless, Parks's analysis is in alignment with the analysis of form in 'La vent dans la plaine,' notably Oravitz's description of the first eight measures as 'A1' (in B♭ Phyrgian) followed by 'B1' in mm. 9–12 (comprised of E♭ Dorian) followed by a return in mm.13–14 to A2 (also in B♭ Phrygian).[50] Oravitz agrees with Parks's hypermetric analysis as well, writing:

> hypermeter plays a magically dualistic role; on one level, the music exudes hypermetric consistency within sections, and on another level, the juxtapositions of its variant hypermetric orientations provides contrast to the flow of that intra-sectional regularity as it sequés from one section to the next.[51]

Parks notes that 'interesting questions arise in the notion of metric ambiguity. Can meter as experienced contradict meter as notated? How do we determine plausible metric schemes? For that matter, what is meter?'[52] Parks's analysis helped to explain

[50] Oravitz, 'Metric Patterning,' 234. Oravitz considers the entire composition to be a seven-part ABACABA form.

[51] *Ibid.*, 241.

[52] Parks, *The Music of Claude Debussy*, 280.

the notion that Debussy's music, although containing referential meter, does not necessarily comply with the traditionally accepted notion of metric structure. As Parks would suggest, experiential and notated meter in the composer's music are quite frequently at odds with one another. The disparity between the two is widened in Debussy's music (for example, see Trezise's analysis below of displaced 4/4 in 'La vent dans la plaine').[53]

4.2.2: Trezise's Hypermetric Analyses

Simon Trezise's metric analysis of 'Voiles' varies slightly from Parks's. While Trezise considers the hypermeter beginning at m.7 to consist of four hypermetric beats, Parks analyzes it as three beats with the second belonging to a higher level than the outer two.[54] Where Parks analyzes the accent to be on the final beat of m.7, Trezise's hypermetric analysis emphasizes the second beat, with the third beat beginning on the downbeat of m.8 (whereas Parks considers the next hypermetric level to fall on the off beat). Such a difference illustrates both the fluid metric structure of Debussy's music, and the pitfalls of the dynamically driven analysis that Parks employs. There are no performance indications differentiating the first beat of m.7 from the offbeat, so it's safe to assume that different performances can yield different emphases (although the majority do emphasize the offbeat).

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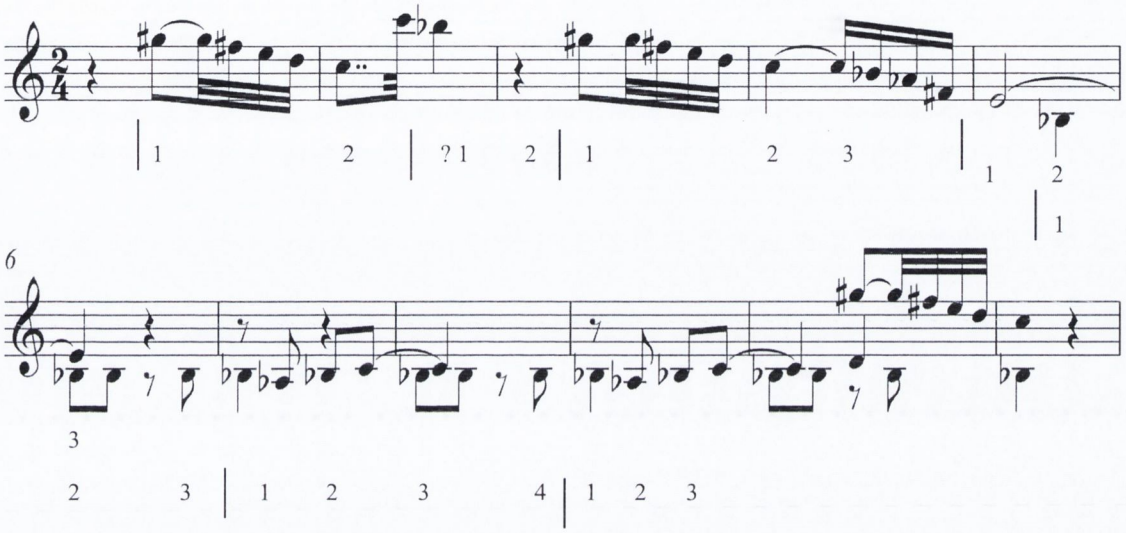
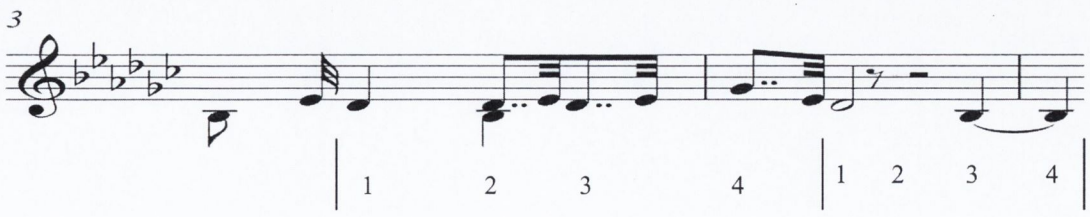
[53] Trezise, 'Debussy's 'Rhythmicised Time," 237.

[54] Parks, *The Music of Claude Debussy*, 291; Trezise, 'Debussy's 'Rhythmicised Time," 237.



Example 4.4: Trezise's Analysis of mm.1–11 of 'Voiles'

Trezise does not differentiate between various hypermetric levels, but rather illustrates displacement between them. For example, his analysis of 'La vent dans la plaine' is consistent with Parks's, but where Parks differentiates between the various levels, such as by having the third hypermetric level begin on beat two of m.4 followed by the first level on beat 3, and the second level on first beat of m.4, Trezise simply points out that the four-beat hypermeter is displaced by one beat.[55]



Example 4.5: Trezise's Analysis of mm.3–5 of 'La vent dans la plaine'

[55] Trezise, 'Debussy's 'Rhythmicised Time,'' 238. Parks *The Music of Claude Debussy,* 291. Such a concept of displacement is similar to Krebs's notion of 'displacement dissonance' a similarity pointed out in Oravitz, 'Metric Patterning and Its Effects,' 94.

Trezise's study implements a hypermetric method similar to Kramer's to illustrate the various hierarchies of 'Jardin sous la pluie,' this time from a more static view. The analysis uses two equally strong accents at the opening of the piece and m.25 (at the point of return just before the return of the 'lullaby theme').[56] Trezise's invocation of strictly accented hypermeter is effective with this composition, and allows for the metric structure to be clearly illustrated. It doesn't do justice, however, to his analysis of the malleability of time in the piece (Trezise's statement that the piece 'proceeds to inhale and exhale excitedly'[57] suggests that the rigid view of meter wouldn't necessarily grasp the intricacies that the rest of the analysis does). Nevertheless, the analysis of multiple fluctuations in meter is a similar strain in both theories of metric displacement and metric projection (both discussed below), and Trezise's system is applied (albeit in a somewhat modified form) to the metric analysis of the Violin Sonata below.

4.2.3: Metric Dissonance

One of the most useful elements of the prosodic method of analyzing rhythmic hierarchies is the ability to see a restructuring of emphasis throughout a composition. Surprisingly, one of the best examples of such a restructuring is 'Minstrels.' The cakewalk nature of the piece would seem to dictate a steadily syncopated rhythm throughout, but Debussy expands on this idea by creating full phrases that begin on either off beats or weak beats, and the perception of a tactus, or rhythmic structure is increasingly compromised. To illustrate the dissonant metric nature of this piece, I will use Krebs's displacement terminology in conjunction with Cooper and Meyer's prosodic terminology, although the latter is restricted to the more immediate levels, as the metric elements of the piece seem to be at odds with the larger architectonic metric

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[56] Trezise, 'Debussy's 'Rhythmicised Time," 246.

[57] *Ibid.*, 246

structures the theory proposes.[58]

Cooper and Meyer refer to a rhythmic accent as 'an event that is marked for consciousness'[59] If we take this rather vague definition as a given when discussing the rhythmic structure of a piece, we will need an analytical framework which illustrates the relationship of these 'events' to the listener's 'experiential time.' Krebs uses a hypermetric unit to begin his theory; in the case of 'Minstrels' 'pulse sensation' would be a sixteenth note.[60] Thus the symbol D_{x+y} indicates that the displacement (D) of the number lowest units (x) has been added (or subtracted) by a certain amount (y).[61]

The piece begins conservatively, with a trochaic rhythm, in which the first event is perceieved as being strong, and is followed by a weak accent. This opening rhythm would be what Wallace Berry refers to as the 'referential meter' of the piece, and what Krebs would term the 'primary metrical consonance.'[62] The final eighth note of the first bar is an emphasized weak beat, which could be seen as being the beginning of a an

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[58] The terms 'displacement dissonance' and 'grouping dissonance' are both used by Krebs, but are not interchangeable. A grouping dissonance occurs when the original relationship between two pulses are different, causing multiply directed meters, which Krebs defines simply as 'the association of at least two interpretive layers whose cardinalities are not multiples/factors of each other.' In *Fantasy Pieces,* 254. A displacement dissonance is when accented groups are not in sync. Grouping such rhythms is an important aspect of rhythmic perception. Taggart notes that 'we tend to perceive rhythm in terms of rhythmic groups or motives whose spans do not exceed the perceptual present.' Taggart, 'Rhythmic Perception and Conception: A Study of Bottom-up and Top-Down Interaction in Rhythm and Meter,' 40. As Debussy's music focuses so much on the perceptual present, I argue that a firm grasp of such grouping and displacement dissonances is crucial to the understanding of rhythmic and metric implication/projection.

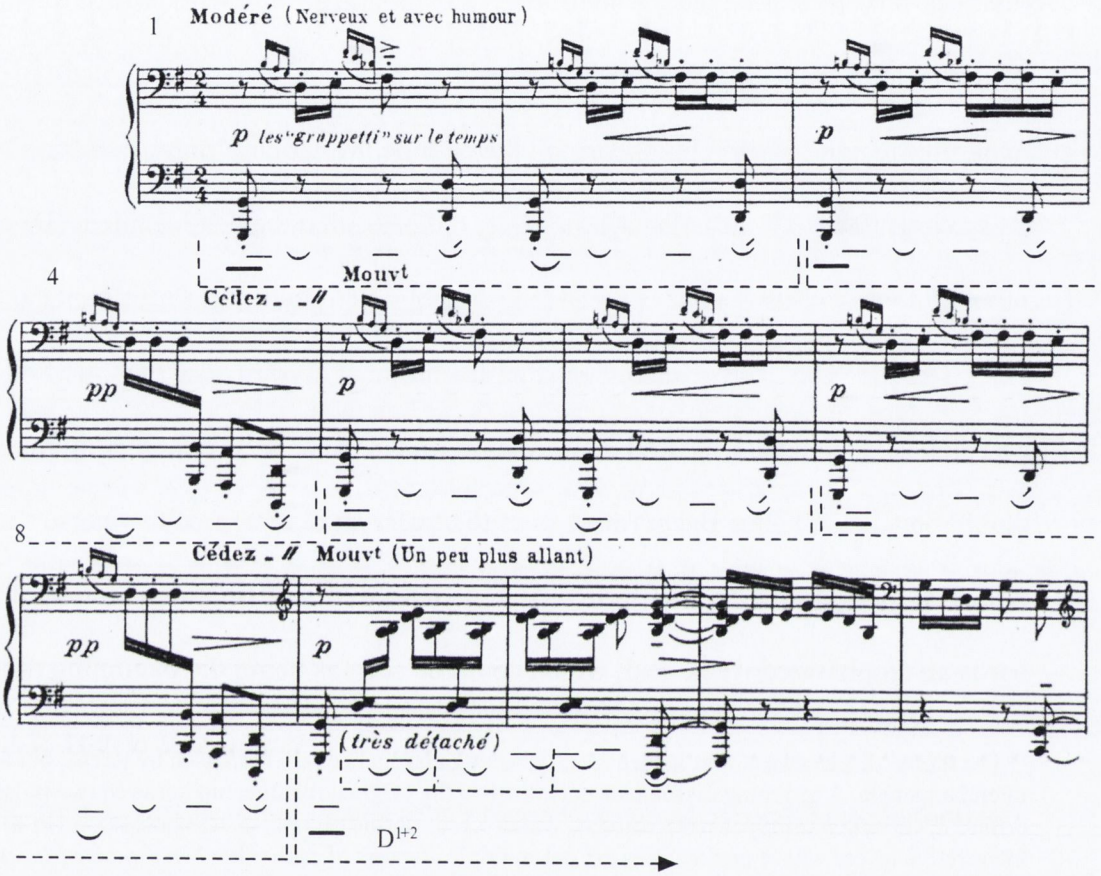
[59] Cooper and Meyer, *The Rhythmic Structure of Music*, 8.

[60] Although this term is commonly used, it is perhaps attributed most to Krebs, and the earlier perceptual work of Parncutt. See Richard Parncutt, 'A Perceptual Model of Pulse Salience and Metrical Accent in Musical Rhythms', *Music Perception* 11/4 (1994), 409–64. and Harald Krebs, *Fantasy Pieces: Metrical Dissonance in the Music of Robert Schumann*, (New York: Oxford University Press, 1999).

[61] Krebs explains displacement dissonance at length in his *Fantasy Pieces* and his 1987 article 'Some Extensions.' For an excellent explanation of the theory, see Yonatin Malin 'Metric Displacement Dissonance and Romantic Longing in the German Lied' *Music Analysis* 25/3 (2006), 251–288 (262–265).

[62] Wallace Berry, 'Metric and Rhythmic Articulation, 11–12 and Harald Krebs, *Fantasy Pieces: Metrical Dissonance in the Music of Robert Schumann* (NewYork, Oxford: Oxford University Press, 1999), 22–39. Berry's work allows for a perception of meter on the local level, rather than assuming that meter must be a constant as many hypermetric views do. Oravitz points out the applicability of Berry's metric theory to Debussy's music in Oravitz, 'Metric Patterning and Its Effects on Phrasing and Form in Selected Debussy *Préludes*' 15. Perhaps one of the best examples of a subverted 'referential meter' would be the eighth mm.6–8 of 'Hommage à S. Pickwick Esq. P.P.M.P.C., which blur the triple meter after a very strict display of the time signature in the previous measures.

eighth-note displacement that recurs throughout the composition. This melody plays twice, and at m.9 the piece begins to accent the second eighth note of the first beat.

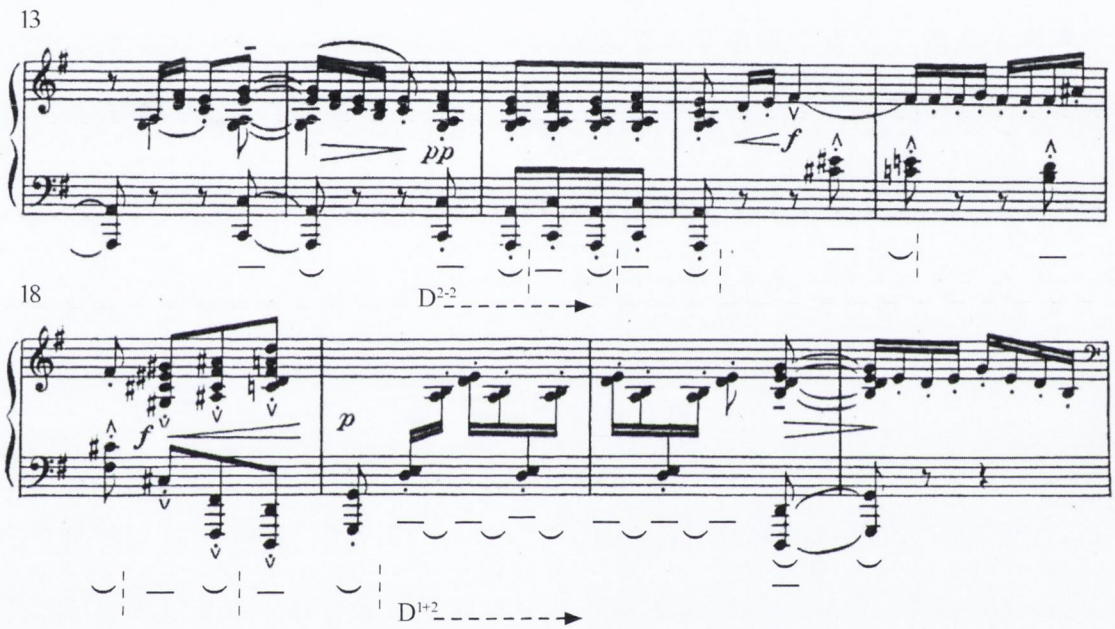


Example 4.6: mm.1–12 of 'Minstrels'

This continues the trochaic rhythm, but is displaced.[63] It is indicated in Example 4.6 as D^{1+2}, as the sixteenth note is displaced by the equivalent of two sixteenth notes, and the arrow indicates the continuation of this displacement through the downbeat of mm.11 and 13. The last eighth-note of m.13, which has no attack in the right hand might be heard as the beginning of a trochaic structure, with the end of the measure being the

[63] Kurth used this as an example of sonic 'tapering' which allowed for the listener to focus more on the 'absolute' nature of the sound. In Kurth, *Romantische Harmonik Und Ihre Krise in Wagners "Tristan"*, 389.

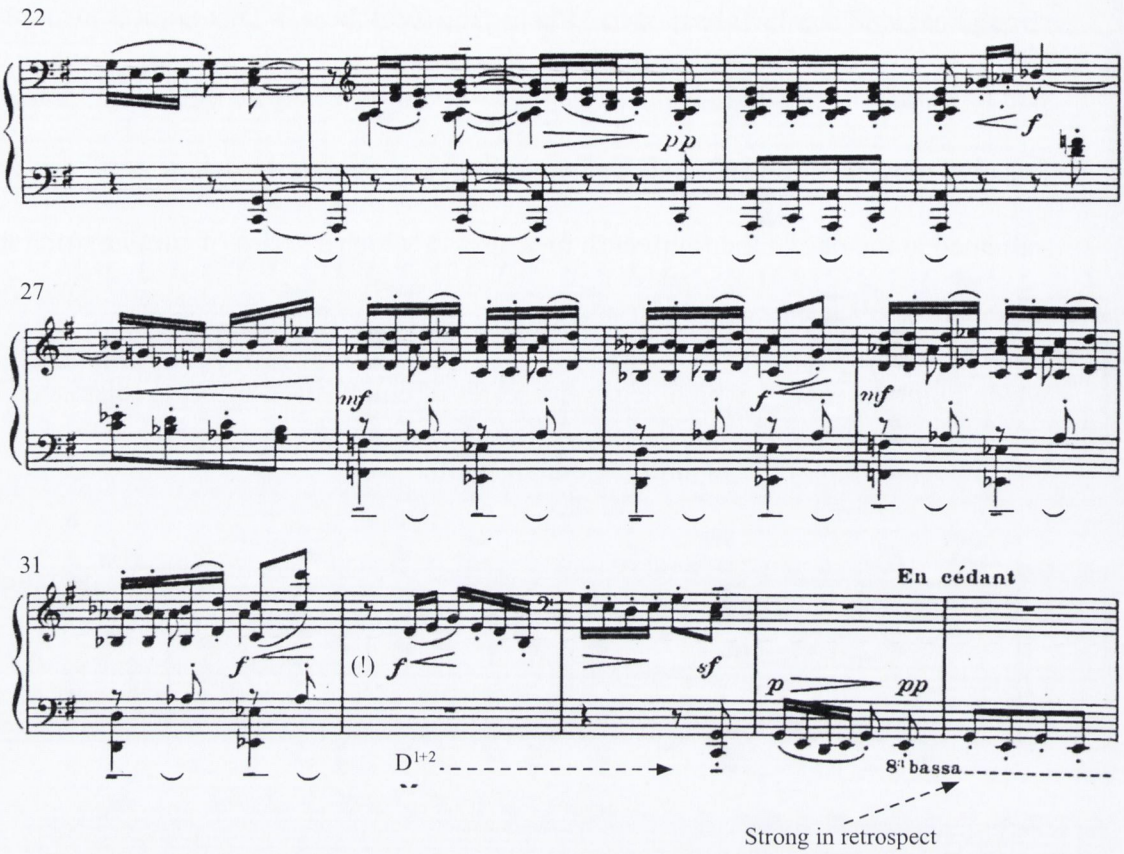
strong beat, and the downbeat of m.14 being the weak beat.[64] This point is also what I will refer to as a 'negative displacement' as the displaced eighth note would be a negative movement on an x-axis by two units. This displaced trochaic emphasis is validated at the end of the fourteenth measure, in which a series of similar structures is emphasized. This continues until the climax at the end of the eighteenth measure, at which point the motive which began the series of emphasized offbeats (displaced by one sixteenth-note) returns until the end of m.20.



Example 4.7: mm.13–21 of 'Minstrels'

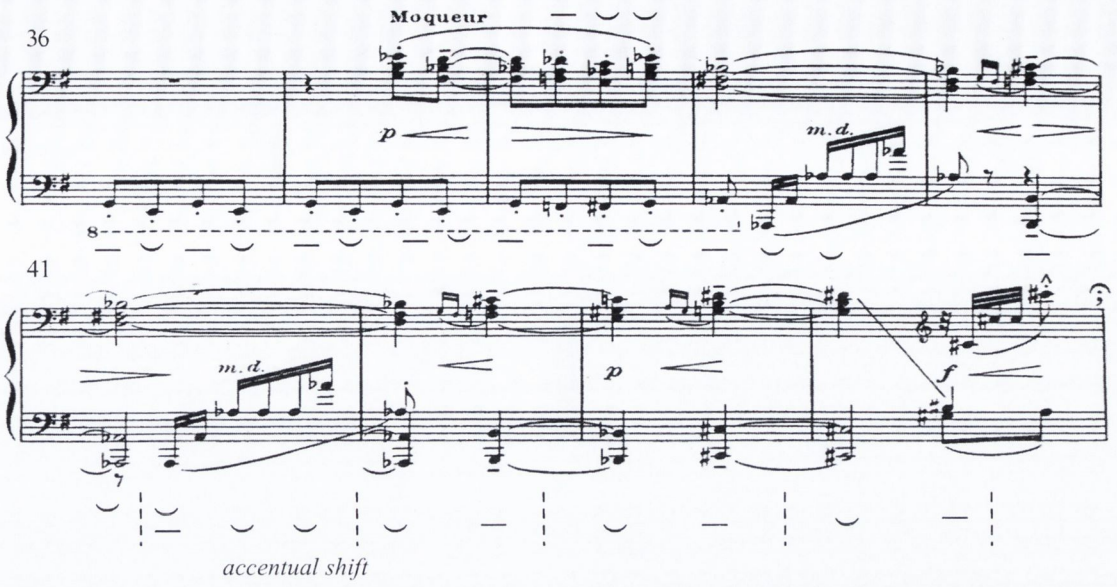
At this point, m.22 concludes with yet another emphasis on the end of the beat, rather than the downbeat of the next measure. Normally, this would sound as an anticipation of the next measure, but Debussy masks this with the melody. In fact, the end of m.22 seems to specifically illustrate the accent, which is tied to a rest on the next downbeat. Beginning at m.28, the metric dissonance subsides in favor of a return to the original trochaic idea, this time compressed into the first and third beats of the measure.

[64] This displacement is open to multiple readings. On the one hand, the bass gestures might seem to reinforce the notated meter, and the accents implicit in that meter. On the other hand, when used in conjunction with the melody, the bass gestures seem to establish a fluid interplay of weak and strong accents. The latter view is taken in the present study, although it is not meant to be a definitive interpretation of the piece.



Example 4.8: mm.22–35 of 'Minstrels'

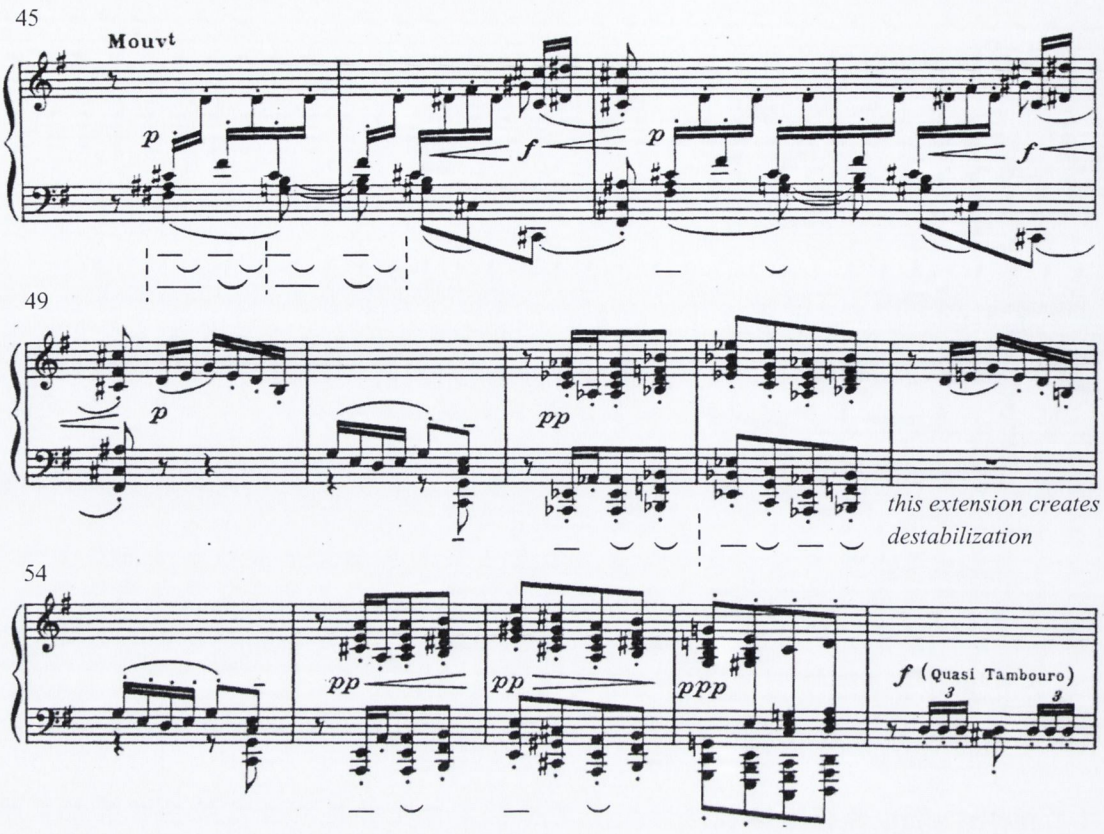
This continues until the beginning of m.32, at which point there is a pause to allow the next phrase to begin on the offbeat. This theme, which has appeared twice before, consists of a lead-in to the emphasized second beat, and the phrase carries over until the end of the next measure. This displacement (notated as D_{1+2} in the Example 4.9) continues until m.34. This could be interpreted as beginning on an accented rhythm, which is then followed by an unaccented one on the second beat, or the second beat might be perceived retroscpectively as a strong beat leading into the heavily trochaic motive that follows.



Example 4.9: mm.36–44 of 'Minstrels'

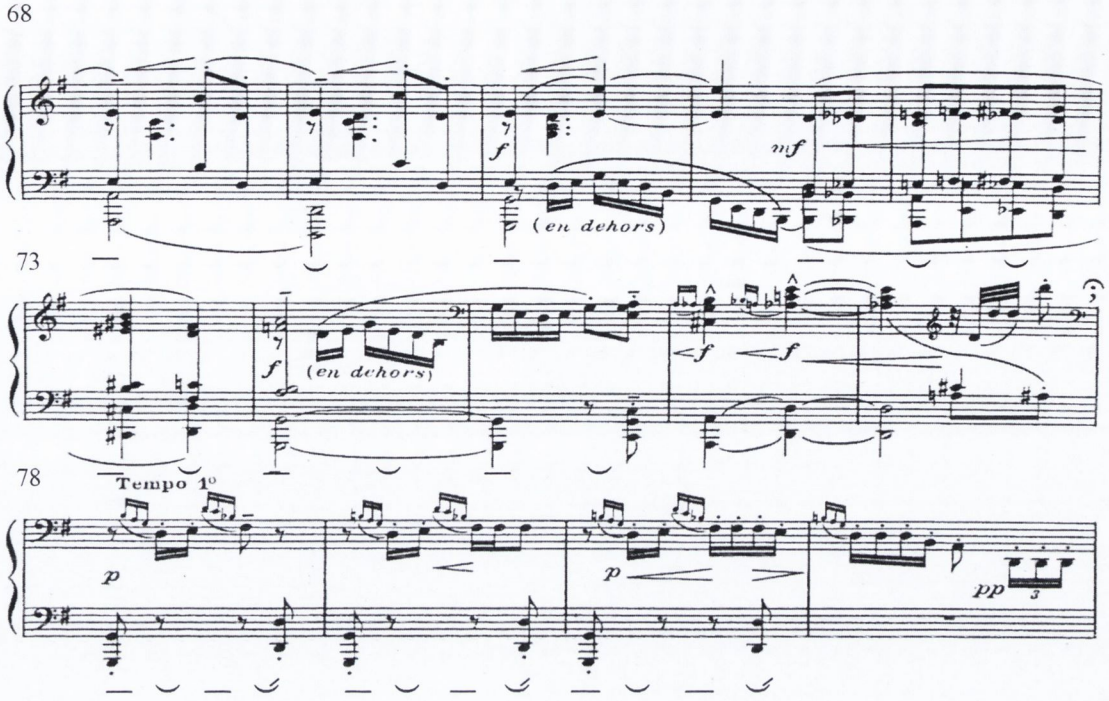
Either way, the downbeat is reaffirmed in m.35 (signifying a return to the referential meter, a process Krebs refers to as 'metric normalization'),[65] but the blurred barline between mm.37–38 illustrates the immanent instability. As the ascending octaves appear on the second eighth note of m.39, it begins a dactylic (strong-weak) structure, which again runs until the second beat of m.40. This then begins a similar structure at the end of that measure (with a strong-weak-weak) emphasis, which then recurs when the ascending octaves return at m.41. As the phrase ends with the high C♯, it is at the end of a dactylic phrase with a strong-weak-accented weak structure.

[65] This is discussed as a part of his much larger discussion pertaining to metric consonance and dissonance. In Krebs, *Fantasy Pieces: Metrical Dissonance in the Music of Robert Schumann*, 22–39.



Example 4.10: mm.45–58 of 'Minstrels'

A rest occupies the downbeat of m.45, and another trochaic element blurs the bar lines until m.49, at which point the descending motive arrives for the fourth time. At m.51, a dactylic unit leads into two trochaic units (forming another trochaic unit on a higher level), before the motive returns. The extension of this motif in mm.55–58 only serves to destabilize the perception of rhythm, as the downbeat is less obvious by doing so. At m.58, the percussive phrase is retrospectively iambic, as the accented dissonance could likely be heard as being the strong beat. Although this then creates a trochaic element beginning on the downbeat of m.59, it is perceived as beginning when the phrase starts, further diluting the tactus. This section is quite odd, as the disconnected nature of the material sounds displaced, but is in actuality metrically consistent with the piece. This element represents one of the primary issues of the piece: the juxtaposition between a trochaic and iambic grouping.

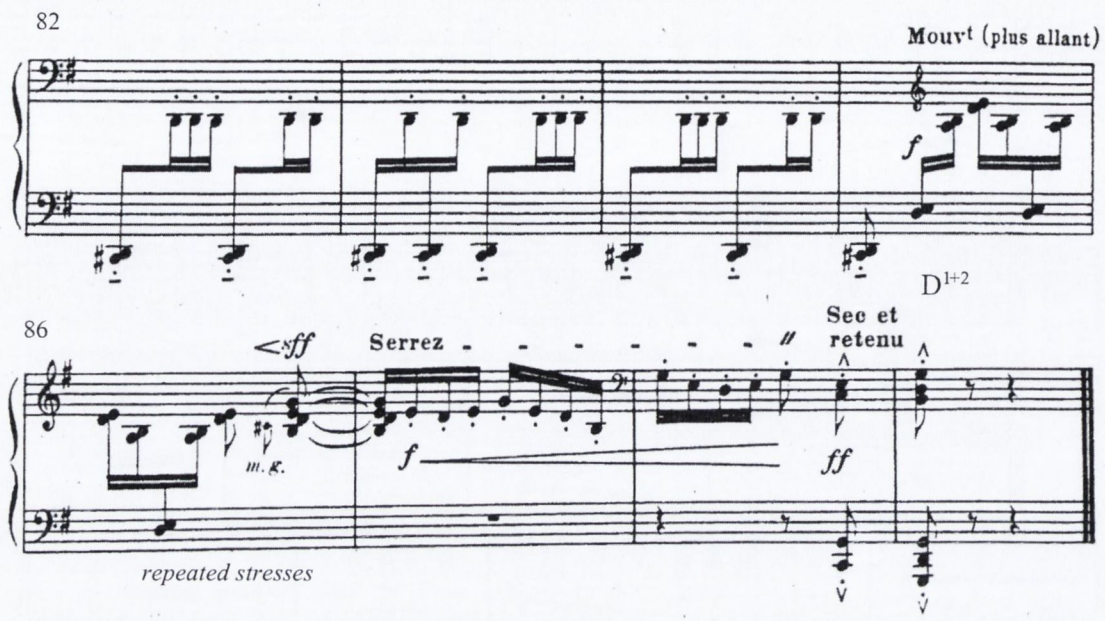


Example 4.11: mm.68–81 of 'Minstrels'

The trochaic phrase at the end of m.63 sounds like a strong-weak-weak (dactylic) structure, followed by two strong-weak (trochaic) structures.[66] There is a dissonance with the referential meter, but the trochaic structure takes control of the section, and is further emphasized in m.68, as well as the trochaic structure on a higher level at m.71. This might be considered a clarification of the referential meter. At the second half of this measure, however, a dactylic unit begins, which is elongated in m.73 with the descending quarter note structures. This then builds up to a similarly dactylic structure as in m.44. When the accented dissonances return, the wrongfully perceived downbeat continues until m.87, at which point the motif that has held the piece together leads into a playful cadence. The composition therefore seems to be more than just a series of cakewalk-style syncopations, and could be interpreted as more of a preconceived attempt to destabilize the rhythmic hierarchy through metric and accentual

[66] Pomeroy notes that this theme is a 'parodistic adoption of colloquial tonal idioms..the reference is homegrown, in the form of a Parisian music hall.' Pomeroy, 'Chromaticism and Form in Debussy's Orchestral Music,' 84.

displacement.



Example 4.12: mm.82–89 of 'Minstrels'

On the immediate level, 'Minstrels' is comprised of an ambiguity between trochaic and iambic groupings. While it seems to stress a trochaic structure for most of the piece, many of the metric ambiguities (such as the bass patterns in mm.24–26) are instances in which a dual grouping might be assigned. To create a hierarchical analysis of this piece would be somewhat contrived. While there is frequently a clarification of a referential meter (such as in mm.35–38), they don't operate on a larger structural level, perhaps due to the fact that there is little notion of period-sentence relationship within the piece as a whole. As such, 'Minstrels' might best be viewed on the local level, with meter obscured through accentual shifts and displacement.

The first movement of Debussy's *Violin Sonata* contains a number of similar

metric dissonances.[67] There are what Krebs refers to as 'direct' metric dissonances in mm.29–39, as there are multiple layers creating a conflict. The pulse, which is changing frequently despite not being notated as such, contributes to what Krebs refers to as 'indirect metric dissonance,'[68] first noticeable at m.7. The rest of the first beat of m.8 allows for a perceived measure of 4/4 in m.7. This fluctuation continues, as the newly perceived 3/4 measure is that which straddles mm.8–9.[69] Additionally, these measures (which can be seen in Example 4.13 below) exhibit another form of hemiola, as the melody played by the violin creates the impression of 3/2. This 'indirect metric dissonance' is recurs at m.34, as the tied A-natural octaves contribute to a perception of two half note attacks that continue until m.40 (seen in Example 4.14).[70]

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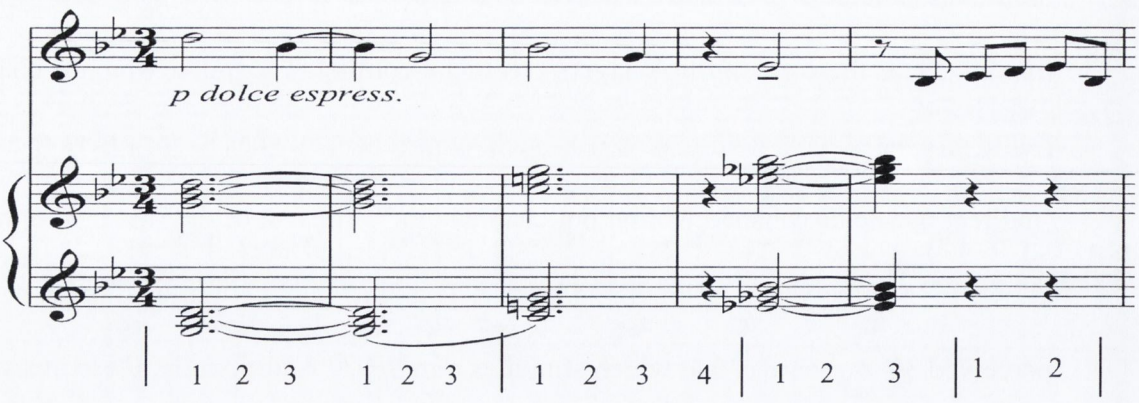
[67] Christopher Hasty provides an analysis of mm.1–27 of the opening movement, invoking projection. While I would argue that projection is an appropriate methodology for this piece, Hasty's analysis doesn't discuss a number of the more immediate metric issues. For example, he considers mm.5–6 to be one unit, while I would argue that it is a displaced 2/4 meter. Additionally, while the analysis of the opening measures of the piece provides an interesting insight into the benefits of projection when applied to the Violin Sonata, it avoids a number of the more metrically interesting aspects of the movement, which are discussed here in terms of displacement, rather than projection (as I displacement is perhaps more fitting to discussing multiple meters perceived at once). Christopher Francis Hasty, 'Just in Time for More Dichotomies–a Hasty Response', *Music Theory Spectrum* 21/2 (1999), 275–93 (289–93).

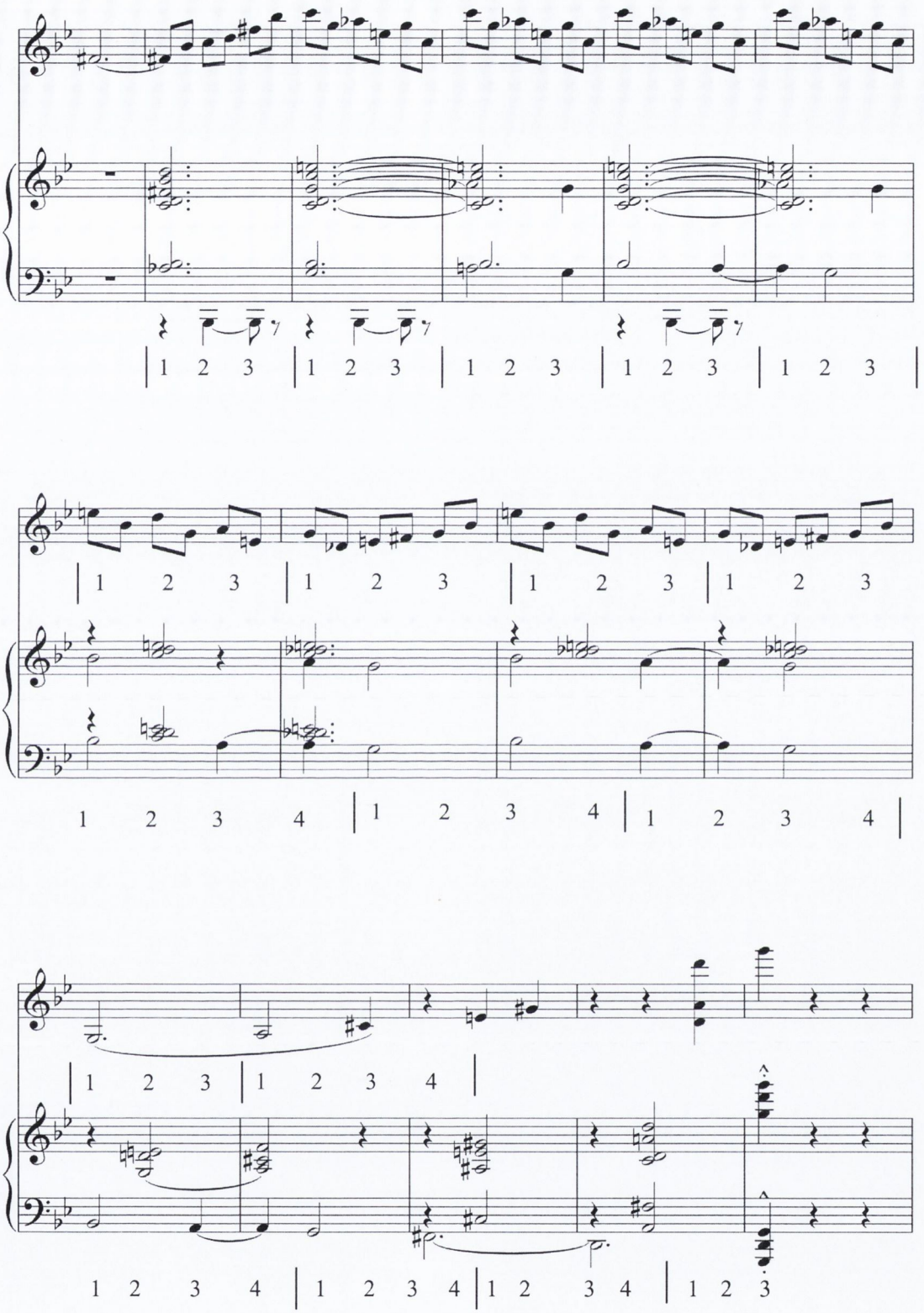
[68] Harald Krebs, 'Some Extensions of the Concepts of Metrical Consonance and Dissonance', *Journal of Music Theory* 31/1 (1987), 99–120 (105).

[69] Hasty analyzes this as the onset of a new meter as well, but additionally views the onset of m.9 (although not accented) to be the start of a new meter. Hasty, 'Just in Time for More Dichotomies–a Hasty Response,' 290.

[70] Such metric dissonance has been discussed by a number of other theorists. Rothstein refers to a 'shadow meter,' in which a 'secondary meter [is] formed by a series of regularly recurring accents' William Nathan Rothstein, 'Beethoven with and without *Kunstgepräng:* Metrical Ambiguity Reconsidered', *Beethoven Forum* 4 (1995), 165–93 (167). The term, however, has been attributed to Frank Samarotto, who later published it in Frank Samarotto, 'Strange Dimensions: Regularity and Irregularity in Deep Levels of Rhythmic Reductions', in *Schenker Studies Ii*, Heidi Carl Schachter and Siegel (ed.), (Cambridge Cambridge University Press, 1999) 222–38. *Passim.* A similar concept is simply referred to under the general term of 'metrical dissonance' in Krebs, 'Some Extensions of the Concepts of Metrical Consonance and Dissonance'. Richard Cohn, 'Metric and Hypermetric Dissonance in the *Menuetto* of Mozart's Symphony in G Minor, K.550', *Intégral* 6 (1992), 1–33. and Yeston, *The Stratification of Musical Rhythm*, *Passim.*



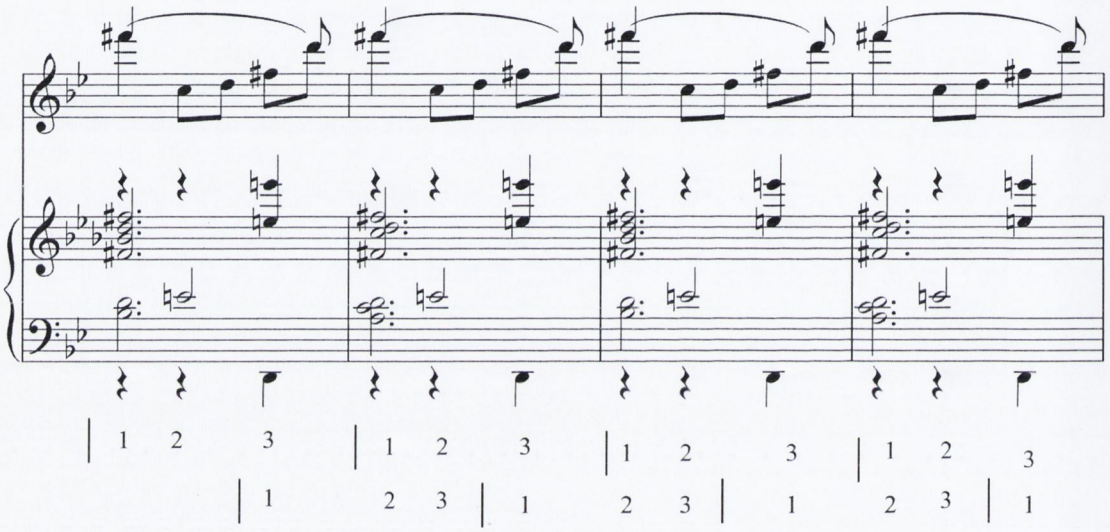
Example 4.13: Brief metric fluctuation in mm.5–9 of the Violin Sonata



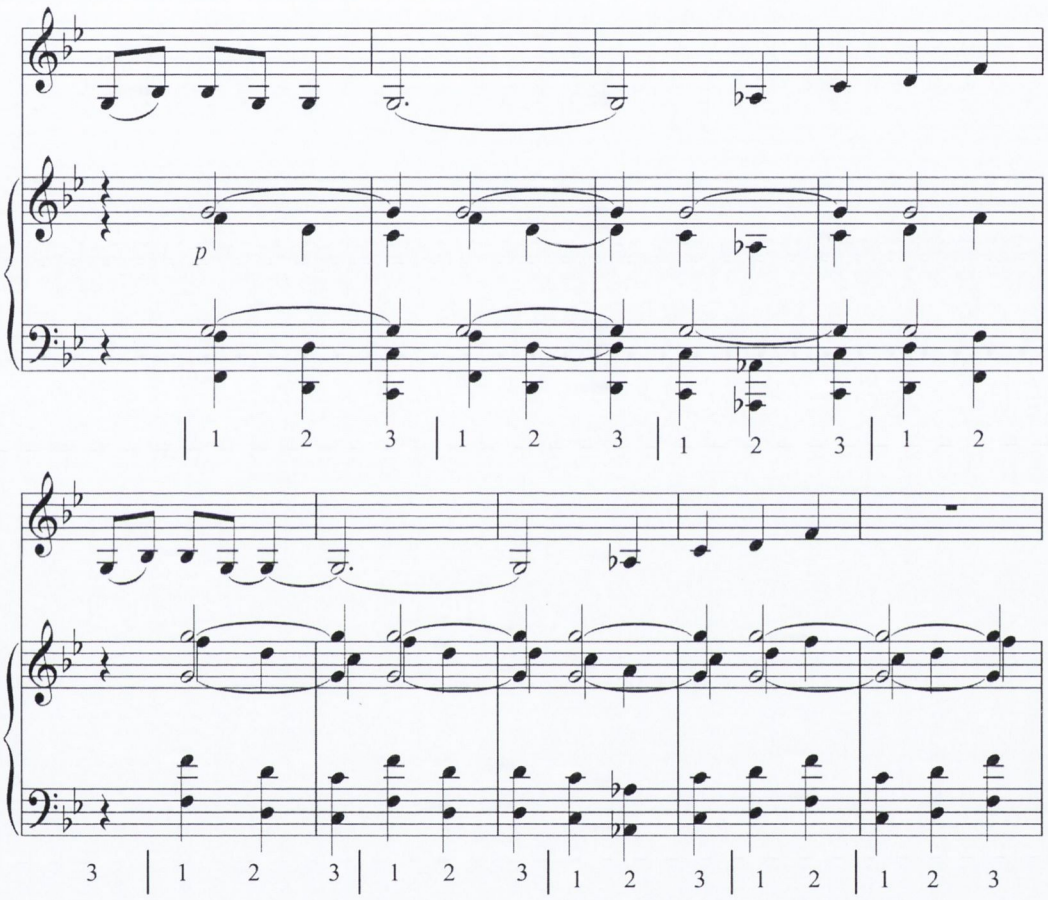
Example 4.14: Metric dissonance in mm.28–40 of the Violin Sonata

At the *appassionato* in m.192, the low D in the left hand on the third beat would not normally create such an overt metric dissonance, but the fact that a quarter-note attack on the second beat was prevalent in mm.15–19 (which then becomes a quarter tied to an

eighth in mm.29–32) prepares the listener for a metric emphasis in alternation with the chords in the right hand. As this shifts to the third beat in m.192, the primacy of the downbeat is undermined, and there are two competing meters of 3/4, creating an overt metric dissonance between the two. Aside from these instances, pure metric displacement occurs in m.226 of the first movement, at which point a 3/4 measure begins to be inferred, but displaced by a beat (D^{2+2} if we consider the eighth note to be the lowest structural hypermetric level in this movement).



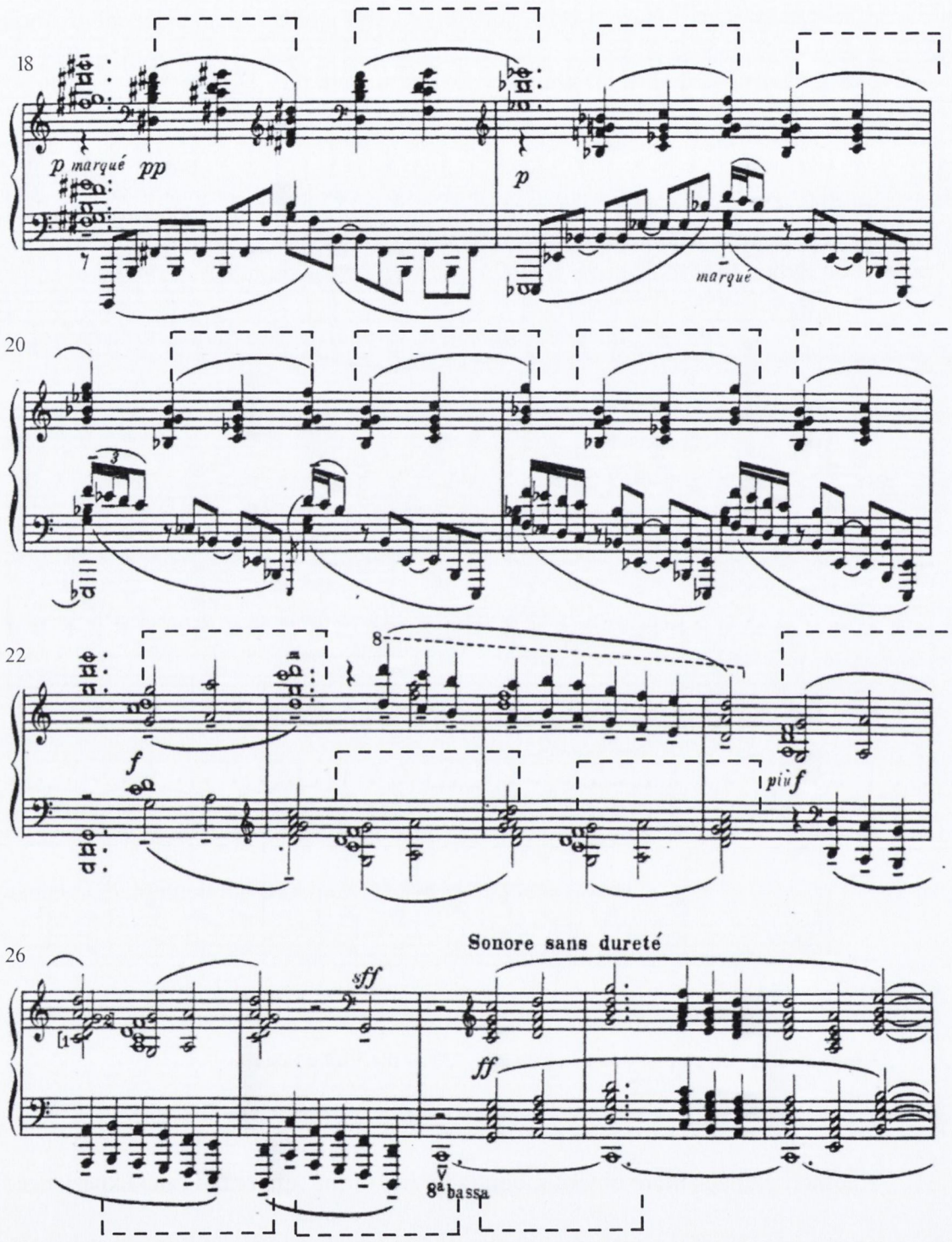
Example 4.15: Multiple meters in mm.192–196 of the Violin Sonata



Example 4.16: Displaced meter in mm.226–233 of the Violin Sonata

Another, perhaps more obvious, contradiction of the referential (and experienced) meter occurs in m.18 of 'La cathedral engloutie,' in which a series of three-chord quarter note events beginning on the second beat continue until a resolution at m.22. This is at odds with the left hand, which consists of a grouping displaced by a beat ($D^{4\text{-}4}$). At this point, the rhythm expands to a half note grouping of in both the left and right hands. In m.23, the three-note grouping continues–now as half-notes, against a grouping of four followed by six. In mm.25–27 there is a three-half-note group at odds with the six-

quarter note groups, displaced by one beat (although this time D^{4+4}).[71]



Example 4.17: Metric displacement in mm.18–30 of 'La cathédrale engloutie'

Such displacements and metric dissonances allow for the piece to continue to be fluid, but frequent return to a referential meter allows for a hierarchy to be used in the first

[71] This piece contains a number of similar instances, although I've only discussed one. For example, there is a metric dissonance in mm.7–9 that would illustrate a similar point.

place. An analysis based on a tactus-driven rhythmic model is inherently limited, however, as the consistencies required for a complete hierarchical analysis simply don't exist.

4.3 Rhythmic Projection

Hasty's methodology is largely based on this idea of rhythmic 'projection,' which he defines as 'the process in which mensurally determinate duration provides a definite durational potential for the beginning of an immediately successive event.'[72] Simply stated, projection can be thought of as the listener's expectation that has been created by previous rhythmic and metric regularities.

The concept of projection, with its emphasis on the conscious experience of rhythm being dependent on the context in which it is placed, can be seen as being a child of phenomenological musical analysis. Hasty's concept of rhythmic projection relies heavily on the philosophies of Henri Bergson, who believed that the experience of time could not be quantifiably measured. Bergson posited that any experience in time immediately becomes a past experience, and any future experience exists as a projection. When referring to the temporal qualities of a melody Bergson asks:

> Could we not say that, if these notes succeed one another, we still perceive them as if they were inside one another and their ensemble were like a living being whose parts, though distinct, interpenetrate through the very effect of their solidarity?[73]

Husserl, who chooses to use the metaphor of a melody as perceived in time, believed that consciousness of time must consist of retention, which consists of the memory of the note, attention, which is the surface impression of the note, and protention, which is

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[72] Hasty, *Meter as Rhythm*, 85.

[73] Henri Bergson, *Time and Free Will: An Essay on the Immediate Data of Consciousness*, (Mineola, N.Y.: Dover Publications, 2001), 101. originally published as Henri Louis Bergson and Frank Lubecki Pogson, *Time and Free Will, Tr. By F.L. Pogson*, (London, 1910).

based upon the listener's expectation of what will occur.[74] Justin London discusses the relevance of phenomenological theories of time to Hasty's rhythmic analyses, most notably Bergson's approach, as well as Whitehead's process theory, which emphasizes 'becoming' over 'being' and what he calls 'the occasions of experience.'[75]

Despite this emphasis, the theory of projection does not preclude hierarchy. Hasty illustrates the multiple levels of potential each rhythmic onset can have, but despite the nesting of projections, they are not 'recursive' structures.[76] That is, there can be multiple projections moving to different time points, and 'the measure establishes a complex projective field.'[77] Hasty refers to this as 'dominance,'[78] but is quick to note that

> the notion of 'dominance' comports well with the connotations of 'hierarchy.' But it must also be remembered that the 'power' of dominance is derived from dominating and that continuations as denials of beginning that would end dominance also function to realize the potential or 'power' of the dominant beginning, to keep this becoming alive, and to enhance its mensural determinancy or its projective potential.[79]

Hasty's theory allows for a metric study of Debussy's music that is analogous to the implicative theories mentioned in the previous chapter. By viewing meter as a juxtaposition of realized and unrealized events, one can therefore view the implicative elements of melody and meter in congruence with one another. Before continuing with

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[74] David Lewin, 'Music Theory, Phenomenology, and Modes of Perception', *Music Perception* iii (1986), 327–92.

[75] Justin London, 'Review: Hasty's Dichotomy', *Music Theory Spectrum* 21/2 (1999), 260–74 (262–63). Dahlhaus makes a similar distinction, differentiating between the 'shaping of time' (*Zeitgestalt)* or 'shaped time' (*gestaltete Zeite*). See Carl Dahlhaus, *Esthetics of Music*, (Cambridge ; New York: Cambridge University Press, 1982), 75.

[76] London uses this term to describe the hierarchical nature of other rhythmic studies in London, 'Hasty's Dichotomy,' (267).

[77] *Ibid.*, 267

[78] Hasty, *Meter as Rhythm*, 115.

[79] *Ibid.*, 115

this, however, it would be efficacious to provide a brief history on theories of rhythmic expectation.

4.3.1: Some Precedents for a Theory of Projection

Hauptmann's *Akzentheorie* viewed rhythm as implicative, as the dialectic created by a first beat (the thesis) and a second (the antithesis) could only reach a unified synthesis once the third beat was played. Hauptmann writes:

> A first element of time, which metrically can only be the first of a second equal to it, is in regard to its second, determining; the second is determined. A first as against its second has the energy of the beginning, and consequently the metrical accent.[80]

Similarly, Neumann's rhythmic theory is dependent upon the role of expectation (*Erwartung*) which exists 'on the way from [point] A to [point] B temporal consciousness is directed predominantly toward the future, toward the arrival of B.'[81] Neumann, in alignment with the theories of temporality discussed above, includes a sense of recollection (analogous to the phenomenological retention), which can be explained as:

> From point B to [a future point] S...the direction of our attention is reversed; consciousness glances back toward the past stretch A-B and avoids any thoughts of the coming potential limit (S) in order that the wholeness of the pair not be disturbed. This state we will label recollection (*Erinnerung*).[82]

Neumann's ideas influences Hasty's theory of rhythmic 'projection,' which states that the act of listening to a first beat is accompanied by a 'feeling of growth, a feeling of continually new and expanding duration, and the feeling of the potential for

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[80] Moritz Hauptmann, *Die Natur der Harmonik und der Metrik,* (Leipzig: Breitkopf und Hartel, 1853), translated by W. Heatcote as *The Nature of Harmony and Metre,* (London, S. Sonnenschein, 1888), cited in Caplin, 'Theories of Musical Rhythm in the Eighteenth and Nineteenth Centuries,' 679.

[81] Justin London, 'Rhythm in Twentieth-Century Theory,' in *Cambridge History of Western Music Theory*, Thomas Street Christensen (ed.), (Cambridge: Cambridge University Press 2002), 695–725 (700).

[82] *Ibid.*, 700.

becoming.'[83] Hasty employs a projective theory of rhythm to illustrate rhythmic implications as well as an invocation of Bergson and Whitehead's theories of protention and retention, accommodating the dual nature of time. The methodology uses nested implications, created a system of hierarchical implications of rhythm. Projections, like melodic implications, can be either be realized (in which case they lead to further projections), or they can be denied (those denied are marked with an x at the point of denial in the analysis).

Narmour briefly mentions rhythmic implication in *Beyond Schenkerism*, explaining that

> a durational process is always created when a note of longer duration moves to a note of shorter duration. And vice versa: a degree of rhythmic closure is always created when a short note moves to a long note.[84]

This theory fails, however, to account for any sort of implication beyond the immediate level. Additionally, it focuses solely on duration, rather than on a relationship to a larger meter or its placement within the composition.

4.3.2: Cognitive Basis for a Rhythmic Theory of Projection

While hierarchical views of meter have been the focus of the majority of the analytical writings for the past century, a number of recent studies have focused on the viability of metric perception being a dynamic (as opposed to static) process. As Taggart writes:

> static cognitive structures cannot completely explain temporally linear rhythmic and metric perception and production. A perceived rhythmic stimulus occurs in real-time; it has a distinct beginning and ending and requires a period of time to unfold.[85]

London notes that the clock model presented by Povel and Essens could be considered

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[83] Hasty, *Meter as Rhythm*, 72.

[84] Narmour, *Beyond Schenkerism: The Need for Alternatives in Music Analysis*, 150.

[85] Taggart, 'Rhythmic Perception and Conception', 113.

to be *time discrete,* with 'an internal representation of an external temporal interval'[86] that forces the listener to move 'from state to state, where each state includes a representation of past temporal structure as well as the anticipation of future events.'[87] The theories of dynamic-attending, however, are 'time-continuous models,' which 'does not move from state to state but varies in a cyclical fashion. It is a resonating system.'[88]

Additionally, the fluctuating nature of perception has been emiprically tested at length. Mari Riess-Jones's theory of 'dynamic attending' aims at illustrating the fluid nature of a listener's approach to rhythm, considering listeners to be more attentive at certain points during a composition, and their consciousness of rhythm to be altered as a result. She notes that it addresses the 'in-the-moment' expectations in listening as it 'realizes adaptive synchrony of *internal* attending oscillations with an *external* event.[89] Riess-Jones states that

> time spans within a metric level can elicit a corresponding neural oscillation, which has a persisting internal periodicity, manifest as a temporal expectancy. It 'tunes into' recurrent time spans at a given level by adjusting its phase in response to temporal *expectancy violations* at that level.[90]

This finding is in line with Zuckerkandl's earlier theory of metric perception, which considered a similar form of attending (in the form of oscillations) stating that

> [o]ur sympathetic oscillation with the meter is a sympathetic oscillation with this wave. With every measure we go through the succession of phases characteristic of wave motion: subsidence from the wave crest, reversal of motion in the wave trough, ascent toward a new crest, attainment of the summit, which immediately turns into a new subsidence–

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[86] London, *Hearing in Time: Psychological Aspects of Musical Meter*, 21.

[87] *Ibid.*, 21.

[88] *Ibid.*, 21. Seashore similarly postulated that attention was dynamic in the 1930s, and David Huron notes that 'when listening to sounds, we do not pay attention equally at all moments.' Huron, *Sweet Anticipation: Music and the Psychology of Expectation*, 176. Carl E. Seashore, *Approaches to the Science of Music and Speech*, (Iowa City: Iowa University Press, 1933).

[89] Mari Riess Jones, 'Musical Time', in *The Oxford Handbook of Music Psychology*, Susan Hallam, Cross, Ian, Thaut, Michael (ed.), (Oxford: Oxford University Press, 2009), 81–92 (83). Emphasis in original.

[90] *Ibid.*, 83.

a new wave has begun.[91]

If we accept that meter is experienced as 'to and from' and 'away and back'[92] then the acceptance of metric projection becomes more feasible.

Longuet-Higgens and Lee found that after two onsets occurred, a third was predicted by the listener to be the same interval as the interval between the previous two. If this prediction was realized, there was then a prediction that there would then be an interval equal to that between the first and third, creating a hierarchical system of predictions (projections).[93] This finding provides a cognitive basis to Hasty's theory of projection. A projective analysis might therefore provide an view of Debussy's treatment of rhythmic ambiguity in a practical way, analogous to the melodic implications discussed in Chapter 3.

4.3.3: A Projective Analysis of 'Feuilles mortes'

The analysis of 'Feuilles mortes' takes this theory of time-consciousness into account when dealing with Hasty's theories of projection. The opening two-bar gesture begins with a constant structure progression that descends by whole step and is perceptually accelerating with its decrease in rhythmic values (from dotted half note to dotted quarter) and is followed by a motivic return to the opening structure in m.3. This could be seen as setting up the expectation of a repeated rhythmic motive, which is subverted in the fourth measure. These opening measures can be seen in Example 4.18. The solid arrow signifies a gesture that has been realized, while the dashed arrow is a projection that has yet to be realized. As this example shows, the motive projection was interrupted

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[91] Zuckerkandl, *Man the Musician: Sound and Symbol, Volume Two*, 168. Trezise echoes this in his discussion of rhythm and meter in Debussy's music when he refers to the inhalations and exhalations of a composition. InTrezise, 'Debussy's 'Rhythmicised Time,'' 264.

[92] Zuckerkandl, *Man the Musician: Sound and Symbol, Volume Two*, 169.

[93] H.C. Longuet-Higgens, and C.S. Lee, 'The Perception of Musical Rhythms', *Music Perception* 11 (1982),115–28. *Passim.*

at the fourth measure by a new rhythmic idea.

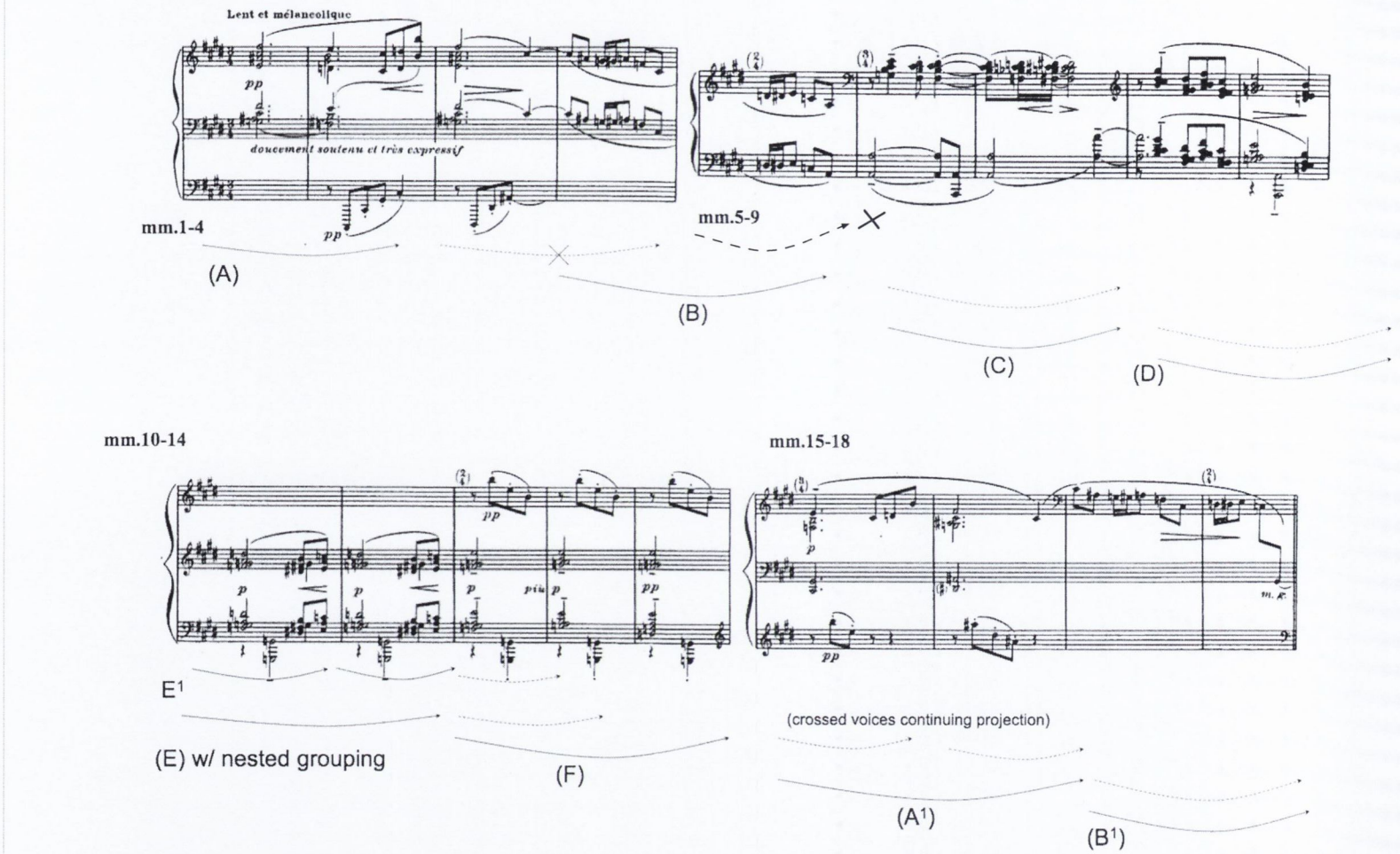
This new rhythmic motive, which will soon become the basis of an ostinato section, contains a momentum that is designed to accentuate the A augmented triad and the A-minor triad, and is a 3+2 grouping used as an agogic accent before the piece returns to the triple meter in which it began. This accentual grouping will recur later in duple meter as the basis for the ostinato section, but at this moment the expectation it may have generated is left yet again unrfulfilled. The next measure returns to triple meter, and consists of the syncopated descending structure over the metrically reorienting A on the downbeat. While this projected downbeat is realized in the following measure, the melody accelerates only to be interrupted in the eighth measure with a two-bar melody consisting of the constant-structure voicings on the upbeat. What occurs in the ninth measure (a pedal point on the second beat), however, is repeated for the next five measures. When the meter returns to duple meter, it remains on the offbeat.

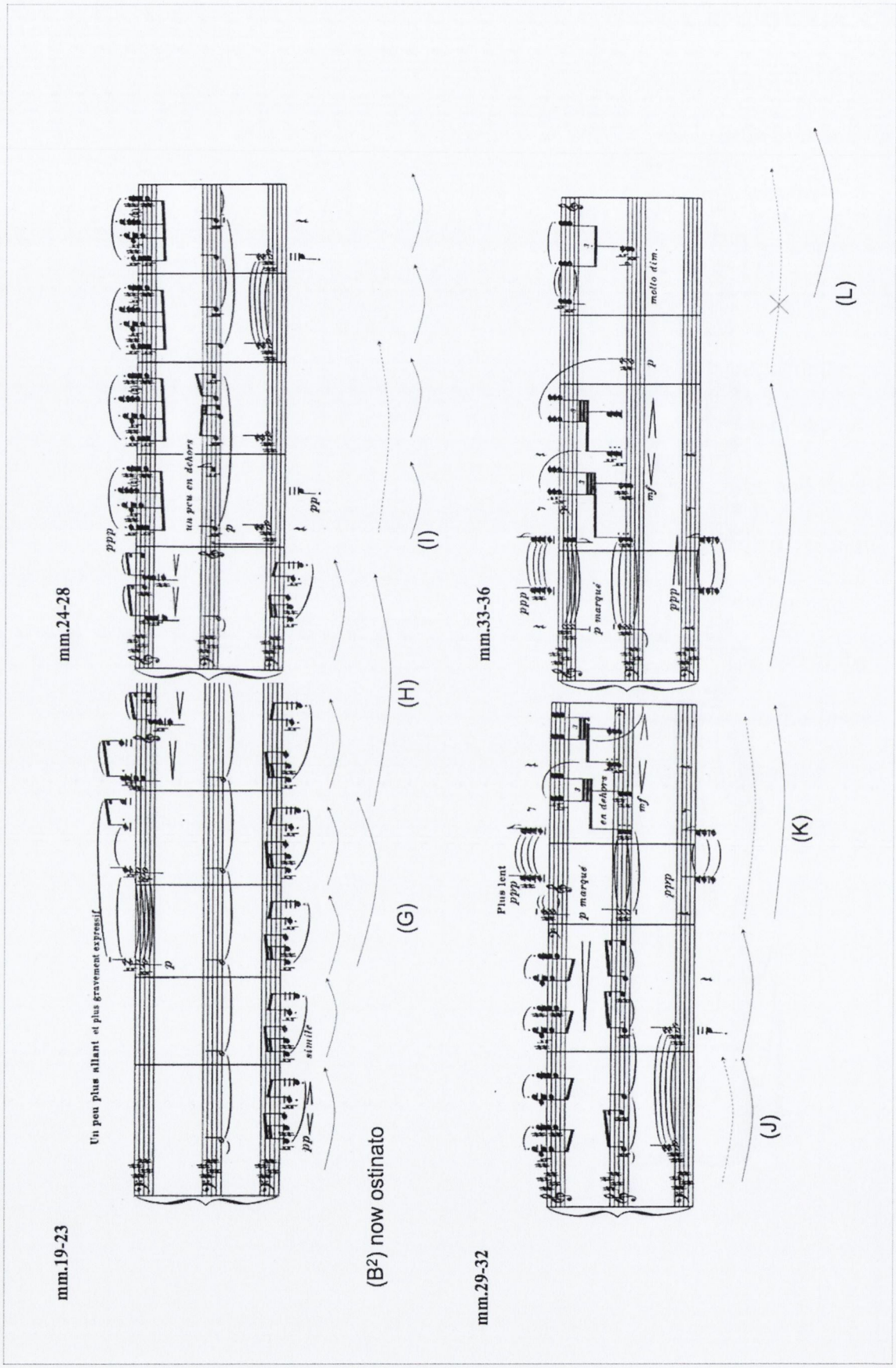
These sets of two discontinuous two-measure ideas lead into a one-measure idea that is repeated. The projection that is realized is further emphasized by a sense of motion that occurs with the melody beginning on the offbeat, which is juxtaposed with the clusters being doubled in both hands on the downbeat, followed by the pedal tone that has been carried over and is now on every second beat, which is now aiding the sense of acceleration with the metric shift from 3/4 to 2/4 time.

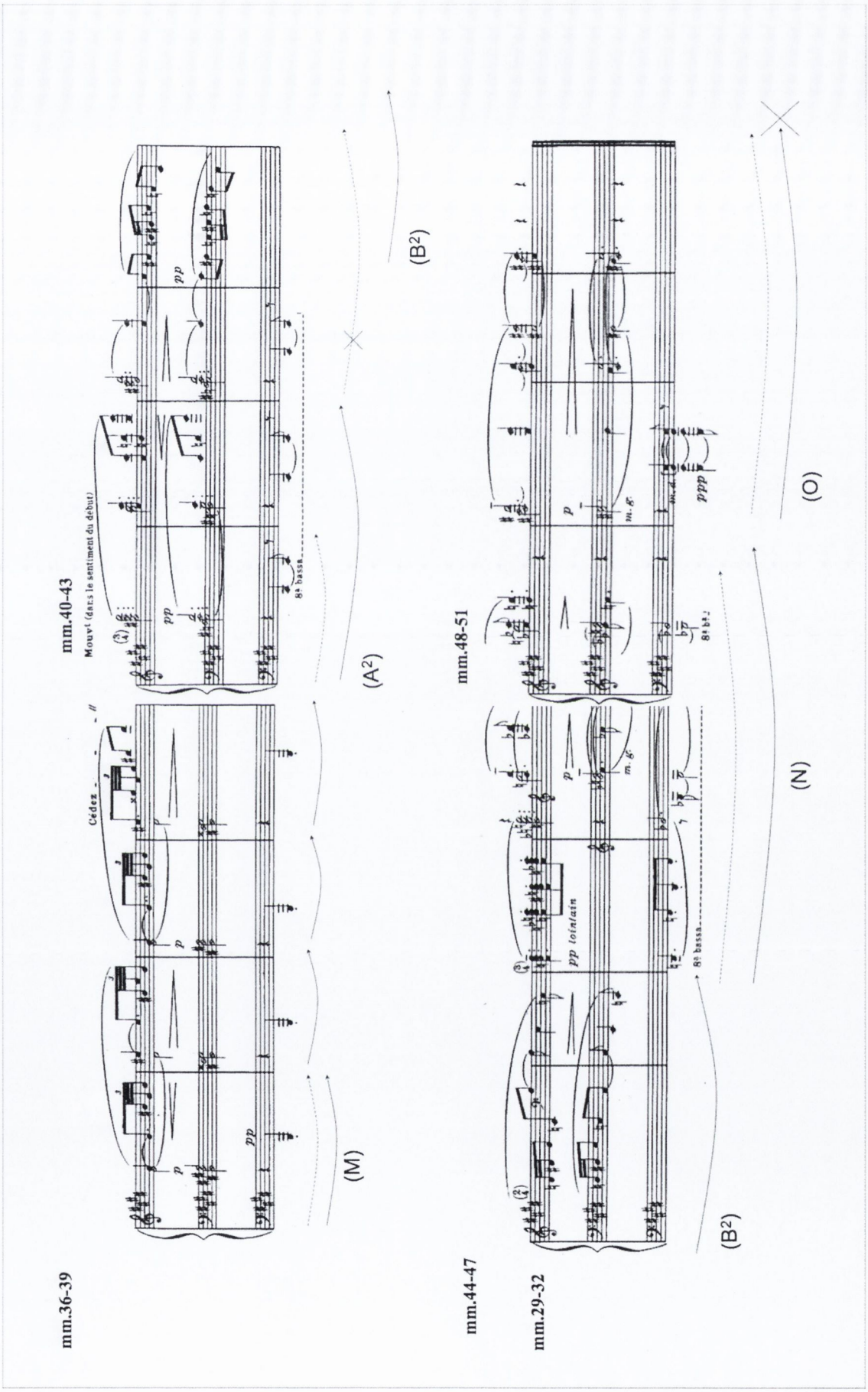
This section then dovetails into somewhat of a recapitulation of the opening theme,which is also the beginning of the second section of this tripartite composition. Rather than returning to the opening chord as in the third measure, however, the motive is truncated and moves directly into the motivic device comprising of the A-augmented to A-minor triad with chromatic neighbor tones. This then becomes a section with the most realized rhythmic expectations in the piece. The ostinato, while harmonically and tonally stagnant, begins each time with an accelerative 16th note motion, and further

builds the expectation for some sort of change. The right hand begins by playing an open voiced C-major triad with an added 9th, and begins slowly, by playing a full three beats before the a melody begins an ascending, and perceptually accelerating motion for two and a half measures, fulfilling the projection until the m.25, which marks the beginning of a section of another series of repeated harmonies which contrast with the somewhat atonal melody in the middle register.

At m.31 the piece begins a contrasting element of tension and release, with the sparse rhythmic properties of the m.31 interweaving with the somewhat frantic thirty-second note triplets that comprise mm.32 and 34. This alternation of tension and release would likely be expected to repeat, yet nothing but a sparse F♯-major triad arrives at m. 35. This measure, the returns to the triplet figure which is repeated until the opening gesture returns, this time in a spread voicing of the original harmonies. The end of the second section of this piece also marks the end of the realized projections in this piece. The remainder of the piece rhythmically consists of various decelerating gestures.


Lent et mélancolique
pp
doucement soutenu et très expressif
pp
mm.1-4
mm.5-9
(A)
(B)
(C)
(D)
mm.10-14
mm.15-18
E1
(E) w/ nested grouping
(F)
(crossed voices continuing projection)
(A1)
(B1)


mm.19-23
Un peu plus allant et plus gravement expressif
mm.24-28
un peu en dehors
(B2) now ostinato
(G)
(H)
(I)
mm.29-32
Plus lent
en dehors
(J)
(K)
mm.33-36
(L)



Example 4.18: Projective Analysis of 'Feuilles mortes'

4.4: Conclusion

This chapter has attempted to provide a background into the analytical methodologies that have been applied to rhythm in Debussy's music. It has discussed the analyses as either 'analyses of rhythmic structure' or 'analyses of rhythmic process.' Debussy utilizes a number of methods to create metric ambiguity, a number of which are hierarchical. For instance, the juxtaposition of iambic and trochaic stresses in 'Minstrels' can be considered one of the primary factors of metric ambiguity. Similarly, Debussy's use of metric dissonance (and metric displacement) offers multiple metric options for the listener in the *Violin Sonata*

Alternatively, meter in Debussy's music can be thought of as an implicative process, constantly subverting expectations in a similar way to what was discussed in Chapter 3 regarding melody. While both systems provide an enlightening view of Debussy's metric structures, the linearity of Hasty's projection allows for it to be used in congruence with melodic implication (and harmonic attraction, to be discussed in the following chapter). For this reason, in Chapter 6, the present study will advocate an analysis of projection.

In comparing these two methodological viewpoints, I have attempted to reconcile their underlying theories with recent cognitive studies, which indicate that listeners do hear meter as both structural and implicative. In doing so, this chapter has attempted to provide a more perceptually based analysis of Debussy's metric systems, with the aim of achieving a greater understanding for the role of ambiguity and process in the composer's music.

Chapter 5: Harmonic Tension and Attraction in the Préludes

5.1: Introduction

The harmonic element of Debussy's writing is perhaps the most contentious aspect of the composer's music, and has created a breadth of analytic studies that are often formed upon completely different assumptions. For example, Jarocinski believes that Debussy's harmonic structures are without function, simply meant to be immediate sonorities,[1] while Arnold Whittall points out that Debussy 'accepted principles of voice-leading and formal organization, preserving the distinction between consonance and dissonance and the presence of keys or modes.'[2] This chapter argues that, while Debussy's music is frequently based on tonal elements (a fact that has led to a number of Schenkerian analyses of the composer's works),[3] it creates ambiguity through a dissolution of harmonic syntax. This lack of syntax has created the gap in analyses of the composer's music, as the music frequently contains analyzable pitch-collections (and the use of non-diatonic pitch-collections has allowed for analyses by Parks, Forte, and McFarland to illuminate a number of elements of the composer's works),[4] but does not foresake a governing harmonic syntax with which one can analyze the music tonally (it merely subverts it). The following chapter discusses both attempts, and argues for a third based on the concept of harmonic attraction. This method employs a tonal methodology, but avoids a strict adherence to a governing tonic (as many Schenkerian analyses have used).

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[1] Stefan Jarocinski, *Debussy: Impression and Symbolism* (London: Eulenburg, 1976), 141–143.

[2] Arnold Whittall, *Musical Composition in the Twentieth Century* (Oxford, UK: Oxford University Press, 1999), 204.

[3] See Boyd Pomeroy, 'Toward a New Tonal Practice: Chromaticism and Form in Debussy's Orchestral Music' (PhD Thesis, Cornell University, 2000), *Passim.*

[4] Allen Forte, 'Debussy and the Octatonic, in *Music Analysis,* 10/12 (1991), 125–169, Richard S. Parks, *The Music of Claude Debussy,* (New Haven: Yale University Press, 1989), 'Mark McFarland 'Claude Debussy and the Concept of Chromatic Harmony in His Late Works,' (PhD Thesis, UC Santa Barbara, 1997).

Harmonic theory has always hinged on the role of gravitation, attraction and tension. Among the most notable examples are obviously Rameau's tonal theory (so directly influenced by Newton's contemporaneous writings on gravity)[5] and Schenker's use of the descending *Urlinie* as a 'striving toward a goal, and ultimately the completion of this course.'[6] Similarly, Kurth's *Grundlagen des linearen Kontrapunkts* discussed the role of tension (*Spannung*) at length, and wrote of the 'potential energy' of harmonic structures (opposed to the kinetic energy of melody).[7] He writes:

> An attraction prevails between simultaneous tones, a gravitational force that inclines toward consolidation in a particular chordal image, the consonant triad. A kind of cohesion exists between the tones in music. The consonant triad is the basis and the beginning of all further regularities only in a theory of chords. In that attraction between tones, however, an active force must be recognized that engenders the primal urge relating the simultaneous, 'vertically' oriented tones to one another, for absorbing the mass of the chord as a unit.[8]

The analyst of Debussy's music is therefore presented with a conundrum: can attraction exist when the line between consonance and dissonance is blurred? Fétis based his entire harmonic treatise on the opposition of:

> the consonant harmony called *accord parfait*, which has the quality of rest and

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[5] See Jean-Philippe Rameau, *Treatise on Harmony*, (New York,: Dover Publications, 1971). *Passim.* Thomas Christensen writes that, 'both gravity and tonal attraction are unseen forces that operate over distances...just as Newtonian theory shifted attention away from the *impact* of matter to the *attraction* of matter, so too did Rameau begin to define tonal motion less by the concatenation of dissonant dominant chords above the fundamental bass than by the attractive quality of the tonic.' *Rameau and Musical Thought in the Enlightenment.* (Cambridge: Cambridge University Press, 1993), 190.

[6] Heinrich Schenker *Der Freie Satz,* Ernst Oster and Oswald Jonas (eds. and trans.), (New York: Longman, 1979), 4.

[7] Ernst Kurth, *Grundlagen des linearen Kontrapunkts.* See *The Selected Writings of Ernst Kurth,* Lee Rothfarb (ed.), *Passim.* Regarding musical tension, Geoffrey Chew writes that, 'the concept of musical tension was not invented by Kurth: it appears at least as early as the late nineteenth century in books on performing practice. But Kurth appears to have been the first to attempt to systematize it and to understand it as a commonplace, especially in the more journalistic type of writing about music.' in Geoffrey Chew, 'The Spice of Music: Toward a Theory of the Leading Note' in *Music Analysis,* Vol.2 No.1 (March 1983), 35–53.

[8] Ernst Kurth, *Grundlagen Des Linearen Kontrapunkts; Bachs Melodische Polyphonie*, (Bern,: Krompholz, 1948)., cited in Ernst Kurth, *Ernst Kurth: Selected Writings*, Lee Rothfarb (trans. and ed.) Cambridge Studies in Music Theory and Analysis 2 (Cambridge: Cambridge University Press, 1991).

> conclusion, and the dissonant harmony, which causes tendency, attraction, and movement...Thus are determined the requisite relationships among tones that one designates, in general, by the name of tonality.[9]

Such notions of consonance/dissonance would seem to be essential definitions for a theory of harmony, but begin to become more of a burden than an aid. Toch's frustration with this dualism led him to write that (unfortunately) harmonic analysis dictates:

> 1) that dissonance does not find repose in itself, and therefore does not satisfy the ear, but needs to 'resolve', meaning to be followed by consonance, in which the ear may find repose and satisfaction; and
> 2) That certain sounds, intervals or harmonies are by nature dissonant, and by others are by nature consonant.[10]

He continued to write:

> The sooner we discard these two coddled pets of theory, the sooner we will discard with them an unending source of confusion. The future will look back at this doctrine of consonances and dissonances with the same pitying smile which we bestow upon the once-upon-a-time belief in witches and evil demons living inside certain individuals.[11]

Despite the frequent lack of these boundaries, harmonic analyses of Debussy's music frequently implement this binary opposition. Much of this has to do with the fact that the consonant triad, referred to by Kurth as the 'primordial image of repose among harmonies,'[12] remains a stronghold throughout the

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[9] François-Joseph Fétis, *Traite Complet De La Théorie Et De La Pratique De L'harmonie*, (Paris,, 1903)., iii cited in Carl Dahlhaus, *Studies on the Origin of Harmonic Tonality*, (Princeton, NJ: Princeton University Press, 1990), 8–9.

[10] Ernst Toch, *The Shaping Forces in Music: An Inquiry into the Nature of Harmony, Melody, Counterpoint, Form*, The Dover Series of Study Editions, Chamber Music, Orchestral Works, Operas in Full Score (New York: Dover Publications, 1977)., 12. Toch differentiates between 'chord' and 'harmony.' The former has more of a functional implication while the latter means a more tangible 'sound,' (2).

[11] *Ibid.*, 15.

[12] Kurth, *Ernst Kurth: Selected Writings*, 42.

Préludes, despite a frequent lack of functionalism in regard to it.[13]

5.1.1 The Role of Function in the Préludes

One of the biggest obstacles for a tonally based analysis of the *Préludes* is Debussy's use of non-functional harmony. Debussy was hardly fond of functional theory (or, for that matter, the theorists espousing it). In a 1907 letter to Victor Segalen, he wrote: 'regarding Mr Riemann, don't you think he seems like someone who would reduce the beauty of a sunset to a mechanic movement?'[14] This disregard for traditional harmonic function is perhaps the biggest stumbling block for a tonally-based analysis. When the tonic-dominant polarity is weakened (as it frequently is by Debussy's use of the lowered 7th despite the lack of a dominant function, and his general avoidance of standard cadences) its function, or the striving toward an end goal, is devalued. As many have noted, this lack of functionality is indebted to Wagner.[15] Nadeau writes:

> Because chordal tensions, especially those of dominant function in Wagner's music often did not resolve conventionally, the principle of tonic hegemony within the major/minor tonal system weakened greatly; Wagner's endless chromatic modulation taxed the ear's ability to retain the sense of a single, overriding tonic. It was at this point that Debussy struck out in his new direction. He developed a chromatic homophonic style that retained tonic hegemony while broadening it tremendously to accommodate a variety of tonal materials beyond major/minor. He accomplished this by refuting the absolute need for the resolution of dissonant chords. He used all possible chromatic and diatonic intervals, not as consonances or dissonances, but as part of a graded hierarchy of vertical tensions subservient only to generating chord roots within a

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[13] Whittall states that 'Debussy's dialogue with the past did not involve rejection of the past. Nor did his questioning of tradition yield such explicitly radical results as those achieved by his contemporaries – Schoenberg, Ives – whose vocabularies and formal designs were less beholden to the idea of 'rapprochement.' Yet it is precisely the delicate balance between old and new in his finest works that marks him as a central figure who remains a seminal example of progressive thought a century later.' Whittall, *Musical Composition in the Twentieth Century.* 19.

[14] 'À propos de Mr Riemann, ne trouvez-vous pas qu'il ressemble à quelqu'un qui ramènerait la beauté d'un coucher de soleil à une pièce mécanique?' in Claude Debussy, Letter to Victor Segalen, in *Debusssy Correpondance,* 1028.

[15] Ernst Kurth, *'Romantische Harmonik,* see also Laurence D. Berman 'The Evolution of Tonal thinking in the Works of Claude Debussy, (PhD Thesis, Harvard University, 1965), 1–30.

broadened field of tonality.[16]

Berman refers to this 'diatonic disintegration of functionality' as 'neutralization,'[17] as the implicative nature of the chords is jeopardized (although Berman never uses such terminology). Such 'neutralization' of function is usually the result of either an extended emphasis on the upper-structure elements of a chord (9, 11, 13, etc), or a devaluation of the leading tone. In 'Canope' for example, Debussy uses pitch classes from C-major (although emphasizing D Dorian), but avoids the B-natural (instead opting for a B♭ in a G-minor triad). When he does use a B, it descends to A, while the B♭ ascends to C. Debussy is creating neutralization by avoiding the common function of the leading tone. Another instance of 'neutralization,' this time through a non-resolution of dominants, occurs in mm.3–5 of 'Les sons et les parfums tournent dans l'air soir,' in which the parallel dominants never resolve accordingly, but rather to a cluster on the second beat of m.5.[18] Fauré's music frequently contains similar instances that predate those used by Debussy, but the prevalence of such issues in the *Préludes* warrants a discussion, as it one of the central issues for a tonal analysis of the pieces.[19]

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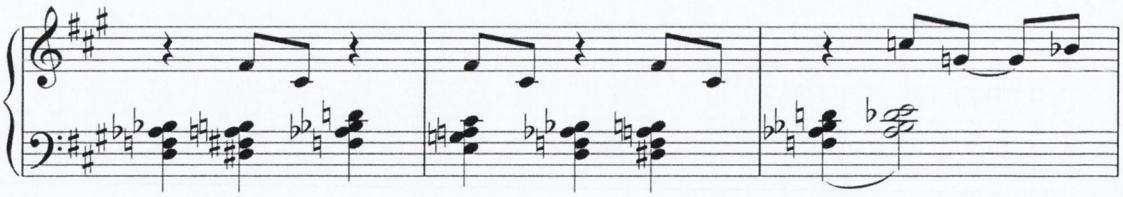
[16] Nadeau 'Brouillards: A Tonal Music,' 44.

[17] Laurence Berman, 'The Evolution of Tonal Thinking in the Works of Claude Debussy' (PhD Thesis, Harvard University, 1965), 31.

[18] Pomeroy, referring to it as non-functional diatonicism, examines this concept at length in Debussy's orchestral music, most notably 'De 'laube sur la mer' in which a seventh chord alternates between non-functional and functional. (Pomeroy, 'Towards a Tonal Practice,' 138) He asks 'in a Debussyan context, under what conditions should a seventh chord be understood as syntactically functional?' (*Ibid.*, 108). A similar dominant transformation takes place in 'Des pas sur la neige' which is discussed at the end of this chapter.

[19] The E♭ chord in the opening of 'Canope' might be considered another use of 'neutralization.' When first used in m.4, it is serving a Neapolitan function in D-Dorian. When it returns in m.13, it is now an E♭7, implying a similarly dominant function. Instead it resolves onto a C-major triad, subverting the only dominant function of the piece and destabilizing the function of similar future events.



Example 5.1: mm.3–5 of 'Les sons et les parfums tournent dans l'air du soir'

Such 'neutralization' is obviously at odds with the more 'verticalist' Riemannian theory,[20] in which a tonic/subdominant/dominant reduction is essential. Danckert's attempted reduction to such forms ended in incomplete analyses (he reduces a number of *Prélude* openings, such as those of 'Bruyères' and 'Canope' to this functional level),[21] but despite this reductionism, he highlights the need for a study of harmonic tension in the composer's music, stating that, 'Debussy would not be a Western musician if he had abandoned the interplay of tension and release between the sounds.'[22]

While many of the *Préludes* contain a seeming lack of function, they nevertheless create tension and repose. The present study argues that this tension is the result of harmonic attraction, as the more one chord is expected to move to another, the less tension a listener could likely perceive when that expectation is realized (to return to the conflict theory of emotions discussed in Chapters 3 and 4). This would lead one to a broader definition of function, that could encompass tension and repose beyond the scope of tonic and dominant. One of Kopp's definition of function is 'a concept of the intrinsic potentiality of a given chord to progress in a particular way or to a particular chord.'[23] This more flexible definition allows for one to analyze the function of the

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[20] This phrase (in reference to Riemann) is from Kurth, as mentioned in Geoffrey Chew's article, 'Ernst Kurth, Music as Psychic Motion,' *Music Analysis*, Vol. 10, No. 1/2 (Mar. - Jul., 1991), 171–193.

[21] Werner Danckert, *Claude Debussy*, (Berlin, Walter de Gruyer, 1950), 86.

[22] 'Debussy wäre keinkein abendlandischer Musiker, wenn er auf das Wechselspiel von Spannung und Lösung zwischen den Klängen verzichtet hätte.' in *Ibid.,* 91.

[23] David Kopp, 'A Comprehensive Theory of Chromatic Mediant Relations in Mid-Nineteenth-Century Music' (PhD Thesis, Brandeis University, 1995), 6.

Préludes devoid of the traditional functional requirements such as a dominant-tonic relationship. Instead, function can be expanded to include chords of higher tension (which I would argue are analogous to a 'dominant' function), and those that are more at rest (serving as a tonic function). The expansion of terminology creates a vague field with which one can discuss Debussy's music, but it confronts the problem that Danckert was attempting to deal with: tension and repose despite a lack of dominant and tonic relationships.

5.2: A Brief Review of Analytical Precedents

Before embarking on a discussion of harmonic attraction and tension in the composer's music, a brief overview of the increasingly varied field of writings on Debussy's harmonic practice seems warranted. While it may seem to be an oversimplification, the following discussion will employ a binary opposition of analyses: those that view the composer's music as an 'expanded tonality' (to use Whittall's term),[24] which assume a certain degree of tonal syntax in the composer's music, and often employ Schenkerian methods, and those that focus on the role of pc-collections (and place less of an emphasis on syntax and function). These fields are not mutually exclusive. For example, Richard Bass's analysis of octatonic and whole-tone collections in 'Ce qu'a vu le vent d'Ouest,' demonstrates the overarching D-major triad at the heart of the collections and Pomeroy's Schenkerian analyses frequently invokes collectional terminology. Nevertheless, the distinction allows for a concise delineation of two very different frames of reference from which we can discuss the nature of primary trains of thought that have been applied to Debussy's harmonic structures.

5.2.1: Analyses of 'Expanded Tonality'

[24] Arnold Whittall, 'Tonality and the Whole-Tone Scale in the Music of Debussy' in *Music Review* 36 (1975), 261–271 (271).

Debussy's treatment of diatonicism rarely conforms to the constraints of traditional forms of analysis. Nevertheless, the presence of an underlying triad in many of the more conservative of the *Préludes* has led to a number of hierarchically-based analyses of the composer's works by the students and followers of Schenker, whose distaste for the composer is well noted.[25] Parks has used this acrimonious attitude toward the composer as backing to state that 'one must avoid the trap of modifying the Schenkerian model when confronted by a repertoire that Schenker rejected...'[26] While such modifications have led to counterintuitive analyses, they can also provide a setting where Debussy's structures are more clearly defined, although Schenker's basic concepts have to be redefined in order to do so.[27]

The treatment of dissonance and the dissolution of functionalism undermines the ability of a Schenkerian system to accurately portray the structural and linear levels of many of Debussy's works. When referring to such repertoire, Straus writes that it's meaningless to force a method so strictly adherent to the dichotomy of consonance/ dissonance to music where this duality doesn't apply.[28] Alternatively, Brown writes that chromaticism should play a *more* prominent role in Schenkerian theory. Rather than simply being a foreground entity, Brown argues that it can exist in the middleground as well.[29] As a result, he is able to conduct analyses that hinge on

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[25] Schenker considered Debussy to be a 'brainless French nonentity' emblematic of the 'mediocrity of French taste.' in Heinrich Schenker, 2004 *Der Tonwille. Pamphlets in Witness of the Immutable Laws of Music, Offered to a New Generation of Youth,* vol. 1 *Issues 1–5 (1921–1923)* William Drabkin (ed.), (Oxford and New York: Oxford University Press), 45. Cited in Matthew Brown, 'Tonality and Form in Debussy's *Prélude a 'L'apres-midi d'un faune.'* 129.

[26] Parks, *The Music of Claude Debussy,* 3–4.

[27] For example, Jeremy Day O'Connell's analysis of *Prélude a l'apres midi d'un faune* replaced the descending *Urlinie* with a $\hat{5}$–$\hat{6}$–$\hat{8}$ *ascending* progression of what he refers to as the 'plagal leading tone.' in 'Debussy, Pentatonicism, and the Tonal Tradition' in *Music Theory Spectrum* Volume 31, no.2 (Fall, 2009), 225–261 (239).

[28] Joseph Straus, 'The Problem of Prolongation in Post-Tonal Music' in *Journal of Music Theory* 31 (1987), 1–21.

[29] Matthew Brown, 'The Diatonic and the Chromatic in Schenker's Theory of Harmonic Relations' in *Journal of Music Theory* 30 (1986), 1–33.

extensions of tonality (although he refuses to go as far as Salzer in exhibiting what are primarily middleground and background analyses).[30]

While Schenkerian theory might be seen as providing a somewhat one-dimensional perspective on Debussy's treatment of tonality, that one dimension allows for an illustration of Debussy's adherence to earlier tonal practices. Additionally, the more progressive of these analyses have attempted to discuss what Pomeroy refers to as the:

> individuality of Debussy's large-scale chromatic processes....tonal forms that appear to embody some kind of structural paradox...meaningful deformations of earlier tonal-formal practice–where idiosyncratic voice-leading configurations or tonal-formal processes are in some sense to be understood as deviations from normative models.[31]

The study of these tonal 'deviations' has encompassed a wide range of analytical methodologies over the past century. While recent theorists have viewed this composer's music as a precursor to the post-tonal music of the twentieth century, early analyses viewed it as nothing more than an extension of tonality.

5.2.2: Early Approaches

In her book *Challenge to Musical Tradition: A New Concept of Tonality*, Katz's attempts to analyze various works of Debussy, as well as twentieth-century pieces by Schoenberg and Stravinsky, lead to not much more than a plea for a method of analysis

[30] Elsewhere, Brown's analysis of *Ibéria* presents a rare cognitively-based perspective on Debussy analysis, but is implemented as a broader means for justifying the author's Schenkerian analyses. Invoking Sloboda's use of the 'information-processing model,' Brown writes that, 'problem-solvers begin with some basic material, or starting state, and some desired solution, or goal state. They then make a series of choices that transform the former into the latter.'(3–4) Brown expands this model to explain the 'wide variety of problems when writing a tonal piece... that of taking a given kernal of musical material, such as a theme or a progression, and extending it to create a coherent tonal work.'(5–6)The process is used throughout to illustrate the 'discovery process,' or poietic aspect, of Debussy's compositions, often inferring compositional intent to further explain the analysis. The invocation of the information-processing model, however, does very little to illustrate any sort of perceptual process the listener might incur, and does little to actually explain why *Schenkerian theory* is the preferred methodology. Matthew Brown, *Debussy's Ibéria*, Studies in Musical Genesis and Structure (Oxford ; New York: Oxford University Press, 2003).

[31] Pomeroy, 'Chromaticism and Form in Debussy's Orchestral Music,' 10–11.

that can 'cope with problems to which the new systems give rise.'[32] Katz concludes that a Schenkerian analysis will simply not work for pieces that are not derived from a tonic triad. In a discussion of Debussy's 'Voiles' she writes:

> It is possible that the whole-tone scale, in its substitution of an augmented for a perfect fifth, does not provide the same kind of structural coherence that is inherent in the older system. If this be true, we cannot apply the same form of analysis to the prelude that we used in connection with compositions that emerged out of the tonal concept. [33]

This realization is an important departure from the notion of Debussy as a predecessor to atonality, or an important transitional composer. Katz has been criticized for too quickly dismissing alternate methods of analysis while refusing to acknowledge any sort of fallibility within Schenker's system, as well as for oversimplifying many analyses.[34] Katz does succeed, however, in establishing Debussy as 'the natural heir to Wagner in a tonal evolutionary process extending from Bach to the early twentieth century.'[35]

While many of the *Préludes* are based on the tonic triad, its presence as an underlying structural entity is not always perceptible. While noting the goal-driven aspects of the *Ursatz,* Pomeroy writes:

> Schenker's concept of the *Ursatz* was strikingly teleological in nature–a 'striving' towards the condition at rest, synonymous with musical form–completion. Given the dichotomous or discontinuous nature of transformation between levels in Debussy's tonal forms, there arises the question of what might constitute the ultimate status of the *Ursatz* in such pieces. To claim for it a form- and content

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[32] Adele T. Katz, *Challenge to Musical Tradition; a New Concept of Tonality*, (New York: Da Capo Press, 1972), 279.

[33] *Ibid.,* 279.

[34] Reichenbach bluntly states that 'calling every chord just a passing chord if it goes beyond the 'structural' chord, picking out notes of the melody without reference to their relation to the rhythmical accent, and wantonly manipulating notes up or down an octave in order to produce a straight 'Urlinie.''Herman Reichenbach, Review of *Challenge to Musical Tradition: A New Concept of Tonality* in *Notes* 2nd Series, Vol. 3 no.1 December 1945 pp.41–42.

[35] Boyd Pomeroy, 'Debussy's tonality: a formal perspective' in *The Cambridge Companion to Debussy* ed. Simon Trezise. Cambridge University Press, Cambridge UK 2003., 162.

> generative role on a par with that obtaining in earlier tonal music is obviously problematic. On the other hand, has the *Ursatz* in Debussy's music become a mere abstraction, without consequence to the more perceptible levels?[36]

While Katz concluded that Schenkerian theory lacked the ability to accommodate non-triadic music, another of Schenker's students, Felix Salzer, aimed to expand the constraints of the theory to encompass music that didn't conform. In his analysis of 'Bruyères,' he concludes that the piece is largely based on 'contrapuntal structure.'[37] He explains that Debussy 'deals with the variants of the melodic neighbor-note motion, creating fascinating melodic parallelisms.'[38]

Salzer too often disregards parts of the fundamental structure of non-triadic music as simply coloristic pitches without any structural function. The analysis of 'Bruyères' offers little insight into the composition other than the aforementioned neighbor-tone relationships. Much of the contrapuntal progression containing the contrary stepwise motion between the ascending upper structure chords, and the quartal motion descending in the right hand is simply written off as 'neighbor-note motion.'[39] The perceptual reality of Salzer's analysis is somewhat suspect as well. James Baker states that 'It is quite possibly not as easy to distinguish between coloristic harmonic devices and structural chords as Salzer would have us believe.'[40] Salzer's analysis, while illustrating many of the essential concepts of structural coherence within the piece, also discards too many of the composition's indispensable features.

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[36] Boyd Pomeroy 'Toward a New Tonal Practice: Chromaticism and Form in Debussy's Orchestral Music,' (PhD Thesis, Cornell University, 2000), 140.

[37] Felix Salzer, *Structural Hearing; Tonal Coherence in Music*, (New York: Dover Publications, 1962), 222

[38] *Ibid.*, 222

[39] This can be seen in example 478 in Salzer, *Structural Hearing,* 409–410.

[40] James Baker 'Schenkerian Analysis and Post-Tonal Music', in *Aspects of Schenkerian Analysis*, David Beach (ed.), (New Haven: Yale University Press 1983), 156.

His analyses of 'Bruyères' and *Prélude á l'aprés-midi d'un faune*[41] have been some of the most controversial analyses of Debussy's harmonic structure in print. Salzer chooses to illustrate the non-*Urlinie*-based structure of 'Bruyères' as largely consisting of neighbor-tone prolongation. Pomeroy writes that this approach is 'characterized by the author's wholesale Schenkerian revisionism,' in which (quoting Laufer) 'everything goes and likewise nothing.'[42]

In bending Schenker's rules in order to create a more universal system, not only does Salzer's analysis create an inaccurate depiction of the tonal form of Debussy's pieces, but it fails to represent accurately the perceptual reality of how the piece is actually heard, a criticism best summarized by Meyer's critique of Salzer's system. He writes:

> Felix Salzer's condemnation of the concept of modulation is symptomatic of this essentially stale view of musical meaning. It it true that, when we consider the evident and determinate meaning of the whole work, modulations can be regarded as passing intensifications of the main key. But this view ignores that the entire meaning of the work includes the meanings of the several parts and the various architectonic levels. While we are experiencing music, we hear modulations and changes of key; we experience shifts in tonal center. Merely because some of these changes cannot be directly and immediately related to the key of the work as a whole does not mean that they are not felt and lack signification; nor does it mean that they cannot be understood.[43]

Many of the most rudimentary elements of Schenkerian theory are simply not present in Debussy's music. Parks explains that 'one rarely finds structural soprano lines that begin on members of the tonic triad and descend across the work, to the tonic itself.'[44] Parks also remarks that aside from the early works, there is 'an absence of structural

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[41] Salzer, *Structural Hearing,* (New York: Dover), Examples 478 (209–210) and 455 (222–223), respectively.

[42] Pomeroy 'Toward a New Tonal Practice,' 10–11, citing Edward Laufer, review of Schenker's *Free Composition* in *Music Theory Spectrum* 3 (Spring, 1981), 158–184 (161).

[43] Meyer, *Emotion, Meaning and Music,* 53.

[44] Parks, *The Music of Claude Debussy*, 4.

harmonic-fifth relationships' and that 'one rarely finds dominant-tonic closure in a structural sense.'[45] Indeed, one characteristic of much of Debussy's music is its lack of cadences in the traditional sense. Debussy often undermines his cadences by including non-chordal elements into the tonic chord, or by delaying or bypassing resolutions. Adorno believed that it was this inability to explain Debussy's music that showed 'the inadequacy of Schenker's approach,'[46] stating that the theorist

> accused [Debussy] (and others, including Richard Strauss) of the destruction of the Fundamental Line, without being able to see that, in Debussy's case, there are criteria for inner consistency and musical cohesion which are entirely different from the requirements of what he called the Fundamental Line.[47]

It would therefore seem that any application of Schenkerian methodologies would be unfruitful. While Katz and Salzer's early analyses proved to be somewhat unfruitful, however, a number of more recent approaches have faired much better.

5.2.3: Recent Approaches

Matthew Brown's analysis of *Prélude a l'apres midi d'un faune* attempts to demonstrate the piece through Schenkerian methods, discussing the nature of incomplete progressions, parenthetical episodes, motivic compression and tonal models in the process.[48] The analysis views the piece as mostly tonal, but with interruptions that cause a delay in the progression of the harmony. Additionally, Brown invokes the notion that the whole tone sonorities are altered dominant forms, a view that would frequently be correct, but is a dangerous assumption in many instances in Debussy's

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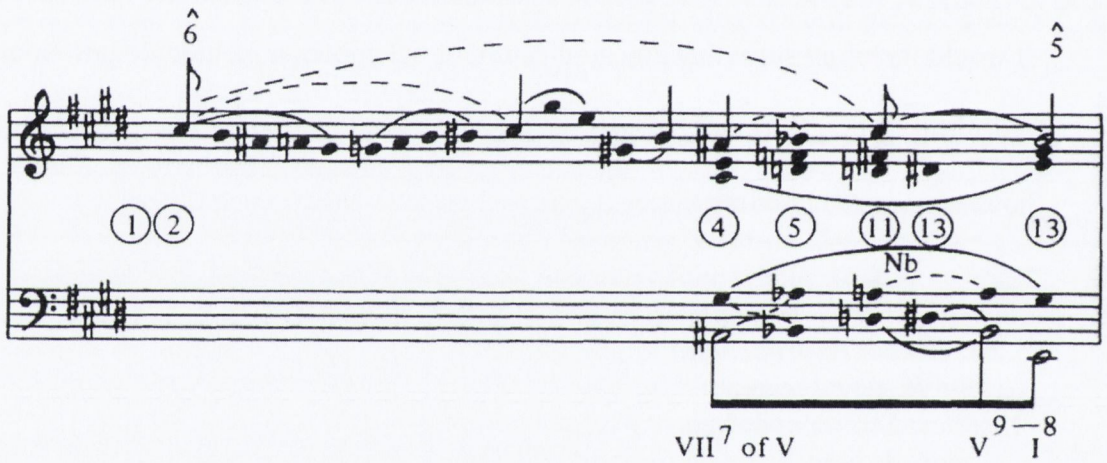
[45] *Ibid.*, 5.

[46] Theodor Adomo, 'On the Problem of Musical Analysis' Max Paddison (trans.) in *Music Analysis,* 1/2 (July,1982), 169–187 (175).

[47] *Ibid.*, 175.

[48] Matthew Brown, 'Tonality and Form in Debussy's *Prélude à l'Apres-midi d'un faune'* in *Music Theory Spectrum,* vol. 15/2 (Autumn, 1993), 127–143.

music. Brown writes that such an interpretation is consistent with Schenkerian theory, as the theorist wrote that when such scales occur in tonal contexts, they are meant 'not to loosen [the] system in order to incorporate a foreign one, but, on the contrary, to use [the] major-minor system to express a foreign element.'[49] Such an analysis works in *Prélude à l'Après midi d'un faune*; the celebrated opening is analyzed as a prolongation of a $VII^7/V - V^9 - I$ progression, which assesses the section's nature. In other instances, however, this will lead to more difficulties. Debussy's casual relationship with functional dominants creates an environment in which such invocations of 'exotic scales' are coloristic just as often as they serve as extensions of dominants.[50]



Example 5.2 Reproduction of Brown's Reduction of mm.1–13 of *Prélude à l'Après midi d'un faune*[51]

Unlike Brown's analysis, Pomeroy's is somewhat more flexible, although he too discards many of the revisionist ideas of Schenker's followers (such as Salzer's dissonant prolongations). Pomeroy admits that 'subjecting tonal music as *un*-common

[49] Heinrich Schenker, *Kontrapunkt* vol. 1 (Stuttgart: Cotta, 1910), 44. John Rothgeb and Jugen Thym (trans.) (New York: Schirmer, 1987), 28. Cited in Brown, 'Tonality and Form in *Prélude a l'apres-midi d'un faune,'* 136.

[50] A similar point is made by Leydon when she writes that 'to consider all non-syntactic chord successions as prolongations of functional harmonies would greatly oversimplify the subtleties of Debussy's non-tonal materials.' Rebecca Leydon, 'Narrative Strategies and Debussy's Late Style' (PhD Thesis, McGill University, 1996), 20–21.

[51] Brown, 'Tonality and Form in *Prélude a l'apres-midi d'un faune*,' 133.

in practice as Debussy's to trial by voice-leading graphs can only be as a heuristic comparative device'[52] and writes that the study is an attempt to clarify 'underlying communalities of tonal process with those of earlier music,' as well as 'the individuality of Debussy's large-scale chromatic processes' and the 'meaningful deformations' of earlier tonal formal practice – where idiosyncratic voice-leading configurations or tonal-formal processes are in some sense to be understood as deviations from normative models.'[53]

In his analysis of 'Ce qu'a vu le vent d'Ouest,' for example, Pomeroy treats the thematic devices (including the whole-tone motives) as pitch collections.[54] Similarly, his analysis of 'La Puerta del Vino' describes the 'A' section as being comprised chromatic (mm.5–8 and 17–20), octatonic (mm.8–13/14) and hexatonic (14–16) collections.[55] The analysis, however, invokes Schenkerian constructs throughout. For example, mm.25–30 are demonstrated as a 'Phrygian ♭3–♭2–1 cadential formula'[56] which contains the modal, structural descending line. Pomeroy's ability to address the needs of the piece through either structural or collectional concerns allows for a far-reaching analysis of much of the composer's work.

5.2.4: A Schenkerian Reduction of 'La mer est plus belle'

To illustrate the issues of Schenkerian reductionism in a fairly conservative piece, it might be best to return to Debussy's collection of Verlaine songs from 1901. Although based in diatonicism, 'La mer est plus belle' contains a number of issues that would make a Schenkerian analysis of the piece quite difficult. I would argue that the piece is

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[52] Pomeroy 'Toward a New Tonal Practice,' 10.

[53] *Ibid.*, 11.

[54] *Ibid.*, 32–50.

[55] *Ibid.*, 59–60.

[56] *Ibid.*, 60.

tonally 'open,' beginning in the key of B and finishing in E.

The piece begins by emphasizing a B-major triad, although the quick shift into D-minor in m.4 seems to undermine this. When the original key begins in m.5, could initially be heard as a I, although retrospectively it acts as a V chord for the E-major tonicization in m.7 (a tonicization followed by a similar ♭III motion to that in m.4). 1– The chromatic section in mm.15–16 places an emphasis on D and D♯, seeming to create an ambiguity between the E-major and and parallel E-minor of the previous measures. This ambiguity then extends into mm.17–22, and this extended F♯ section could be considered a dominant function by the time the B-major triad returns in m.23, which then returns to E, on which the piece concludes.

While 'La mer est plus belle' contains a number of chromatic sections, it is structurally comprised of dominant relationships, and would seem to be a fitting candidate for a Schenkerian reduction. In doing so, however, one is confronted with a number of analytical difficulties. Firstly, the harmonic structure seems to be one of ambiguity, almost an invocation of Berman's 'neutralization,' discussed above.[57] The nature of dominant-tonic is being consistently subverted; the relationship between V-I could frequently be understood as I-IV. One of the few hints that the piece is finally becoming more clear occurs in m.35, as the A-major triad arrives (acting as a IV). Parks cites this ambiguity, caused by the subversion of a tonic-dominant relationship, as one of the primary obstacles of Schenkerian theory when applied to Debussy's music, and this difficulty is highlighted in this piece.[58] Nevertheless, the dominant relationships (although ambiguous) do create a polarity within the piece, a sort of *Bassbrechung,* although somewhat obscured.

A second issue one would face when conducting a Schenkerian reduction of

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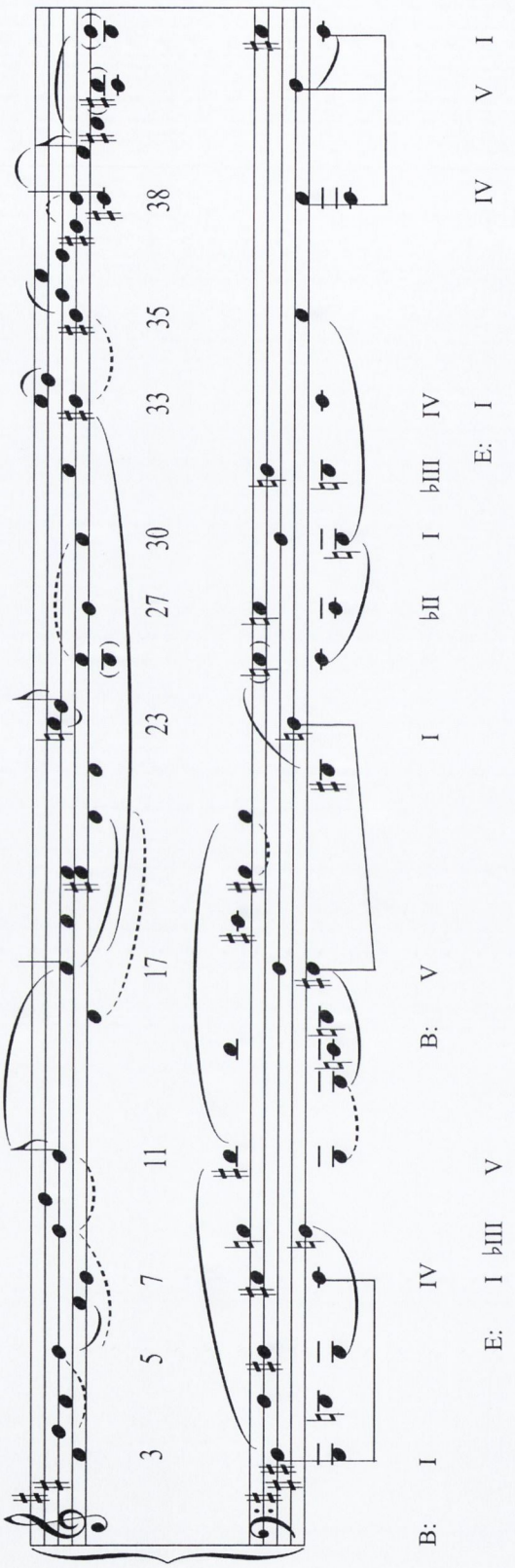
[57] Berman, 'The Evolution of Tonal Thinking in the Works of Claude Debussy,' 31.

[58] Parks, *The Music of Claude Debussy,* 4.

the piece would be the lack of a discernible descending *Urlinie.* While one could somehow conceive a $\hat{5}$–$\hat{4}$-$\hat{3}$-$\hat{2}$-$\hat{1}$ motion, beginning with the emphasized B in the soprano in m.5, and a structural A occurs in m.17, followed by an accelerated descend in m.33–38, the soprano E never occurs, and the line is frequently obscured by more emphasized non-*Urlinie* points (such as the D in the soprano in m.9).

Despite these difficulties, however, a reductionist analysis of this piece is somewhat viable. There are structural levels in this piece (albeit perhaps no more than two) which allow for a harmonic reduction. Although ambiguous, a dominant-tonic relationship exists, and a reduced melodic line is somewhat conceivable (although arguable, due to its lack of full closure). 'La mer est plus belle' illustrates Debussy's adherence to earlier tonal concepts, and demonstrates his traditionalist tendencies. Nevertheless, a number of traits indicative of the composer's more modernist slants present the analyst with a number of difficulties.

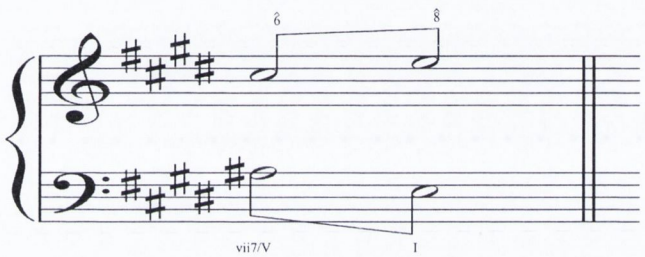


Example 5.3: Reduction of 'La mer est plus belle'

5.2.5: Structural/Collectional Interaction and the 'non-descending Urlinie'

Jeremy Day-O'Connell's article 'Debussy, Pentatonicism, and the Tonal Tradition' argues that Debussy's use of pentatonicism is not only a coloristic device or an allusion

to orientialism, but rather an extension of tonal traditions.[59] He argues first that the composer's use of pentatonicism was by no means original (Chopin and Liszt had used the scale in a number of similar instances, and Rameau had frequently discussed 'a peculiar scale 'of only five tones.'[60] Secondly he argues that the composer's use of pentatonicism is often used in a functional way that allows for a system of tonal attraction (whereas the typical diatonic scale has attractions of $\hat{7}$–$\hat{8}$, $\hat{4}$–$\hat{3}$, etc., the lack of a leading tone in the pentatonic scale creates what O'Connell refers to as a 'plagal leading tone' of $\hat{6}$–$\hat{8}$).[61]



Example 5.4: Day-O'Connell's Analysis of Plagal Cadence in m.108 of *Pelléas et Mélisande*

This plagal leading tone leads to an untraditional reductionist analysis, containing frequently *ascending* structural lines. He notes the cadence treatment of m.108 of *Pelléas et Mélisande,* which contains a $\hat{6}$–$\hat{8}$ structural soprano with a vii^7/V leading to I in the bass.[62] There are similar instances in 'La fille aux cheveaux de lin' and the *Prélude l'apres midi-d'un faune.* While the system is similarly reductive, it corrects some of the issues inherent in more traditional Schenkerian analyses. For example, it

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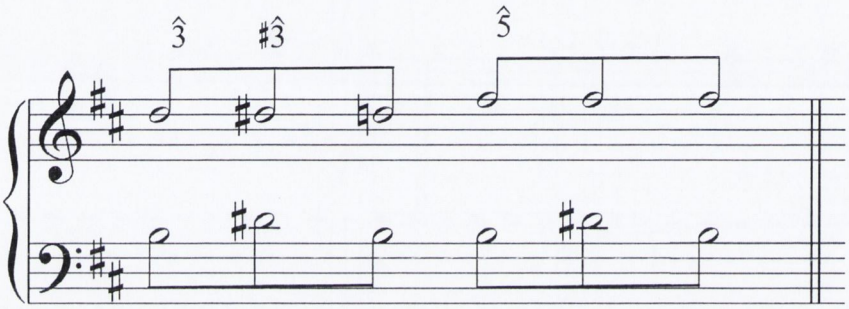
[59] Jeremy Day O'Connell, 'Debussy, Pentatonicism, and the Tonal Tradition' in *Music Theory Spectrum,* 31/2 (2009), 225–261.

[60] *Ibid.,* 225.

[61] Lerdahl's theory of tonal attraction posits a pentatonic attraction hierarchy, with all levels being equal except for the root and the $\hat{5}$, which are on the two highest levels respectively. Lerdahl also creates a hierarchy with a triadic level imposed, where $\hat{3}$ is one level higher than $\hat{2}$ or $\hat{6}$. Lerdahl, *Tonal Pitch Space,* 52.

[62] Jeremy Day O'Connell, 'Debussy, Pentatonicism, and the Tonal Tradition,' 241 The author writes that 'Debussy has thus compounded the paradox of the plagal leading tone: the scale degree that is at once plagal and a leading tone has been wedded to a chord that is itself at once a subdominant (that is, a chord that properly leads to V) and a dominant (specifically, an applied dominant), 240.

finds a way to discuss Debussy's lack of emphasis on the leading-tone. O'Connell's analysis corrects the prolonged neighbor-tone motion conveyed in Salzer's 'Bruyères' restating the $\hat{5}$–$\hat{6}$–$\hat{5}$ progression to be encompassed within a series of $\hat{6}$–$\hat{8}$ cadences. This, however, leads to a somewhat misplaced emphasis on the $\hat{6}$–$\hat{8}$ motion. The instances illustrated in 'La fille aux chevaux de lin' are not always structural points, and all other relationships are somewhat discarded in the process.[63] Similarly, Pomeroy points out the 'paradoxical' example of *Nuages,* which in addition to the lack of a structural dominant, contains a rising structural line ($\hat{3}$–$\sharp\hat{3}$–$\hat{5}$).[64]



Example 5.5: Pomeroy's Analysis of Ascending *Urlinie* in 'Nuages'

Debussy's use of alternative scales as an extension of diatonicism is not limited to pentatonicism. Pomeroy states that in 'Ce qu'a vu le vent d'Ouest,':

> octatonic and whole-tone usage almost always relates...to tonal context. In the case of the octatonic collection, a piece's predominant ('home') octatonic context most frequently arises directly from either the tonic or the dominant triad, implicating the specific collectional transposition that contains the triad.[65]

Obviously such analyses invoking an ascending *Urlinie* would be dismissed by strict adherents to Schenker's theory, but it might not need to cause such an objection.

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[63] *Ibid.,* See the analysis on 256.

[64] Pomeroy 'Toward a New Tonal Practice,' 308–311. Pomeroy writes that the piece 'could be viewed as approximating to a three-part mixture form – albeit of a rather unconventional variety, with the chromatic third transferred to the bass. From another perspective, the large-scale B-D♯ bass motion might suggest an incipient I - (♯)III -V arpeggiation, with the B section's chromatic mediant as a potential third-divider en route to a structural V. (309).

[65] *Ibid.*, 49.

Neumeyer notes that Schenker's early theory consisted of both rising and falling structural lines. In an introductory essay to Beethoven's Piano Sonata in A-Major op.21 (published as part of the *Tonwille* series in 1921) Schenker writes that 'in examining the *Urlinien,* one should not be misled by the fact that they all resemble one another in their fixed lines of seconds, repetitions, and *ascending and descending* motion (as regular as inhaling and exhaling).[66] While the early theories invoked more of an aspect of tension and release (and inhalation and exhalation), the descending *Urlinie* evolved into the primary factor by the time of *Free Composition.*[67] Some of Schenker's disciples (such as Salzer) have accepted the possibility of an ascending *Urlinie,* but have been hesitant to use incorporate it in analysis. Nevertheless, it comes up quite frequently in Debussy analysis. In addition to Day O'Connell's 'plagal leading-tone' theory, Brown's analysis of *Prélude a l'apres midi-d'un faune* incorporates a rising $\hat{5}$-$\flat\hat{6}$-$\hat{6}$ line from mm.37–55.[68]

Parks has claimed that Schenkerian theory is only applicable to a select few, fairly traditional pieces.[69] He notes that the Schenkerian tripartite division of structural levels is non-existent, writing that such levels in Debussy's music are 'few and uncomplicated',[70] and that:

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[66] Heinrich Schenker, *Beethoven: Die Letzten Sonaten: Sonate A Dur Op. 101*, Oswald Jonas (ed.), (Vienna: Universal, 1972), 8–9, fom 'Die Urlinie: Eine Vorbemerkung' in *Der Tonwille* (Vienna: Universal, 1921–1924), 24. Cited in David Neumeyer, 'The Ascending *Urlinie'* in *Journal of Music Theory,* Vol. 31/2 (Autumn, 1987), 275–303 (276).

[67] In a translation of *Free Composition* Ernst Oster writes: 'Since Schenker nowhere explained this phenomenon (of the impossibility of the rising line), the following may serve as an answer, – As Schenker said...the 8,5, and 3 are only images of overtones. But, like true overtones, they too seem to be generated by a fundamental tone, which in the fundamental structure is the 1. And the 'tensions' come to rest only when the 8,5, or 3 have 'gone home' – when they have returned to where they came from, that is, to the fundamental which created them. Accordingly, they have to move in the direction of the fundamental, and this means downward.' Heinrich Schenker, *Free Composition,* 13fn. cited in Neumeyer, 'Ascending *Urlinien,'* 278.

[68] Matthew Brown, 'Tonality and Form in Debussy's *Prélude a l'apres-midi d'un faune'* in Music Theory Spectrum, vol. 15, no. 2 (Autumn 1993), 127–143 (135). This is the only ascending portion Brown makes note of, as the piece as a whole consists of a descending line.

[69] Parks uses Schenkerian theory to analyze 'Pour les degrés chromatiquies, the first movement of the string quartet, and 'La fille aux cheveaux de lin' which is used as a transitional point to demonstrate the efficacy of pc-collection analysis. Parks, *The Music of Claude Debussy,* 5–21.

[70] Parks *The Music of Claude Debussy,* 4.

> we look in vain for many of the features that contribute to structure and cohesion in the music of Debussy's immediate and more distant antecedents: the myriad contrapuntal and harmonic relationships nested within each other in an intricacy of structural levels, the transformations of deeper-level voice-leading progression into passages of charm and artifice, the extended linear and interval progressions that interconnect formal units and structural elements across time and musical space.[71]

To some degree this is true. The constructs set up by Schenkerian theory fail to accurately explain much of the perceptual reality of a large number of Debussy's pieces. Much of this has to do with the fact that, while the composer's music could be seen as a continuous process, (the 'continuous becoming' discussed in Chapter 1), there is a level of disregard for linearity in the composer's music in the Schenkerian sense (see the discussion on the perception of form in Debussy's music in Chapter 2). As a result, Schenkerian theory fails to provide an likely depiction of the way the average listener might hear the piece. In many ways, its failure to depict the process of comprehension for a piece (perhaps more so with 'less-than' linear pieces) makes Schenkerian theory susceptible to the same criticism lodged by Dèliege and Melen against Lerdahl and Jackendoff's *Generative Theory of Tonal Music*: it only offers *post-hoc* representations 'that might be formed after listening to a piece of music.'[72] While the same criticism might be lodged against an analysis of pitch-collections, an emphasis on collectional interaction does allow for an analogous concept of tension/relaxation (as McFarland discusses in terms of aggregate formation, which is discussed in the next section).

5.3 Analyses of Pitch Collections

When referring to Parks's set-theoretical analyses of Debussy's music, Pomeroy writes that

> while the set-theoretical approach can hardly be criticized for failing to

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[71] *Ibid.*, 4.

[72] Iréne Deliége and M. Melen, 'Cue Abstraction in the Representation of Musical Form' in *Perception and Cognition of Music,* Iréne Deliége and John A. Sloboda (ed.), (Sussex: Psychology Press, 1997), 387.

> address issues that lie beyond its scope, it must be said that its drastic negation of tonality results in a somewhat one-dimensional picture.[73]

This, however, is an oversimplification of the analyses that use the lack of tonality of a piece, rather than functional diatonicism, as an *a priori* assumption. While Debussy's use of 'expanded tonality'[74] has led many analysts to de-emphasize the role of diatonicism in favor of a system more focused on pitch collections, these analyses rarely foresake tonality altogether. For example, Forte writes that, in *L'enfant prodigue,*

> tonal-harmonic functions are operative across the octatonic 'foreground'...the octatonic passage therefore remains well under the control of the basic diatonic collection.[75]

In 1964, Schnebel wrote that, 'Brouillards' was 'neither definitely diatonic tonality nor chromatic tonality.'[76] This distinction continued with Richard Parks, who invoked four primary 'referential collections' in Debussy's music (diatonic, chromatic, whole-tone and octatonic).[77] In his reduction to four genera, Parks is able to illustrate the extension of diatonicism , as well as the inclusion of pitch collections that are extensions of tonality (such as the whole-tone collection), which allows for thematic analysis, as well as an invocation of diatonicism, when necessary, as well as the flexibility of a methodology that encompasses more than simply diatonicism.

Forte's analysis of octatonic sets in *L'énfant prodigue* illustrates the role of the octatonic set in the cantata, and he argues that the opening passage is a combination of

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[73] Boyd Pomeroy, 'Debussy's Tonality: A Formal Perspective' in *The Cambridge Companion to Debussy* Simon Trezise (ed.), (Cambridge: Cambridge University Press, 2003), 155–178 (163).

[74] This phrase has been used many times in reference to Debussy's music, but is perhaps most likely coined by Arnold Whittall, who writes, 'As a language, it can best be described as \expanded tonality,' a language in which tonality still acts as a basic term, giving perspective to all other harmonic activity.' in Arnold Whittall, 'Tonality and the Whole-Tone Scale in the Music of Debussy' in *The Music Review,* 36 (1975), 261–271 (271).

[75] Allen Forte, 'Debussy and the Octatonic,' *Music Analysis* 10/1/2 (1991), 125–69 (138).

[76] Dieter Schnebel, '*Brouillards:*Tendencies in Debussy' In *Die Reihe* vol. 6 (1964), 33.

[77] Richard Parks, *The Music of Claude Debussy.* McFarland points out that these referential collections were first discussed as the primary scales in Debussy's music by Renee Lenormand in *Etude sur l'harmonie moderne* in 1913. Discussed in Mark McFarland, 'Claude Debussy and the Concept of Chromatic Harmony,' 3.

the opening major chord and the following diminished 7th chord, which form an subset of an octatonic collection. Forte, however, ignores the fact that the diminished chord in m.4 is actually functioning as a dominant, which resolves onto a D major triad in m.5.[78] Although Forte admits to the tonal underpinnings of the piece, his analysis seems somewhat blinded by a search for collections. Such blind spots in analysis are obviously not exclusive to set-theoretical approaches. Huron uses the term 'confirmation bias,' when discussing Schenkerian theory, stating that 'knowing that the "right answer" must be one of three descending lines is a recipe for self-deception during analysis.'[79] Similarly, Narmour discusses the *'a priori* fallacy' which takes place when assumptions are made independently of the analysis.[80]

Many of the elements that make an analysis of structural coherence difficult from a tonal perspective present similar obstacles when treating the music from an atonal one. Debussy's use of symmetrical collections, however, has generated discussion about the transpositional and symmetrical nature of his compositions, as well as the possible benefits of treating him as solely a post-tonal composer.[81] While analytically neither is entirely efficacious, exploring Debussy's post-tonal qualities facilitates an understanding the complex nature of his music and the nebulous structures that form such a large part of his *oeuvre*. McFarland notes that the strength of a set-theoretical approach 'lies in its ability to categorize and compare collections of pitches, regardless of composer, genre, compositional style, or epoch.[82] He submits, however, that the

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[78] A similar point is made by Mark McFarland, in 'Claude Debussy and the Concept of Chromatic Harmony in His Late Works (1911–1915), 6.

[79] Huron, *Sweet Anticipation*, 97.

[80] Narmour, *Beyond Schenkerism*, 26.

[81] Allen Forte considers the history of his use of the octatonic collection and clearly establishes a lineage of its use from his predecessors in 'Debussy and the Octatonic' in *Music Analysis* Vol. 10, No. 1/2 (March-July 1991),157.

[82] McFarland, 'Claude Debussy and the Concept of Chromatic Harmony in His Late Works,' 4.

> universality of application is also one of the system's weaknesses. Apropos of Debussy analysis, the two main flaws to pitch-class set theory are segmentations that yield analytic results incongruous with the musical context, and an ahistorical perspective that can hide distinctions in the composer's use of pitch resources within a single work, or more importantly, between works and style periods.[83]

Richard Parks's reduction into a number of available collections begins with Debussy's expansion from tonal precedents and focuses largely on the chromatic aspects of the music. He writes that

> [i]n Debussy, chromaticism functions differently; it does not always tonicize, nor enrich in the Schenkerian sense of mixing alternative scale steps drawn from parallel keys.[84]

Some issues arise, however, due to the fact that Parks treats the diatonic collection as a chromatic one (be it major, minor or a mode of a diatonic collection). His neglect for any sort of contextual or tonal implications can also make many aspects of his analyses suspect.

5.3.1: Octatonic and Whole-Tone Collections in 'Ce qu'a vu le vent d'Ouest'

Perhaps one of the best examples of collectional interaction in the *Préludes* is a piece that Parks only mentions in passing. 'Ce qu'a vu le vent d'Ouest' exhibits a number of the extended tonal resources that are typical of much of Debussy's music, such as the octatonic collection (invoking pc-notation, it would be the 0,1,3,6,7,9 prime form) that begins the composition,[85] and the whole-tone collection that governs much of the

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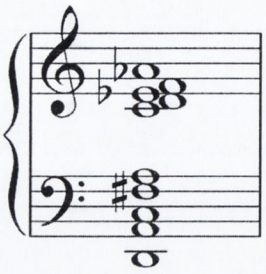
[83] *Ibid.*, 5.

[84] Parks, *The Music of Claude Debussy*, 4–5.

[85] This opening, Forte notes, is an almost direct quotation from the coronation scene in Mussorgky's *Boris Godunov,* and it is an arpeggiated form of what Forte refers to as set class 6–30 {C,D,E♭,F♯,Ab,A}.Allen Forte, 'Debussy and the Octatonic' in *Music Analysis* Vol. 10, No. 1/2 (March-July 1991), 157.

middle section (1,3,5,7,9).[86] The chord, as condensed by Forte, can be seen in Example 5.6.[87]



Example 5.6: The Verticalized Octatonic Heptachord (7–31, Realized as 0,2,3,5,6,8,9)Displayed in mm.1–6 'Ce qu'a vu le vent d'Ouest'

When viewed through the prism of interacting collections, the structure of the piece becomes quite clear. Much of the composition is a juxtaposition between the aforementioned octatonic collection and the whole-tone. In m.10, for instance, Debussy employs a whole-tone collection as a transitional element, as the collections complete the previous octatonic collection of mm.7–9 (completed with the aid of the F♯ pedal). In his article 'Models of Octatonic and Whole-Tone Interaction,' Richard Bass briefly discusses the interactive principles between the whole-tone and octatonic collections, and their effect on musical coherence, writing that 'the juxtaposition of contrasting collections often relies on the retention of common tones for musical continuity.'[88] His analysis of the opening measures of the *Prélude* demonstrates the common tones between the two collections, and their role in creating such a degree of continuity in the piece.

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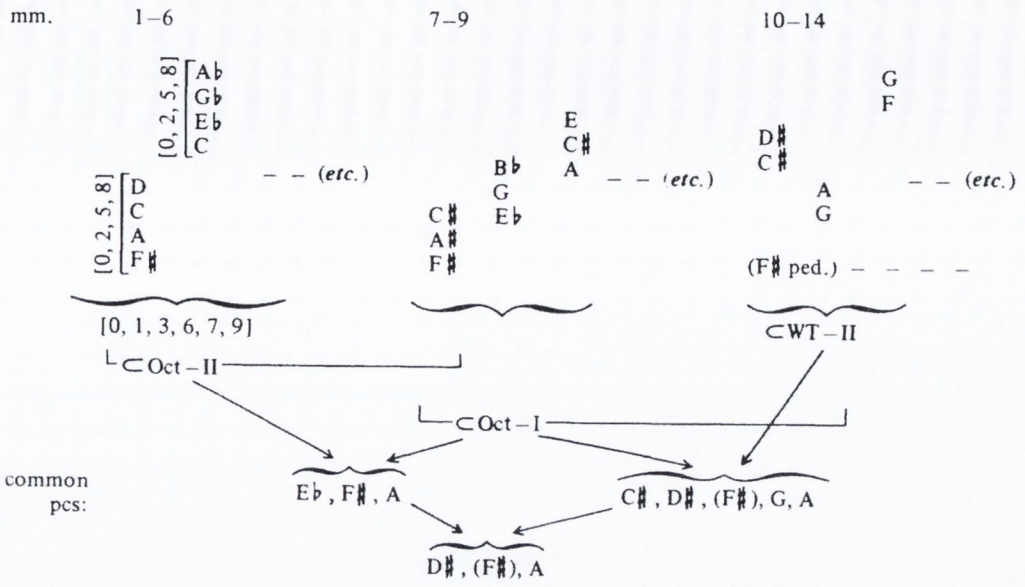
[86] Forte concludes that Debussy's use of the octatonic collection was directly inherited from his predecessors, most notably Berlioz, Liszt, and Wagner. *Ibid.*, 153–159.

[87] *Ibid.,* 157.

[88] Richard Bass, 'Models of Octatonic and Whole-Tone Interaction: George Crumb and His Predecessors' in *Journal of Music Theory,* Vol. 38, No.2. (Autumn, 1994), 155–186 (161).



Example 5.7: Reproduction of Bass's Analysis of Octatonic and Whole-Tone Elements in 'Ce qu'a vu le vent d'Ouest' (mm.1–14)

The use of a hierarchy of collections (as Bass's analysis does) allows one to retain the structural pitch-classes while nevertheless invoking the non-tonal elements Debussy invokes within the piece.

The degree to which the listener is able to discern such a hierarchy in Debussy's music, is questionable, as the music quite frequently obfuscates primary thematic ideas. For example, in m.11 Debussy uses parallel structures built in seconds to further emphasize the lack of any specific tonality at this point. The fact that the harmony is built upon seconds makes it more difficult for any discernible *Hauptstimme* to be heard, and this creates an amorphous segment in the transition from octatonic to whole-tone collections.

In the second section, which begins in m.26, we find that it is, in many ways, a continuation of the whole-tone collection first asserted in m.20 through scalar form, which is then reinforced in m.22 through vertical harmonies. The piece then continues this motivic device until m.39, at the arrival of a change in texture (and an emphasized secundal structure on the downbeat, although similar structures begin in m.37). It then returns to the motive until m.43.

In order to discuss the structure of the piece (the collectional interaction as well as the motivic structure), I have employed Pomeroy's schematic layout.[89] The final A section is actually quite different than the original. For instance, the chordal motive on F♯ in the m.7 is delayed for three measures by a whole tone motive. The buildup section is removed and replaced with an emphasis of thewhole-tone collection at m.63. Pomeroy notes that the F♯ minor key signature is incorrect, and that the piece is actually in F♯ major, although the piece can hardly be heard as being in F♯ major or minor.[90] While F♯ is predominant in that it is a pedal tone for a large part of the composition, its characteristic tones are not emphasized, nor is there any cadential motion that would affirm this tonality.

mm.	Motive	Collection
1–6	swirling motive	Collection 2
7–9	chordal motive	Collection 3
10–14	disjunct motive	Whole Tone B
15–18	buildup motive (triadic)	Collection 3
19–24	buildup motive (whole-tone)	Whole Tone A
25–32	transitional passage	Whole Tone A
27–29		D^{13}
30	mini-chromatic ascent'	V^7/IV
31–32	sequence	
33–34	first chromatic ascent	
35–39	disjunct motive	Whole Tone B (different collection from previous)

[89] Pomeroy, 'Toward a New Tonal Practice,' 32

[90] The overall F♯ centricity of this piece is due to the F♯ drone. W.A. Mathieu refers to this as "dronality." See *Harmonic Experience: Tonal Harmony from its Natural Origins to its Modern Expression,* (Rochester, VT: Inner Traditions, 1997), 240. See also Kip Wile 'A Study of Collection in Neocentric Music: a Study in Theory and Analysis of the Music of Debussy, Stravinsky, Scriabin, Bartok, and Ravel' (PhD Thesis, University of Chicago, 1995).

mm.	Motive	Collection
28–42	diatonic scalar motive	iv^6/vi
43–45		D♯7
46	second chromatic ascent	
47–53	scalar 'storm' motive	Whole Tone B
54–58	swirling' motive	Collection 2
59–62	chordal motive on C	Whole Tone A
63–68	chordal motive on F♯	Whole Tone A
69–71	disjunct motive	Whole tone B

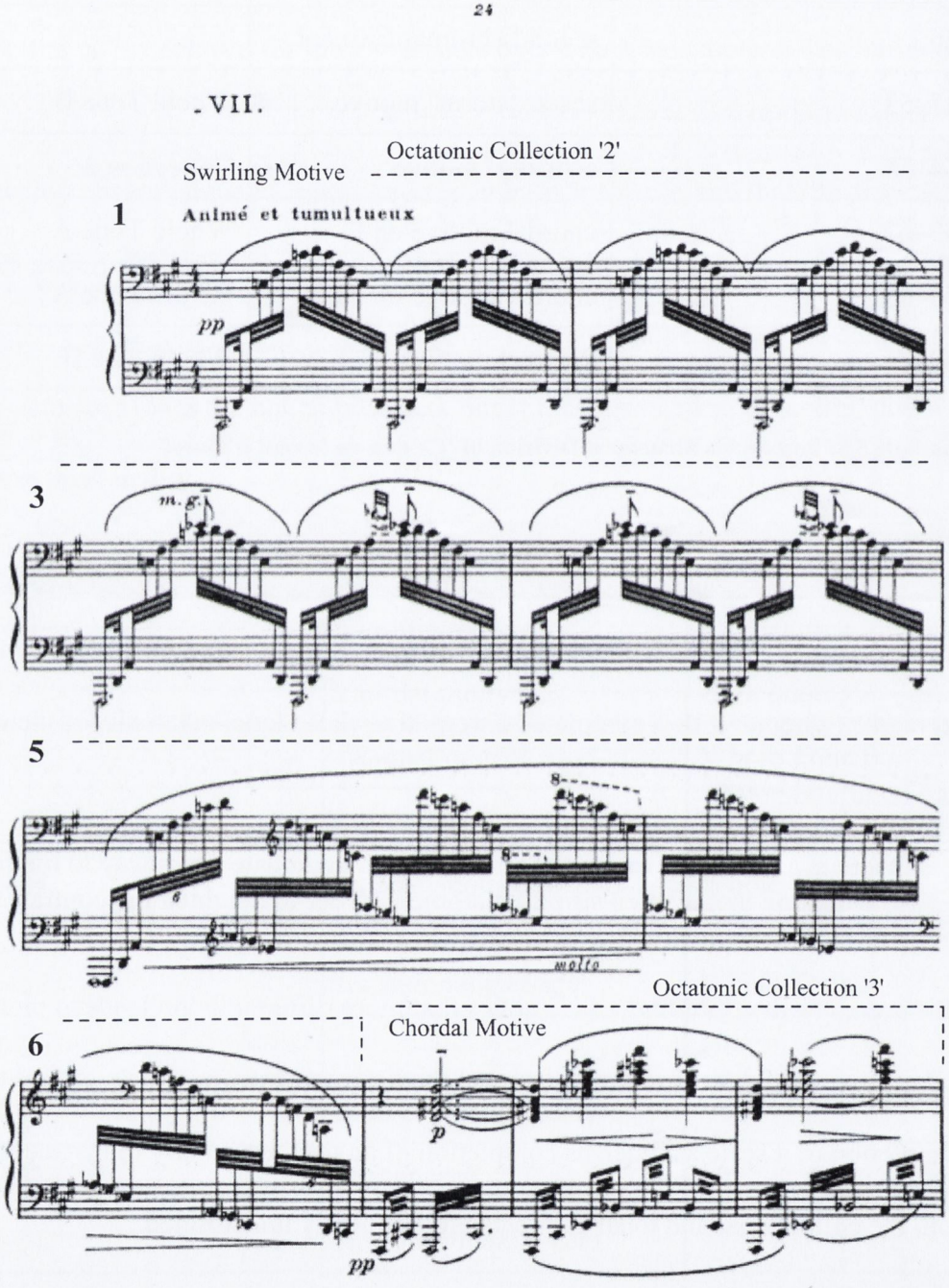
Example 5.8: Pomeroy's Structural Division of 'Ce qua vu le vent d'Ouest

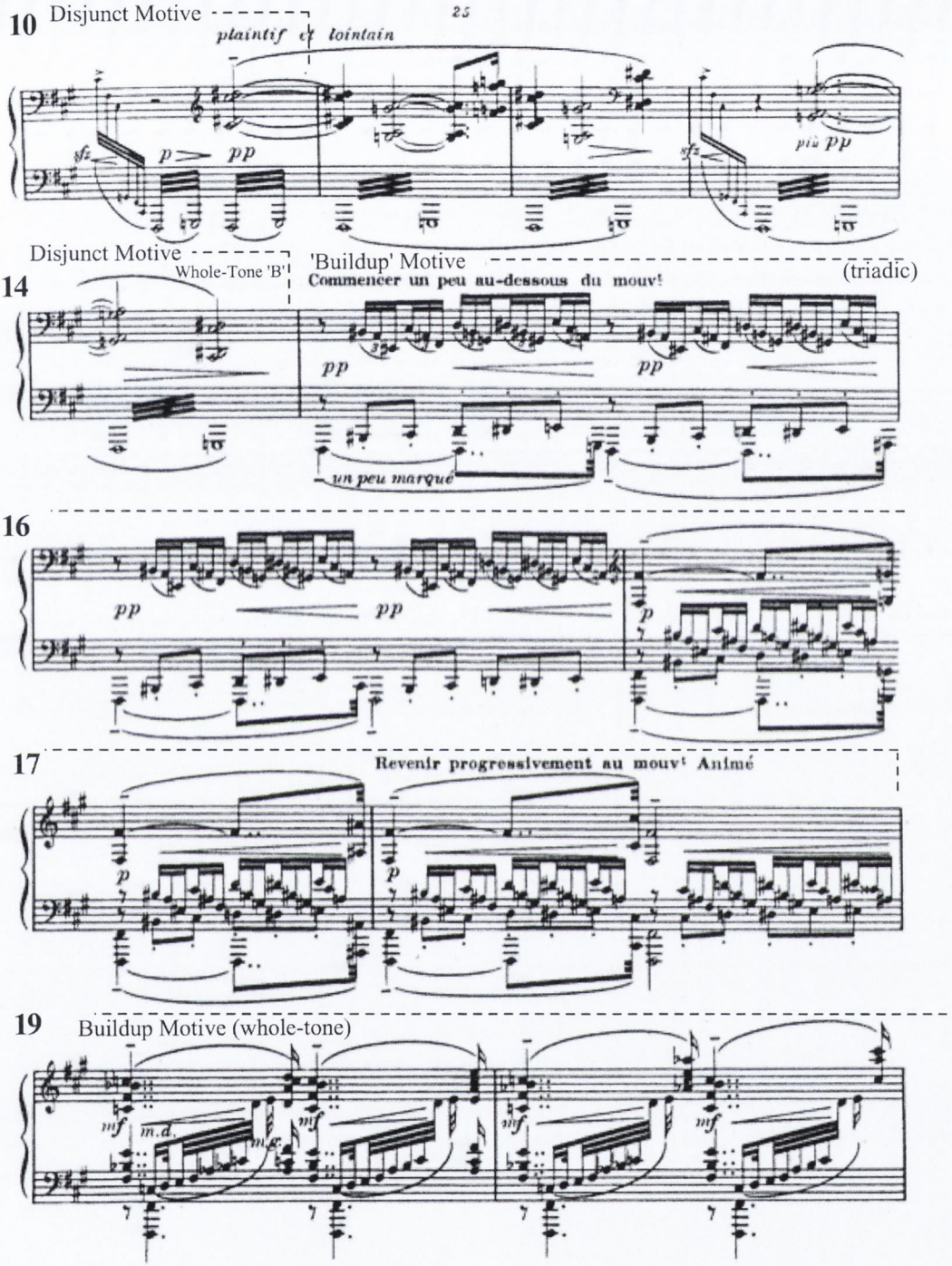
One wonders how collectional interaction effects the notion of tension/repose discussed earlier. Mark McFarland believes that it can be dependent upon the completion of an aggregate (whether it be a completed chromatic, whole-tone, octatonic, or diatonic set). As McFarland notes,

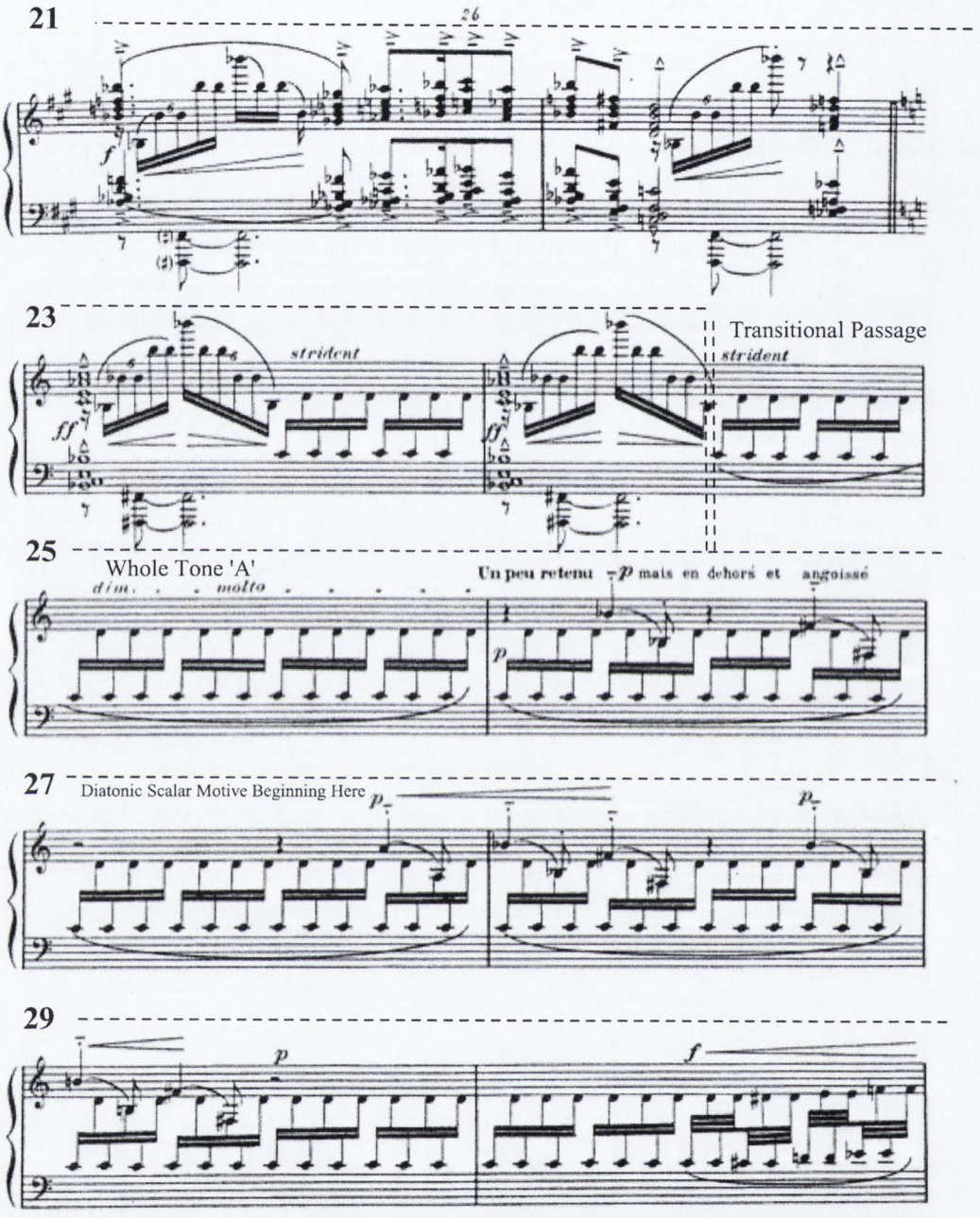
> there is a satisfying release of tension as the aggregate gives way to the following theme, one that is often strictly diatonic in order to heighten the contrast across the formal boundary.[91]

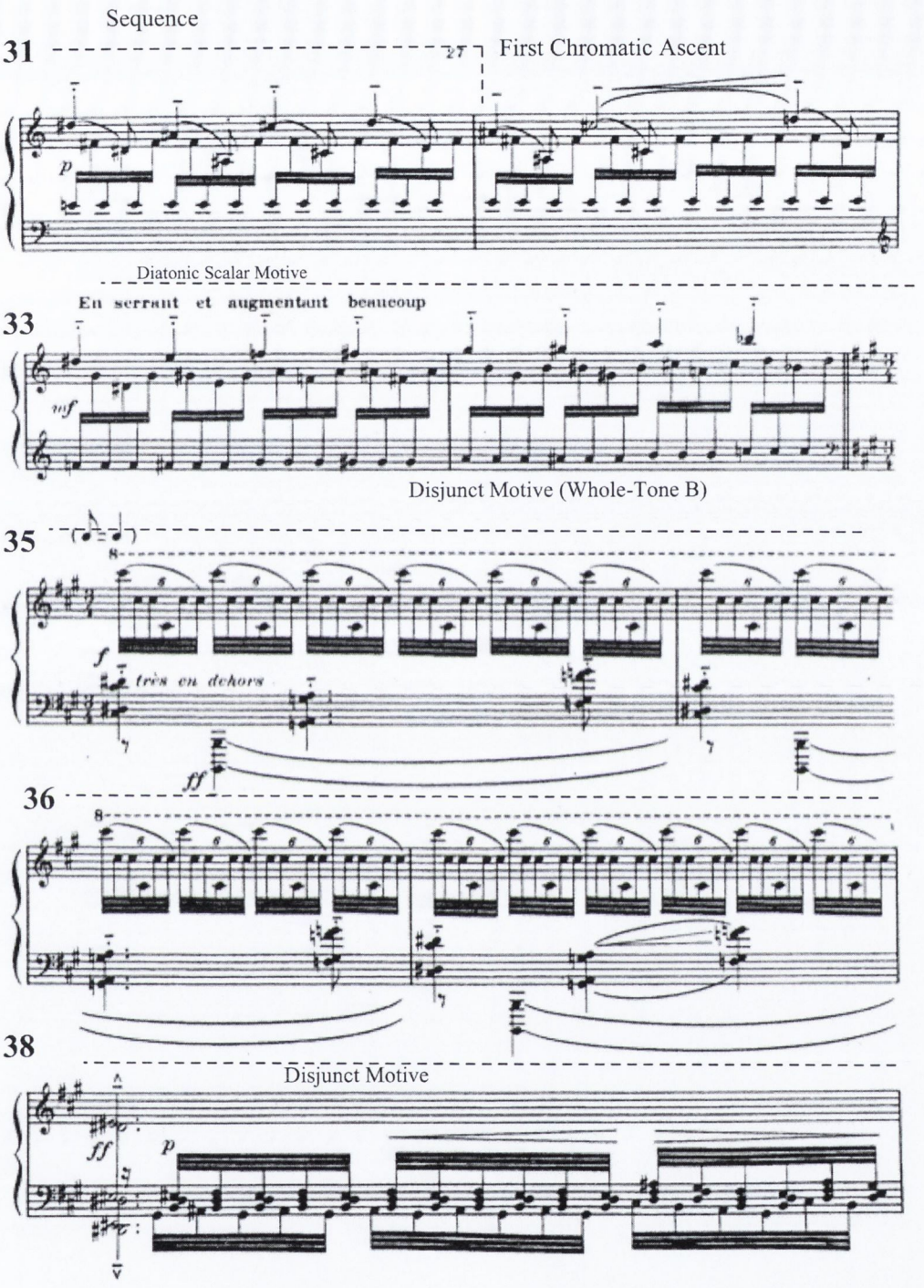
This seems counterintuitive, as it implies that more differentiation leads to more certainty. It would seem more logical that the listener would not likely expect the completion of a scale as much as completion of an idea, especially in instances in which both the collectional and tonal elements are frequently undermined.

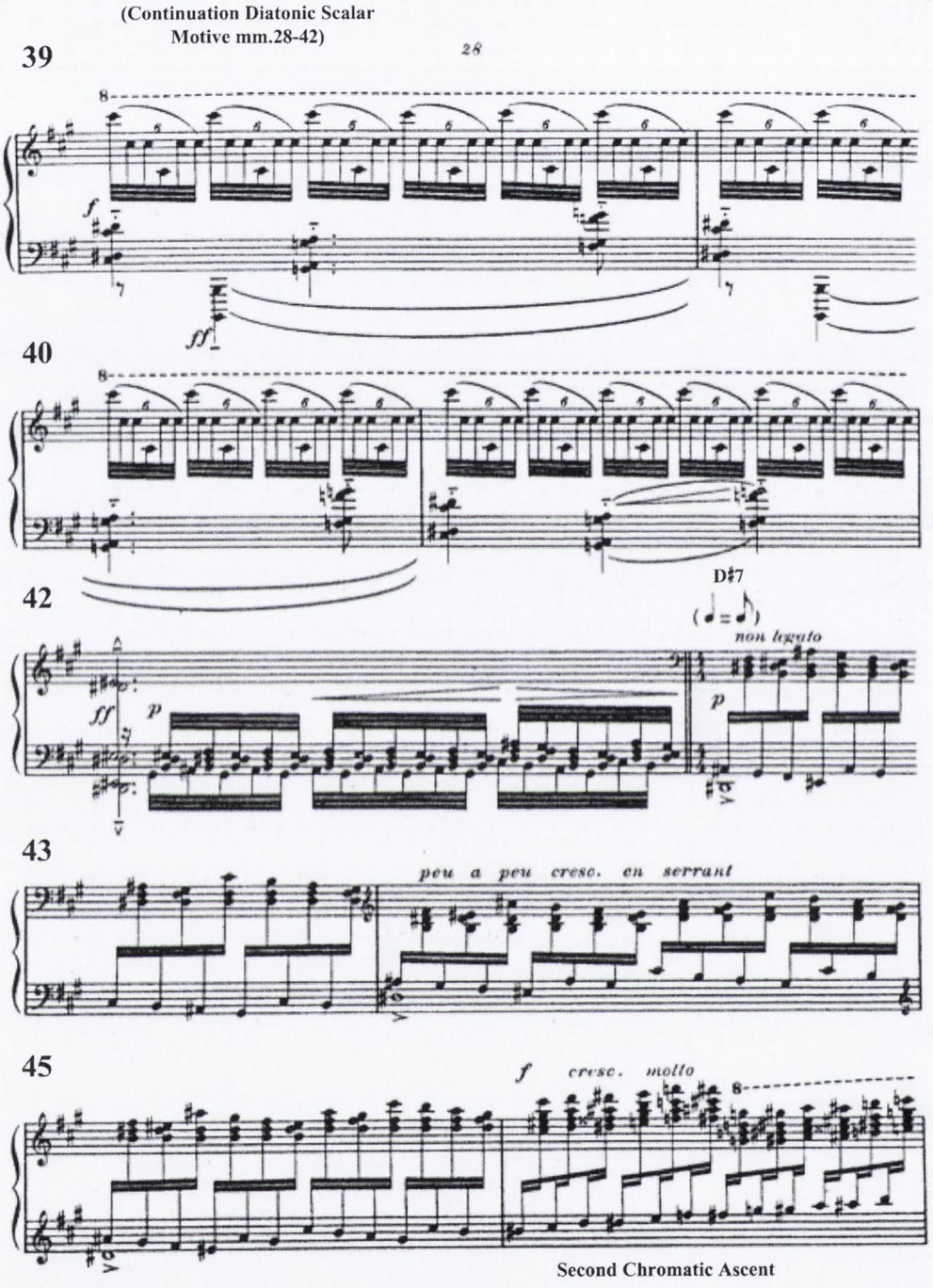
[91] Mark McFarland, 'Transpositional Combination and Aggregate Formation in Debussy' in *Music Theory Spectrum* (Fall, 2004), 187–220 (191).

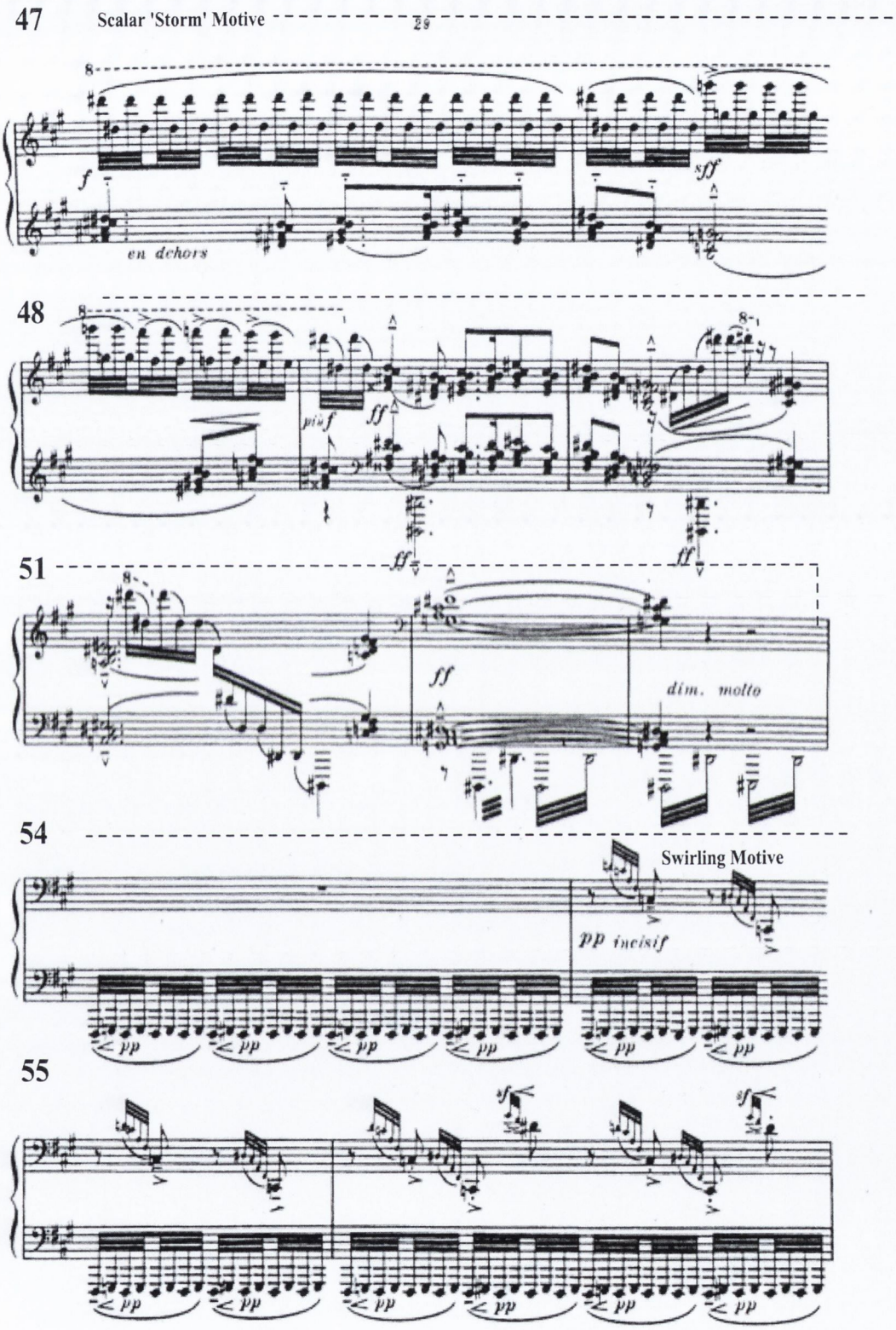

24
VII.
Octatonic Collection '2'
Swirling Motive
1
Animé et tumultueux
pp
3
m. g.
5
molto
Octatonic Collection '3'
Chordal Motive
6
p
pp

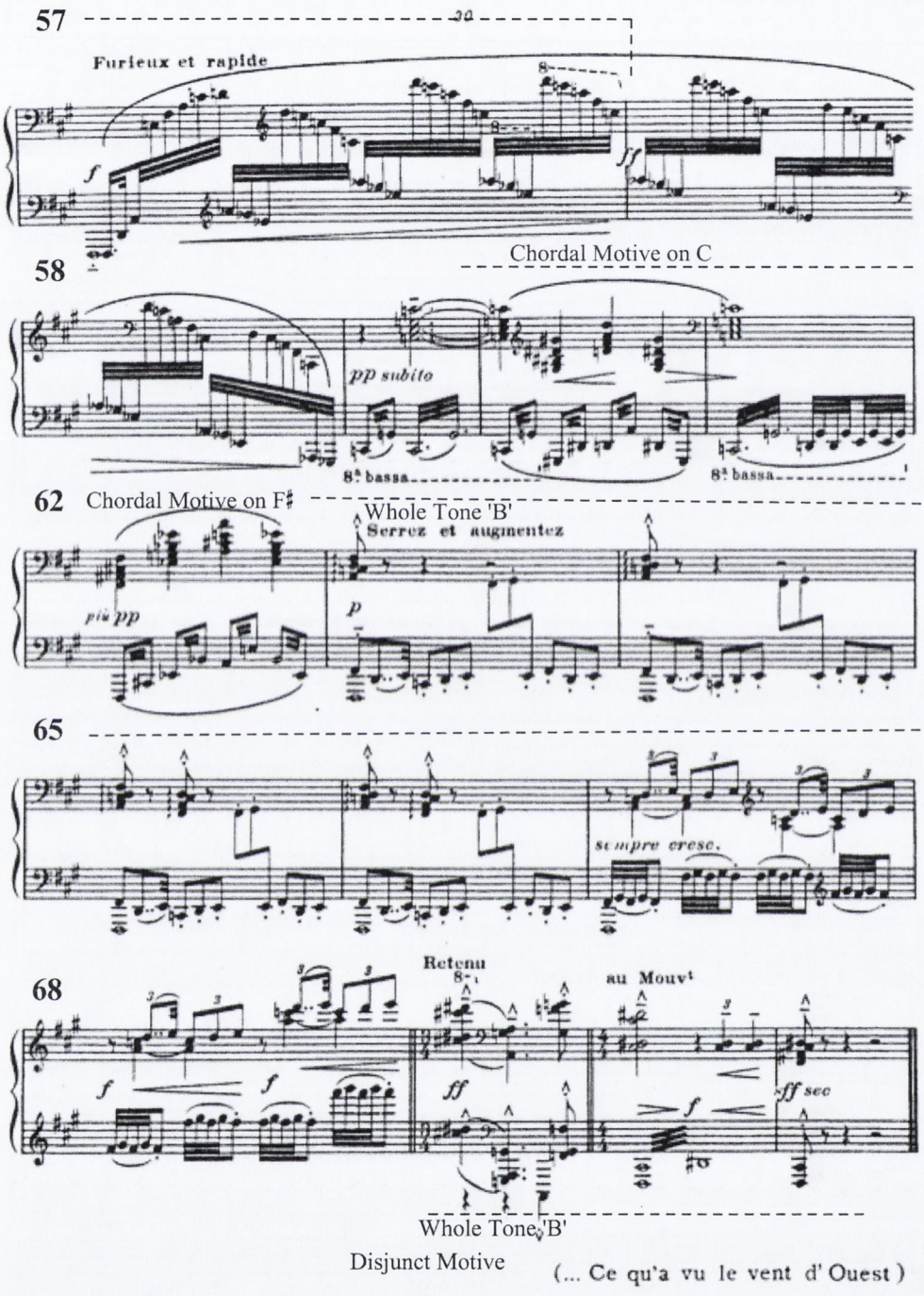

10
Disjunct Motive
25
plaintif et lointain
sfz
p
pp
sfz
più pp
Disjunct Motive
Whole-Tone 'B'
'Buildup' Motive
(triadic)
14
Commencer un peu au-dessous du mouvt
pp
pp
un peu marqué
16
pp
pp
p
17
Revenir progressivement au mouvt Animé
p
p
19
Buildup Motive (whole-tone)
mf
m.d.
m.g.
mf
mf
mf


21
23
Transitional Passage
strident
strident
25
Whole Tone 'A'
dim. molto
Un peu retenu p mais en dehors et angoissé
27
Diatonic Scalar Motive Beginning Here
29


Sequence
31
First Chromatic Ascent
p
Diatonic Scalar Motive
En serrant et augmentant beaucoup
33
mf
Disjunct Motive (Whole-Tone B)
35
f
très en dehors
ff
36
38
Disjunct Motive
ff
p


(Continuation Diatonic Scalar Motive mm.28-42)
39
28
f
ff
40
42
D♯7
non legato
ff
p
p
43
peu a peu cresc. en serrant
45
f cresc. molto
Second Chromatic Ascent


47
Scalar 'Storm' Motive
28
f
en dehors
sff
48
piu f
ff
51
ff
dim. molto
54
Swirling Motive
pp incisif
pp
55
sf



Example 5.9: 'Ce qua vu le vent d'Ouest'

Viewing the piece as a series of interactions between octatonic, whole-tone, and diatonic collections nevertheless allows for a structure to be delineated. Categorizing it as merely a juxtaposition between octatonic and whole-tone collections, as Bass mentions, and as Parks does with a number of other compositions in Debussy's

works, however, does not offer the listener much more than very general observations. Pomeroy notes that,

> Debussy's octatonic and whole-tone usage almost always relates thus to tonal context. In the case of the octatonic collection, a piece's predominant ('home') octatonic context most frequently arises directly from either the tonic or the dominant triad, implicating the specific collectional transposition that contains that triad.[92]

Treating such a composition as tonal, however, is also somewhat misleading, as was explored in the previous section.

While set-theoretical and pitch class analysis can be useful when dealing with atonal music, we find some difficulties when applying it to many 'post-tonal' composers such as Debussy. The taxonomies and categorizations of various pitch-collections are often helpful in understanding a form or structure of a composition, but there is a disconnect between the analysis and what is able to be comprehended by the listener. Furthermore, it is an analytical method that deals solely with the semantic issues, or the possible meaning of the structure, and neglects far too many of the syntactical relationships (although Bass's invocation of collectional interaction deals with syntax on some level). The context of the collections is often neglected and the moment-to-moment relationships are ignored.

5.4: Harmonic Attraction in the *Préludes*

As has been discussed above, a major obstacle in an analysis of Debussy's harmonic structures is the fact that progression seems to occur without function. The task of the analyst is then to find the method in which a fluctuation of tension and repose is used in the piece. As was discussed above, Debussy frequently creates a 'neutralized' harmonic progression, in which the standard notion of tension doesn't apply. The studies of extended tonality discussed above view the composer's music as primarily syntax

[92] Pomeroy, 'Chromaticism and Form in Debussy's Orchestral Music,' 49.

driven (requiring a certain degree of function), while the latter analyses of collectional interaction are primarily semantically based. The present study argues for a method that employs both syntactic relationships (and a somewhat extended definition of function), but with a focus on the more immediate level (as the composer's music requires). By using Lerdahl's principles of harmonic attraction, the analysis is able to encapsulate the tonal hierarchies of a diatonic pitch set (allowing one to maintain the tonal base the composer was using), as well as an ability to move between tonal regions without creating an unreasonable increase in the analyzed tension.

Lerdahl's system (a portion of which was used to quantify melodic attraction in the previous chapter) provides an excellent means of quantifying harmonic expectation and attraction that is adherent to tonal hierarchies, as well as an emphasis on voice-leading. Many of Debussy's harmonies are non-functional, but they create a sense of fluidity solely through smooth voice-leading. By invoking principles of voice leading attraction, as well as an inter-key hierarchy, Lerdahl creates a system that works within the confines of harmonic space, but also views proximity and chordal hierarchy as factors.[93]

5.4.1: Lerdahl's Basic Space

Lerdahl creates a basic space of hierarchically organized pitches, divided into five levels, with the chromatic scale occupying the lowest space, followed by the diatonic scale, a triad, the perfect fifth, and completed by the octave.[94] Additionally, the system

[93] Lerdahl's model has held up in comparison to empirical cognitive tests. Carol Krumhansl has noted that in comparison to her empirical studies, Lerdahl's 'tonal-pitch space model [has] provided the most precise musical analysis.' Music: a Link between Cognition and Emotion' Carol L. Krumhansl *Current Directions in Psychological Science* 11/2 (April, 2002), 45–50 (47).

[94] Fred Lerdahl, *Tonal Pitch Space,* 47. Lerdahl writes that 'the seventh-chord level is excluded because in Classical music seventh chords have little independent status, the interval of a seventh usually behaving as a local dissonance governed by voice-leading principles. If, however, a seventh is judged to be harmonic, it can be added to the triadic level.' (47) Structural sevenths in the present study are therefore considered harmonic and are analysed on equal footing with the basic triad.

has alternative hierarchies for scales with altered structures (such as the octatonic and whole-tone sections discussed in the previous section).[95] Such a space is similar to the anchoring hierarchies Bharucha writes about (discussed in Chapter 3) as well as Krumhansl and Kessler's hierarchies.[96] This basic conceptual space governs Lerdahl's harmonic, melodic, and rhythmic attraction rules.

0												12
0							7					12
0				4			7					12
0		2		4	5		7		9		11	12
0	1	2	3	4	5	6	7	8	9	10	11	12

Example 5.10: Lerdahl's Basic Space in I/C

This basic space is used to calculate voice-leading attraction, and the specific chordal distance (discussed below). By invoking Krumhansl and Kessler's hierarchies, Lerdahl underpins his theory with principles of tonal cognition. By applying this method to Debussy's music, I hope to provide an analysis of the properties of ambiguity in the pieces analyzed. Such a theory, however, is obviously biased to tonal hierarchies. In admitting a hierarchical syntax of tonal music, an analysis becomes somewhat dependent on terminology related to diatonicism. Although this might be somewhat objectionable to many analysts of Debussy's music, it is still somewhat appropriate to

[95] For a discussion of octatonic hierarchies, see *Ibid.*, 252–258.

[96] Carol Krumhansl and E.J. Kessler, 'Tracing the dynamic changes in perceived tonal organization in a spatial representation of musical keys' *Psychological Review* 89 (1982), 334–368. This hierarchy has been repeated in a number of subsequent studies. The most prominent method analyzes the *quantity* of pitch class occurrences. This was done in Bret Aarden's dissertation 'Dynamic melodic expectancy' (PhD dissertation: Ohio State University, 2003) discussed in Huron, *Sweet Anticipation*, 148. The Krumhansl and Kessler model actually played listeners a series of notes, and asked how well the following note fit on a scale of 1–7.

frame a discussion of music comprised of 'expanded tonality' in terms of tonal syntax.[97]

5.4.2: Chordal Distance

Lerdahl's rule of chordal distance is comprised of both common-tones and a relationship within the circle of fifths. On explaining the reasoning for this, Lerdahl writes:

> The circle of fifths is central because root motion by fifths is basic to cadences and pervasive at all levels of tonal organization. There are psychoacoustic and group-theoretic grounds as well: the prominence of the third partial in most pitched sounds, the generation of the diatonic collection and all of the diatonic triads via the fifths cycle. The common-tone factor is warranted because the sharing of pcs-of octave space is a strong link between two chords.[98]

Harmonic movement is therefore first judged by the movement of the circle of fifths, in which all pitch classes in the basic space are adjusted according to the circle in as few steps as possible. More formally Lerdahl states the 'Chordal Circle-of-Fifths Rule' as follows:

> Move the pcs at levels a-c of the basic space four steps to the right (mod 7) on level d or four steps to the left.[99]

In order to calculate common-tone distance, 'the number of distinctive, or noncommon, pcs' in the new space in a harmonic progression is compared to those in the previous space.[100] The structural importance of the hierarchical space is maintained by calculating the triadic space *at all levels.*

The combination of the two concepts leads to Lerdahl's 'chord distance

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[97] Perhaps the most obvious difficulty with the implementation of Lerdahl's system would be the primacy placed upon motion from the root to the fifth, which, as has been discussed, is devalued in the music of Debussy. Despite this obstacle, Lerdahl's system provides an instrumental methodology for viewing tension in light of the music's tenuous relationship with tonality, and the system should therefore not be discarded.

[98] Lerdahl, *Tonal Pitch Space,* 53–54.

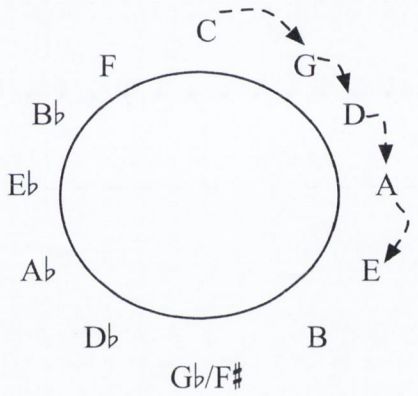
[99] *Ibid.,,* 54

[100] *Ibid.,* 55.

rule' which states:

> d(x → y) = j + k, where d(x → y) = the distance between chord x and chord y; j = the number of applications of the chordal circle-of-fifths rule needed to shift x into y; and k = the number of distinctive pcs in the basic space of y compared to those in the basic space of x.[101]

For example, the distance between I and iii is 8, as four occurrences of the circle of fifths are necessary for the tonic to arrive at iii, and there are four distinct pitch classes in the basic space of iii (if taken hypothetically from pc0, the two occurrences of pc4 at the higher level in the space of iii, along the two occurrences of pc11 at a higher order).



Example 5.11 Circle of fifth movements from I to iii in C major.

				4								
				4							***11***	
0				4			7				***11***	
0		2		4	5		7		9		11	12
0	1	2	3	4	5	6	7	8	9	10	11	12

Example 5.12: Distinct pitch classes in the basic space of a iii chord. (the distinct pcs are underlined and in italics).

This is followed by a similar rule governing the proximity of harmonic structures across 'regional levels,' or those existing outside of the diatonic

[101] *Ibid.*, 55.

space.[102] This begins with the *regional* circle-of fifths rule, which is simply an extension of the diatonic rule, and is written as:

> Move the pcs at level d of the basic space seven steps to the right (mod 12) on level e or seven steps to the left.[103]

Although this regional space is similar in nature to the circle-of-fifths rule, Lerdahl utilizes Gottfriend Weber's regional space (from his table of closely related keys) to illustrate the paths traversed.[104] In this space, the circle of fifths assumes the vertical axis, the relative minors are to the left of primary key, while the parallel minors are to the right. Lerdahl's analyses use this space, as well as a morw localized space, in which chordal paths are demonstrated within the region. Schoenberg uses a very similar regional chart, and its usage allows for a visual representation of the tonal trajectory in the piece, as well as of the regional distances which Lerdahl uses to calculate harmonic attraction.[105]

F♯	**f♯**	**A**	**a**	**C**	**c**
B	**b**	**D**	**d**	**F**	**f**
E	**e**	**G**	**g**	**B♭**	**b♭**
A	**a**	**C**	**c**	**E♭**	**e♭**
D	**d**	**F**	**f**	**A♭**	**a♭**
G	**g**	**B♭**	**b♭**	**D♭**	**d♭**

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[102] The usage of the terminology of 'space' and 'regions' seems quite applicable to Debussy's harmonic writing. Debussy often invokes what could be considered an applied dominant, but it fails to function as one. Debussy's non-functional writing creates the inclination to disavow the terminology associated with function, but without completely cutting ties to a tonal hierarchy. When discussing a shift toward the concept of regional space, Lerdahl writes that 'Contrasting terminology is widely used for chromatic moves at different levels of event hierarchies: 'applied' or 'secondary' dominant for momentary shifts, 'tonicization' for intermediate shifts, and 'modulation' for global shifts. For our purposes *these distinctions are immaterial except as expressions of levels of regional motion.*' in *Ibid., 59.* (Emphasis added)

[103] *Ibid.,* 59.

[104] *Ibid.,* 43. See also, Gottfried Weber, *A Theory of Musical Composition,* J. Warner (trans.) (London: R. Cocks, 1851).

[105] Arnold Schoenberg, *Structural Functions of Harmony* (2nd Edn), Leonard Stein (ed.), (London: Faber, 1969), 21.

F♯	f♯	A	a	C	c
C	c	E♭	e♭	G♭	g♭

Example 5.13: Weber's Regional Space

By incorporating regional space, the chordal distance rule allows for a quantification of non-diatonic harmonic attractions. In addition to the circle-of-fifths rule (j) and the distinct pc clause (k), the expanded chordal distance rule includes the regional distance rule (i) and is written as:

> d(x → y) = i + j + k, where d(x → y) = the distance region between chord x and chord y; i = the number of applications of the regional circle-of-fifths rule needed to shift the diatonic collection that supports x into the diatonic collection that supports y; j = the number of applications of the chordal circle-of-fifths rule needed to shift x into y; and k = the number of distinctive pcs in the basic space of y compared to those in the basic space of x.[106]

Put simply, the regional space is an extension of the chordal-distance rule. This allows for both the inter-key and intra-key relationships to be quantified as one. While everything at this point has been largely based on diatonic-principles, Lerdahl allows for an invocation of non-diatonic collections. This involves a rearrangement of the basic space to include the altered tones (primarily $\hat{5}$ in the whole-tone and octatonic instances).[107]

5.4.3: The Harmonic Attraction Hypothesis

Lerdahl's principle of harmonic attraction is consists of this 'chordal distance' hypothesis along with a rule of voice-leading attraction. The second of which is an extension of the rule of melodic attraction. Lerdahl notes that 'the concept of melodic

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[106] *Ibid.*, 60.

[107] For relevant discussions on non-diatonic regions, see *Ibid.*, 51–52 (for a discussion of pentatonic space), 249–258 (octatonic space) and 266–268 (whole-tone space).

attraction extends to harmonic progression, for the individual pitches in a chord seek stability just as do the pitches in a melody.'[108] The voice-leading attraction rule, being a composite of the melodic attraction rule, is stated as:

> $a_{rvl}(C^1 \rightarrow C^2) = a_{rl} + ...a_{rn}$, where C^1 and C^2 are chords in which (at the very least) not all the pitches are identical; a_{rvl} $(C^1 \rightarrow C^2)$ = the realized voice-leading attraction of C^1 to C^2; and $a_{rl} + ...a_{rn}$ = the sum of the realized melodic attractions for all the voices in C^1 to C^2.[109]

The voice leading attractions are therefore quantified by the sum of the various melodic attractions within the harmonic structure. Lerdahl uses the example of a $V^7 \rightarrow I$, progression voiced as:

4	C												C
3	C				E			G					C
2	C		D		E	F		G		A		B	C
1	C	C♯	D	D♯	E	F	F♯	G	G♯	A	A♯	B	C

Example 5.14: The Basic Space in I/C

F → E = (1.5)
D → C = (.5)
B → C = (2)
G → C = (.05)

Example 5.15: The Voice-Leading Attraction ratings of V → I in C major

As illustrated by the graph of basic space, in the basic space of C, E has an attraction rating of 3, while F is at the diatonic level of 2. Thus, when inserted into the equation of $p2/p1 \times 1/n^2$, where as n = the number of semitones between the two pcs, we arrive at $3/2 \times 1/1^2$, or 1.5. The sum of all four voices is 4.05, and this is therefore the voice-

[108] *Ibid.*, 173. This seems quite appropriate to Debussy's approach to harmony, who (when speaking of the arabesque, once wrote that 'harmony that is made of melodies.' cited in Josiah Fisk (ed.), *Composers on Music: Eight Centuries on Writing.* (Boston: Northeastern University Press, 1997), 200 cited in Pomeroy, 'Toward a New Tonal Practice,' 13.

[109] *Ibid.*, 173

leading attraction rating.[110]

This attraction rating is then combined with chordal distance. As Lerdahl writes, 'the crucial factor is distance...not in semitonal distance but in chordal space, expressed by the chord distance rule as denominator.'[111] As the values are usually quite small, a constant (K) of 10 is added. The theory is therefore the realized voice-leading attractions (a_{rvl}) over the chordal distance, all multiplied by 10. More formally, the harmonic attraction rule can be written as:

> $\alpha_g (C^1 \rightarrow C^2) = K[\alpha_{rvl}(C^1 \rightarrow C^2)/d(C^1 C^2)$, where $\alpha_{rh}(C^1 \rightarrow C^2)$ is the realized harmonic attraction of C^1 to C^2; constant K = 10; $\alpha_{rvl}(C^1 \rightarrow C^2)$ is as in the voice-leading attraction rule, and $d(C^1 \rightarrow C^2)$ is the distance from C^1 to C^2, with C^1 not equal to C^2.[112]

This distance equation also accounts for Lerdahl's theory of tonal tension, which is both sequential and hierarchical. He writes that 'boradly speaking...naive listeners stay close to the surface while experienced listeners tend to hierarchize it.'[113] The sequential tension rule is little more than the distance rule, stating:

> $T_{seq}(y) = d(x_{prec} \rightarrow y)$, where y= the target chord, x_{prec} = the chord that immediately precedes y in the sequence, $T_{seq}(y)$ = the tension associated with y, and $d(x_{prec} \rightarrow y)$ = the distance from x_{prec} to y (using $d[x \rightarrow y] = i + j + k$).[114]

This study makes no distinction between the naive and experienced listener, and therefore considers tension to arise sequentially.[115] Additionally, Lerdahl's hierarchical

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[110] Example from *Ibid.*, 174. Lerdahl maintains a uniform basic tonal space in his examples (the harmonic space doesn't shift with the various chords). The distance algorithm accounts for this tonal shift already, and as such, the voice-leading attractions are all based on consistent hierarchy.

[111] *Ibid.*, 174.

[112] *Ibid.*, 174.

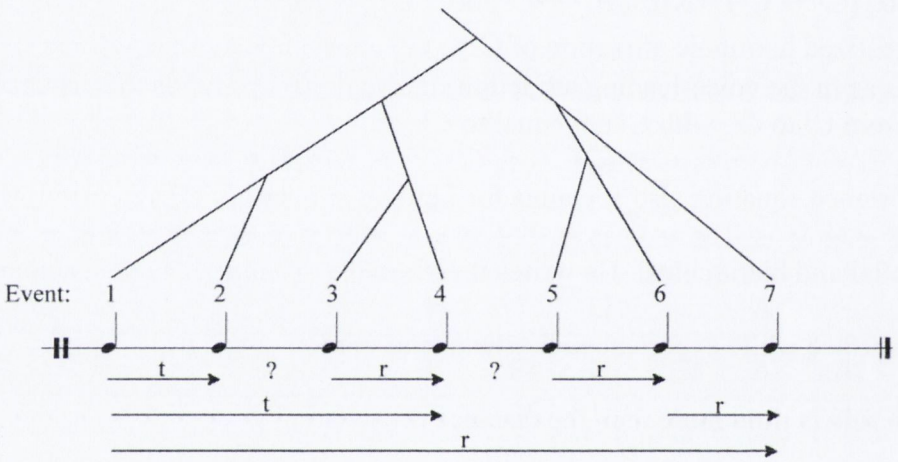
[113] *Ibid.*, 141.

[114] Lerdahl, *Tonal Pitch Space,* 143.

[115] The reasons hierarchical elements might not be as beneficial as sequential ones in an analysis of Debussy's music have been discussed earlier in the chapter, as well as in the previous chapter regarding hypermetric elements.

tension model calculates distances from the prolongational perspective, 'so that an event inherits tension values from prolongationally more important events.'[116]

Tension is graphically represented through the use of Lerdahl and Jackendoff's branching structures, first proposed in *A Generative Theory of Tonal Music.*[117] With the branching structures, tension is indicated by a right leaning branch, and an increase in relaxation is indicated with a left leaning branch.[118] Further symbols, which aren't relevant to the present study, are used for issues of prolongation.[119]



Example 5.16: Branching structure of a gradually relaxing series of events (reproduction of Lerdahl and Krumhansl's chart).[120]

In the following analyses, tension is calculated as the inverse of attraction. As mentioned above, Lerdahl employs both hierarchical and sequential tension models, but as I argue that one should analyze Debussy's music as primarily a process, it would seem that the most beneficial analysis would be based upon the attraction principles

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[116] *Ibid.,* 143.

[117] Fred Lerdahl and Ray Jackendoff, *A Generative Theory of Tonal Music* (Cambridge, MA: MIT Press, 1983)

[118] *Ibid.,* 113.

[119] While a harmonic reduction is employed to some degree, Lerdahl and Jackendoff's prolongational symbols imply a much more long-term prolongation than is present in any of the *Préludes* analyzed by the present study.

[120] Fred Lerdahl and Carol L. Krumhansl, 'Modeling Tonal Tension' in *Music Perception,* 24/4 (2007), 329–366 (330).

explained above. To illustrate this analytical tool, a discussion of a brief, but ambiguous passage from the *Préludes* is needed.

5.4.4: Attractional analysis of mm.1–10 of 'Hommage à S. Pickwick Esq. P.P.M.P.C'

'Hommage à S. Pickwick Esq. P.P.M.P.C.' presents a number of analytical obstacles. Firstly, its discontinuity throughout the piece, such as the cadenza-like interruptions in mm.35–40 and again at mm.44–47 any notion of linearity. A prolongational analysis of the piece would fail to represent the fact that a listener would be unable to deduce many of the 'structural' points. The piece is largely based around the F-major/D-minor set, but the harmonic structures rarely create a traditionally functional progression. As such, the efficacy of Lerdahl's harmonic attraction and tension theories might best be illustrated by a brief analysis of the opening ten measures.

The piece is known for its humorous introduction, but the harmonization of this introduction is perhaps the most interesting element of this section. It begins with what can only be described as a vii^7 chord in m.2, but it fails to act in any way like one. Instead, this vii^7 chord moves to the ii chord (assuming the vii can act as a form of dominant, it is a reversal of the subdominant-dominant predisposition).[121] The two chords contain three common-tones, but by using Lerdahl's basic space, the shift in tonal center creates three distinct pcs. An application of the circle-of-fifths rule arrives at three shifts between the two roots. The commonalities between the two chords, combined with the non-implicative motion between the two, generates a relatively low harmonic attraction rating of .56.

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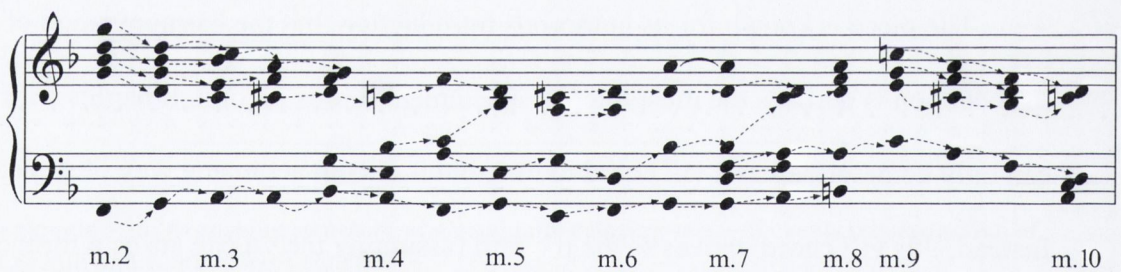
[121] These attractions have been calculated from within an F-major basic space. This is obviously arguable, as there is hardly a cadence in this opening section (the only V → I occurring with the parallel augmented chords in m.9). Nevertheless, there is a definite centricity around the F pitch set, and while there is a brief tonicization of D-minor in m.6, the chord has an F in the bass, which is arrived at by leading tone. There is a C♯ → D motion in m.3, but the emphasis on F (especiallty in mm.1–4) seems to surpass that of D-minor; the hints of which seem to be an attempt at ambiguity. Despite this, the piece as a whole is undoubtedly comprised of the F-major space.

Progression	Regional Space (i)	Circle of Fifths (j)	Distinct pcs (k)	Chordal Distance (d)
vii°7 → ii	0	3	3	6
ii → iii	0	2	6	8
iii → iii+	0	0	3	3
iii+ → ii^{6}	0	2	4	6
ii^{6} → iii	0	2	6	8
iii → I	0	4	4	8
I → vii	0	5	6	11
vii6/5 →V6/4/vi	3	2	4	9
v6/4vi →vi^{6}	0	1	3	4
vi^{6} → ♯iv°7	0	2	6	8
♯iv°7 → V+	0	5	6	11
V+ → I+	0	1	7	8
I+ → IV	0	1	7	8
IV → iii	0	5	6	11

Example 5.17: Chordal Distance Calculations for the opening of 'Hommage à S. Pickwick'



Example 5.18: Voice Leading for mm.1–10 of 'Hommage à S. Pickwick'

Prog(1 →2)	Harmonic Attraction
α(G →D)	2/2 x 1/5^{2} = .04
α(D → B♭)	2/2 x 1/4^{2} = .06
α(B♭ → G)	2/2 x 1/3^{2} = .11
α(G → D)	2/2 x 1/7^{2} = .02
α(F → G)	2/4 x 1/3^{2} =.06
α_{rvl}(vii°7 → ii)	sum = .34
α_{rh} (vii°7/F → ii/F)	10 x .29/6 = .483

This is followed by a much stronger attraction, primarily generated by the G→A and B♭ →A motion, from the ii to iii chord. The augmented chord on the second beat of m.3 is

a shift into whole-tone space, but it is in the same region (it isn't functioning as an applied dominant, modulatory chord or anything of that nature. Nevertheless, the smooth voice-leading, along with the lack of shift in space creates a spike in the attraction ratings at 4.2.

Prog(2 → 3)	Harmonic Attraction
α(D →C)	3/2 x $1/2^2$ = .38
α(B♭ → A)	3/2 x $1/1^2$ = 1.5
α(G → E)	2/2 x $1/3^2$ = .11
α(D → C)	4/2 x $1/2^2$ = .50
α(G→ A)	3/2 x 1/1 = 1.5
α_{rvl}(ii → iii)	Sum = 3.99
α_{rh} (ii/F → iii/F)	10 x 3.99/8 = 4.99

Prog(3 →4)	Harmonic Attraction
α(C → A)	3/3 x $1/3^2$ = .11
α(A → F)	4/3 x $1/4^2$ = .08
α(E → C♯)	1/2 x $1/3^2$ = .06
α(C → A)	3/2 x $1/3^2$ = .17
α(A → A)	null
α_{rvl}(iii → iii+)	Sum = .42
α_{rh} (iii → iii+)	10 x .42/1 = 4.2

A similarly high attraction rating is generated by the shift from the augmented triad to the ii6 chord at the end of the bar. The C♯ → D motion obviously creates a higher attraction rating, and the relatively few diatonic spaces between them (via the circle-of-fifths rule) creates an attraction rating of 5.02.

Prog(4 →5)	Harmonic Attraction
α(A → G)	2/3 x $1/2^2$ = .17
α(F → F)	null
α(C♯ → D)	2/1 x $1/1^2$ = 2

α(A → G)	2/3 x $1/2^2$ = .17
α(A → Bb)	2/3 x $1/1^2$ = .67
α_{rvl}(iii+ → ii^6)	Sum = 3.01
α_{rh} (iii+ → ii^6)	10 x 3.01/6 = 5.02

The return to iii seems to create the sense of a lack of progression, and the descent in attraction ratings demonstrate this, but the emphasized B♭→A allows for a certain sense of fluidity and process, leading to a rating which, although not high, is average.

Prog(5 → 6)	Harmonic Attraction
α(G → null)	null
α(F → C)	3/4 x $1/5^2$ = .03
α(D → Bb)	2/2 x $1/3^2$ = .11
α(G → E)	2/2 x $1/3^2$ = .11
α(B♭ → A)	3/2 x $1/1^2$ = 1.5
α_{rvl}(ii^6 → iii)	Sum = 1.75
α_{rh} (ii^6 → iii)	10 x 1.75/8= 2.19

The movement from the iii^9 to the F major triad generates a rather low attraction rating, largely due to the uncharacteristic leaps from E → A. Obviously the progression is much smoother than this reduction (which only takes the first chord of the bar) shows. The passing chord would generate a much higher attraction rating, as the B♭ → A would create have a much higher tendency to resolve.

Prog(6 → 7)	Harmonic Attraction
α(C → F)	4/3 x $1/5^2$ = .05
α(B♭ → C)	3/2 x $1/2^2$ = .38
α(E → A)	3/2 x $1/5^2$ = .06
α(A → F)	4/3 x $1/4^2$ = .083
α_{rvl}(iii^9 → I)	Sum = .57
α_{rh} (iii^9 → I)	10 x .57/8 = .71

The low attraction level from the F major triad at the end of m.4 and the vii6 at the beginning of measure 5 illustrates the structural gap that takes place at this point. The following chord, however, creates a much higher attraction rating due to the voice leading and the B♭→A motion.

Prog(7 → 8)	Harmonic Attraction
α(F → D)	2/4 x $1/3^2$ = .06
α(C → B♭)	2/2 x $1/2^2$ = .25
α(A → E)	2/3 x $1/5^2$ = ..02
α(F → G)	2/4 x $1/2^2$ = .13
α_{rvl}(I → vii6)	Sum = .46
α_{rh} (I → vii6)	10 x .46/11= .42

Prog(8 → 9)	Harmonic Attraction
α(D → C♯)	2/4 x $1/2^2$ = .25
α(Bb → A)	3/2 x $1/1^2$ = 1.5
α(G → G)	null
α(F → E)	2/4 x $1/1^2$ = .5
α_{rvl}(vii6/5 → $V^{6/4}$/vi)	Sum = 2.25
α_{rh} (vii6/5 → $V^{6/4}$/vi)	10 x .2.25/9 = 2.5

The high attraction rating demonstrates the tonicization of D minor in the sixth measure. The obvious cadential motion, along with the E →F and C♯→D generates an obvious implication, but the movement to the ii (in F or iv in D minor) is done with few obvious harmonic implications.

Prog(9 → 10)	Harmonic Attraction
α(C♯ → D)	2/1 x $1/1^2$ = 2
α(A → A)	null
α(G → D)	2/2 x $1/5^2$ = .04

α(E → F)	$4/2 \times 1/1^2 = 2$
$\alpha_{rvl}(V^{6/4}/vi \rightarrow vi^6)$	Sum = 4.04
$\alpha_{rh}(V^{6/4}/vi \rightarrow vi^6)$	$10 \times 4.04/7 = 5.77$

Prog(10 → 11)	Harmonic Attraction
α(A → A)	null
α(A → B)	$1/3 \times 1/2^2 = .08$
α(F → G)	$2/4 \times 1/2^2 = .13$
New voices added	
$\alpha_{rvl}(vi^6 \rightarrow V/V)$	Sum = .21
$\alpha_{rh}(vi^6 \rightarrow V/V)$	$10 \times .21/7 = .297$

Prog(11 → 12)	Harmonic Attraction
α(B → D)	$2/2 \times 1/3^2 = .111$
α(null → C)	null
α(A → A)	null
α(B → F)	$4/2 \times 1/6^2 = .0625$
α(G → A)	$3/2 \times 1/2^2 = .375$
New voices added	
$\alpha_{rvl}(vi^6 \rightarrow V/V)$	Sum = .549
$\alpha_{rh}(vi^6 \rightarrow vi^6)$	$10 \times .549/1 = 5.49$

This continued shift to what could be considered either a harmonic structure borrowed from the parallel Dorian mode or a passing diminished chord to the augmented triad in m.9 creates a low attraction level. The disregard for any voice leading principles that might imply a passing chord leads one to believe that it is a borrowed modal chord.

Prog(12 → 13)	Harmonic Attraction
α(D → A)	$3/2 \times 1/5^2 = .06$
α(C→ F)	$4/3 \times 1/5^2 = .05$
α(A → D)	$2/3 \times 1/5^2 = .03$
α(F → A)	$3/4 \times 1/4^2 = .05$
α(A → B)	$1/3 \times 1/2^2 = .08$
$\alpha_{rvl}(V/V \rightarrow \sharp iv^{o}7)$	Sum = .27
$\alpha_{rh}(V/V \rightarrow \sharp iv^{o}7)$	$10 \times .27/8 = .338$

Prog(13 → 14)	Harmonic Attraction
α(A → C)	3/3 x $1/9^2$ = .01
α(F→ G♯)	1/4 x $1/3^2$ = .03
α(D → E)	2/2 x $1/2^2$ = .25
α(B → C)	3/1 x $1/13^2$ = .02
α_{rvl}(♯iv°7 → V+)	Sum = .31
α_{rh} (♯iv°7 → V+)	10 x .31/11= .281

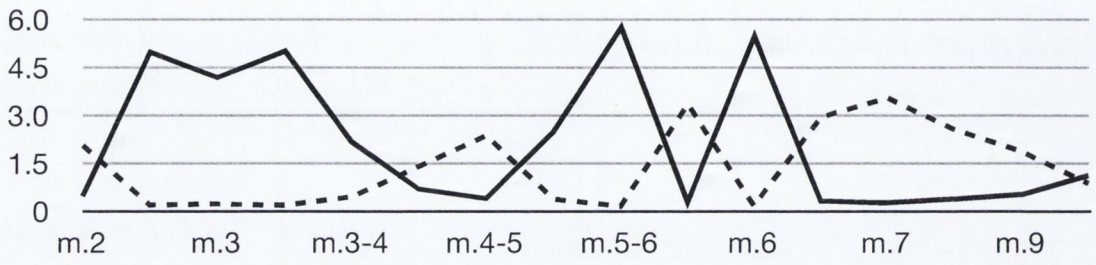
Prog(14→ 15)	Harmonic Attraction
α(C → A)	3/3 x $1/3^2$ = .11
α(G♯ → F)	1/4 x $1/3^2$ = .03
α(E → C♯)	1/2 x $1/3^2$ = .06
α(C → A)	3/3 x $1/3^2$ = .11
α_{rvl}(V+ → I+)	Sum = .31
α_{rh} (V+ → I+)	10 x .31/8= .388

The brief transitional section of parallel voicings (with two augmented triads leading to a Bb major triad) generates rather low attraction ratings, but the stepwise transition from this bridge to the iii chord at the beginning of m.10 is quite implicative.

Prog(15→ 16)	Harmonic Attraction
α(A → F)	4/3 x $1/3^2$ = .15
α(F → D)	2/4 x $1/3^2$ = .06
α(C♯ → B♭)	1/2 x $1/3^2$ = .06
α(A → F)	4/3 x $1/3^2$ = .15
α_{rvl}(I+ → IV)	Sum = .42
α_{rh} (I+ → IV)	10 x .42/8= .53

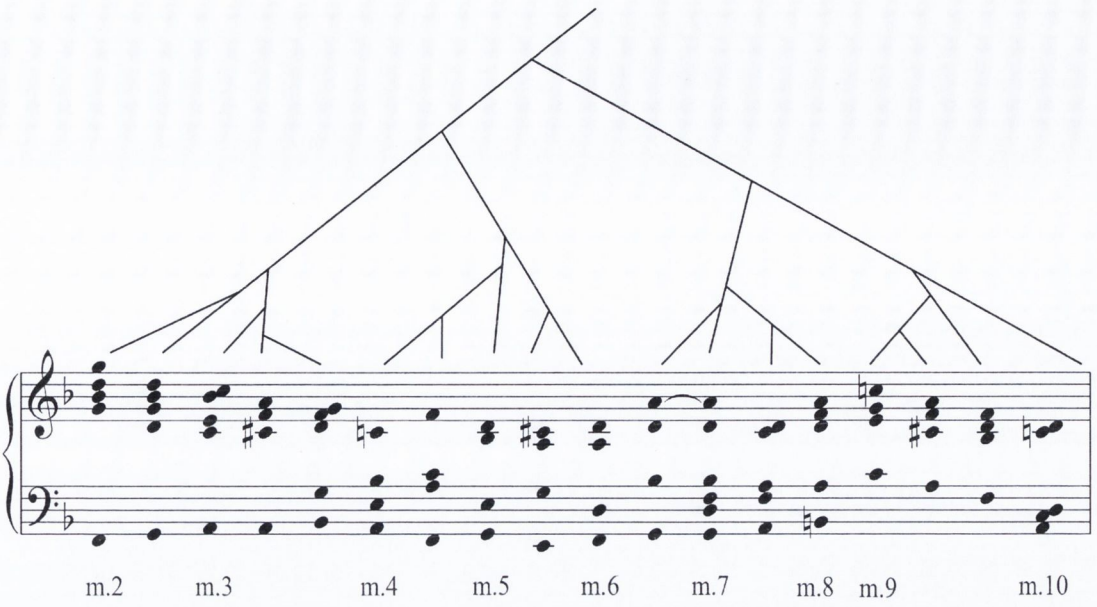
Prog(16→ 17)	Harmonic Attraction
α(F → null)	null
α(D → C)	3/1 x $1/2^2$ = .75
α(B♭ → B♭)	null
α(F → D)	2/4 x $1/1^2$ =.5

New Voice Added (A in Bass)	
α_{rvl}(IV → iii9)	Sum = 1.25
α_{rh} (IV → iii9)	10 x 2.75/11 = 1.13



Ex. 5.19: Attraction and Tension Ratings in mm.1–10 of 'Hommage à S. Pickwick' (Solid Line is Attraction, Dotted Line is Tension)

This tension and attraction analysis then allows us to create a branching structure of mm.1–10, based on the ebb and flow the selection. One can see that the excerpt is one that increases in tension, and the points of increased attraction in Example 5.20 are dependent upon larger branches (with a similar structure to indicate the increase in tension). This example illustrates Debussy's ability to create the natural dichotomy of tension/repose despite a lack of traditional functional harmonic usage. It is somewhat different than Lerdahl's branching system, which is based on grouping, time-span reduction, and prolongation. Instead, the branching in Example 5.20 uses solely attraction levels as a basis for grouping, and the branching reflects a possible hierarchy of tension and repose within the phrase. While the majority of this selection is encompassed within one region, the analyses in Chapter 6 will evoke regional shifts, and will attempt to ascribe 'function' to such peaks in tension.



Example 5.20: Branching Structure of mm.1–10

In quantifying the implicative nature of Debussy's harmonies, the analyst is able to view the fluctuation of ambiguities in the composer's music. This analysis didn't demonstrate anything an analyst with an understanding of the style would not be able to infer on their own, but the ability to view it in such a manner will lead to a larger analysis on the interaction between the various parameters. Debussy's ability to create fluidity and stasis, tension and relaxation without the strict adherence to tonal principals is unique, and a quantification of the harmonic implications provides another tool for the analyst.

5.5 A Narrative Digression: The Unfolding of Tonal Plot

A discussion of harmonic motion in Debussy's music would be incomplete without a brief digression into the narrative aspects of the composer's music.[122] Meyer, borrowing an analogy from Salzer, writes that 'harmonic excursions can be understood in just the

[122] Parks's recent analysis of *Syrinx* provides a series of 'journeys,' which the listener encounters throughout. His analysis is primarily based upon attack points, rather than harmonic motion, and as such does not fall into the purview of the current discussion. Richard S. Parks, 'Music's inner dance: form, pacing and complexity in Debussy's music' in *The Cambridge Companion to Debussy* Simon Trezise (ed.), (Cambridge: Cambridge University Press, 2003), 197–231 (213–216).

same way as departures from the straight narrative line in a novel – the complications of the plot – can be understood.'[123] Harmonic narratives assume a specific meaning in many of the *Préludes,* as their intended depictions are clarified by the titles of the pieces. Incorporating Nattiez's tripartite division of musical narrative, the discussion in the present study of tonal narratives will focus on the 'esthesic' level (the role of the listener, while Brown's use of Sloboda's information-processing model, as discussed above, focuses on the poietic level, and the immanent –or neutral– level illustrates the narrative path of the music regardless of the composer's intent or listener's reception).[124] Whether or not it is compositionally intended, tonal plots are likely to be understood as narratives, especially when the pictorial nature of the piece is emphasized by the extra-musical elements, such as the titles given to the work and the composer's biography. Cone writes that the expressive nature of music is frequently understood as a projection from a narrator (which need not be the composer), and Scruton discusses a similar 'biography theory' of music.[125] Nattiez believes that the presence of a text (which could be taken to include a suggestive title)[126] presents a linguistic cue for a

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[123] Meyer, *Emotion, Meaning and Music,* 53, this linearity of plot can obviously be extended to the *Urlinie* and *Ursatz.* Gregory Karl writes: 'Musical plot, defined as the integrated formal and semantic content of a musical work, is the most inclusive concept of this kind: the Ursatz of musical narrative, and a symbol of aspiration toward a grand unified theory of musical processes.' in 'Structuralism and Musical Plot' in *Music Theory Spectrum*, 19/1 (Spring, 1997), 13–34 (14).

[124] Matthew Brown, *Debussy's Ibéria*, Studies in Musical Genesis and Structure (Oxford ; New York: Oxford University Press, 2003).

[125] Roger Scruton, *The Aesthetics of Music*, (Oxford: Clarendon Press, 1997). 144 and Edward T. Cone, *The Composer's Voice*, The Ernest Bloch Lectures (Berkeley: University of California Press, 1974). Michael Klein writes that 'on the esthesic level, a listener may want to hear music as a narration, regardless of the composer's intent.' His analysis of narrative in Chopin's Fourth Ballade similarly 'assumes the existence of a musical persona who is the implicit narrator of a tale, and demonstrates that Chopin makes more explicit this surviving narrator with an evocation of the past. Michael Klein, 'Chopin's Fourth Ballade as Musical Narrative', *Music Theory Spectrum* 26 (2004), 24–55, (24–26).

[126] Kivy calls such suggestive titles 'unaided pictorial representation.' He writes that listeners of Honegger's *Pacific 231* are able to 'recognize without textual help what the music represents. But even they at least need to be told they are hearing a representation of *something.*' Peter Kivy, *Introduction to a Philosophy of Music*, (Oxford ; New York: Clarendon Press, 2002), (185).

narrative, and therefore influences the perception of such a 'plot.'[127] The *Préludes* therefore present an obvious source of narrative analysis for those so inclined. The titles at the end of each piece allow for literal connections to be made with each musical idea.[128] For example 'Des pas sur la neige' obviously conjures an image of a winter journey, and the analyses use this as a guide. Whittall writes that

> treading on thin ice, the lamenting traveller seems on the edge of an abyss, having progressed into a new, wholly unstable predicament, uncentred symmetry replacing rooted hierarchy.[129]

Such literal translations of the piece can be somewhat dangerous, as such specifics change depending on the listener, and Debussy's feelings on literal interpretations of narrative in instrumental music is fairly well-known, famously writing that he had 'nothing but contempt for music organized according to one of those leaflets they're so careful to provide you with as you come into the concert hall.'[130] Music can serve as an aid to a linguistic cue, and the title alone can support some degree of a narrative (the spinning wheel in Schubert's 'Gretchen am Spinnrade' is a prime example of this), but a title alone cannot support the various narratives placed upon an instrumental work.

Musical works have a subjective 'openness' about them, and Eco correctly states that 'the important thing is to prevent a single sense from imposing itself at the very outset of the receptive process,'[131] and that

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[127] Jean-Jacques Nattiez, 'Can One Speak of Narrativity in Music?', Katharine Ellis (trans.), *Journal of the Royal Musical Association* 115/2 (1990), 240–57 (242).

[128] Jankélévitch actually placed great importance on the fact that the titles were at the end, referring to it as 'suggestion in retrospect.' Jankélévitch and Abbate, *Music and the Ineffable*, 59.

[129] Whittall, *Musical Composition in the Twentieth Century*. 26. Whittall is not alone in prescribing such specifics to the piece. For example, Rings discuses the 'narrative in which white notes are figured as either representative of the frozen landscape, or of a certain mental forgetfulness or numbness [one that is obviously closely entwined with, and manifested in, the landscape...] The Black not B♭ has been figured as a painful intrusion on that landscape. in Rings, '*Mystéres limpides,* 197.

[130] Debussy, *Debussy Letters*, 184.

[131] Umberto Eco, *The Role of the Reader: Explorations in the Semiotics of Texts*, Advances in Semiotics (Bloomington: Indiana University Press, 1979), 53.

> every 'reading,' 'contemplation,' or 'enjoyment' of a work of art represents a tacit or private form of 'performance'[132] of a text that is 'pregnant with infinite suggestive possibilities.[133]

Similarly, Almen writes that, 'there can be no *one* narrative that fits appropriately with a musical work.'[134] An analysis of tonal 'narrative' must therefore focus on the less specific, but similarly enlightening, elements of the composition. Almen writes:

> Music has its own syntactic potentialities, its own ways of manifesting conflict and interaction. A theory of musical narrative that recognizes the different languages and organizing principles of literature and music would not be focused on the question 'How is music really like literature in disguise?'[135]

Imberty has conducted a number of experiments in which he claims to have demonstrated 'that listeners are sensitive to this story-without-words that music awakens in them' by gauging the changes in mood in 'La puerta del vino' and 'La cathèdrale engloutie.'[136] He writes that the two pieces

> evolve for the listener from a somber and even violent mood to a calm, serene, luminous, and immobile ending that is blurred in a sort of complete atemporality and thus creates the illusion that time stops.[137]

The narrative of the two pieces is vague, but a universal process exists. The following discussion focuses primarily on the somewhat general notions of narrative realization and process, illustrated through the romantic notion of *Witz,* and Monelle's terminology

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[132] *Ibid.*,65.

[133] *Ibid.* 53. When speaking of the openness of musical compositions, Eco quotes Pousseur, who writes: '...it is up to the listener to place himself deliberately in the midst of an inexhaustible network of relationships and to choose for himself, so to speak, his own modes of approach, his reference points, and his scale, and to endeavor to use as many dimensions as he possibly can at the same time and thus dynamize, multiply, and extend the utmost degree of his perceptual facilities.

[134] Byron Almen, 'Narrative Archetypes: A Critique, Theory, and Method of Narrative Analysis', *Journal of Music Theory* 47/1 (2003), 1–39 (7). Emphasis in original.

[135] *Ibid.*, 3.

[136] Michel Imberty 'The Question of Innate Competencies in Musical Communication in *The Origins of Music.* Nils Wallin, Bjorn Merker, Steven Brown (eds), (Cambridge, MA: MIT Press, 2000) 449–462 (461).

[137] *Ibid.*, 461.

of 'lyric' and 'narrative' time.[138]

The gradual realization of the tonal scheme is an important aspect of the analysis of harmonic progression. In his analysis of the last movement of Schumann's String Quartet in A major, op.41, no.3, Newcomb writes that

> the narrative game here is the gradual realization – from the point of view of the listener – of reversal of formal function in the units of a work that seem to declare its plot type extremely early, and one whose sectional articulations are unambiguous.[139]

Newcomb bases his theory of narrative on the gradual unfolding of a musical work, similar to the Romantic concept of *Witz* employed by Schlegel and Jean Paul.[140] When discussing *Witz,* Daverio writes that it is necessary 'in order for the listener to perceive the underlying logic amidst apparent confusion' and that it 'is the power where one may detect connections between elements that are seemingly independent and totally contrasted and varied.'[141]

Yet, as as been discussed, many aspects of Debussy's music do exactly the opposite. Jankélévitch writes that the composer's 'symphonic poems,' 'never behave like narrative, with proper closure.'[142] Perhaps this is because a narrative requires a plot, while the images Debussy intends to provide the listener might be no more than auditory *qualia*. The unfolding of a plot, so frequently the object of analyses of tonal

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[138] Raymond Monelle, *The Sense of Music: Semiotic Essays*, (Princeton, N.J.: Princeton University Press, 2000), 115–121.

[139] Newcomb, 'Schumann and Late Eighteenth-Century Narrative Strategies' Anthony Newcomb, *19th Century Music*, 11/2 (Autumn, 1987), 164–174 (164). While many theories of narrative require a conflict, such a concept of 'gradual realization' certainly fits into Tarasti's definition, in which 'something becomes something else.' In Eero Tarasti, *Signs of Music: a Guide to Musical Semiotics*, Approaches to Applied Semiotics 3 (Berlin: New York: Mouton de Gruyter, 2002), 31.

[140] Newcomb, 'Schumann and Late Eighteenth-Century Narrative Strategies' 169. Newcomb defines *Witz* as 'the faculty by which subtle underlying connections are discovered (or revealed) in a surface of apparent incoherence and extreme discontinuity.' (169).

[141] John Daverio, 'Schumann's "Im Legendenton" and Friedrich Schlegel's *Arabeske'* in *19th Century Music,* (Fall, 1987), 150–163 (159).

[142] Jankélévitch, *Music and the Ineffable*, 36. At another point, Jankélévitch points to stasis as an inhibitor to the conveyence of narrative, writing: 'Debussy does not narrate events from the ocean's daily levee: because this half-day is as much stasis as agitated, as empty of events as it is full of wind.' 43.

music, is questioned in Debussy's music, which is so tangentially related to linearity. Debussy does allow for a linear tonal system at points, and when this happens, it invokes what Ricouer refers to as 'the configurational dimension' of perception, in which the reader/listener ascertains the narrative devices and the unfolding of the plot. When the piece abandons linearity, it forces the listener to rely on the 'episodic dimension,' or the perception of events, rather than progression.[143] Therefore I would argue that progression in the narrative sense is no more than a notion of 'becoming.'

This concept, which is analogous to the literary *Witz,* seems to manifest itself in a number of writings on Debussy's music. To some extent, Jankélévitch's statement that 'Debussy is mysterious but he's clear' points to the dual nature of coherence despite ambiguity,[144] and Nadeau writes that in 'Les Fées sont d'exquises danseuses' tonality is inferred by the listener, and is only 'gradually uncovered and revealed.'[145] He writes:

> long before the tonic actually sounds (m.52) in 'Les Fees' the ear analyzes certain information telling it that tonality exists. It does not know for sure what the tonic will be until it is actually heard in measure 52. From the very beginning of the prelude (measures 1–3), melodic and chordal groupings suggest tonicity without pointing directly to a particular tonic.[146]

Nadeau's emphasis on the uncertainty of the listener is reminiscient of *Witz.* The continuous development from uncertainty to certainty is common in Debussy's music, and may be one of the most definable aspects of narrative in the composer's music.

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[143] Paul Ricoeur, 'Narrative Time' in *Critical Inquiry,* 7 (1980), 169–189 (171–174) Discussed in Newcomb 'Schumann and Late Eighteenth-Century Narrative Strategies,' 166.

[144] 'Debussy est mysterieux, mais il est clair' Vladimir Jankélévitch, *Debussy et le mystere* (Nauchatel: Baconniere, 1949), 10. Cited in Stephen Rings '*Mystères limpides:* Time and Transformation in Debussy's *Des pas sur la neige'* in *19th Century Music,* 32/2 (2007), 178–208 (178).

[145] Roland Nadeau, 'Brouillards: A Tonal Music,' 40.

[146] *Ibid.,* 40.

Monelle argues that 'narrative' time exists in conjunction with 'lyric' time.[147] Klein similarly writes that 'narrative time is signified in those sections in which harmonic and phrase structures become more complex, and in which there is generally an increase in rhythmic activity.'[148] Conversely, 'lyric' time is 'signified in those presentational sections in which melody comes to the fore, and in which harmonic and phrase structures are relatively stable.'[149] Monelle invokes Marx's formal structure of *Satz-Gang-Satz* (*Gang* being a transitional section between the more structural *Satze*), which conveys a rest-motion-rest structure, and equates lyric and narrative time with similar constructs: '*Satz* (lyric time) is time arrested, and the *Gang* (narrative time) is time passing. Lyric time is evocation, description; narrative time is action.'[150]

If viewed as an alternation of narrative and lyric time, the narrative aspects of 'Des pas sur la neige' begin to emerge. The piece could similarly be seen as a continual form of *Witz,* until the opposing D♭ mixolydian region finally emerges as an independent entity in m.21. The piece begins with a D-minor ostinato, an static, lyric element, before the melody in m.2 begins to create more of a progressive motion. The motion of D-minor to D-Dorian could be thought of as a simple modal interchange, but in this instance the B-natural assumes an elevated importance. It is an enharmonic spelling of the D♭-mixolydian that begins to emerge. This D♭ arrives in the third section (mm.8–11) via chromatic voice leading before resolving on G♭ at the end of m.11.[151] At the *next* narrative point, however, it fails to function as a dominant and assumes its own importance as it is emphasized as a stable sonority in its own right. Perhaps one instance

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[147] Raymond Monelle, *The Sense of Music: Semiotic Essays* (Princeton: Princeton University Press, 2000), 115–121.

[148] Klein, 'Chopin's Fourth Ballade,' 37.

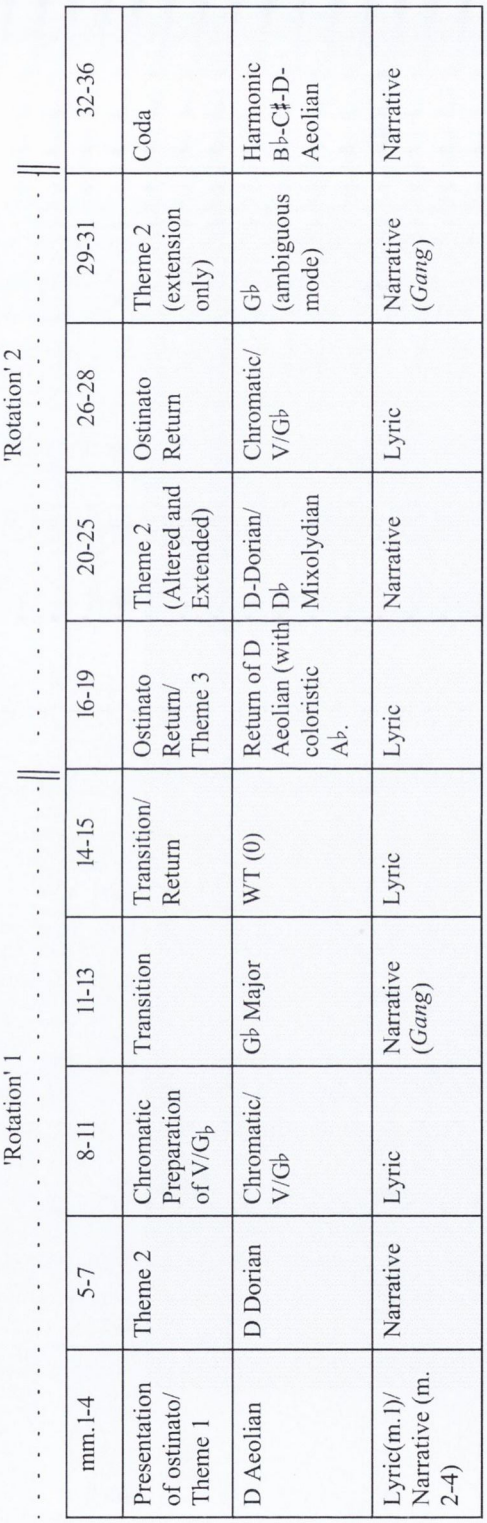
[149] *Ibid.*, 37.

[150] *Ibid.*, 38.

[151] Rings likens the 'memory of the G♭' to a 'Proustian *moment bienheureux*–a felicitous moment,' which allows a memory to resurface. Rings '*Mystères limpides*,' 203.

of such a continual becoming would be the tritone in m.8, which implies a resolution onto the D♭ that won't arrive until m.25. The alternation between lyric and narrative time coincides with the elements of 'becoming' or the 'gradual realization' of the D♭, which serves as the contrasting sonority, perhaps the larger *Gang* between the D-minor *Satze.* Example 5.21 illustrates this, and uses Rings's application of 'rotational form' to illustrate the larger scheme of the piece.[152]

[152] *Ibid.*, 186. Rings divides the section into two primary rotations (mm.1–15 and mm.16–31) followed by a Coda (mm.32–36). Within these divisions he has further subdivisions (mm.1–4 is a1, mm.5–7 is a2, and mm.8–11, 11–13, and 14–15 are permutations of a further b section. Similarly mm.16–19 and 20–25 are a sections within the second rotation, and mm.26–28 and mm.28–31 are subdivisions of the second b.)



mm.1-4	5-7	8-11	11-13	14-15	16-19	20-25	26-28	29-31	32-36
Presentation of ostinato/ Theme 1	Theme 2	Chromatic Preparation of V/G♭	Transition	Transition/ Return	Ostinato Return/ Theme 3	Theme 2 (Altered and Extended)	Ostinato Return	Theme 2 (extension only)	Coda
D Aeolian	D Dorian	Chromatic/ V/G♭	G♭ Major	WT (0)	Return of D Aeolian (with coloristic A♭.	D-Dorian/ D♭ Mixolydian	Chromatic/ V/G♭	G♭ (ambiguous mode)	Harmonic B♭-C♯-D-Aeolian
Lyric(m.1)/ Narrative (m. 2-4)	Narrative	Lyric	Narrative (*Gang*)	Lyric	Lyric	Narrative	Lyric	Narrative (*Gang*)	Narrative

Example 5.21: Narrative Path of 'Des pas sur la Neige'

The piece could be viewed as a 'gradual realization' of the opposition between

D♭7 and D-minor. While the G♭ is present and tonicized, much of the work is dependent on the unfolding of the dominant D♭, which then assumes its own importance. This seems to fit into the notion of *Witz* more than Nadeau's description of 'Les Fées sont d'exquises danseuses,' although both are accurate depictions of the term. More importantly, such an analysis illustrates the efficacy of viewing harmonic trajectories as long term realizations independent of prolongational analyses or referential collections.

5.6: Conclusion

As the majority of analytical writings on Debussy's music focus on his harmonic concepts, the ability to include every major work into a chapter is impossible. Nevertheless, this chapter has attempted to demonstrate the two primary modes of thought: the notion of extensions of functional tonality, and that of an connection of pitch-collections. Put succinctly, these two concepts can be reduced to a syntactically driven analytical foundation opposed to a semantically driven one.

In focusing on harmonic attraction, one is at risk of falling into many of the same traps as Schenkerian theorists, namely an overemphasis on tonal function and grammar. As such, the harmonic analysis conducted in this chapter (and those in Chapter 6) attempt to focus primarily on harmonic tension and resolution, as opposed to the strict functional concepts of tonal theory.

Nevertheless, a system of harmonic attraction is beneficial for a number of reasons. It allows for a quantification of attraction and tension, and (as will be demonstrated in the next chapter) allows one to see how Debussy can undermine shifts between disparate tonal regions through voice-leading that adheres to these rules of attraction. In doing so, one is able to trace a system of harmonic dependencies on the immediate level, allowing for an analysis of both syntactic and semantic harmonic elements.

Chapter 6: Analyses of Three Selected Pieces

6.1: Introduction

As the present study has stressed, implication is a coalescence of multiple parameters, which have thus far been discussed individually, as though they exist in a vacuum. As this is obviously not the case, a further chapter discussing the interaction of implication within parameters would be required. As the *Préludes* cover such a vast range of tonal, formal, and harmonic concepts, finding pieces that can be easily classified for the purposes of analysis can be somewhat difficult. While there are obviously pieces in Book II that seem connected to those in Book I ('Bruyères' and 'La fille aux cheveaux de lin' are perhaps the most obvious examples, followed by the connection between 'Ce qu'a vu le vent d'Ouest' and 'Le vent dans la plaine'), the implicative elements of each piece are often quite different from one another. For example, 'Feux d'artifice' treats metric displacement in a much different way than 'Les collines Anacapri,' despite their textural similarities. As Debussy frequently creates tension in a piece through an extended subversion of various forms of expectation, a synoptic understanding of expectation within the piece would have to incorporate a multi-parametric view of expectation.

In order to illustrate the benefits of the form of analysis discussed in the previous chapters, I have selected compositions that treat expectation in very different ways. The first piece (*Pour les huit doigts*, an *Étude*, rather than *Prélude*, for reasons discussed below) does so solely through melodic and rhythmic means, as the piece is largely monophonic throughout. Another piece ('Canope') exerts harmonic implication in a modal context for the majority of the piece, largely through an interaction of disparate regional shifts and smooth voice-leading principles. Additionally, the melodic element of the piece attempts to subvert any notion of tonal implications (or those too reliant on

a single mode, for that matter), while the piece creates a number of metric dissonances throughout. The final piece discussed ('Des pas sur la neige') creates multiple, contradictory expectations at different points to create multiple denials of expectation at different points, highlighting the disparity of parameters in the process. While these three pieces are by no means a reasonable sample of the *Préludes* (as such an example is unlikely to exist), they do represent multiple treatments of implication, rhythmic projection, and tonal tension.

6.2 'Pour les huit doigts'

Many of the *Préludes,* such as 'Les tierces alternées,' 'Feux d'artifice,' and 'Le vent dans la plaine,' exhibit a primary emphasis on one parameter as a means of conveying what Meyer referred to as the 'facticity of sound.'[1] Jarocinski refers to these elements, which seem to elude the title of either 'melody' or 'harmonic structure,' as 'autonomous sound complexes.'[2] The pieces derived from such 'sound complexes' are exemplified through flourishes of melody, little rhythmic variation, and a de-emphasis of harmonic structures. Jarocinski notes that these structures are neither vertical nor horizontal structures; harmonic elements are broken into a series of events, while melodic ideas are often relegated to elaborations of harmonic ideas. The best example of such a composition might not be a *Prélude* at all, but rather an *Étude.* 'Pour les huit doigts' generates a series of melodic implications that allow for the piece, which contains little –if any– textural variation, to generate a sense of both propulsion and fluidity. While a *Prélude* such as 'Les Tierces alternées' is also driven by the expectation of one element, 'Pour les huit doigts' manages to juxtapose stasis, continuity, and interjected 'moments'

[1] Leonard B. Meyer, *Explaining Music; Essays and Explorations*, (Berkeley: University of California Press, 1973), 121.

[2] This was discussed earlier in Chapter 3. Stefan Jarocinski, *Debussy: Impressionism and Symbolism*, (London: Eulenburg, 1976), 141–43.

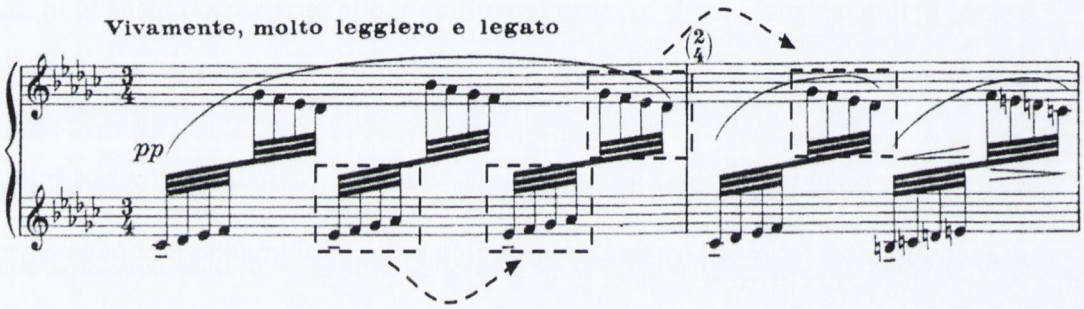
with a singular form of implication. In analyzing this *Étude,* one can see how a similar analytical approach could be applied to the *Préludes.*[3] On the piece's local level, continuation is consistently being implied, yet never realized. On a larger level, Debussy creates motion by implying continuation, only to halt it with various forms of 'stasis' and interjected 'moments. This interaction between propulsion and stasis could be considered a form of implication in itself. One recalls that Narmour's basic precept of A+A→A and A+B→C focuses on this concept, as well.[4] Repetition (generating stasis, in this instance) leads to more repetition, while progression leads to more progression.

In the opening of 'Pour les huit doigts,' the basic melodic contour of five ascending notes followed by three descending notes could be thought of as a primary motive of the piece. The downbeat of the melody has an elevated perceptual importance, both through the privilege of being placed on the original downbeat, as well as the accompanying *tenuto* markings in mm.1–3. While the key signature indicates G♭, the placement of the C♭ structure on the downbeat, followed by the G♭ (with no exterior factors for referencing a tonic), lead one to hear this rather ambiguous opening as I–V, rather than IV–I. As such the analysis of the opening uses C♭ as the tonal center. Reducing the motives to these accented notes, it becomes clear that Debussy subverts implication almost from the outset of the piece (in fact, as soon as an expectation is able to be denied, it is). An implication is denied in m.1 as an ascending triadic implication is left incomplete: the reduced melody avoids the $\hat{1}$-$\hat{3}$-$\hat{5}$ that would be expected, instead

[3] It should be noted, however, that one's schematic expectations might be shifted from the outset, as external expectations of an *Étude* are inherently different from those of a *Prélude.* For example, an *Étude* as inherently tactile as this might generate certain expectations from a pianist, and completely separate ones from a non-pianist (and especially from a non-musician).

[4] Eugene Narmour, *The Analysis and Cognition of Basic Melodic Structures: The Implication-Realization Model*, (Chicago: University of Chicago Press, 1990), 3. Narmour writes that such implications are not limited to the melodic structures his work focuses on, but differentiates between the notation. A+A is a formal repetition, A+A is an intervallic pattern, and a + a refers to pitch elements.

favoring a $\hat{1}$-$\hat{3}$-$\hat{3}$ shape. This then returns to $\hat{1}$ in m.2, and remains at this point until m.4 (although enharmonically). This repetition in the left hand of the first measure (E♭-F-G♭-A♭ on both the second and third beats) provides a contrast to the right-hand, which reverses direction (B♭-A♭-G♭-F to G♭-F-E♭-D♭). Additionally, repetition of the final gesture of the measure is echoed by the right hand gesture of m.2, while the left hand returns to the tonic.

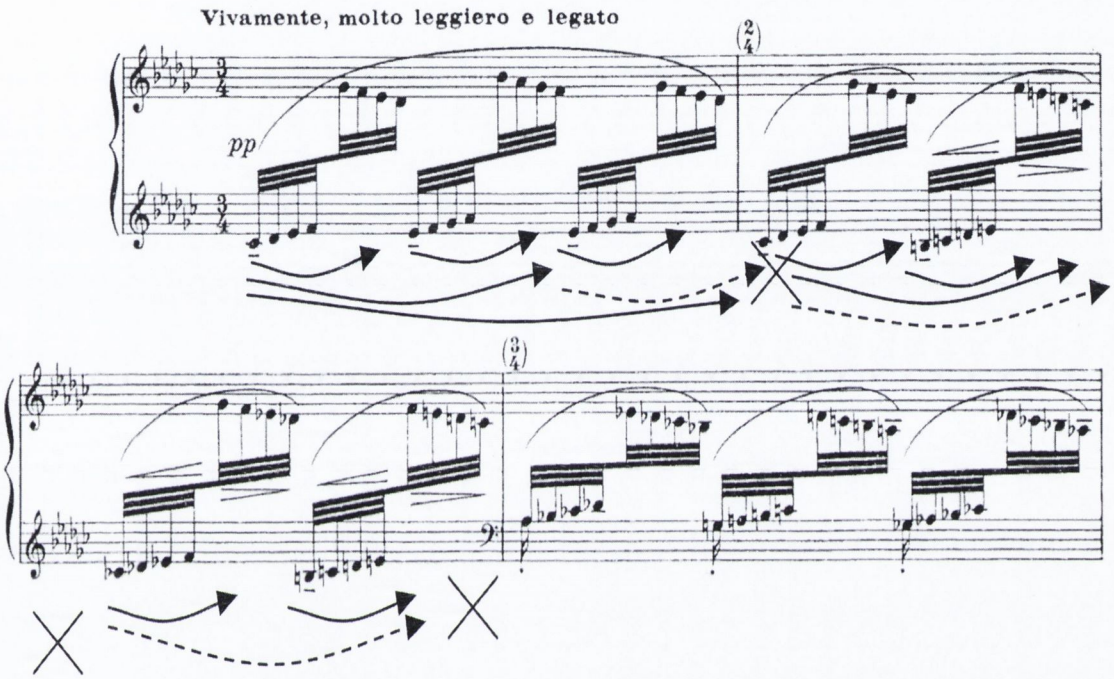


Ex.6.1: mm.1–2 of 'Pour les huit doigts' (with highlighted elements of conflicting repetition)

The motive that began the piece recurs at the onset of m.2, which would seem to imply repetition: the recurrence of $\hat{1}$-$\hat{3}$-$\hat{3}$ would be the most likely event at this point. This, however, is quickly thwarted as the descending motion begins in the second half of the measure, and the accented downbeat in the left hand begins a chromatic descent. The repetition of the motive thus far has quickly set up either an implication of further repetition, or a development of the $\hat{1}$-$\hat{3}$-$\hat{3}$ idea (perhaps through a triadic idea, or a continuation of the descending idea).

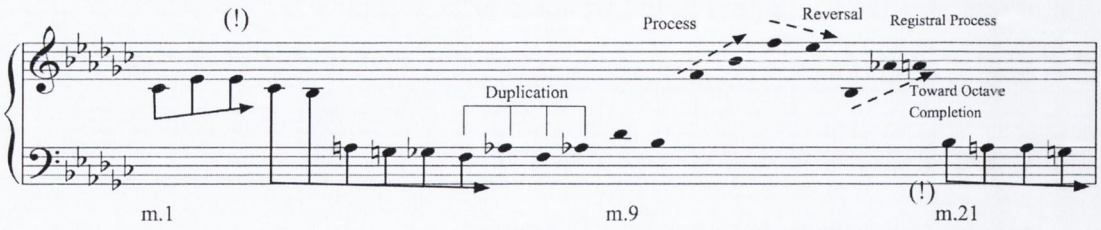
At the onset of m.3, multiple implications have been denied. Along with the triadic motion implied in m.1, the metric structure of the opening measures implies a collection of two of the primary motives before the next collection, as the return in m.1 could be viewed as an onset of a new meter. Additionally, this metric unit of three motives, once attained in m.1, should continue. In mm.2–3, the C♭/B acts as a point of stasis: the implied process of C♭ to E♭ is replaced with C♭-B. In another example of

stasis, the two bars of 2/4 might be heard as an extended 4/4 between two 3/4 measures. Any notion of metric regularity is discarded, and when m.4 is created (not by the repetition of any motive but by the staccato in the left hand) any further notion of metric regularity seems to disintegrate at this point.



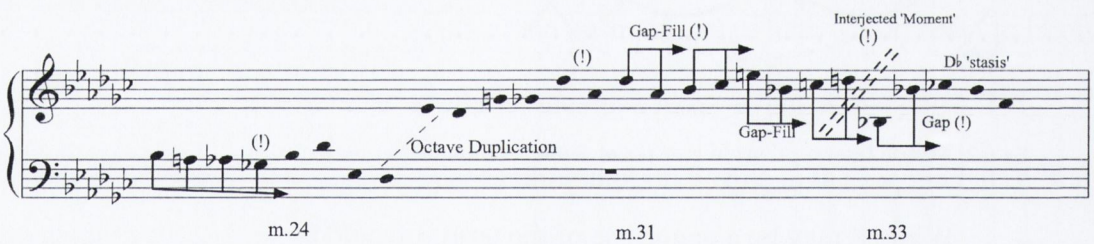
Ex 6.2: Metric Interruptions in mm.1–4 of 'Pour les huit doigts'

While it may be a vague use of the term, I would argue that the binding motive of the piece is the interplay of two four-note gestures. While it could be divided based on contour (five notes up, three notes down), the very nature of this *Étude* seems to be one of equal division between the two hands. The downward descent in the left hand continues until m.5, when Debussy counters this process with an idea of stasis; the phrase in mm.5–6 is repeated in mm.6–7 (the structural F and A♭ points are shown as duplication in Example 6.3),and this static element of the piece continues until m.9, at which point octave duplication is used to hinder the progressive element of the piece in mm.9–10.



Example 6.3: A Reduction of Implicative Elements in mm.1–21

Later in the piece, Debussy employs a chromatically descending line on the downbeat of m.21 to create progression (although it is not entirely chromatic, as Debussy avoids the G-natural in the line: B♭-A-A♭-G♭), which is again halted by a stasis created by octave displacement in m.25 (see example 6.4). This then leads into more stasis until m. 30, which provides the listener with a two-measure descending line before an interrupting 'moment' occurs in mm.33–34. This interjection is used to disrupt what was going to be the first completed 'gap-fill' of the piece. The E-B♭-C-D in mm.31–32 heavily implies a return to E, but the disjunct section denies any sense of closure.



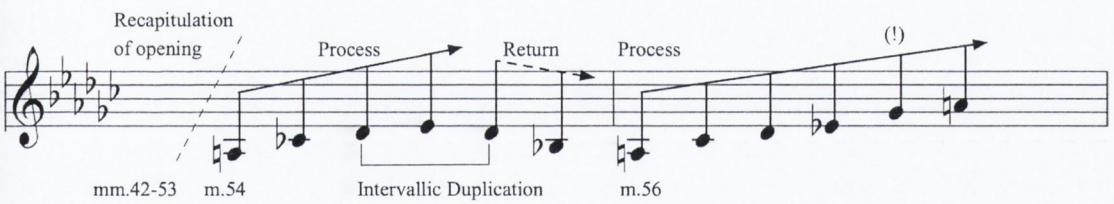
Example 6.4: A Reduction of Implicative Elements in mm.24–41

The momentum of the piece slowly returns in m.38, but is disrupted in mm.39 and 41. This interjected section can be thought of as another disruption in linearity, and this creates yet another obstacle in the experience of progression. As a result of this 'moment,' it would be a fair assumption to say that the listener's point of reference is at best obscured.[5] Goal-directed motion in the 'melodic parameter' (if one could call it that) is not allowed to state a purpose, much less achieve any sort of progress toward a directed point. The piece cannot be said to consist of static temporality either, as each

[5] For a discussion of the role of 'moment form' in the obfuscation of formal progression, see Chapter 2.

moment of stasis is frequently broken up by motion. These opposing structures therefore seem to be used as a device to simply confuse the listener's very sense of expectancy and closure.

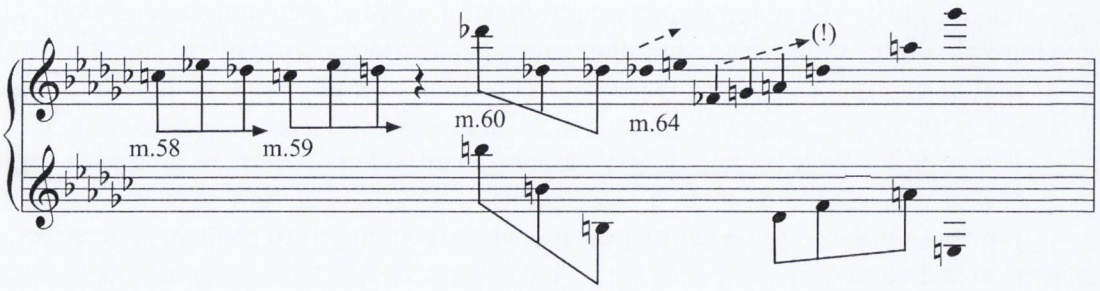
Therefore, the recapitulation of the opening motif (in mm.42–53) would at first be taken lightly, and it surprisingly continues for a full eleven measures. Nevertheless, the notion of a half developed expectation reaching its completion at the climax of the piece is central to 'Pour les huit doigts' (among many others). At m.54, Debussy begins a process similar to the opening gesture. The ascending third sequence, however, is not repeated, as in the third measure, but rather it ascends stepwise. Any notion one may have had that the opening measures were anything but an interrupted process should now be discarded as the implication of such is finally realized. The melodic return to m. 56 begins an ascending process in which the return of the first idea continues upward with a G♭-A, in contrast to the return of the previous measures.



Example 6.5: A Reduction of Implicative Elements in mm.42–57

Perhaps one of the most obvious instances of a denial of melodic implication occurs in mm.58–59, at which point a C-E♭-D♭ is repeated, but chromatically altered from a D♭ to D-natural when played again. Such instances highlight the subversion of expectations on the local level, as opposed to the more global implication (such as with the recapitulation of mm.42–53). Stasis (once again through a repetition at the octave) recurs at the *accelerando poco a poco* in m.60. This stasis then turns to a descending

moment before an arrival at an E♭-minor chord (although not a triad), which, as is the case in many of Debussy's piano works, seems almost out of place upon its arrival. The ascending process in m.64, however, creates a drive toward completion in the final measures.



Example 6.6: A Reduction of the Implicative Elements in mm.58–68

Implication in pieces such as 'Pour les huit doigts' exists in a modified form. By creating such rapidly moving gestures, the emphasis becomes placed on the sonority itself, and it could be argued that expectation begins to become less about *what* and more about *when.* Furthermore, the temporal implications of a piece can only be satisfied if there is a continuous temporal process, devoid of pauses or interjections. In 'Pour les huit doigts,' Debussy uses both stasis and moment form to force the listener to focus on the sonority in isolation. When viewed through the lens of implication, the piece is more fluid than it would appear to be from the outset. Wheeldon discusses the binary nature of the piece, dividing the composition into an A section comprised of mm. 1–41, and a B section of mm.42–68, alleging that the form of the piece could 'provide a possible link to Couperin.'[6] The return of the opening material in mm.42, however, leads Wheeldon to conclude that it could be considered more of an AA' than an AB binary form. On the other end of the spectrum, McFarland writes that the piece is one of the most modernist of Debussy's later works (pointing out that the piece frequently

[6] Marianne Wheeldon, *Debussy's Late Style,* (Bloomington: Indiana University Press, 2009), 70.

achieves a chromatic aggregate in many isolated sections).[7] These somewhat disparate views (seen at once as a regression to the Baroque, as well as a venture into modernism) seem to point to its ambiguous nature. By viewing the implicative nature, one can view the fluidity of the piece, as well as the instances of disruption and stasis. The traditionalist/modernist dichotomy is no longer an obstacle for an analysis, and the focus becomes on the process within the piece.

This could be extended to many similar pieces (some of which, such as 'Brouillards' and 'Les Sons et les parfums tournent dans l'air du soir' are mentioned above), in which implication *does* exist at a somewhat local level (there is still a melodic implication, as this analysis as demonstrated), the large-scale perception of the piece is that of an interaction of the widely defined concepts of progression and stasis. Similar uses of general terminology allow the analyst to understand more than just progression in Debussy. For example, an analysis of 'Canope' would be best understood through an extension of the terminology regarding harmonic function.

6.3: 'Canope'

'Canope' serves as an appropriate case study for four reasons. Firstly, the form is somewhat ambiguous, being what Parks refers to as a 'hybrid' ternary (A-B-A/B),[8] and the formal divisions are frequently blurred to the point where the application of the word 'ternary' (along with the accompanying connotations) almost seems inappropriate. Secondly, Debussy goes to great lengths to differentiate between the notated and the experiential meters, creating metric dissonance throughout the piece by setting up multiple periodicities. Thirdly, the motivic construction creates a sense of motion, but not necessarily development. There is neither the motivic elaboration nor the

[7] Mark McFarland, 'Transpositional Combination and Aggregate Formation in Debussy,' *Music Theory Spectrum,* (Fall, 2004), 187–220 (210).

[8] Parks, *The Music of Claude Debussy*, 224.

Schoenbergian 'liquidation' discussed in Chapter 3, but the motives act as a constant through the various harmonic reinterpretations of the piece, as well as a sort of thread (or cue to return to the terminology from Chapter 2) to allow for the listener to perceive coherence through the somewhat disjunct harmonic shifts. Finally, the harmonic structure illustrates Debussy's tendency to traverse distant tonal regions smoothly through consistent voice-leading. This interaction allows the composer to develop similar concepts of tension and repose to those in functional harmony (the repose of the tonic juxtaposed with the tension of the dominant), thereby allowing the composer to create ambiguity by avoiding the functionalism of dominant-tonic relationships. The following analysis attempts to illustrate these four features in order to create a synoptic view of implication, attraction, and tension in the piece.

6.3.1: Metric Displacement

'Canope' has been mentioned a number of times in this study. It was an example of 'hybid' ternary form in Chapter 2, and its ambiguous opening measures demonstrated the viability of a melodic attraction analysis in Chapter 3. This section will go into more depth with the piece as a way of examining Debussy's treatment of ambiguity, and its effect on the overall tension of a composition. A score depicting the formal layout can be seen in Example 2.4.

From the beginning of 'Canope' Debussy creates a disconnect between experiential and notated meter. The opening triads are in a group of four until the final resolution on m.5. Debussy creates motion with this displacement throughout the piece. The perception of a 4/4 meter beginning on the notated second beat is reaffirmed by the recurring D-minor triads on the second beats of m.2 and m.3 (the latter of which is reaffirmed be a 4/4 division in the lower voice as well). When the harmonic structure switches to E♭ on the second beat of m.4, it continues the displacement of meter. The motive in mm.7–8 is similarly displaced, and as the motive is recontextualized throughout the composition, this displacement serves as an opposition to the emphatic chords on the downbeats.

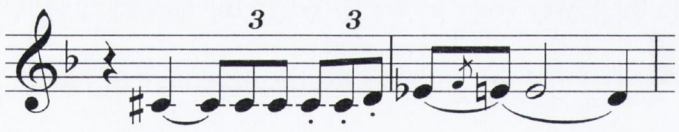
This displacement continues throughout the piece, but the experiential meter in the middle section of the piece is somewhat in congruence with the referential one. The downbeat is emphasized as the new section begins in m.11, and this continues throughout the section.[9] Nevertheless, there are emphasized elements that are displaced. The whole-tone element in m.18 contains a similar quarter note displacement as in the beginning of the piece, Debussy offsets the pedal in mm.18–22. The displaced melody

[9] The formal division of these piece was discussed in Chapter 2. A new tonal collection begins in m.11, but the previous chapter stated that a 'proper' B section didn't start until m.19. There is a new tonal centre E♭ that begins in m.21, and a recapitulation of the opening material in m.28.

in m.22 continues the shifted 4/4 meter, but the truncation in m.23 from a four-beat unit to a three-beat one (when the interruption occurs before the return of the opening section), is displaced. The simple displacement throughout the piece creates an underlying ambiguity, which is further reinforced by motivic and harmonic means.

6.3.2: Motivic Structure

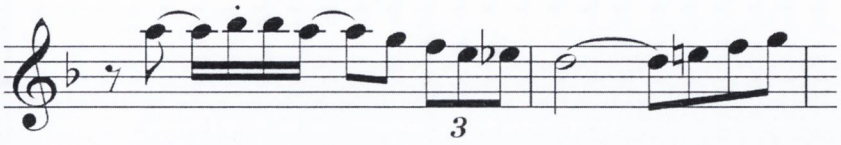
The motivic structure of 'Canope' doesn't have the same developmental aspects as the pieces discussed in Chapter 3 The motives sometimes contain an immediate repetition, but this can hardly be considered development. Instead, the motivic structure of the piece can be thought of as subtle transformations of a consistently returning figure (henceforth referred to as Figure A). While the introductory theme serves a sort of 'bookend' function for the piece, the motivic structures of the middle sections of the piece serve a similar function.



Example 6.7: Figure A in 'Canope'

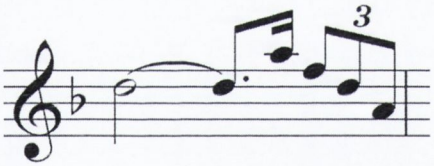
Beginning in m.7, Figure A creates an implication of chromatic stepwise motion. It has an inherent tonal weakness, beginning on the major seventh of the D-major tonality of the moment, but the resolution to the D is treated as a passing tone on the way to E♭ on the downbeat of m. 8. As the idea gradually spans a minor third, it returns, but a full sense of closure is thwarted by the structural gap in m.9 (the rest on the downbeat used to create the displaced meter throughout the piece). When the theme is altered in m.9, the chromatic ascent is replaced with minor thirds (the first could be viewed as being the accented notes of E♭ and F♯, with the G acting as a neighbor tone, and the second instance being the F♯ to the A). This expansion of Figure A is replaced

with a one-bar motive (Figure B in m.11) followed by a linking motive in m.12. It is this theme that allows for a differentiation of the A and B section, and its recurrence in m.30 allows for the formal structure to be viewed as a 'hybrid' A-B-A/B structure.[10]



Example 6.8: Figure B in 'Canope'

The outlined D-minor triad in the brief 'Figure C' keeps the D-Dorian sound in play while being the first structural point in which the C-sonority is emphasized. The theme, however, quickly turns into what I will refer to as a 'moment' in mm.16–20, which seems to function as a way of interrupting the linearity of the piece. Figure C is followed by a return of Figure A in mm.20–23, as the idea of ternary return that encapsulates the piece exists at the lower thematic level as well.



Example 6.9: Figure C in 'Canope'

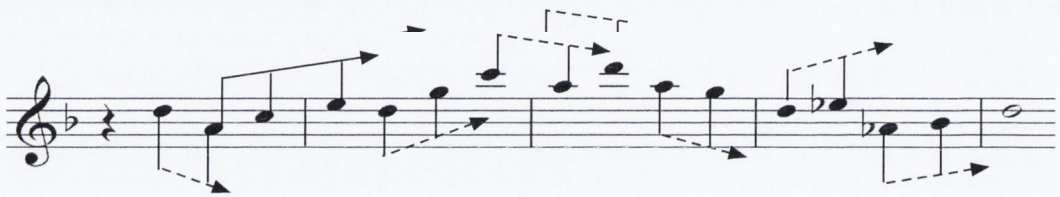
The recurrence of the motives (in particular Figure A) allows for the listener to perceive the harmonic shifts of the composition, as well as serving as a binding element throughout the piece (functioning in a similar fashion to the 'cognitive reference points' discussed in Chapters 2 and 3.

6.3.3 Melodic Implication

Ambiguity in the opening melody of 'Canope' is facilitated by the constant subverting of melodic implications on the immediate level. For example, the first two notes of the piece (a D followed by an A) would seem to imply either a triadic continuation to F, or

[10] Such hybrids were discussed in chapter 2.

a stepwise return (to B or B♭). Instead, the melody returns to C, continuing upward to E to fulfill a triad at the start of m.2. This would seem to imply another ascending triad, now beginning on the D, but this never occurs. Although the D moves to a G (implying a triad, albeit in second inversion, rather than root position), it continues in fourths to C. Debussy continues to avoid either continued stepwise or triadic motion for the remainder of the introduction, although the stepwise A-G in m.3 and A♭ to B♭ in m.4 hint at such continuations.[11]



Example 6.10: Possible Implications in mm.1–5 of 'Canope' (Dotted arrows representing unrealized implications)

The remainder of the piece seems to play with the implications of stepwise chromaticism. The C♯-D-E♭ element in Figure A immediately reaches E-natural upon its first iteration in m.7, but seems to avoid this completion in mm.9–10. When the motive returns in m.20, the expansion implied from the first occurrence is replaced with a return to D (and an eventual return to C♯, albeit after a 'structural gap' created by the rest on the downbeat). One of the few realized implication occurs in mm.14–15 (Figure C), as the D-minor triad is outlined against the F^7 chord; yet another reason to consider the imposed duality of C/D-dorian. As the nature of melodic implication in the piece is one based largely on denial (therefore creating tension), tension and repose occurs

[11] It could argued that this opening is an invocation of pentatonic space, in which such implications might not be heard as such. Meyer and Narmour, however, would argue that this is irrelevant, and the listener would most likely expect a resolution of a leap, regardless of the pitch-collections. The analysis presented here is more faithful to Meyer and Narmour's methodology, although one must give credence to the notion that alternative pitch-spaces might contain alternative sets of expectancies. Little research has been done on this, aside from the empirical work previously mentioned, which supports the findings of a universal sense of resolution. For example, see Lola L. Cuddy and C.A. Lunney, 'Expectancies generated by melodic intervals: Perceptual judgments of melodic continuity' in *Perception and Psychophysics,* 57 (1995), 451–462 (*Passim*).

largely as a result of the harmonic parameter, which is comprised of a similar battle between the two sonorities.

While 'Canope' is frequently discussed in terms of its harmonic motion and modal ambiguities, these melodic and metric issues underline the amorphous nature of the piece. As the piece is primarily comprised of a duality between two modal centers, the discussion of harmonic attraction will be extended, but it is nevertheless important to acknowledge that ambiguity is functioning on all parametric levels.

6.3.4: Harmonic Attraction and Tension

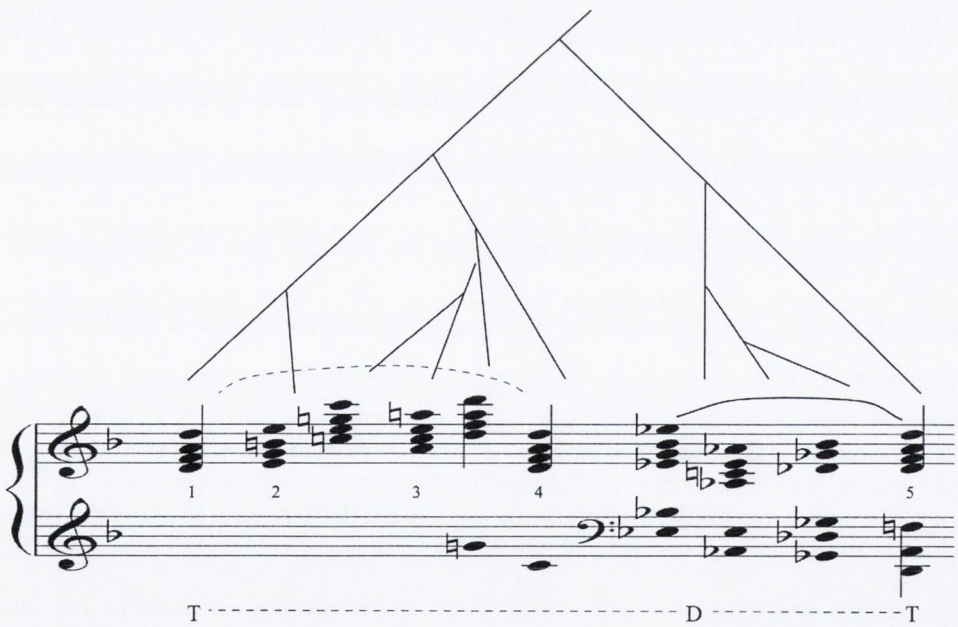
While 'Canope' is structurally closed (comprised of a somewhat ternary, if hybrid, design), it is tonally open, beginning with what could be considered a strong D-Dorian introduction, and ending in C-Mixolydian (while the C-major triad is heavily accented, the brief B♭ in the melody seems to create a weakening of C-major, in favor of Mixolydian).[12] Harmonically, the piece seems torn between the these two centers. Obviously, the opening could be considered to be in D minor; the G-minor triad in m.2 gives a hint of it. Nevertheless, the emphasized B-natural at the beginning of the measure creates a strong modal sonority, and the B♭ only acts as a method for undermining the C-major tonality.[13] Interestingly, whenever the B could be used as a

[12] The modal emphasis is obviously an invocation of earlier music, most likely an attempt to evoke an early Egyptian setting. Roy Howat writes that Canope is 'the ancient Egyptian city that gave its name to the 'Canopic jar' tops of funerary urns; Debussy had two such jars on hiw work table.' in, Claude Debussy, *Préludes, Livre I/Livre II,* Roy Howat and Claude Helffer (eds.), in *Ouevres Complètes de Claude Debussy,* (Paris: Durand-Costallat, 1985), xvii.

[13] For an more in-depth discussion of the Dorian nature of this opening, see David Lewin, 'Some Instances of Parallel Voice-Leading in Debussy', *19th-Century Music* 11/1 (1987), 59–72 (66–70). Debussy considers the Dorian nature of the piece to create an internal conflict in itself, asking: 'what generates the musical impulse for a cognitive dissonance whereby, according to my reading, Debussy hears the cadence of the actual music instead of the Dorian cadence?' (67). James Baker analyzes the piece as strictly in C, which seems counterintuitive. In James Baker, 'Post-Tonal Voice-Leading', in *Models of Musical Analysis: Early Twentieth Century Music*, Jonathan Dunsby (ed.), (Oxford: Blackwell, 1993) 20–41. Pomeroy mentions this when referring to Debussy's 'directional tonality,' similarly viewing this piece as an 'overall progression of a descending second (D minor–C major),' although he does not distinguish between the broad 'D-minor' and the emphasis (and subversion of) D-Dorian. Pomeroy, 'Chromaticism and Form in Debussy's Orchestral Music,' 242. Boyd Pomeroy, 'Tales of Two Tonics: Directional Tonality in Debussy's Orchestral Music,' *Music Theory Spectrum* 26/1 (2004), 87–118 (90).

leading tone, it instead resolves downward, while the B♭ is ascends to C rather than descending to A. This very subtle treatment of the leading tone gives the phrase an ambiguous modal center.

If this is the case, the first five measures could be considered an emphasis on this Dorian sonority, affirmed in two places. The motion to the A-minor triad at the beginning of m.3 establishes a tonic-dominant polarity, and the chord resolves at the beginning of the next phrase (on the second beat of m.3). The reduction of this harmonic progression, as well as the hierarchical organization and branching of mm.1–5, can be seen in Example 6.11. Another type of dominant motion occurs in m.4 by means of an unconventional ♭II movement (reduced from ♭II -♭V -♭IV, which seem to serve as a mixed-modal unfolding of the E♭ triad).



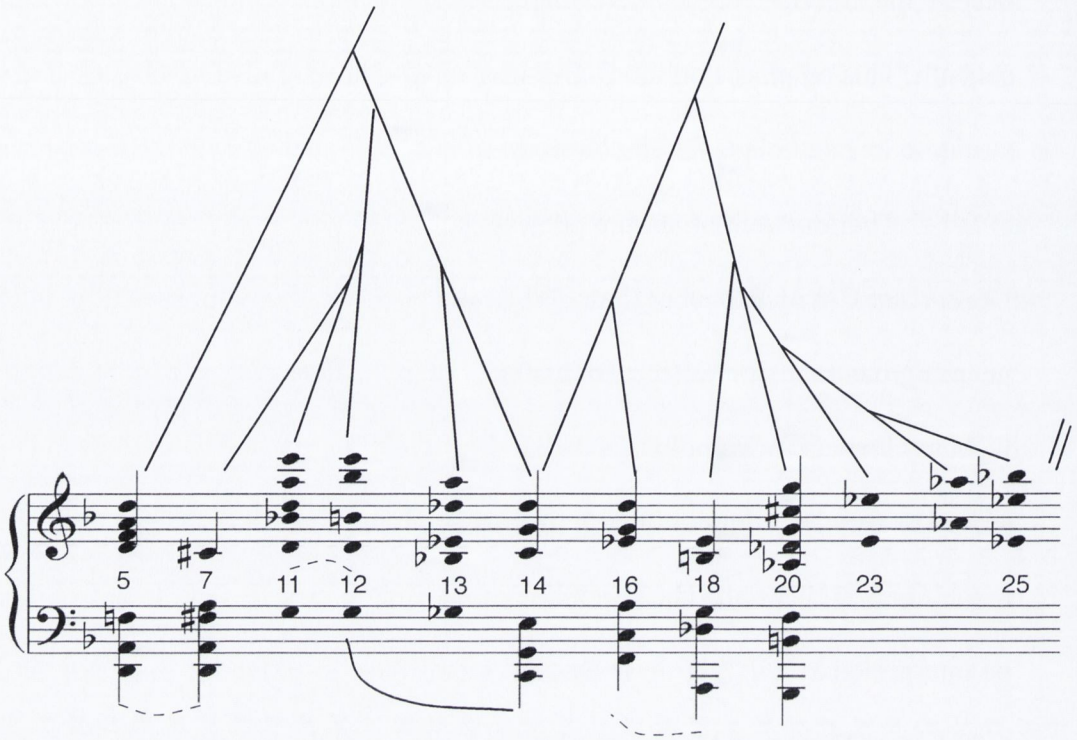
Example 6.11: Hierarchical Structure of mm.1–5 of 'Canope'

While the 'B' section of the piece commences at m.11, the buildup begins in m.5. The parallel modal interchange from D-minor to D-major sets up the motion from G-minor to G-major that occurs in mm.11–12. This D-major then serves as an applied dominant

to this G tonal region (I'm hesitant to say key, due to the brevity of the instance), despite the fact that Debussy exchanges the dominant seventh sonority for a major seventh. This emphasis on the G/G-minor tonal space is illustrated by the branching structure in Example 6.12. The G-minor in m.11 is branched with the G-major in m.12.[14]

The fourteenth measure presents a pivotal point in the conflict between the D-Dorian and C-major tonal regions. While the pitch-classes would seem to indicate an unambigious C-major collection, it is lacking in the necessary syntax to define it as C. Debussy arrives at this point via a ♭III^{7}–I progression, and the E♭ in question previously served as a cadential point in m.5, thereby implying a possibility for a Neapolitan resolution to D-Dorian. The chromatic movement in mm.11–12 (which could possibly be interpreted as a ii°7–II^{7} in D Dorian) seems to be an extended implication of a return to D (either Dorian or Major), but I would argue that the resolution on C allows for the possibility of retroactively perceiving mm.11–12 as a ii°7–V^{13} progression in the key of C. The D major space that commences in m.7 eventually resolves downward to G, and the modal mixture between the D tonal region might be considered an extended dominant of sorts, although the section is much more likely to be understood as a product of chromatic voice-leading, rather than dominant function.

[14] Lerdahl's analysis of 'La terrasse des audiences du clair de lune' treats function in a similar fashion, although the piece is primarily a dominant function, only resolving to the tonic in m.8 and finally at m.34. The analysis of 'La terrasse' fits within the context of Lerdahl's larger discussion about chromatically modified spaces ('La terrasse' utilizes an octatonic space), but the application of this system to the *Prélude* demonstrates the ability of the methodology to cope with Debussy's music, and the difficulties pertaining to the harmonic structure of the piece. Lerdahl, *Tonal Pitch Space,* 305–312.



Example 6.12: Hierarchical Structure of mm.5–23 of 'Canope' (the double lines indicate a structural break)

The C tonal region (neither strongly major nor Mixolydian) begins to be emphasized through a sort of plagal affirmation, although Debussy has once again replaced the major seventh with a dominant seventh chord.[15] This C-major, occurring at almost exactly the midpoint of the piece, serves as a tensional pivot point. The increasing tension beginning in m.5 culminates in m.14, which then serves as a point of departure.[16] This F-Mixolydian region (which could be called dominant in terms of pitch collection, but not function) gives way to an enharmonic use of an A-Mixolydian region in m.18, which then invokes whole-tone space in m.20 (as an A^{wt}/G). This whole-tone use becomes the basis of a primary climax of the section as the return of the melody presented in mm.7–8 returns, and is expanded until the structural break in m.25. The

[15] I would argue that The E♭ in the middle voices leads one to hear it as a IV^{13}, rather than a D-minor.

[16] The branching in the above example attempts to depict this increasing tension from these points. Debussy exploits such dualities frequently in this piece.

branching reflects an increase in tension from m.14 until m.20, and the extension of the motive until m.25.

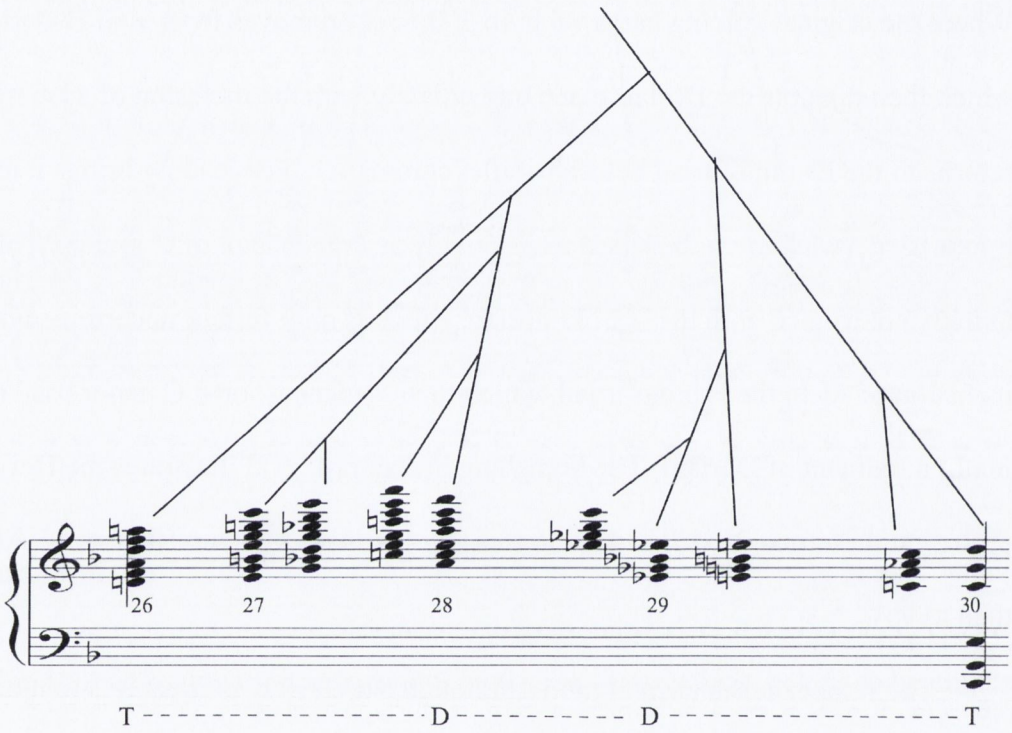
The final section presents a retelling of the opening organum, at first in the original D-Dorian, but adjusted to fit the return to a C-tonal region (Mixolydian). The triadic voicings are now doubled, and once again the E♭ serves as a turning point. Where the original voicing had a v-i in m.3, the return moves from v-♭ii/D-dorian, which then disrupts the Dorian space immediately with the inclusion of a ♭vi triad. This returns to the E♭ minor triad before parallel chromatic voice-leading brings it to an E-minor triad, (what might be heard retroactively as the mediant of C-major). This is quickly confronted with the V of D-dorian, which is only further undermined by the inclusion of A♭ in the F-minor triad, which then 'cadences' on a C major triad (with a ninth: a remnant of Dorian). The branching in Example 6.13 illustrates the Dorian prolongation in mm.26–27, and illustrates the dominant function (first as a V/D-Dorian, then as ♭ii).

The final cadence is ambiguous, although not entirely unique; it is reminiscent of the end of Wagner's *Tristan und Isolde,* which contains a similar iv-I motion. In the final measures of 'Canope,' the A♭ continues to G♭, the F to E (via octave transfer), and the C in the soprano ascends to D.[17] As such, the harmonic tension analysis presented in Chapter 5 would provide this analysis with a visual representation of the harmonic attraction (and tension) levels of the piece.

On a very basic level, one can ascribe dominant function to instances of high tension. Lerdahl does this, extending the notion of function to be a corollary of

[17] One could also make the argument that this is essentially an off-tonic ending. The return of the opening material (ambiguously placed between C-major and D-Dorian), as well as the arrival of D in the melody might lend credence to this argument. Nevertheless, I would argue that the relative brevity of the off-tonic elements leading of to the final chord, and the emphasis of this final C-major group (admittedly, with an added 9th) would create a tonic impression more readily than an off-tonic one.

tension.[18] The branching structure in of the final measures approaches it similarly, although not to the extent with which Lerdahl does, as he also assigns subdominant functions. Viewing function as such an extension, one is able to see how resolution functions in the ending section of 'Canope,' despite the lack of a traditional (V-I) relationship.

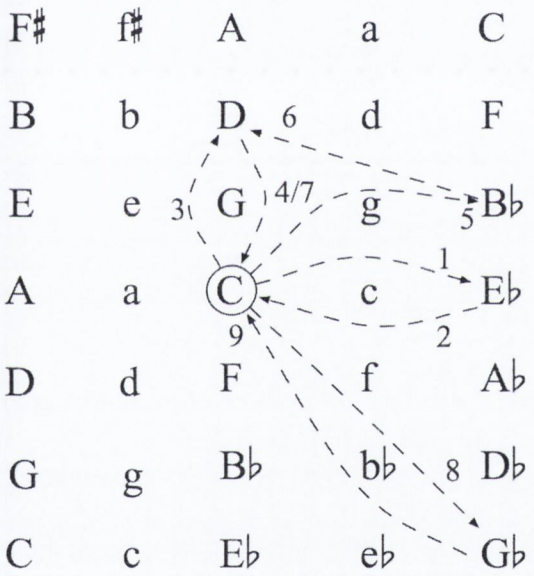


Example 6.13: Reduction of mm. 26–33 of 'Canope'

To illustrate the various regions traversed throughout 'Canope' I have invoked Lerdahl's regional space, which combines elements of Riemann's *Tonnetz* with Weberian and Schoenbergian tonal space (as discussed in Chapter 5). The order of the trajectory is illustrated with the numerals, and the second graph illustrates the chordal space traversed through the regions. The opening pitch space is derived from C-major pitch classes (as C-Mixolydian isn't as emphasized at this point), which then progress to E♭ before returning. While the D-major in m.7 is originally given its own space, it is then shifted to the dominant of G, as can be seen in the second graph (as the G sonority

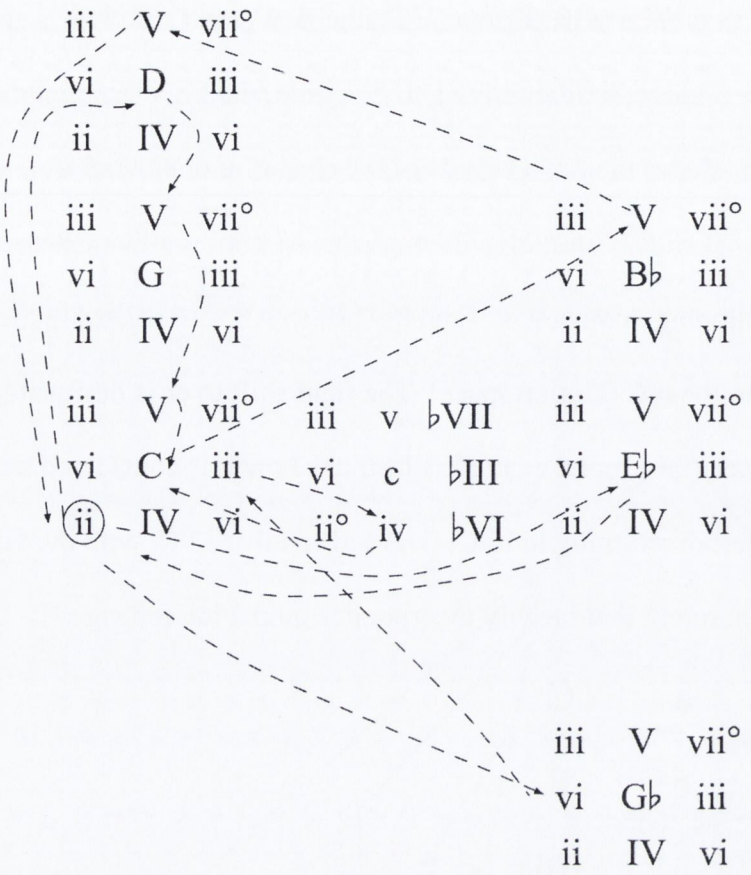
[18] Lerdahl, *Tonal Pitch Space*, 229–231.

seems to itself function as a V/C (rather than a IV/D) the first graph simply demonstrates a return to C space, before moving to B♭ space (the F^7, although it never acts as a dominant in B♭, shares the pitch classes of the region, and is therefore considered to be a regional shift). Similarly, although the A^7 is more of an extension of the sonority than a functioning dominant, it (and its shift to A^{wt}) are shifted to the V/D space before returning to the ii/C (Dorian space). The final shift to e♭ is designated by the movement to G♭ space (the second example illustrates how it is considered the relative minor of G♭), before returning to iii/C, iv/c, and finally to I/C, with the fairly unconventional cadential return that heavily incorporates modal interchange.[19]



Example 6.14: Movement Between Regional Space in 'Canope'

[19] The invocation of regional space here is meant to provide a tangible way of looking at the interaction of collections. Admittedly, there is not as much of a focus on tonics and roots as in Lerdahl's system, but this relationship is so frequently subverted in Debussy's music, one must wonder about how efficacious it would be to focus too much on this aspect of the methodology. By focusing on the collections, but maintaining the notions of regions, this analysis attempts to elaborate on Lerdahl's system within a more 'quasi-tonal' context.



Example 6.15: Movement Between Regional Space in 'Canope' (with Chordal Space Included)

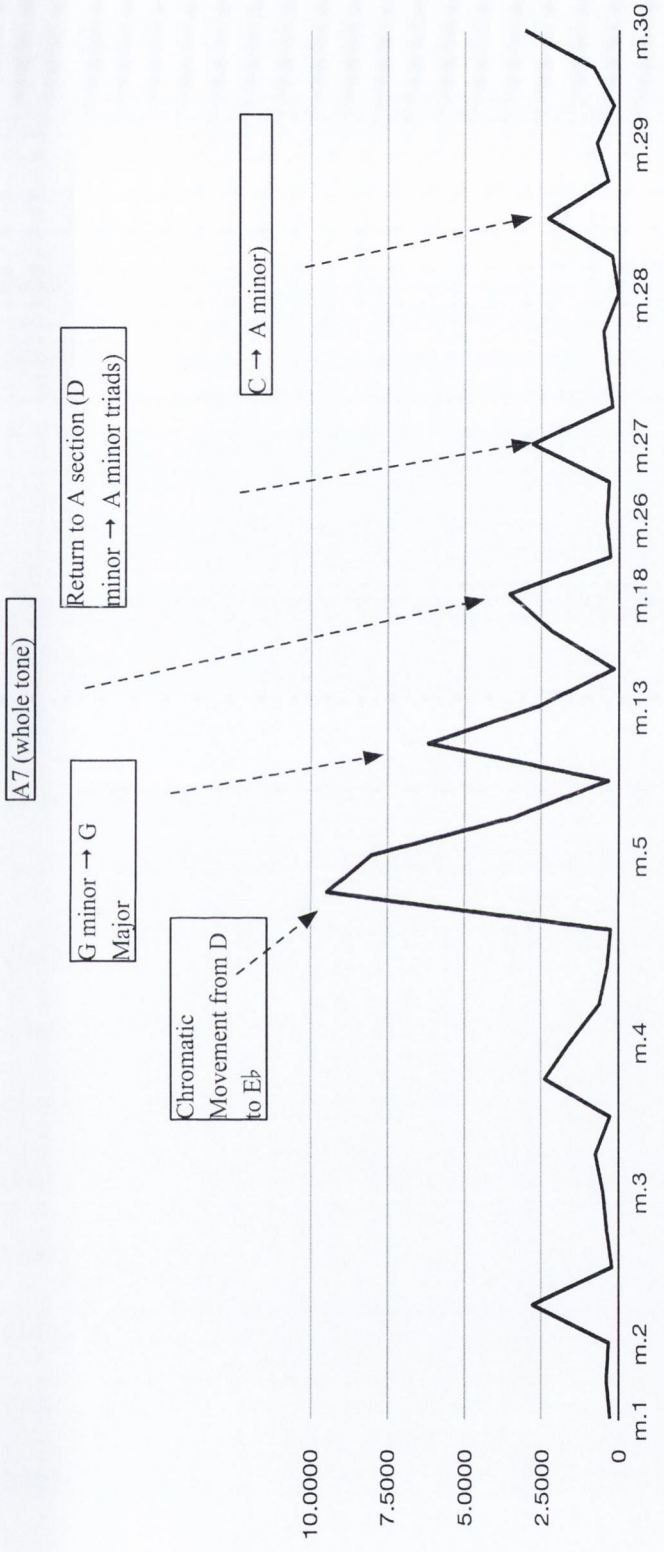
In conjunction with the regional space, I have included the chordal distance elements (as proposed by Lerdahl and discussed in Chapters 3 and 5) as a means for generating an analysis based on harmonic attraction. The chordal distance is the sum of the distinct pcs, as well as the circle-of-fifths and regional shifts. The chordal distance is then combined with the voice-leading attractions to calculate the harmonic attraction.

Harmonic Region	Progression	Harmonic Movement	Regional Space (i)	Circle of Fifths (j)	Distinct pcs (k)	Chordal Distance (d)
D Dorian	1 →2	i → v	0	1	3	4
	2 →3	v → ♭VII	0	3	5	8
	3 → 4	♭VII → ii	0	4	5	9

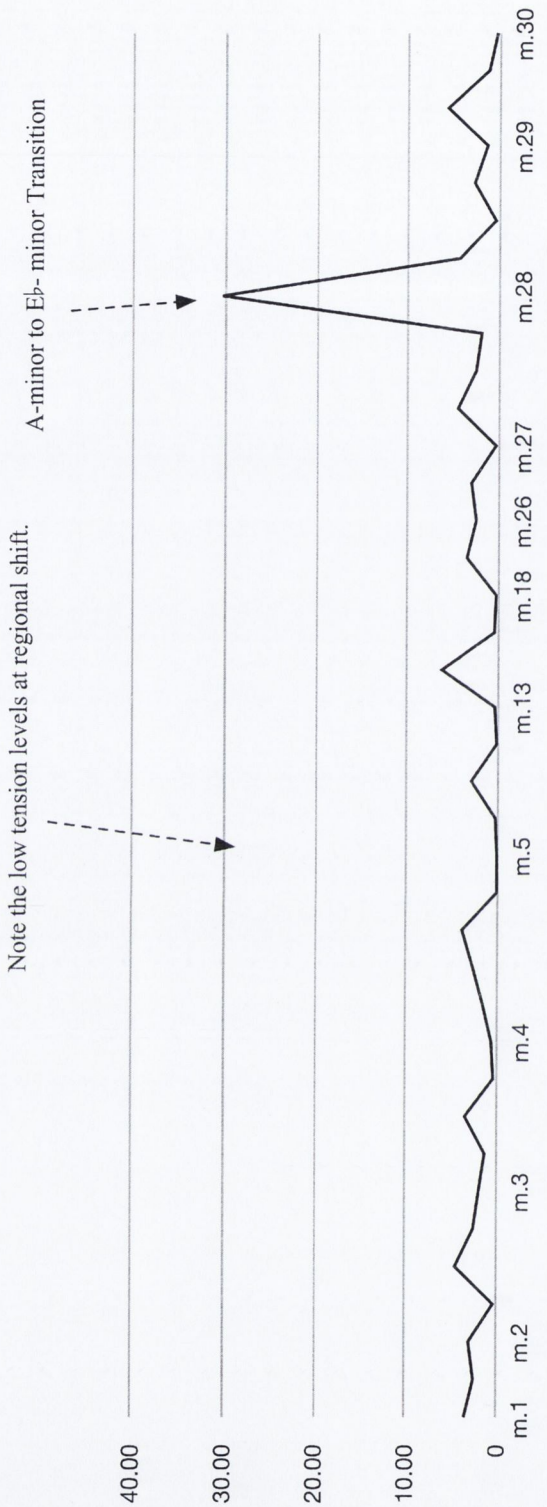
Harmonic Region	Progression	Harmonic Movement	Regional Space (i)	Circle of Fifths (j)	Distinct pcs (k)	Chordal Distance (d)
	4 → 5	ii → i	0	1	5	6
	5 → 6	i → iv	0	1	5	6
	6 →7	iv → ♭VII	0	1	5	6
	7 →8	♭VII → v	0	1	4	5
	8 → 9	v → i	0	1	2	3
	9 → 10	i → v	0	1	3	4
	10 → 11	v → iv	0	1	4	5
	11 → 12	iv → i	0	1	4	5
	12 → 13	i → ♭II(I/E♭)	5	5		10
E♭	13 →14	I → IV	0	1	5	6
	14 → 15	IV → ♭III	0	1	5	6
D Dorian	15 → 16	♭III/E♭ (III/ D major?) → i/D-Dorian	0	5	9	14
D major	16 → 17	i → I	0	1	4	5
	17 → 18	I → ii	0	2	9	11
C Mixolydian	18 → 19	ii/D (iii/C) → V/C	0	4	7	11
	20 → 21	V → V/♭VI	1	0	2	3
	20 → 21	V/♭VI → I	1	1	5	7
	21 → 22	I → $IV^{7(dom)}$	0	4	6	10
A Mixolydian	22 → 23	IV^{7}/C → I/ A^{mixo} (or ♭VI7 → I/ A^{mixo})	3	1	6	10
A Whole-Tone	23 → 24	I/A^{mixo} → I/ A^{wt}	1	0	4	5
D Dorian	24 → 25	i → v	0	1	3	4

Harmonic Region	Progression	Harmonic Movement	Regional Space (i)	Circle of Fifths (j)	Distinct pcs (k)	Chordal Distance (d)
	25 → 26	v → ♭VII	0	3	5	8
	26 → 27	♭VII → ii	0	4	5	9
	27 → 28	ii → i	0	2	6	8
	28 → 29	i → iv	0	1	5	6
	29 → 30	iv → ♭VII	0	1	4	5
	30 → 31	♭VII → v	0	3	5	8
E♭ minor	31 → 32	v → ♭II/d (i/e♭)	3	6	4	13
	32 → 33	i/e♭ → v	0	1	4	5
	33 → 34	v → iv	0	2	4	6
	34 → 35	iv → i	0	1	4	5
C Mixolydian	35 → 36	i/e♭ → iii/ C^{mixo}	3	5	8	16
	36 → 37	iii → vi	0	1	6	7
	37 → 38	vi → iv	0	4	9	13
	38 → 39	iv → I	0	1	6	7

Example 6.16: Chordal Distance Calculations for 'Canope'



Example 6.17: Harmonic Attraction Ratings in 'Canope'



Example 6.18: Harmonic Tension Ratings in 'Canope'

By viewing the attraction ratings of the harmonic structure of the piece, one is able to see how Debussy is able to provide the listener with what seem to be smooth harmonic shifts by alternating between an adherence to either regional centers, or smooth voice-leading. When a distant tonal region occurs, it does so through (often

chromatic) voice-leading that adheres to the principles of attraction. Creating high levels of attraction, which then serve to counterbalance the high chordal distance value. For instance, the graph above illustrates a peak in attraction at the transition between mm.4–5. Theoretically, this would seem to be an odd formation. The G♭ triad (serving as the ♭III in the locally tonicized E♭) resolves on the D-minor triad in m.5, but the chromatic attraction in all voices creates a smooth (and in fact, raised) attraction level, allowing Debussy to traverse the distant tonal region quite smoothly. The chordal distance (as the sum of regional space, circle-of-fifths movements and distinct pcs) is quite large, measured as a 14 in Lerdahl's equation. This is counterbalanced, however, by the extremely high voice-leading attraction rating of 13.25. The result is an elegant interplay of the two to create a smooth sound despite the seemingly disparate tonal structures.

As illustrated by the graphs, the i→iv progression in the second measure discussed above (with the included B♭ to subvert any tendency to C-mixolydian) creates a brief increase in tension. In terms of harmonic 'tension,' however, the primary climactic point would be in the final return of the triads in mm.26–29. The leap from A-minor to E♭-minor creates the biggest regional shift (as is illustrated in the regional chart above), and there is similarly very little voice-leading. While the obvious climactic point of the piece would in fact be the growth from the A whole-tone to the more chromatic points in mm.23–25, the piece seems to use the harmonic attraction/ tension of the triads to subvert the notion of return in this seemingly ternary structure.

The final cadence of the piece continues to exploit regional difference and voice-leading attraction principles in the final cadence. As the graph shows, there is a significant increase in attraction at the point where the F-minor triad moves to the C sonority with the added 9th with which the piece concludes. In many ways, this ending chord, with the added non-chord tone, is a nod to the battle between the two modes that

has continued throughout the piece (Debussy could have just as easily kept the top voice on C, as it is in the F-minor chord, a seemingly willful nod toward ambiguity). The F-minor triad could have just as easily served as a iii chord in the mode of D-dorian, with a similar function of the G♭ in m.4, resolving back on D-minor. Instead, it moves in what might be considered a 'minor plagal' cadence (iv-I), but with stepwise voice-leading, allowing for the high levels of attraction (the A♭ → G motion, as well as the F → G and C → D) seen in the graph.

The tension ratings correspond with the rather vague invocation of 'tonic' and 'dominant' terminology in the above branching structures. The structures in mm.28–29 were given dominant function, and the increase in tension at this points supports this. On this level, the branching structure analysis above corresponds with the harmonic tension ratings throughout the piece. The harmonic structure of 'Canope' presents an excellent example of the treatment of tonal structures in the *Préludes.* The disconnect between nonfunctional, yet comprehensible (and memorable) harmonic progressions is more easy to grasp when viewed as such an interplay between regional motion and voice-leading attraction. As the present study has stressed, however, tension, attraction, and implication results from multi-parametric elements.

6.3.5: Synoptic Perception

As Lerdahl writes, 'closure is a composite phenomenon that involves melodic, harmonic, regional, rhythmic, gestural, and formal resolution.'[20] In examining these parameters, one is able to see how 'Canope' treats closure as a relative phenomenon, existing not as the opposition of dominant harmonies or rhythmic accelerations or decelerations, but through the juxtaposition of metric dissonance, denials of melodic implication, and harmonic tension. In illustrating the interaction of these parameters,

[20] *Ibid.*, 227.

this analysis has attempted to provide an insight into how function (in this case interpreted quite vaguely) can exist amongst such ambiguities, and how the 'ebb and flow' of a piece such as this can be used to maintain the listener's sense of both expectation and coherence.

The dual nature of this piece, the constant struggle between to sonorities, complies with William Empson's second type of ambiguity, which he described as an instance in which 'two or more alrenative meanings are fully resolved into one.'[21] Although Empson was describing poetry, 'Canope' exhibits an almost identical form of ambiguity. The branching structures, along with the tension and attraction ratings, allows the analyst to view how this ambiguity functions, and how it eventually resolves into one meaning. A similar ambiguity, although more explicitly through the use of conflicting parameteric expectancies, is present in 'Des pas sur la neige.'

6.4: Tension and Attraction in 'Des pas sur la neige'

Debussy's 'Des pas sur la neige' is one of the most studied of the *Préludes.* Its constant recontextualization of a standard ostinato, along with the narrative implications of the piece's title (and accompanying metaphor-based expression markings), has allowed for a number of analyses of the piece's harmonic structure, narrative implications, and rhythmic and melodic construction. Trezise analyzes the duality of meter in the piece,[22] Whittall compares the ostinato to the story of a winter's journey in great detail,[23] Pomeroy analyzes the piece as an example of 'allusive chromaticism,' in which it is a 'kind of variation form' that revolves around the D-minor tonality (obviously driven by

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[21] William Empson, *The Seven Types of Ambiguity* (London: Chatto and Windus, 1930), 48.

[22] Trezise, 'Rhythmicised Time,' 248–250.

[23] Whittall, *Musical Composition in the Twentieth Century*, 23–26.

the ostinato),[24] and Rings views the piece as an example of Hepokoski and Darcy's 'rotational form.'[25] Few, however, focus on the fact that these various elements of the piece are often at odds with one another. If there is a story being told, it would seem to be comprised of many points of view. As such, I have analyzed the implicative nature of the melodic and rhythmic parameters, and have illustrated the nature of tension in an attempt to clarify the nature of expectation in the piece.

6.4.1: Melodic Implication

Like the piece's ostinato, the melodic structure of 'Des pas sur la neige' generates expectation on the immediate level, frequently setting up two-note motifs, which incur a series of recontextualizations throughout the composition. The present discussion on melodic implication will focus on the role of melody independently in order to allow for a synoptic view of parametric interaction later in the chapter. The ostinato, which plays such a large role in the synoptic perception of the piece, is discussed in relation to its various harmonic transformations. While a study of melodic implication would ideally examine the nature of all melodic instances within a piece, the ostinato functions very differently than the 'melody' of the piece, and will therefore be analyzed separately. In the discussion of implication, the exclamation point signifies instances in which expectations were thwarted (and similarly the dotted arrows are unrealized expectations), while the solid lines indicate fulfilled expectations, which in turn can lead to closure (notated as CL//).

The melody begins in m.2, and from the outset there is a denial in expectation through a 'structural gap' as there is an implication to continue on the downbeat of m.3, rather than on the second beat as it does. In m.3, the melody seems to outline a triadic

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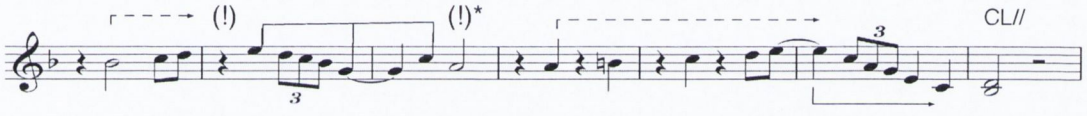
[24] Pomeroy, 'Chromaticism and Form in Debussy's Orchestral Music' 94–105.

[25] Steven Rings 'Mystéres limpides: Time and Transformation in Debussy's 'Des pas sur la neige' in *19th Century Music*, vol.32/2 (2008), 178–208.

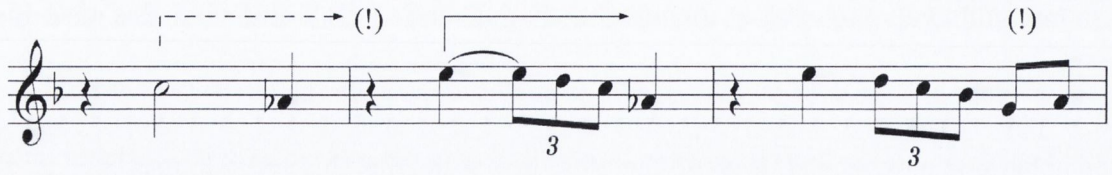
structure, which is then affirmed, but the leap up to C on the second beat of m.4, and the occurrence of A on beat three undermines any triadic return to E. Meyer and Narmour would likely view this as an unrealized implication, and would view this melody in isolation. Lerdahl, however, views all melodic instances as intertwined with the harmonic parameter. It could therefore be argued that this second unrealized implication is not unrealized at all, as it is the fifth of the tonic triad, and would create a strong sense of arrival. For this reason, the example below marks it as an unrealized implication, but with an asterisk. As the phrase comes to a conclusion, there is an increase in tendencies toward closure. The ascending line in mm.5–7 fulfills this expectation until it then descends in another triadic structure on the second beat of m.7, which then resolves on either the D of the ostinato or the B♭ of the new harmonization.



Example 6.19: Implicative melodic elements in mm.2–7 of 'Des pas sur la neige'

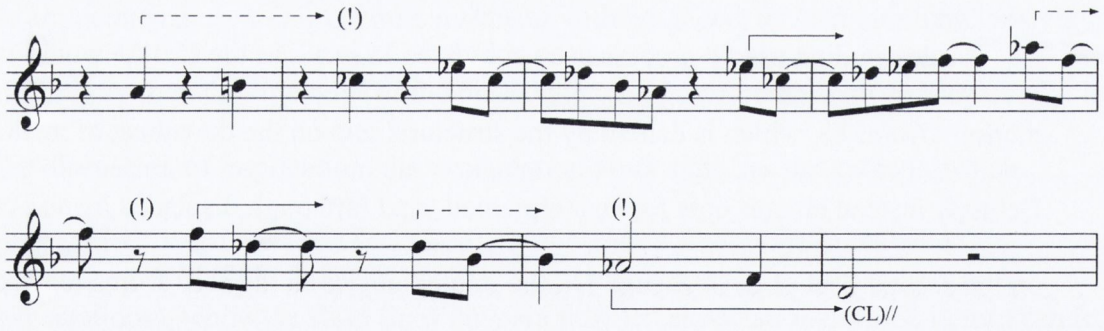
A descending triadic process is be subverted in m.17, as the C→A♭ would imply motion toward E♭, which is denied by the structural gap on the downbeat of m.18. Debussy instead creates opts for an augmented triad (although displaced by an octave) on the second beat of the measure. On the immediate level, the shift from stepwise to triadic process in m.19 briefly denies the A that arrives on the next beat, but more importantly the process seems to dissolve almost immediately. It does not continue (either stepwise or triadically) but there is a duplication of the A (seen in the example of mm.22–26), after another structural gap. The recurrence of these structural gaps seems to imply an alternate experiential meter (discussed below), which creates a type of metric dissonance. They are only considered to be experienced gaps as a result of how

the composer treats them. The consistent processes leading up to them seem to emphasize the rest (as does the ostinato on beats 1 and 3).



Example 6.20: Implicative melodic elements in mm.17–19 of 'Des pas sur la neige'

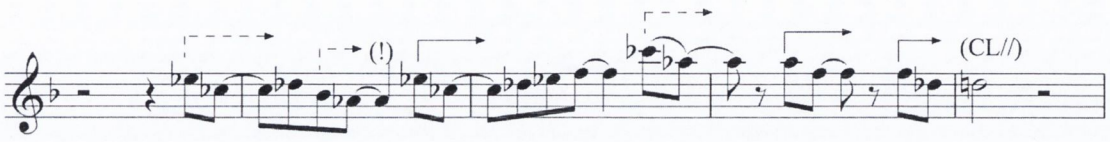
The E♭→C♭ descent becomes a mode of intervallic implication in itself in mm.23–31, as the major third begins to indicate near registral return (E♭→C♭→D♭) in multiple instances (such as in mm.24 and 25). When this return doesn't occur (such as at the onset of m.24), the two-note motive becomes an implication in itself (as it does on the second and fourth beats of m.24). The triadic descent creates an odd juxtaposition of linear subversion and harmonic closure in m.26, as the now minor third motion from A♭→F neither ascends by step nor repeats, but continues to D, outlining a diminished triad and arriving at the starting point of the ostinato.



Example 6.21: Implicative melodic elements in mm.22–26 of 'Des pas sur la neige'

In mm.27–31, Debussy frequently switches between the two treatments of this triadic implication to create motion. For instance, in mm.28–29, the melody begins the motive of near registral return, but it fails to repeat at the next occurrence. At the third instance, however, the melody does return to D♭, which is then followed by two of the latter implications (in which the first two-note idea leads into a second beginning on the same

note). The former implication, however, returns in m.32 as the melody moves from F→D♭→D, and there is now melodic closure (both linearly and harmonically) for the first time in the piece (this full could be the end of the piece, but Debussy typically attaches a coda in mm.32–36 to emphasize the D-minor).



Example 6.22: Implicative melodic elements in mm.28–32 of 'Des pas sur la neige'

Melody plays a multifaceted role in 'Des pas sur la neige,' serving as both an element of cohesion (the major third motive is the only constant when Debussy strays from the ostinato in favor of a distant G♭ region, the parent region of D♭-Mixolydian), and of differentiation during the ostinato. Implication therefore plays a large role in both the synoptic and progressive perception of the piece.

6.4.2: Metric Projection

Like the melodic structure of the piece, the metric elements are constantly in flux, creating tension through varying implications (projections, to return to Hasty's terminology) throughout. Trezise writes that the meter of the piece serves as a 'connecting thread that meshes every part of the work together,'[26] but writes that this cohesion is created through 'the polarisation of two metrical poles, one implied by the time signature of four crotchets in a bar (4/4), which opposes the duple time implications of the ostinato.'[27] This dichotomy creates metrical attraction: as weak beats are more frequent between the two meters, there is more tension, and conversely more attraction toward a strong beat, creating an increased sense of projection.

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[26] Simon Trezise, 'Debussy's 'rhythmicized time,'' 249–9–50.

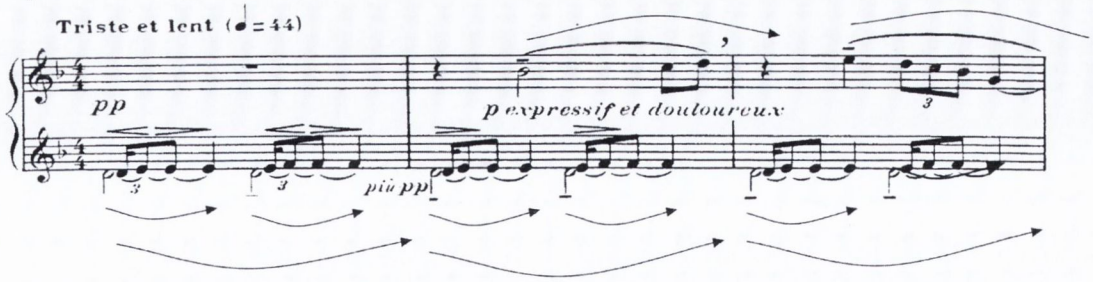
[27] *Ibid.*, 250.

The opening ostinato (comprised of a subset two rhythmically identical instances) creates a projection of similar meter; a projection which is realized for the majority of the composition, only to be disrupted when the alternate 4/4 meter takes prominence. The melody in m.2 begins the 4/4 meter, and this metric displacement (to invoke Krebs's terminology, as discussed in Chapter 4) takes prominence in m.7, before the new section begins in m.8. As this projected 4/4 is denied in m.8, however, the ostinato returns and remains the prominent meter until it concludes in m.12 at which point there is a seemingly amorphous bar, followed by a truncated m.13, which then leads into the strict duple time of the ostinato in m.14. I would, however, argue, that the D♭ on the third beat of m.11 (preceded by an almost cadential A♭→G) marks the onset of a 4/4 meter, which continues until m.15. The truncated measure allows this projection to coincide with the gesture rhythmically similar to the ostinato in m.14, therefore allowing the 2/2 and 4/4 to once again coincide.

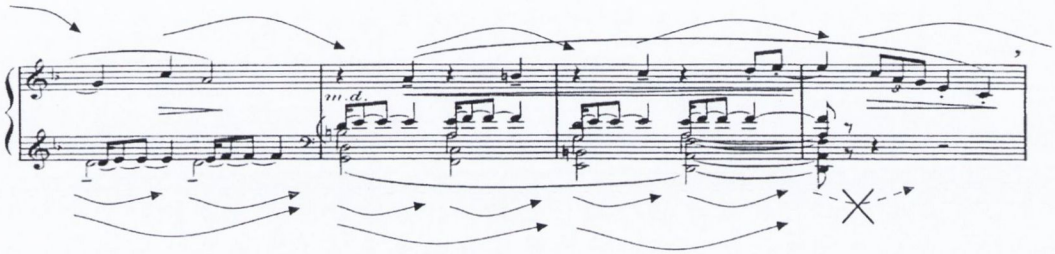
The displaced 4/4 recurs in m.16, once again in opposition to the ostinato. This displacement continues until m.25, at which point the 4/4 again serves a transitional function into a new section. When the ostinato returns in m.26, the alternate meter cedes until m.28, continuing until m.30, at which point the quarter-note chords in the left hand emphasize this displacement until m.32 when the ostinato returns (and the coda is introduced).

This displacement allows for the amorphous, fluid sound that Debussy hoped to achieve. The points at which one meter cedes prominence to another is often congruous with sectional breaks (and consequently, the instances of melodic closure). Debussy is creating motion in the piece by creating tension in the rhythmic/metric parameter during instances of melodic closure, allowing for a sense of both cohesion and process.

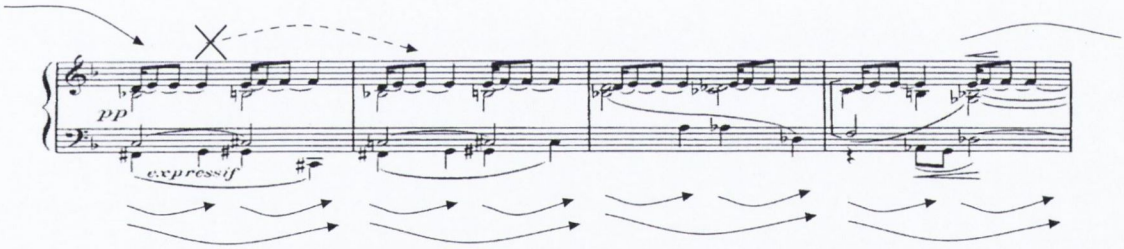
1


Triste et lent (♩= 44)
pp
p expressif et douloureux
più pp

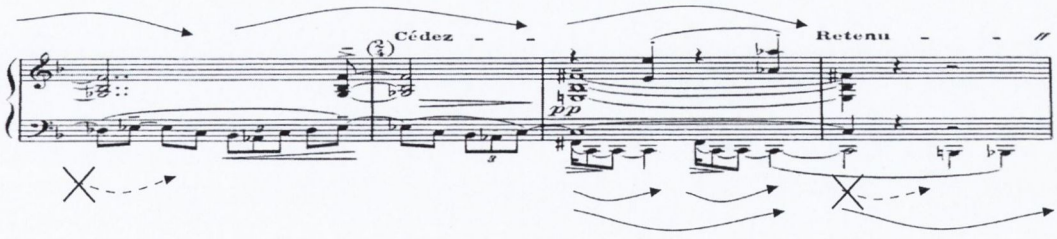
4


m.d.

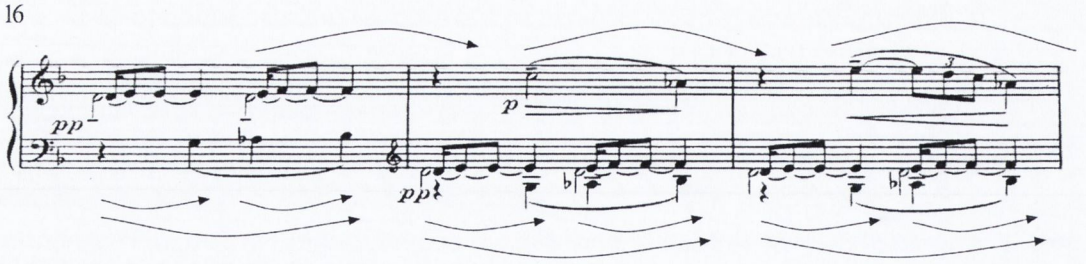
8


pp
expressif

12


Cédez
Retenu
pp

16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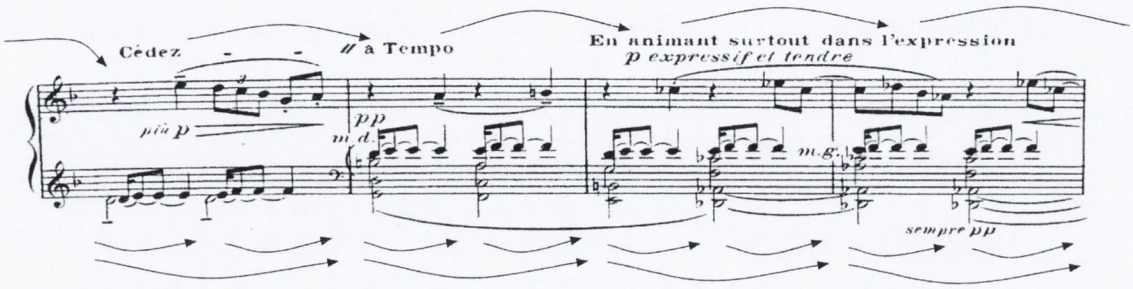
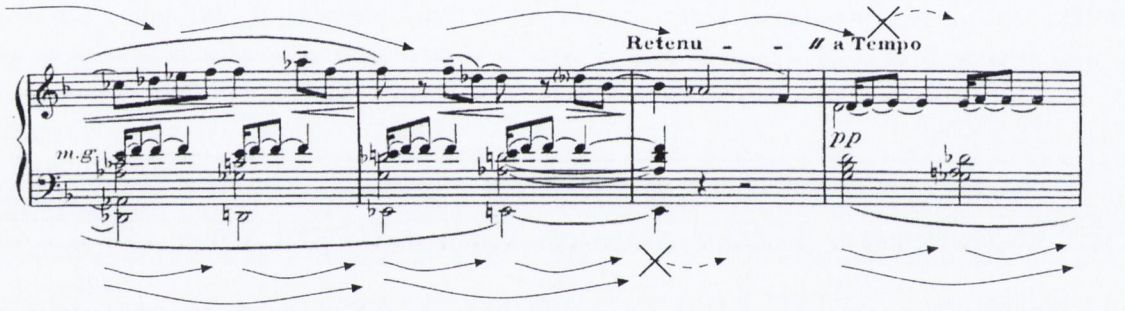
p
pp

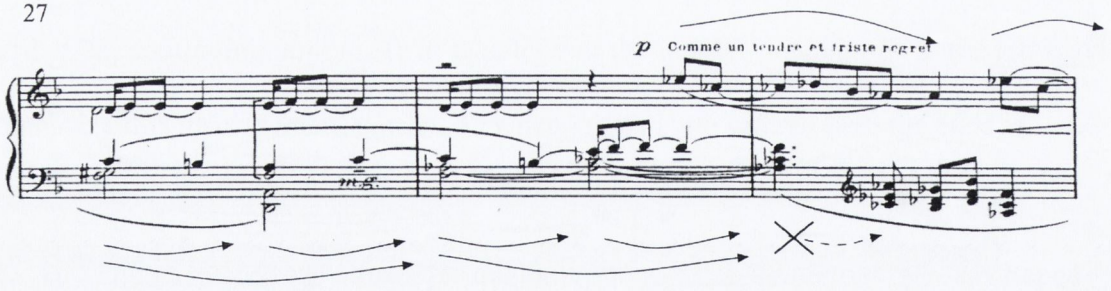
19

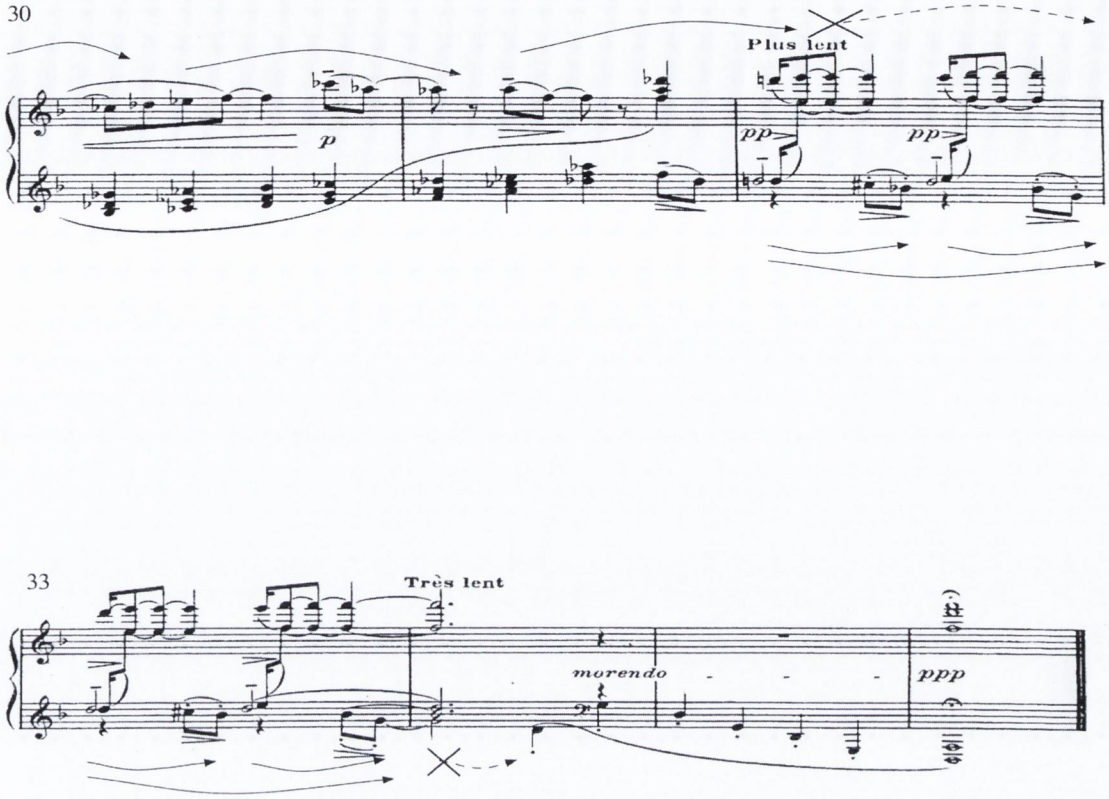

Cédez
// à Tempo
En animant surtout dans l'expression
p expressif et tendre
più p
pp
m.d.
m.g.
sempre pp

23


Retenu
// à Tempo
m.g.
pp

27


p Comme un tendre et triste regret
m.g.



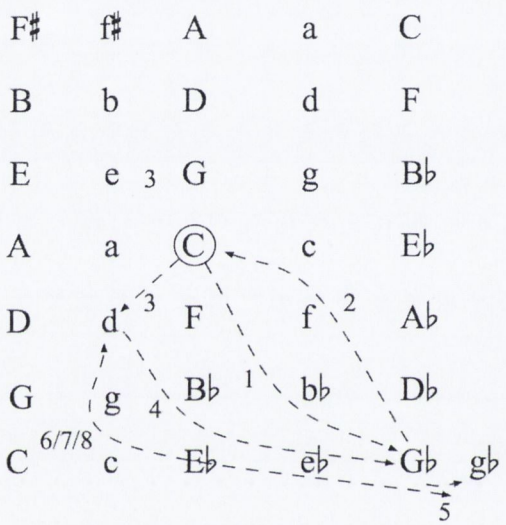
Example 6.23: Projective Analysis in 'Des pas sur la neige'

6.4.3: Harmonic Attraction

Cone rightly observes that, in 'Des pas sur la neige,' 'the normal is final, tonic, stable, and triadic; but the harmony is nonfunctional–for the most part,' and that, 'voice-leading determines the directionality.'[28] The emphasized role of voice-leading in the piece leads one to believe that harmonic attraction plays a significant role in determining the tonal structure of the piece. 'Des pas sur la neige' is 'bookended' by D-minor modal forms (switching between D-natural minor and D-Dorian), but prolongs the D♭-Mixolydian region to the point where does not always function as a V/G♭, but rather its own modal center. When the G♭ does arrive, it is used as a pivotal point to other regions (for example, to the C whole-tone in m.14, where the G♭ becomes an F♯,

28 Edward T. Con, 'Debussy's Art of Suggestion' in *Hearing and Knowing Music: The Unpublished Essays of Edward T. Cone*, Robert P. Morgan (ed.), (Princeton: Princeton University Press, 2009), 43.

and the whole-tone elements are emphasized). Despite such regional differences, however, the harmonic structure of 'Des pas sur la neige' illustrates Debussy's ability to create differentiation while maintaining a fairly standard striving toward climax in terms of tension. Additionally, the piece is illustrative of Debussy's employment of voice-leading as a means of diffusing the tension from the distant tonal regions.



Example 6.24: Traversed Regional Space in 'Des pas sur la neige'

Incorporating Weber's space once again, the disparate tonal trajectory seems quite clear. It begins in D-Dorian (in the chordal space it would be described as i/D^{dor}), which moves to G♭ before returning to C whole-tone. The piece then moves to D-Aeolian before moving to G♭ (and then G♭-Aeolian). The rest of the piece is comprised of the dichotomy of G♭ and D-Aeolian.

The calculation of chordal space takes this regional shift into account, as well as the distinct pitch classes of each chord, and the chordal distance from one event to the next via the circle of fifths rule (discussed in the previous chapter). In order to discuss the chordal space, it's necessary to invoke terminology related to tonal grammar. While this isn't necessarily ideal in a discussion of seemingly 'non-functional' harmonic

structures, it allows one to convey the syntactical shifts Debussy employs with the most clarity.

Harmonic Region	Progression	Harmonic Movement	Regional Space (i)	Circle of Fifths (j)	Distinct pcs (k)	Chordal Distance (d)
D-Dorian	1 →2	ii → III	0	5	6	11
	2 →3	III → ii	0	5	6	11
	3 → 4	ii → i	0	2	6	8
	4 → 5	i → chrom/D♭	0	5	6	11
D♭^{mixo}	5 → 6	chrom D♭ → I^{7}/D♭^{mixo}	5	5	6	16
	6 →7	I^{7} → chrom/ D♭^{mixo}	0	5	6	11
	7 →8	chrom D♭^{mixo} → I^{7}	0	5	6	11
	8 → 9	I^{7} → chrom/ D♭^{mixo}	0	5	6	11
	9 → 10	chrom/D♭^{mixo} → I^{7}	0	5	6	11
	10 → 11	I^{7} → iii	0	4	4	8
G♭	11 → 12	iii/D♭^{mixo} → I/ G♭	0	5	6	11
	12 → 13	I → vi	0	0	1	1
C^{wt}	13 →14	vi → I/C^{wt}	5	4	5	14
D-Aeolian/ octatonic	14 → 15	ii^{7} → i^{dim}	2	2	6	10

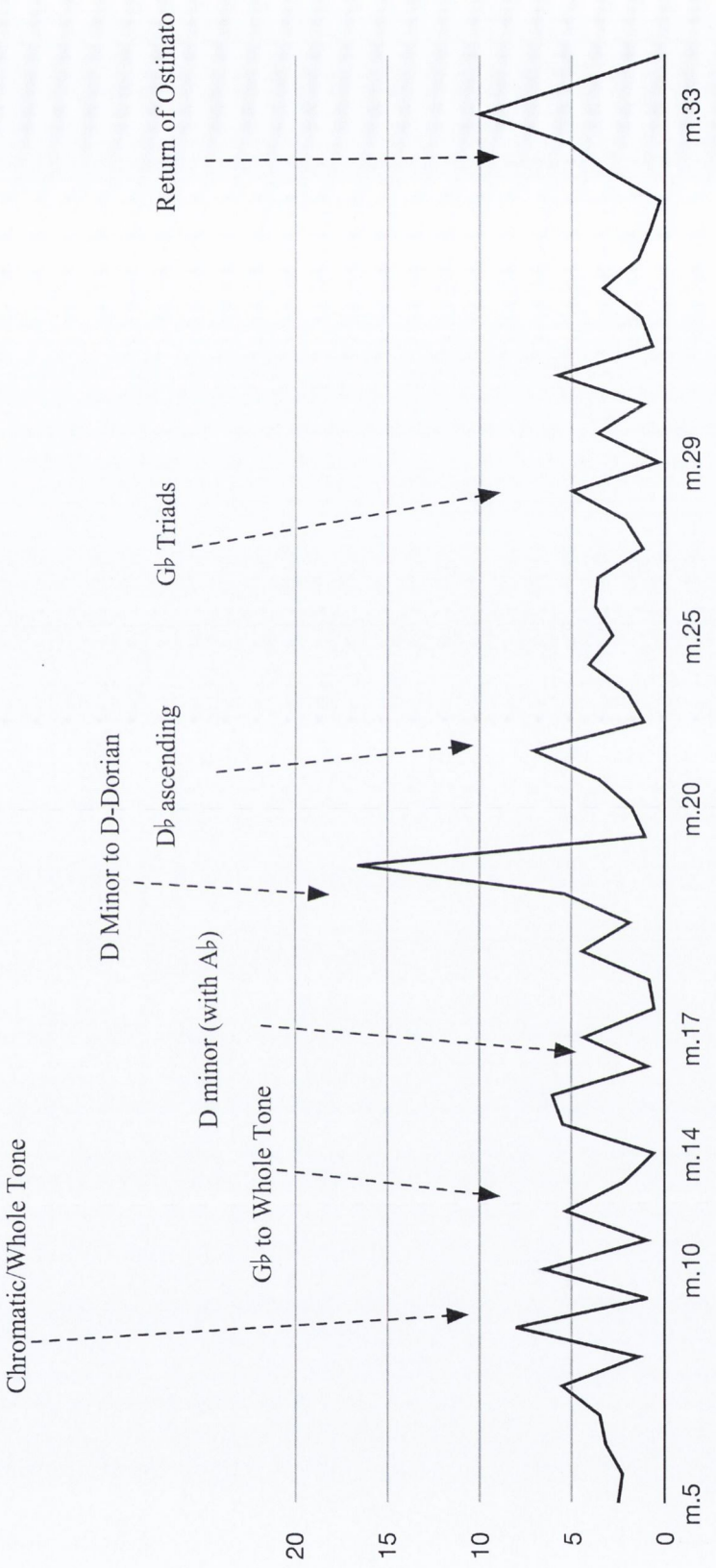
Harmonic Region	Progression	Harmonic Movement	Regional Space (i)	Circle of Fifths (j)	Distinct pcs (k)	Chordal Distance (d)
	15 → 16	i^{dim}/ → B♭-F (Dyad)	0	2	3	5
	16 → 17	B♭/F(dyad) → ♭VII	0	4	6	10
	17 → 18	♭VII → i^{dim}	0	2	5	7
	18 → 19	i^{dim} → ♭VI	0	4	5	9
	19 → 20	♭VI → ii	0	6	5	11
	20 → 21	ii → i^{dim}	1	2	6	9
	21 → 22	i^{dim} → i^{dim}	0	0	1	1
	22 → 23	i^{dim} → D-E dyad	0	0	1	1
	23 → 24	D-E dyad → i	0	0	1	1
	24 → 25	i → ii^{6}	0	2	5	7
	25 → 26	ii^{6} → ♭III	0	3	5	8
	26 → 27	♭III → ii	0	5	5	10
D♭^{mixo}	27 → 28	ii → I/D♭^{mixo}	5	1	6	12
	28 → 29	I^{7} → I^{7}	0	0	1	1
	29 → 30	I^{7} →♭II	5	5	6	16
	30 → 31	♭II →II^{9}	0	5	6	11
	31 → 32	(II^{9}→i^{dim}/D^{oct})	5	5	6	16
G♭-minor	32 → 33	ii →i/G♭ (parallel minor)	1	3	6	10

Harmonic Region	Progression	Harmonic Movement	Regional Space (i)	Circle of Fifths (j)	Distinct pcs (k)	Chordal Distance (d)
	33 → 34	i/G♭ →chrom	0	1	6	7
D-Aeolian	34 → 35	chrom →i/D-minor	5	5	6	16
	35 → 36	i →iii	0	4	4	8
	36 → 37	iii →iii^{6}(or vii/G♭)	0	4	0	4
G♭	37 → 38	vii/G♭ →ii^{6}	3	3	4	10
	38 → 39	ii^{6} →I^{6}	0	2	5	7
	39 → 40	I^{6} → vii	0	5	6	11
	40 → 41	vii → I^{6}	0	5	6	11
	41 → 42	I^{6} →ii^{6}	0	2	5	7
	42 → 43	ii^{6} →iii^{6}	0	3	5	8
	43 → 44	iii^{6} →IV^{6}	0	2	5	7
	44 → 45	IV^{6} → V^{6}	0	2	5	7
	45 → 46	V^{6} →ii	0	1	4	5
	46 → 47	ii → V	0	1	4	5
	47 → 48	V→V^{6}	0	0	0	0
	48 → 49	V^{6}→D-E dyad	5	0	4	9
D-Aeolian	49 → 50	D-E dyad → E-F dyad	0	2	0	2
	50→51	D-E Dyad→iv/Dminor	0	0	2	2
	51→52	iv→i/Dminor	0	1	4	5

Example 6.25: Chordal Distance Calculations in 'Des pas sur la neige'

The calculations of the attraction and tension ratings of each chord can be viewed in the appendix. As with 'Canope', the tension ratings represent an inverse of the attraction ratings. The instances of attraction and tension then allow for a harmonic branching analysis of the piece. While in 'Canope' it was efficacious to denote dominant function (as a result of in an increase in tension), 'Des pas sur la neige' treats function slightly differently. The highest points of tension (such as m.29) are not the result of an extended concept of dominant, but rather ambiguity. It is through the ambiguity of functions that Debussy is able to create a fairly consistent increase in tension despite the disparate regional shifts.

Beginning at the first repetition in m.5 (as the first four measures serve to emphasize the ostinato and D-minor tonality through the melody, discussed above), the harmonic structure of the piece further strengthens the D-minor sonority with a iv-♭III-ii-i progression, changing the B♭ to B-natural in a way similar to the opening of 'Canope' (discussed above). Predictably, the voice-leading analysis found relatively high attraction levels at this point, and therefore very low tension.



Example 6.27: Attraction Ratings of 'Des pas sur la neige'

The first increase in tension occurs in m.8, as the piece first wanders from D-minor to D♭. Debussy emphasizes the shift to D♭ through a chromatic 'leading tone'

type of parallelism (although D♭ is spelled enharmonically as C♯ in mm.8–9, only being spelled as D♭ in m.10). The somewhat regular spikes in the graph below illustrate the ebb and flow of tension that occurs as the these leading-tone chords arrive at I^7 which then moves back to this 'vii' chord.[29] Debussy creates a fluid transition between the D-minor and G♭ with this use of the enharmonic D♭ region. If we take the D♭ as 'tonic' for the moment, the chord in m.11 serves as a pivot chord; being a iii of D♭ and a vii of G♭, both emphasizing the latter key while creating a recurrence of the 'leading-tone' parallelisms of mm.8–9.

The next peak in tension occurs in the shift to the C-whole tone element in m.14. At first, such a peak might seem out of place: the F → F♯ motion is heavily weighted (the F♯ alternating as G♭) and the harmonic structures in mm.12–13 create a smooth sense of voice-leading into that of m.14. The distant tonal region, however, creates the increase. The C (so distant from the G♭ of the previous measures) is emphasized in the bass, as are the E and A♭ in the melody. The emphasized whole-tone element allows for the region that is so far removed from the G♭ of the previous bars that it creates the increase in harmonic tension.

Example 6.28 presents a graphic representation of the various attractions in mm. 5–15 of 'Des pas sur la neige' (as m.15 is a harmonic duplication of m.14, the graph only shows m.14). For example, there is an increase in harmonic attraction as ii moves to i in mm.6–7, and the branching (being a 'left-branching' structure, or one which increases 'relaxation') is given. The chromatic motions toward the D♭ dominant structure in m.8 are dependent on these I^7 chords (this is indicated by the high attraction ratings), and the branching reflects this.

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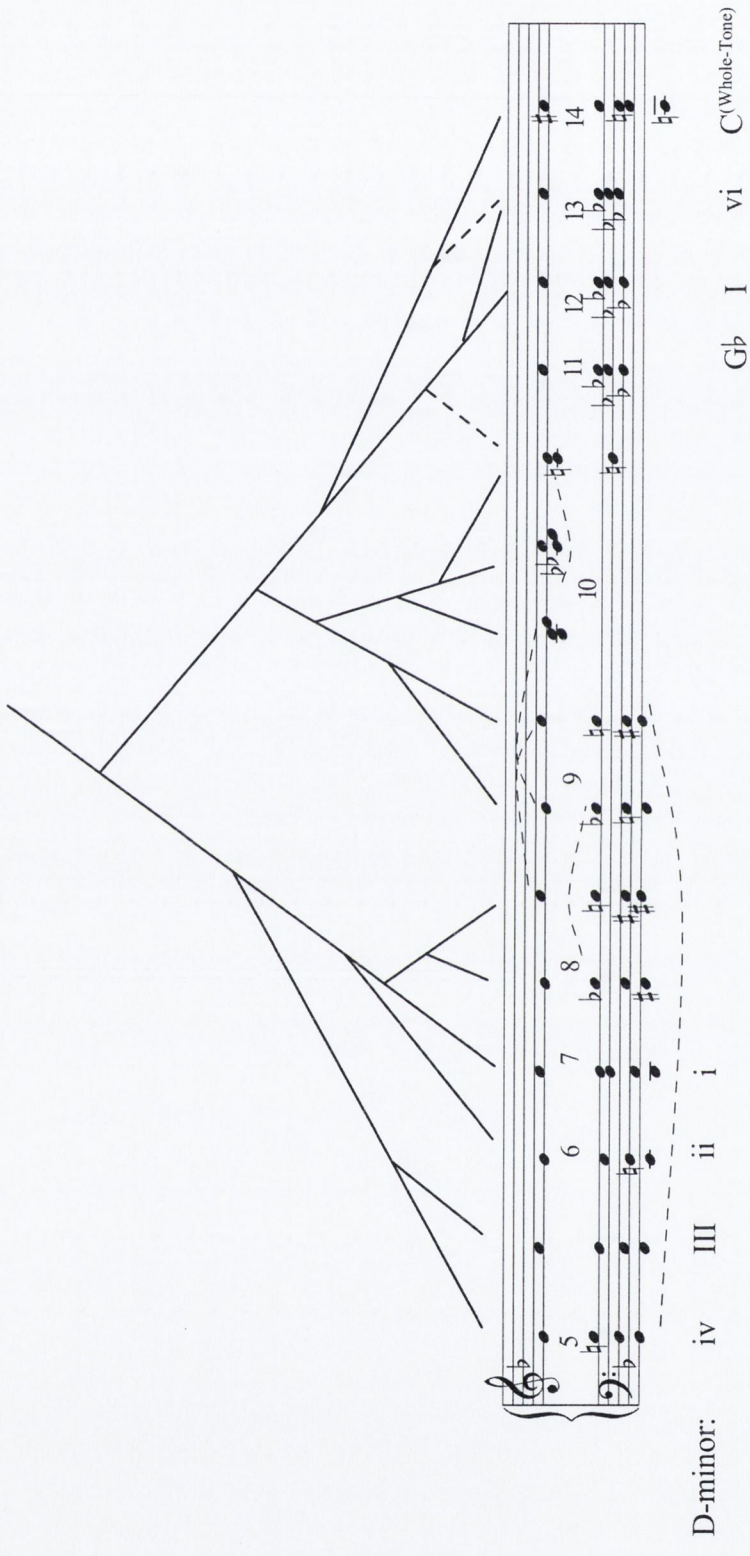
[29] I have used the notation of I^7 at this point to signify a dominant structure (although without a dominant function at this point), being the 'tonic' of D♭-Mixolydian.

This analysis illustrates the general increase in tension as D arrives on G♭ in m.12. The arrival of D-minor in m.7, along with that of G♭ in mm.11–12 could therefore be considered the primary structural points of this example. The opening of the example on m.5 could be seen as serving somewhat of an anacrustic function leading up to m.7, while mm.13–14 serve as extensions of the distant tonality of G♭.

Much of the ambiguity of these measures is dependent on the dual affinities of the chords. For example, the arrival of D♭ (as C♯) in m.8 is first treated as being dependent on the D-minor element from the previous measures, but is eventually dependent on the G♭. The iii chord (I refer to it as such timidly, as there is no third) serves as both the iii of D♭ and the vii of the G♭ in m.11. Similarly, the E♭-minor in m.13 assumes a dual function of both a vi chord in G♭ and a chromatic 'leading chord' to the whole tone section beginning in m.14. Debussy exploits these dual attractions to create both ambiguity and fluidity.



Example 6.28: Branching of mm.5–14 of 'Des pas sur la neige'

The section represented by Example 6.29 is a continuous pull between what might be considered a D-octatonic region (a reiteration of the D-minor ostinato, but with an A♭) and the D♭ mixolydian section that begins on m.22. Again, there is an increase in

tension as the former progresses to the latter, and the 'right-branching' demonstrates it as such. The pivotal point in terms of harmonic attraction seems to occur at m.19, at which point the ii-III-ii begin to be pulled toward the D♭, while the D diminished serves more as a prolongation of the triad that first appears in m.16 (and is emphasized by a ♭VII-i motion in m.17). The diminished chord is an unlikely structural point, but Debussy's emphasis through such cadential elements creates an increase in attraction toward them, and allows for the triad to exist without the usual tension that normally occurs with such structures. The peaks in the tension graph are largely the result of how the diminished chord is treated, rather than this disparity between the regions. For instance, the motion from the diminished triad in m.17 to a ♭VI (a B♭ dominant) has a relatively low voice-leading attraction of .552,[30] and therefore an increase in tension.

Some increases in tension do arise in m.19, as the movement from iv to ii^{6} and eventually to III creates a jump in voice-leading. As diminished triad of m.18 returns to a two-note structure of D-E, which then expands into the iv chord, it seemed logical to branch the iv with the diminished triad, rather than with the somewhat disjunct ii^{6} chord at the end of m.19. Another increase in tension occurs as the result of the low attraction ratings generated from static D♭ chord in mm.22–23. As so many of the voices remained the same, the attraction ratings were null, resulting in a lower overall attraction rating, and therefore an increased tension rating. While this may seem counterintuitive, it coincides with Schoenberg's notion that the more sustained a chord is, the more the listener wants it to resolve.[31]

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[30] The calculations are provided in Appendix 2.

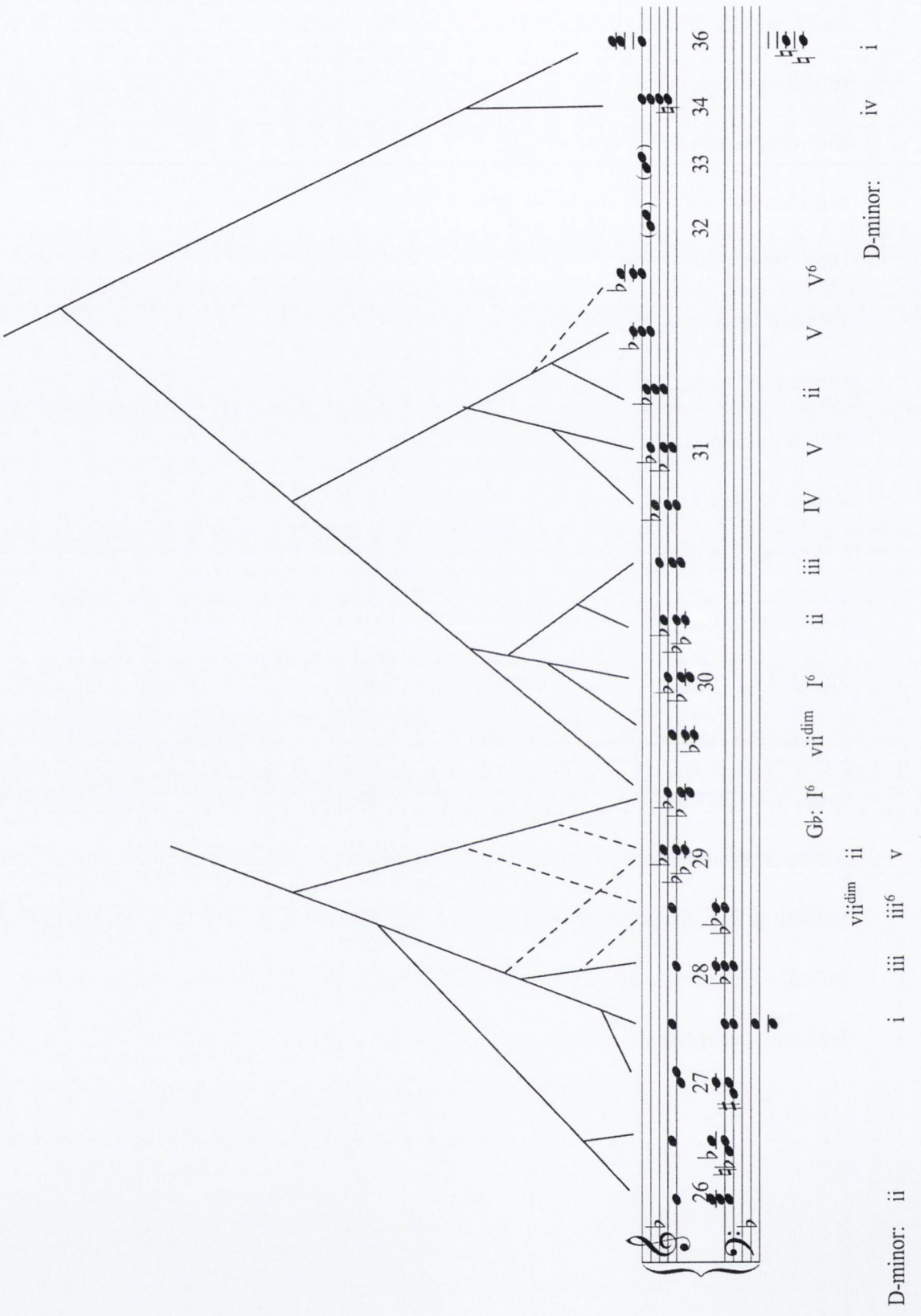
[31] Arnold Schoenberg, *Theory of Harmony* (Berkeley: University of California Press, 1978), 23–24 and 385. This is discussed in more depth in Chapter 5.

Example 6.29: Branching of mm.16–25 of 'Des pas sur la neige'

The section illustrated by the third graph (representing the start of the new section at m.26 until the end of the composition) contains the most attractional ambiguities, as well as the most tension. There is an increase in tension as the D-minor moves to G♭ in

m.29, and the chromatic voice-leading from the ii chord in m.26 first sounds like it will return to the ii, but the chromaticism at the onset of m.27 is dependent on the i triad in the second part of the measure. In m.28, however, many more ambiguities exist. The F-diminished triad in m. 28 could be considered a mediant chord in D-minor (although diminished, rather than major) or the vii chord of G♭. As the chord does not proceed to G♭ until later in m.29, it first creates an ambiguity (one which is only heightened by the movement toward A♭-minor, which could function as either a v in D-minor or a ii in G♭. The branching illustrates the ambiguity at this point, and the tension graph above demonstrates a peak at the point where the vii/G♭ fails to resolve on G♭.

The following section uses the G♭ that was a source of increase tension, now returning to the D-minor, an increase in relaxation (with the branching depicting it as such). The largely diatonic structures in G♭ follow the attractional principles one would expect: the IV in m.30 seems dependent on the V in m.31, which is dependent on the tonic in m.29. Similarly, the ii in m.31 is highly attracted to the V in the same measure. There is an increase in tension as the V becomes the V^6, and the highest peak in the tension graph is caused by the leap from this dominant to the now distant ostinato in mm.32–33, before a iv-i movement in D-minor –devoid of nearly any aspects of voice-leading– completes the piece.



Example 6.30: Branching of mm.26–36 of 'Des pas sur la neige'

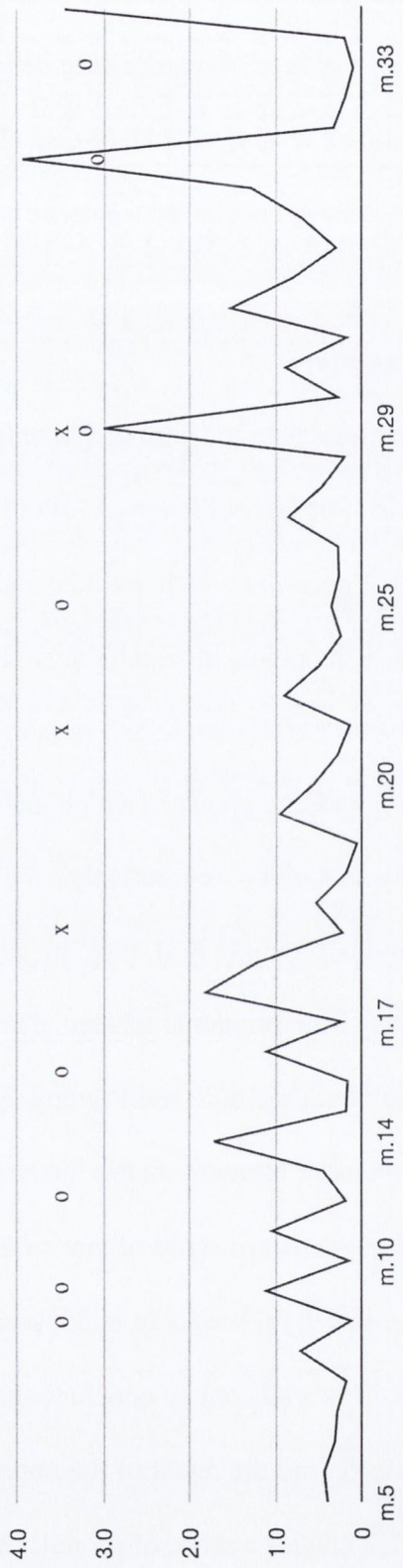
The harmonic structure of 'Des pas sur la neige', although not entirely functional in the traditional sense, creates a fairly traditional climax. Tension isn't created through a shift to a distant tonality as much as it is through the ambiguities that arise from the

tonalities as a result of their shifts (such as the vii/G♭ going to ii/G♭ in m.29). By viewing the piece as a system of interlocking dependencies, each with local and global relationships depicting a tensing or relaxing, an ebb or a flow, the seemingly non-functional harmonic motion is viewed a structural whole.

6.4.4: Synoptic Perception

This leads one to wonder how the various parameters discussed (melody, rhythm, and harmony) interact in 'Des pas sur la neige.' Would all instances of harmonic tension be in alignment with the points at which melodic and rhythmic implications were denied? Interestingly enough, the points in which they are in alignment are outnumbered by the times in which they are not. Example 6.31 demonstrates the harmonic tension of the piece in conjunction with the points in which melodic and metric implications are denied (signified by an x and o, respectively).

As can be seen in Example 6.31, most instances of melodic denial occur at points in which there is very little harmonic tension. The notable exception being transition to G♭ in m.29, in which both melodic and rhythmic parameters are denied, along with peak in tension. There are more frequent metric interruptions, as the interplay between the two meters creates an increased sense of tension in itself. Nevertheless, most points of tension, such as the structural breaks in m.25, seem to coincide with instances of high levels of attraction. This leads one to conclude that implication, tension, and coherence in 'Des pas sur la neige' are the result of the implicative interaction between parameters, the disunity of which creates a sense of propulsion in contrast to the somewhat static ostinato.



Example 6.31: Subversions of Melodic and MetricImplication Aligned with the Harmonic Tension Rating in 'Des pas sur la neige'

When viewed synoptically, 'Des pas sur la neige' reminds one of Cone's observation that 'Debussy cut the tenuous thread still holding the musical elements

together, so that rhythm and melody could develop independently of harmony.'[32] There are many points at which the implications (and the subversions of them) are not in alignment. While this could be said of many of the *Préludes,* it is perhaps never more evident than in this piece. In viewing the piece as a series of parametric implications, one is able to see the constant interplay that creates motion in a piece that would logically be considered quite static.

6.6: Conclusion

Debussy's treatment of implication, projection, and attraction is unique in many ways. He is able to create a unique type of harmonic function which frequently avoids notions of standard harmonic progression, yet nevertheless employs a system in which the harmonic tension of the piece acts in a way very similar to the arch of tonal composition. In a context in which the sole focus in a seemingly repetitive gesture (as in 'Pour Les huit doigts') he creates motion through both melodic implication on a larger level, and a juxtaposition of stasis and motion, which is then used to prolong a larger implication throughout the composition. Finally, Debussy is able to prolong aspects of closure by invoking disjunct notions of implication between the different parameters (as in 'Des pas sur la neige').

Such analyses of implication, projection, and attraction allow for one to understand Debussy's music in terms that are not necessarily confined to the tonal/ atonal dichotomy applied to the composer's music for the past century. This chapter has discussed how these parametric concepts interact to create motion, despite the logical assumption that such concepts of progression, traditional thematic development, or standard metric hierarchies are lacking in the music. The extension of terms (as in the analysis of stasis/progression in 'Pour Les huit doigts' or tonic/dominant in 'Canope') is

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[32] Edward T. Cone, 'Music: A View from Delft' in *Music, A View from Delft: Selected Essays* Robert P. Morgan (ed.), 13–29 (23).

not simply a redefining of terminology for convenience. Instead, it allows for music easily misunderstood by the broad brush strokes of tonal or atonal analysis to be viewed as both a natural progression of tonality and a precursor to modernism.

Epilogue: Reflections on the Applied Methodology and Possible Extensions

The analysis employed in the present study allows for Debussy's music to be viewed as the 'continual becoming' Whitehead spoke of.[1] It allows for one to quantify the implications of each parameter, which then facilitates a synoptic understanding of the piece. Nevertheless, difficulties arise from many of the same areas that have inflicted previous analyses of the composer's music.

For example, the analysis of harmonic attraction is often dependent on a similar reductionism to that employed by Schenkerians. As discussed in Chapter 5, such reductions in Debussy's music are more reliant on subjectivism than in tonal music with more clearly defined structural points. The analyst of Debussy's music must create a distinction between ornamental and structural, and the analysis therefore lacks the strict empiricism that might be required for an analysis of perception. A similar subjectivism is employed in determining chordal vocabulary (often whether a chord is a ii or IV is dependent upon the emphasis and voicing, rather than simply the construction of the harmonic structure). The ambiguous functions of many of Debussy's tonal structures forces the analyst to employ subjective notions to obtain the analysis. Similarly, while Lerdahl's system allows for a certain degree of variance (commonly functioning chords are weighted very similarly), much of the weight of the chord depends on whether or not it's classified as a functional chord, rather than simply a chromaticism.

The criticism of subjectivity is simply an extension of previous critiques on perceptually-based analyses. When referring to Narmour's *Beyond Schenkerism*, Alan Keiler noted that the theory 'belong[ed] squarely to a tradition of strict behaviorism, a

[1] Vere C. Chappell, 'Whitehead's Theory of Becoming,' in *Journal of Philosophy* 58/19 (1961), 516–528.

tradition that has always been nourished by empricist illusions of one kind or another.'[2]

This criticism, however, seems to be unfairly lodged against methodologies that argue with the loaded terminology of 'expectation' and 'closure,' which imply some sort of universality (although Chapter 1 argued that many of these do exist). Issues of subjectivity, regarding segmentation, reduction, etc., would obviously be inherent in any methodological approach. If Narmour's early adaptation of Meyer's implication-realization model grew out of a distaste for a treatment of music akin to Chomskian syntactical structures (as he believes the Schenkerians do), he was noting what many in researchers of music cognition now acknowledge: musical syntax functions very differently from linguistic syntax in a number of ways. Patel writes that,

> syntax allows music to achieve perceptual coherence based on contrast rather than similarity...While linguistic syntax depends on meaning, musical syntax can exploit ambiguity.[3]

This ambiguity begets subjective analyses, and Debussy's music exploits the ambiguity of musical syntax to an extreme degree. Therefore, while the analyses above use this loaded terminology of 'expectation,' 'perception,' etc., as well as quantitative analyses for harmonic and melodic attraction, they are far from empirical. Nevertheless, I hope they illustrate exactly what Patel pointed out: the ways in which Debussy exploits the various syntactical elements to create ambiguity, and how this ambiguity might be perceived.

The analysis of implication, while demonstrated here with solo piano pieces, would be equally applicable to Debussy's larger works. Future studies would aim to analyze Debussy's treatment of ambiguity through these analyses of expectation, and by viewing the larger-scale works, an analysis would illustrate the juxtaposition of Debussy's treatment of the immediate sonority with that of long-term comprehension (a subject that was broached upon in Chapter 2). In illustrating the composer's treatment of process

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[2] Allan Keiler, 'The Empiricist Illusion: Narmour's *Beyond Schenkerism*' in *Perspectives of New Music* 17/1 (1978), 161–195 (194).

[3] Aniruddh D. Patel, *Music, Language, and the Brain,* (Oxford: Oxford University Press, 2008), 261.

through the treatment of melodic, rhythmic, and harmonic implication, an analysis of the composer's larger works would serve to illustrate the treatment of ambiguity in long-term situations (as opposed to the relatively shorter spans of the present study).

For example, similar processes exist in *La Mer,* and a number of analyses of process have been conducted on the piece (as well as *Jeux*). The primary reason for focusing on the *Préludes* was the fact that many of the proccessive elements of the larger works are encapsulated within the collection. Similarly, the *String Quartet in G Minor* (1893) provides the listener with a brief insight into Debussy's use of small motivic devices to span across larger forms, and the implicative tendencies of these motives are frequently at odds between the instruments (for example, closure is achieved in the violins, while the cello implies continuation), and future research would attempt to include these works. Although I have analyzed a small sample of the composer's works, this methodology presented would be applicable to a much wider ranger than those selected.

In providing an analysis of the elements of process in the composer's works, the present study has attempted to reconcile the notion of process and fluidity, with the perception of immediate sonorities, which the composer frequently tried to emphasize. In doing so, one is able to understand the pieces as both process and structure. Bergson's ascription of Debussy as a composer of 'music of *durée*'[4] then seems quite fitting. Through the exploitation of parametric implication Debussy is able to create a fluid composition in which one is focused only on the immediate present, and the music is a continuous process.

[4] Henri Bergson, *Mélanges* (Paris: Presses Universitaires de France, 1972), 844.

Appendix 1: Voice-Leading Attractions in 'Canope'

Prog(1 →2)	Harmonic Attraction
α(D → A)	3/4 x $1/5^2$ = .03
α(A → E)	2/3 x $1/5^2$ = .027
α(F → C)	2/3 x $1/5^2$ = .027
α(D → A)	3/4 x $1/5^2$ =.03
α_{rvl}(i/D^{dor} → v)	sum = .114
α_{rh} (i/D^{dor} →v)	10 x .114/4 = .285

Prog(2→3)	Harmonic Attraction
α(A → C)	2/3 x $1/3^2$ = .074
α(E → G)	2/2 x $1/3^2$ = .111
α(C → E)	2/2 x $1/4^2$ = .063
α(A → C)	2/3 x $1/3^2$ =.074
α_{rvl}(v → ♭VII)	sum = .322
α_{rh} (v → ♭VII)	10 x .322/8= .4

Prog(3→4)	Harmonic Attraction
α(C → E)	2/2 x $1/4^2$ = .063
α(G → B)	2/2 x $1/4^2$ = .063
α(E → G)	2/2 x $1/3^2$ = .111
α(C → E)	2/2 x $1/4^2$ = .063
α_{rvl}(♭VII → ii)	sum = .3
α_{rh} (♭VII → ii)	10 x .3/9= .33

Prog(4→5)	Harmonic Attraction
α(E → D)	4/2 x $1/2^2$ = .5
α(B → A)	3/2 x $1/2^2$ = .34
α(G → F)	3/2 x $1/2^2$ = .34
α(E → D)	4/2 x $1/2^2$ = .5
α_{rvl}(ii → i)	sum = 1.68
α_{rh} (ii → i)	10 x 1.68/6= 2.8

Prog(5→6)	Harmonic Attraction
α(D → G)	2/4 x $1/5^2$ = .02
α(A → D)	4/2 x $1/5^2$ = .08
α(F → B♭)	3/2 x $1/2^2$ = .013
α(D → G)	2/4 x $1/5^2$ = .02
α_{rvl}(i → iv)	sum = .133
α_{rh} (i → iv)	10 x .133/6= .22

Prog(6→7)	Harmonic Attraction
α(G → D)	4/2 x $1/5^2$ = .08
α(D → G)	2/4 x $1/5^2$ = .02
α(B♭ → E)	2/1 x $1/6^2$ = .056
α(G → C)	2/2 x $1/5^2$ = .04
α_{rvl}(iv → ♭VII)	sum = .196
α_{rh} (iv → ♭VII)	10 x .196/5= .392

Prog(7→8)	Harmonic Attraction
α(D → A)	3/4 x $1/5^2$ = .03
α(G → E)	2/2 x $1/5^2$ = .04
α(E → C)	2/2 x $1/3^2$ = .111
α(C → A)	2/3 x $1/5^2$ = .074
α_{rvl}(♭VII → v)	sum = .255
α_{rh} (♭VII → v)	10 x .255/5= .51

Prog(8→9)	Harmonic Attraction
α(A → D)	4/3 x $1/5^2$ = .053
α(E → A)	3/2 x $1/5^2$ = .06
α(C → F)	3/2 x $1/5^2$ = .06
α(A → D)	4/3 x $1/5^2$ = .053
α_{rvl}(v → i)	sum = .226
α_{rh} (v → i)	10 x .255/3= .753

Prog(9 →10)	Harmonic Attraction
α(D → A)	3/4 x $1/5^2$ = .03
α(A → E)	2/3 x $1/5^2$ = .027
α(F → C)	2/3 x $1/5^2$ = .027
α(D → A)	3/4 x $1/5^2$ = .03
α_{rvl}(i → v)	sum = .114
α_{rh} (i → v)	10 x .114/4= .285

Prog(10 → 11)	Harmonic Attraction
α(A → G)	2/3 x 1/2² = .167
α(E → D)	4/2 x 1/2² = .5
α(C → B♭)	1/2 x 1/2² = .125
α(A → G)	2/3 x 1/2² = .167
α_{rvl}(v → iv)	sum = .959
α_{rh} (v → iv)	10 x .959/4= 2.39

Prog(11 → 12)	Harmonic Attraction
α(G → D)	4/2 x 1/5² = .25
α(D → A)	1/3 x 1/1² = .33
α(B♭ → F)	3/1 x 1/5² = .12
α(G → D)	4/2 x 1/5² = .08
α_{rvl}(iv → i)	sum = .78
α_{rh} (iv → i)	10 x .78/5 = 1.56

Prog(12 → 13)	Harmonic Attraction
α(D → E♭)	1/4 x 1/1² = .25
α(A → B♭)	1/3 x 1/1² = .33
α(B♭ → F)	2/3 x 1/2² = .17
α(D → E)	1/4 x 1/1² = .25
α_{rvl}(i → ♭II(I/E♭)	sum = 1
α_{rh} (i → ♭II(I/E♭)	10 x 1/16 = .625

Prog(13 → 14)	Harmonic Attraction
α(E♭→ A♭)	1/2 x 1/5² = .02
α(B♭ → E♭)	4/2 x 1/5² = .08
α(G → C)	2/3 x 1/5² = .027
α(E♭ → A♭)	3/4 x 1/5² = .02
α(B♭ → E♭)	4/3 x 1/5² = .053
α(E♭ → A♭)	1/2 x 1/5² = .02
α_{rvl}(I → IV)	sum = .22
α_{rh} (I → IV)	10 x 1/6 = .37

Prog(14 → 15)	Harmonic Attraction
α(A♭→B♭)	3/2 x 1/2² = .375
α(E♭ → G♭)	1/3 x 1/4² = .021
α(C → D♭)	1/2 x 1/1² = .5
α(A♭ → G♭)	2/1 x 1/2² = .5
α(E♭ → D♭)	1/4 x 1/2² = .063
α(A♭ → G♭)	1/2 x 1/2² = .125
α_{rvl}(IV → III)	sum = 1.54
α_{rh}(IV → III)	10 x 1.54/6 = 2.57

Prog(15 → 16)	Harmonic Attraction
α(B♭→A)	3/1 x 1/1² = 3
α(G♭ → F)	2/2 x 1/2² = .25
α(D♭ → D)	4/1 x 1/1² = 4
α(G♭ → F)	3/1 x 1/1² = 3
α(D♭ → null)	null
α(G♭ → A)	3/1 x 1/1² = 3
α_{rvl}(III → i/D^{dor})	sum = 13.25
α_{rh}(III → i/D^{dor})	10 x 13.25/14 = 9.46

Prog(16 → 17)	Harmonic Attraction
α(A→ null)	null
α(F → null)	null
α(D → C♯)	2/4/ x 1/1² = 2
α(F → F♯)	2/1 x 1/1² = 2
α(A → A)	null
α(D → D)	null
α_{rvl}(i → I)	sum = 4
α_{rh}(i → I)	10 x 4/5 = 8

Prog(17 → 18)	Harmonic Attraction
α(C♯ → D)	3/1 x 1/1² = 2
α(A → B♭)	3/2 x 1/1² = 1.5
α(F♯ →B♭)	3/1 x 1/4² = .188
α(A → D)	3/2 x 1/5² = .06

α(D → G)	4/3 x $1/5^2$ = .053
α_{rvl}(I→ ii)	sum = 3.8
α_{rh}(I→ ii)	10 x 3.8/11 = 3.45

Prog(18 →19)	Harmonic Attraction
α(E → E)	null
α(A → B)	3/2 x $1/2^2$
α(D → D)	null
α(B → B)	null
α(D → D)	null
α(G → G)	null
α_{rvl} (ii/D (iii/C)→ (V/C)	sum = .375
α_{rh}(ii/D (iii/C)→ (V/C)	10 x .375/11 = .34

Prog(19 →20)	Harmonic Attraction
α(E → A)	1/1 x $1/5^2$ =.04
α(B → D♭)	2/1 x $1/2^2$ =.5
α(B → E♭)	3/1 x $1/4^2$ = .188
α(D → B♭)	2/1 x $1/4^2$ =.125
α(G → G♭)	1/1 x $1/1^2$ = 1
α_{rvl}(V → V/♭VI)	sum = 1.85
α_{rh}(V → V/♭VI)	10 x 1.85/3 = 6.17

Prog(20 →21)	Harmonic Attraction
α(A → null)	null
α(D♭ → D)	2/1 x $1/2^2$ =.5
α(E♭ → G)	3/1 x $1/4^2$ = .188
α(B♭ → C)	4/1 x $1/2^2$ =.125
α(G♭ → E)	3/1 x $1/3^2$ = 1
α_{rvl}(V/♭VI → I)	sum = 1.81
α_{rh} (V/♭VI → I)	10 x 1.81/7 = 2.59

Prog(21 →22)	Harmonic Attraction
α(D → D)	null
α(G → G)	null
α(C → E♭)	1/4 x $1/3^2$ = .028
α(E → A)	3/2 x $1/5^2$ =.06
α(G → C)	4/3 x $1/5^2$ = .053
α(C → F)	2/4 x $1/5^2$ = .02
α_{rvl}(I → $IV^{7(dom)}$)	sum = .161
α_{rh}(I → $IV^{7(dom)}$)	10 x .161/10 = .161

Prog(22 →23)	Harmonic Attraction
α(G → E)	3/2 x $1/3^2$ = .17
α(E♭ → B)	2/2 x $1/2^2$ = .025
α(A → G)	4/3 x $1/2^2$ =.33
α(C → D♭)	3/2 x $1/1^2$ = 1.5
α(F → A)	4/2 x $1/4^2$ = .125
α_{rvl}(♭VI7 → I/A^{mixo})	sum = 2.15
α_{rh}(♭VI7 → $IV^{7(dom)}$)	10 x 2.15/10 = 2.15

Prog(23 →24)	Harmonic Attraction
α(E → D♭)	2/2 x $1/3^2$ = .111
α(B → A)	4/2 x $1/2^2$ = .5
α(G → F)	2/2 x $1/2^2$ =.25
α(D♭ → B)	2/3 x $1/1^2$ = .75
α(A → G)	4/2 x $1/4^2$ = .17
α_{rvl}(I/A^{mixo} → I/A^{wt})	sum = 1.78
α_{rh} (I/A^{mixo} → I/A^{wt})	10 x 1.78/5 = 3.56

Prog(24 →25)	Harmonic Attraction
α(D → A)	3/4 x $1/5^2$ = .03
α(A → E)	2/3 x $1/5^2$ = .027
α(F → C)	2/3 x $1/5^2$ = .027
α(D → A)	3/4 x $1/5^2$ =.03
α_{rvl}(i/D^{dor} → v)	sum = .114

α_{rh} (i/D^{dor} → v)	10 x .114/4 = .285

Prog(25→26)	Harmonic Attraction
α(A → C)	2/3 x 1/3^2 = .074
α(E → G)	2/2 x 1/3^2 = .111
α(C → E)	2/2 x 1/4^2 = .063
α(A → C)	2/3 x 1/3^2 =.074
α_{rv}l(v → ♭VII)	sum = .322
α_{rh} (v → ♭VII)	10 x .322/8= .4

Prog(26→27)	Harmonic Attraction
α(C → E)	2/2 x 1/4^2 = .063
α(G → B)	2/2 x 1/4^2 = .063
α(E → G)	2/2 x 1/3^2 = .111
α(C → E)	2/2 x 1/4^2 = .063
α_{rv}l(♭VII → ii)	sum = .3
α_{rh} (♭VII → ii)	10 x .3/9= .33

Prog(27→28)	Harmonic Attraction
α(E → D)	4/2 x 1/2^2 = .5
α(B → A)	3/2 x 1/2^2 = .34
α(G → F)	3/2 x 1/2^2 = .34
α(E → D)	4/2 x 1/2^2 = .5
α_{rv}l(ii → i)	sum = 1.68
α_{rh} (ii → i)	10 x 1.68/6= 2.8

Prog(28→29)	Harmonic Attraction
α(D → G)	2/4 x 1/5^2 = .02
α(A → D)	4/2 x 1/5^2 = .08
α(F → B♭)	3/2 x 1/2^2 = .013
α(D → G)	2/4 x 1/5^2 = .02
α_{rv}l(i → iv)	sum = .133
α_{rh} (i → iv)	10 x .133/6= .22

Prog(29→30)	Harmonic Attraction
α(G → D)	4/2 x 1/5^2 = .08
α(D → G)	2/4 x 1/5^2 = .02
α(B♭ → E)	2/1 x 1/6^2 = .056
α(G → C)	2/2 x 1/5^2 = .04

α_{rv}l(iv → ♭VII)	sum = .196
α_{rh} (iv → ♭VII)	10 x .196/5= .392

Prog(30→31)	Harmonic Attraction
α(D → A)	3/4 x 1/5^2 = .03
α(G → E)	2/2 x 1/5^2 = .111
α(E → C)	2/2 x 1/6^2 = .04
α(C → A)	2/3 x 1/5^2 = .074
α_{rv}l(♭VII → v)	sum = .255
α_{rh} (♭VII → v)	10 x .255/5= .51

Prog(31→32)	Harmonic Attraction
α(E → B♭)	1/4 x 1/6^2 = .007
α(C → G♭)	1/2 x 1/6^2 = .027
α(A → E♭)	1/3 x 1/6^2 = .009
α_{rv}l(v → ♭II/d (i/e♭))	sum = .043
α_{rh}(v → ♭II/d (i/e♭))	10 x .043/13= .033

Prog(32→33)	Harmonic Attraction
α(E♭ → B♭)	3/4 x 1/5^2 = .03
α(B♭ → F)	2/3 x 1/5^2 = .027
α(G♭ → D♭)	2/3 x 1/5^2 = .027
α(E♭ → B♭)	3/4 x 1/5^2 = .03
α_{rv}l(i/e♭ → v)	sum = .114
α_{rh} (i/e♭ → v)	10 x .114/5= .228

Prog(33→34)	Harmonic Attraction
α(B♭ → A♭)	3/2 x 1/2^2 = .375
α(F → E♭)	4/2 x 1/2^2 = .5
α(D♭ → C♭)	1/2 x 1/2^2 = .125
α(B♭ → A♭)	3/2 x 1/2^2 = .375
α_{rv}l(v → iv)	sum = 1.375
α_{rh}(v → iv)	10 x 1.375/6 = 2.29

Prog(34→35)	Harmonic Attraction
α(A♭ → E♭)	4/2 x $1/5^2$ = .08
α(E♭ → B♭)	4/3 x $1/5^2$ = .053
α(C♭ → G♭)	1/1 x $1/5^2$ = .04
α(A♭ → E♭)	4/2 x $1/5^2$ = .08
α_{rv}l(iv → i)	sum = .253
α_{rh}(iv → i)	10 x .253/7= .361

Prog(35→36)	Harmonic Attraction
α(E♭ → E)	1/4 x $1/1^2$ = .25
α(B♭ → B)	1/3 x $1/1^2$ = .33
α(G♭ → G)	1/3 x $1/1^2$ = .33
α(E♭ → E)	1/4 x $1/1^2$ = .25
α_{rv}l(i/e♭ → ♭II/d (iii/C)	sum = 1.16
α_{rh}(i/e♭ → ♭II/d (iii/C)	10 x 1.16/16= .725

Prog(36→37)	Harmonic Attraction
α(E → A)	2/3 x $1/5^2$ = .027
α(B → E)	3/2 x $1/5^2$ = .06
α(G → C♯)	1/3 x $1/6^2$ = .009
α(E → A)	2/3 x $1/5^2$ = .027
α_{rv}l(iii → vi)	sum = .123
α_{rh}(iii → vi)	10 x .123/7= .175

Prog(37→38)	Harmonic Attraction
α(A → C)	4/3 x $1/3^2$ = .148
α(E → A♭)	1/3 x $1/4^2$ = .021
α(C♯ → F)	1/2 x $1/4^2$ = .031
α(A → C)	4/2 x $1/3^2$ = .222
α(A → A♭)	1/2 x $1/1^2$ = .5
α(E → C)	4/3 x $1/4^2$ = .083
α(A→ F)	2/2 x $1/4^2$ = .063
α_{rv}l(vi → iv)	sum = 1.07
α_{rh}(vi → iv)	10 x 1.07/13= .821

Prog(38→39)	Harmonic Attraction
α(C→ D)	2/4 x $1/2^2$ = .125
α(A♭ → G)	3/1 x $1/1^2$ = 3
α(F → G)	2/3 x $1/2^2$ = .167
α(C → C)	null
α(A♭ → E)	3/1 x $1/3^2$ = .33
α(F → G)	3/2 x $1/2^2$ = .375
α_{rv}l(iv → I)	sum = 3.99
α_{rh}(iv → I)	10 x 3.99/13= 3.97

Appendix 2: Voice-Leading Attractions in 'Des pas sur la neige'

Prog(1→2)	Harmonic Attraction
α(E → F)	3/2 x $1/1^2$ = 1.5
α(B → A)	3/2 x $1/2^2$ = .75
α(D → C)	2/4 x $1/2^2$ = .125
α(G → F)	3/2 x $1/2^2$ = .375
α_{rvl}(ii → III)	sum = 2.75
α_{rh}(ii → III)	10 x 2.75/11 = 2.5

Prog(2→3)	Harmonic Attraction
α(F→ E)	2/3 x $1/1^2$ = .67
α(A → G)	2/3 x $1/2^2$ = .167
α(C → B)	2/2 x $1/1^2$ = 1
α(F → E)	2/3 x $1/1^2$ = .67
α_{rvl}(III → ii)	sum = 2.51
α_{rh}(III → ii)	10 x 2.51/11= 2.28

Prog(3→4)	Harmonic Attraction
α(E→ F)	3/2 x $1/1^2$ = 1.5
α(G → A)	3/2 x $1/2^2$ = .375
α(G → F)	3/2 x $1/2^2$ = .375
α(B → A)	2/3 x $1/2^2$ = .167
α(E → D)	2/4 x $1/2^2$ = .125
α_{rvl}(ii → i)	sum = 2.54
α_{rh}(ii → i)	10 x 2.54/8 = 3.18

Prog(4→5)	Harmonic Attraction
α(F→ E)	3/4 x $1/1^2$ = .75
α(A → B♭)	2/3 x $1/1^2$ = 3
α(F → null)	null
α(A → C)	2/3 x $1/3^2$ = .074
α(D → F♯)	1/4 x $1/3^2$ = .028
α_{rvl}(i → chrom/D♭)	sum = 3.85
α_{rh}(i → chrom/D♭)	10 x 3.85/11 = 3.5

Prog(5→6)	Harmonic Attraction
α(E→ F)	3/1 x $1/1^2$ = 3
α(B♭ → B (C♭))	3/2 x $1/1^2$ = 1.5
α(C → C♯ (D♭))	4/1 x $1/1^2$ = 4
α(F♯ → G♯)	3/2 x $1/2^2$ = .375
α_{rvl}(chrom D♭ → I^7/ $D♭^{mixo}$)	sum = 8.875
α_{rh} (chrom D♭ → I^7/ $D♭^{mixo}$)	10 x 8.875/16 = 5.54

Prog(6→7)	Harmonic Attraction
α(F→ E)	1/3 x $1/1^2$ = .33
α(B → B♭)	2/3 x $1/1^2$ = .67
α(C♯ → C)	1/4 x $1/2^2$ = .167
α(G♯ → F♯)	3/2 x $1/2^2$ = .375
α_{rvl}(I^7 → chrom/ $D♭^{mixo}$)	sum = 1.54
α_{rh}(I^7 → chrom/ $D♭^{mixo}$)	10 x 1.54/11= 1.4

Prog(7→8)	Harmonic Attraction
α(E→ F)	3/1 x $1/1^2$ = 3
α(B♭ → B (C♭))	3/2 x $1/1^2$ = 1.5
α(C → C♯ (D♭))	4/1 x $1/1^2$ = 4
α(F♯ → G♯)	3/2 x $1/2^2$ = .375
α_{rvl}(chrom D♭ → I^7/ $D♭^{mixo}$)	sum = 8.875
α_{rh}(chrom/$D♭^{mixo}$ → I^7)	10 x 8.875/11 = 8.06

Prog(8→9)	Harmonic Attraction
α(F→ E)	1/3 x $1/1^2$ = .33
α(B → B♭)	2/3 x $1/1^2$ = .67
α(C♯ → null)	null
α(G♯ → null)	null
α_{rvl}(I^7 → chrom/D♭)	sum = .99
α_{rh} (I^7 → chrom/D♭)	10 x .99/11= .9

Prog(9→10)	Harmonic Attraction
α(E→ F)	3/1 x 1/1² = 3
α(D → D♭)	4/1 x 1/1² = 4
α(B♭ → C♭)	3/2 x 1/2² = .167
α(null → A♭)	null
α_{rvl}(chrom/D♭^{mixo} → I^7)	sum = 7.167
α_{rh} (chrom/D♭^{mixo} → I^7)	10 x 7.167/11= 6.52

Prog(10→11)	Harmonic Attraction
α(F→ E)	1/3 x 1/1² = .33
α(D♭ → C)	1/4 x 1/1² = .25
α(C♭→ C)	1/3 x 1/2² = .083
α(A♭ → F)	3/3 x 1/3² = .111
α_{rvl}(I^7 → iii)	sum = .77
α_{rh} (I^7 → iii)	10 x .77/8 = .96

Prog(11→12)	Harmonic Attraction
α(E→ F)	2/1 x 1/1² = 2
α(C → B♭)	3/1 x 1/2² = 1.5
α(F → G♭)	4/2 x 1/1² = 2
α(F → D♭)	3/2 x 1/2² = .375
α_{rvl}(iii → I/G♭)	sum = 5.875
α_{rh}(iii → I/G♭)	10 x 5.875/11 = 5.34

Prog(12→13)	Harmonic Attraction
α(F→ F)	null
α(B♭ → B♭)	null
α(G♭ → G♭)	null
α(D♭ → E♭)	4/2 x 1/3² = .22
α_{rvl}(I → vi)	sum = .22
α_{rh} (I → vi)	10 x .22/1= 2.2

Prog(13→14)	Harmonic Attraction
α(F→ F♯)	3/1 x 1/2² = .75
α(B♭ → B♭)	null
α(G♭ → E♭)	1/3 x 1/3² = .037
α(E♭ → C)	1/4 x 1/3² = .028

α_{rvl}(vi → I/C^{wt})	sum = .815
α_{rh}(vi → I/C^{wt})	10 x .815/14 = .582

Prog(14→15)	Harmonic Attraction
α(E→ F)	3/1 x 1/1² = 3
α(E → D)	4/1 x 1/2² = 1
α(G → A♭)	3/2 x 1/1² = 1.5
α_{rvl}(ii^7 → i^{dim})	sum = 5.5
α_{rh}(ii^7 → i^{dim})	10 x 5.5/10= 5.5

Prog(15→16)	Harmonic Attraction
α(E→ F)	3/1 x 1/1² = 3
α(D → null)	null
α(A♭ → B♭)	1/3 x 1/2² = .037
α_{rvl}(i^{dim} → B♭/F (dyad)	sum = 3.037
α_{rh} (i^{dim} → B♭-F (dyad))	10 x 3.037/5= 6.07

Prog(16→17)	Harmonic Attraction
α(F→ C)	2/3x 1/7² = .014
α(F → E)	2/3 x 1/1² = .67
α(B♭ → G)	2/2 x 1/3² = .222
α_{rvl}(B♭/F(dyad) → ♭VII)	sum = .906
α_{rh}(B♭/F(dyad) → ♭VII)	10 x .906/10 = .906

Prog(17→18)	Harmonic Attraction
α(C→ C)	null
α(E → F)	3/2 x 1/1² = 1.5
α(E → D)	3/4 x 1/2² = .0625
α(G → A♭)	3/2 x 1/1² = 1.5
α_{rvl}(♭VII → i^{oct})	sum = 3.06
α_{rh}(♭VII → i^{oct})	10 x 3.06/7= 4.37

Prog(18→19)	Harmonic Attraction
α(C→ A♭)	3/1 x 1/3² = .33
α(F → F)	null
α(D → D)	null
α(A♭ → B♭)	2/3 x 1/2² = .167

$\alpha_{rvl}(i^{dim} \rightarrow \flat VI)$	sum = .497
$\alpha_{rh}(i^{dim} \rightarrow \flat VI)$	10 x .497/9= .552

Prog(19→20)	Harmonic Attraction
α(A♭→ E)	2/1 x $1/5^2$ = .08
α(F → E)	2/3 x $1/1^2$ = .67
α(D → E)	2/4 x $1/2^2$ = .125
α(B♭ → G)	2/2 x $1/3^2$ = .111
$\alpha_{rvl}(\flat VI \rightarrow ii)$	sum = .906
$\alpha_{rh}(\flat VI \rightarrow ii)$	10 x .906/11= .823

Prog(20→21)	Harmonic Attraction
α(E→ D)	4/2 x $1/2^2$ = 1
α(E → F)	3/2 x $1/1^2$ = 1.5
α(E → D)	4/2 x $1/2^2$ = 1
α(G → A♭)	1/2 x $1/1^2$ = .5
$\alpha_{rvl}(ii \rightarrow i^{dim})$	sum = 4
$\alpha_{rh}(ii \rightarrow i^{dim})$	10 x 4/9 = 4.44

Prog(21→22)	Harmonic Attraction
α(D→ A♭)	3/4 x $1/6^2$ = .021
α(F → F)	null
α(D → D)	null
α(A♭ → B♭)	2/3 x $1/2^2$ = .167
$\alpha_{rvl}(i^{dim} \rightarrow i^{dim})$	sum = .188
$\alpha_{rh}(i^{dim} \rightarrow i^{dim})$	10 x .188/1= 1.88

Prog(22→23)	Harmonic Attraction
α(A♭→ E)	2/3 x $1/4^2$ = .125
α(F → E)	2/3 x $1/1^2$ = .042
α(D → D)	null
α(B♭ → null)	null
$\alpha_{rvl}(i^{dim} \rightarrow$ D-E dyad)	sum = .541
$\alpha_{rh}(i^{dim} \rightarrow$ D-E dyad)	10 x .541/1 = 5.41

Prog(23→24)	Harmonic Attraction
α(E→ G)	2/2 x $1/3^2$ = .111
α(E → F)	3/2 x $1/1^2$ = 1.5

α(D → D)	null
α_{rvl}(D-E dyad → i)	sum = 1.66
α_{rh}(D-E dyad → i)	10 x 1.66/1 = 16.6

Prog(24→25)	Harmonic Attraction
α(G→ E)	2/2 x $1/3^2$ = .111
α(D → E)	2/4 x $1/1^2$ = .5
α(D → B)	2/4 x $1/2^2$ = .125
α(D added)	null
α(G added)	null
$\alpha_{rvl}(i \rightarrow ii^6)$	sum = .736
$\alpha_{rh}(i \rightarrow ii^6)$	10 x .736/7= 1.05

Prog(25→26)	Harmonic Attraction
α(E→ F)	3/2 x $1/2^2$ = .375
α(B → A)	2/3 x $1/1^2$ = .67
α(D → C)	2/4 x $1/2^2$ = .125
α(G → F)	2/2 x $1/2^2$ = .25
$\alpha_{rvl}(ii^6 \rightarrow \flat III)$	sum = 1.42
$\alpha_{rh}(ii^6 \rightarrow \flat III)$	10 x 1.42/8= 1.78

Prog(26→27)	Harmonic Attraction
α(F→ E)	2/3 x $1/1^2$ = .67
α(A → G)	3/2 x $1/2^2$ = .375
α(C → B)	2/2 x $1/1^2$ = 1
α(F → E)	3/2 x $1/1^2$ = 1.5
$\alpha_{rvl}(\flat III \rightarrow ii)$	sum = 3.55
$\alpha_{rh}(\flat III \rightarrow ii)$	10 x 3.55/10 = 3.55

Prog(27→28)	Harmonic Attraction
α(E → F)	3/1 x $1/1^2$ = 3
α(null → C♭)	null
α(G → F)	3/1 x $1/2^2$ = .75
α(B → A♭)	3/1 x $1/2^2$ = .75
α(E → D♭)	4/1 x $1/1^2$ = 4
$\alpha_{rvl}(ii \rightarrow I/D\flat^{mixo})$	sum = 8.5
$\alpha_{rh}(ii \rightarrow I/D\flat^{mixo})$	10 x 8.5/12= 7.08

Prog(28→29)	Harmonic Attraction

α(F → F)	null
α(C♭ → C♭)	null
α(F → A♭)	3/3 x $1/3^2$ = .111
α(A♭ → A♭)	null
α(D♭ → D♭)	null
α_{rvl}(I^7 → I^7)	sum = .111
α_{rh} (I^7 → I^7)	10 x .111/1= 1.11

Prog(29→30)	Harmonic Attraction
α(C♭ → C)	2/1 x $1/1^2$ = .125
α(A♭ → G♭)	2/3 x $1/2^2$ = 3
α(A♭ → null)	null
α(A♭ → A♭)	null
α(D♭ → D)	1/3 x $1/2^2$ = .083
α_{rvl}(I^7 →♭II)	sum = 3.21
α_{rh} (I^7 →♭II)	10 x 3.21/16 = 2.01

Prog(30→31)	Harmonic Attraction
α(F → F)	null
α(C → D♭)	4/2 x $1/1^2$ = 2
α(G ♭→ G)	1/2 x $1/1^2$ = .5
α(D → E♭)	2/1 x $1/1^2$ = 2
α_{rvl}(♭II → II^9)	sum = 4.5
α_{rh} (♭II → II^9)	10 x 4.5/11= 4.09

Prog(31→32)	Harmonic Attraction
α(F → F)	null
α(D♭ → D)	4/2 x $1/1^2$ = 2
α(G→ A♭)	3/2 x $1/1^2$ = 1.5
α(E♭ → E)	1/2 x $1/1^2$ = .5
α_{rvl}(II^9→i^{dim})	sum = 4
α_{rh} (II^9→i^{dim}/D^{oct})	10 x 4.5/16= 2.81

Prog(32→33)	Harmonic Attraction
α(E → G♭)	4/2 x $1/2^2$ = .5
α(D → D♭)	3/1 x $1/2^2$ = .75
α(B♭ → A)	1/2 x $1/1^2$ = .5
α(G → G♭)	4/2x $1/1^2$ = 2
α_{rvl}(ii →i/G♭ (parallel minor))	sum = 3.75
α_{rh} (ii →i/G♭ (parallel minor))	10 x 3.75/10= 3.75

Prog(33→34)	Harmonic Attraction
α(F → E)	1/3 x $1/1^2$ = .33
α(D♭ → C)	1/3 x $1/2^2$ = .083
α(A → G♯)	2/1 x $1/1^2$ = 2
α(G♭ → F)	2/4 x $1/2^2$ = .125
α_{rvl}(i/G♭ →chrom)	sum = 2.54
α_{rh} (i/G♭ →chrom)	10 x 2.54/7 = 3.62

Prog(34→35)	Harmonic Attraction
α(E→ F)	3/2 x $1/1^2$ = 1.5
α(D → null)	null
α(C → null)	null
α(G♯ → A)	3/2 x $1/2^2$ = .375
α(F → F)	null
α(null → A)	null
α(null → D)	null
α_{rvl}(chrom →i/D-minor)	sum = 1.875
α_{rh} (chrom →i/D-minor)	10 x 1.88/16 = 1.17

Prog(35→36)	Harmonic Attraction
α(F → E)	3/2 x $1/1^2$ = 1.5
α(A♭ → C)	2/1 x $1/3^2$ = .222
α(A♭→ A♭)	null
α(F → F)	null
α(A → null)	null
α(D → null)	null
α_{rvl}(i →iii)	sum = 1.72
α_{rh}(i →iii)	10 x 1.72/8 = 2.15

Prog(36→37)	Harmonic Attraction
α(E → F)	3/2 x $1/1^2$ = 1.5
α(C → C♭)	1/2 x $1/1^2$ = .5
α(A♭ → A♭)	null
α(F → null)	null
α_{rvl}(iii →iii^6)	sum = 2

α_{rh}(iii →iii^6(or vii/ G♭))	10 x 2/4 = 5

Prog(37→38)	Harmonic Attraction
α(F → A♭)	2/2x 1/3^2 = .111
α(C♭ → E♭)	2/2x 1/3^2 = .111
α(A♭ → C♭)	2/2x 1/3^2 = .111
α_{rvl}(vii/G♭ →ii^6)	sum = .333
α_{rh}(vii/G♭ →ii^6)	10 x .333/10 = .333

Prog(38→39)	Harmonic Attraction
α(A♭ → G♭)	4/1 x 1/2^2 = 2
α(E♭ → D♭)	3/2 x 1/2^2 = .375
α(C♭ → B♭)	2/3 x 1/2^2 = .167
α_{rvl}(ii^6 →I^6)	sum = 2.54
α_{rh} (ii^6 →I^6)	10 x 2.54/7 = 3.63

Prog(39→40)	Harmonic Attraction
α(G♭ → F)	2/4 x 1/1^2 = .5
α(D♭ → C♭)	2/3 x 1/1^2 = .67
α(B♭ → A♭)	2/3 x 1/2^2 = .074
α_{rvl}(I^6 → vii)	sum = 1.24
α_{rh}(I^6 → vii)	10 x 1.24/11 = 1.13

Prog(40→41)	Harmonic Attraction
α(F → G♭)	4/2 x 1/1^2 = 2
α(C → D♭)	4/1 x 1/1^2 = 4
α(A♭ → B♭)	3/2 x 1/2^2 = .375
α_{rvl}(vii → I^6)	sum = 6.375
α_{rh}(vii →I^6)	10 x 6.375/11= 5.79

Prog(41→42)	Harmonic Attraction
α(G♭ → A♭)	2/4 x 1/2^2 = .125
α(D♭ → E♭)	2/3 x 1/2^2 = .167
α(B♭ → C♭)	2/3 x 1/2^2 = .167
α_{rvl}(I^6 →ii^6)	sum = .459
α_{rh}(I^6→ii^6)	10 x .459/7= .656

Prog(42 →43)	Harmonic Attraction
α(A♭ → B♭)	3/2 x 1/2^2 = .375
α(E♭ → F)	2/2 x 1/2^2 = .25
α(C♭ → D♭)	3/2 x 1/2^2 = .375
α_{rvl}(ii^6 →iii^6)	sum = 1
α_{rh}(ii^6 →iii^6)	10 x 1/8= 1.25

Prog(43→44)	Harmonic Attraction
α(B♭ → C♭)	2/3 x 1/2^2 = .167
α(F → G♭)	4/2 x 1/1^2 = 2
α(D♭ → E♭)	2/3 x 1/2^2 = .167
α_{rvl}(iii^6 →IV^6)	sum = 2.33
α_{rh}(iii^6 →IV^6)	10 x 2.33/7= 3.33

Prog(44→45)	Harmonic Attraction
α(C♭ → D♭)	3/2 x 1/2^2 = .375
α(G♭ → A♭)	3/2 x 1/2^2 = .375
α(E♭ → F)	2/2 x 1/2^2 = .25
α_{rvl}(IV^6 → V^6)	sum = 1
α_{rh}(IV^6→V^6)	10 x 1/7= 1.43

Prog(45→46)	Harmonic Attraction
α(D♭→ E♭)	2/3 x 1/2^2 = .167
α(A♭ → C♭)	2/2 x 1/3^2 = .111
α(F → A♭)	2/2 x 1/3^2 = .111
α_{rvl}(V^6 →ii)	sum = .389
α_{rh} (V^6 →ii)	10 x .389/5= .778

Prog(46→47)	Harmonic Attraction
α(E♭ → A♭)	2/2 x 1/5^2 = .04
α(C♭ → F)	2/2 x 1/6^2 = .027
α(A♭ → D♭)	3/2 x 1/5^2 = .06
α_{rvl}(ii → V)	sum = .127
α_{rh}(ii →V)	10 x .127/5= .254

Prog(47→48)	Harmonic Attraction
α(A♭ → D♭)	3/2 x 1/5^2 = .12
α(F → A♭)	2/2 x 1/3^2 = .111
α(D♭ → F)	2/3 x 1/3^2 = .074
α_{rvl}(V→V^6)	sum = .305
α_{rh}(V→V^6)	10 x .305/1= 3.05

Prog(48→49)	Harmonic Attraction
α(D♭ → D)	4/1 x $1/1^2$ = 4
α(A♭ →null)	null
α(F → E)	2/3 x $1/1^2$ = .67
α_{rvl}(V^6→D-E dyad)	sum = 4.67
α_{rh} (V^6→D-E dyad)	10 x 4.67/9= 5.18

Prog(49→50)	Harmonic Attraction
α(D → E)	2/4 x $1/1^2$ = .5
α(E → F)	3/2 x $1/1^2$ = 1.5
α_{rvl}(D-E dyad → E-F dyad)	sum = 2
α_{rh} (D-E dyad → E-F dyad)	10 x 2/2 = 10

Prog(50→51)	Harmonic Attraction
α(F → F)	null
α(E →D)	4/2 x $1/2^2$ = 1
α(null → B♭)	null
α(null → G)	null
α_{rvl}(D-E Dyad→iv/ Dminor)	sum = 1
α_{rh} (D-E Dyad→iv/ Dminor)	10 x 1/2= 5

Prog(51→52)	Harmonic Attraction
α(F → F')	3/1 x $1/12^2$ = .021
α(D →D')	2/3 x $1/12^2$ = .004
α(B♭ → F)	3/2 x $1/5^2$ = .12
α(G → null)	null
α(null → A)	null
α(null → D)	null
α_{rvl}(iv→i/Dminor)	sum = .145
α_{rh}(iv→i/Dminor)	10 x .145/5 = .29

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