INCONSTANT TONALITY IN DEBUSSY'S *LA MER*

by

DAVID JONATHAN MARCUS

(Under the Direction of Adrian Childs)

ABSTRACT:

This study is an original harmonic and tonal analysis of Debussy's orchestral masterpiece *La mer: trois esquisses symphoniques.* Based on Debussy's praise of freedom and critique of "overprecise forms," the author undertakes to explain harmony and tonicity in the music afresh, thoroughly adjusting traditional concepts of tonality. He shows that Debussy's harmonic originality lies close to the musical surface, and analytical reductions, particularly to familiar tonal objects, tend to conceal its harmonic methods.These methods include the use of whole-step/half-step scales as harmonic regions, the use of maximally intersecting scales for smooth modulation, and the use of invariant pitch classes as organizing agents over long spans of musical time. The auther then replaces the old concept of harmonic function, conceived as a consistent hierarchy centered on tonic and dominant, with a constantly evolving presentation of tonicity. The final portion of the study considers the metaphorical fit of all these techniques for *La mer*'s oceanic imagery.

KEYWORDS: Debussy, *La mer*, scale theory, parsimony, post-tonal tonicity, pitch-class invariance

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DEDICATION

This thesis is dedicated to my parents, Alan and Lotte Marcus, who taught me to love beauty as well as learning, and to my beautiful wife, Barbara Hall, who has supported both of these passions for many years.

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The challenge of writing this dissertation while also teaching, composing, and raising a family would have been insurmountable if not for the help and support of my community of Decatur, Georgia. Above all, my wife, Barbara Hall, has worked incredibly hard, with great patience, love, and support, during the five years I have spent at UGA. I acknowledge her sacrifice, and thank her from the bottom of my heart.

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Il faut noyer le ton.

– Claude Debussy[1]

1.1 LISTENING TO *LA MER*

In September 1904, a year after he had begun it, Debussy wrote to his publisher Durand from the town of Dieppe, "I would have liked to complete *La mer* here, but I still must perfect the orchestration, which is as tumultuous and varied as…the sea!"[2] Finally completed the following March, Debussy's 1905 masterpiece *La mer: trois esquisses symphoniques* is tumultuous in orchestration, in texture, and, above all, in its tonality. It is a kaleidoscope of surprising harmony. The music is as changeable as the ocean, constantly shifting its color, texture, depth, and tonal character. It also is, like the ocean, an object of great beauty, both in its delicacy and in its savagery. Its metamorphosizing textures and mercurial tonalities stirringly evoke the sea, and the titles of its three movements provide these capricious sonic objects with vivid programmatic imagery:

I. *De l'aube à midi sur la mer* ("From dawn to midday on the ocean"),

II. *Jeux de vagues* ("Wave play")

III. *Dialogue du vent et de la mer* ("Dialogue of the wind and the sea")

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[1] "One must drown the tone." Lockspeiser 1962, 206.

[2] Rolf 1976, 300, translation mine. "J'aurai voulu terminer 'La mer' ici mais il me reste à en parfaire l'orchestre qui est tumultueux et varié comme la…mer!" Rolf's Appendix A provides 59 letters from Debussy to his editor concerning *La mer*, in the original French.

These three images suit the music's quality of searching, tonal metamorphosis, the quality to be explored at length in this dissertation. Despite the existence of numerous previous studies of this music, the variety and indecisiveness of *La mer*'s tonicities has been little examined. Nor is there an analytical consensus about many aspects of its harmonic vocabulary and procedures.

Those who championed *La mer* in its first year—and it was not a universal success at first—often mentioned this quality of constant, supple change. In his first glowing review of the piece, Louis Laloy, Debussy's most supportive critic and eventual confidante, wrote that Debussy's *La mer* contains "all the glimmerings and shifting shadows, caresses and murmurs, gentle sweetness and fiery anger, seductive charm and sudden gravity" of ocean waves.[3] After *La mer*'s third performance, in Brussels on December 3rd, *Le Guide musicale'*s anonymous reviewer provided a dead-on description of the music's "continuous searchings for fleeing harmonies….the equivalent of imprecise color and luminous transparency."[4] The metaphors of these two writers reflect and amplify the music's qualities of constant subtle change, which in turn depend upon the tonal mechanisms documented in this dissertation.

The bulk of this dissertation, then, documents the suppleness and intentional indecisiveness of *La mer*'s tonality, including its "somewhat tonal" scales, its tonics, near-tonics, and non-tonics, its subtle voice-leading by capricious half-steps, and its blurred formal functions. This thesis builds a theory of *La mer*'s tonality from the music's surface up, interrogating tonal concepts like *scale*, *nonharmonic tone*, *function*, and *dominant chord* in order to describe the actual listening experience better. Starting with scales, textures, and embellishing tones, it

[3] Laloy 1999, 192.
[4] *Le Guide musicale*, December 10, 1905, quoted in Lesure 2003, 276, my translation. The original French is "continuelles recherches d'harmonies fuyantes…l'équivalent des couleurs imprecises et des transparences lumineuses."

progresses through voice-leading, modulation, and pitch-class invariance, to end with an original theory of indecisive, multi-colored tonics.

My basic assertion is that *La mer*'s tonics change in two ways. While tonic pitch, color, and "clarity" shift incessantly, particularly in *Jeux de vagues*, the sense of tumultuous transformation in the music also derives from the fact that the balance of musical elements by which tonics are established is itself in constant flux. In addition, tonics are often in abeyance altogether. All of this contributes to the music's wonderful feeling of an entire world of rich harmony in constant, searching motion.

Toward the end of this study, I consider the metaphoric fit of this perceived inconstancy and colorful imprecision for a work entitled "The Sea." Whether or not the linkage is ultimately successful, let me acknowledge at the outset that the conception of musical analysis offered by example in this dissertation is one in which analysis can and should directly help explain some listener's actual experience of hearing *La mer*. In support of this, I find it striking that my own reactions to this wonderful music resonate so closely with the early reviews just quoted. Rather than beginning from common-practice tonal analytical routines, the present study stems from curiosity about an aesthetic response. This is particularly appropriate given Debussy's famous dictum against systematizing his harmony: "The only law is pleasure."[5] Treasuring the music's fleet searching, its lushness, and its misty tonality has led directly to the technical analysis of *La mer'*s scales and collections, of its uncertain chord functions, of its indecisive tonics, of its incremental modulations, of its dabbling in late Romantic tropes, in short, of its fabulous inconstancy.

[5] Lockspeiser 1962, 207. This famous sentence is actually attributed to Debussy by his fellow student, Maurice Emmanuel. It is not found in Debussy's own published writings.

1.2 *LA MER* IN DEBUSSY'S PARIS

La mer came into being in broad daylight, with copious documentation of its gradual genesis in Debussy's letters and musical sketches, and many critical reviews dating continuously from its very first performance. [6] Debussy composed it during one of the most tumultuous eras in music history, the decade preceding World War One, a time in which new music of innumerable harmonic innovations, experiments, and rebellions coincided with upheavals in society and politics.

In many ways, Paris was the most cosmopolitan music capital of the time. Not only were major new works commissioned and premiered there, but a constant stream of foreigners had their works performed in Paris as well. Puccini and Richard Strauss visited. Romain Rolland interviewed the latter, who expressed reserved admiration for Debussy's opera *Pélleas et Mélisande.* Ravel was stepping out of Debussy's shadow, and the Spanish pianist Ricardo Viñes specialized in premiering works by both of them. Diaghilev's Ballets Russes commissioned and premiered music that forged bridges to modernism, including Ravel's *Daphnis et Chloe*, Debussy's *Jeux*, and Stravinsky's famous three ballets. Wagner's music continued to cast its spell on his ardent admirers, eventually provoking a reaction framed as a difference between German and French values.

It is precisely during this period that Debussy achieved pre-eminence in French music and that his influence on composers in and out of France began to manifest itself. Although already celebrated for the 1894 *Prélude à l'après-midi d'un faune* and the String Quartet, Debussy's greatest decade coincided with the musical tumult of this post-Romantic early twentieth century. The 1903 premiere of *Pélleas et Mélisande*, ten years in the making,

[6] The story of its composition is recounted in Lockspeiser 1978, 15–29; Lesure 2003, 269–279; Trezise 1994, 1–18; and Rolf 1976, 1–32.

cemented his reputation, attracted a cult-like following, and provoked intense debate on the direction of opera in France.

Debussy had long contemplated an ocean-themed orchestral work, but he began to work on it in earnest in the fall of 1903, mainly in the inland towns of Bichain and Dieppe. The process of composing, revising, and orchestrating *La mer* stretched until the spring of 1905, a span of eighteen months during which Debussy's personal life was equally full of tumult. He left his wife Lilly Texier for Emma Bardac, a married woman from a family of means, who was later disinherited by her wealthy uncle. Lilly attempted suicide but survived, bearing a bullet in her breast the rest of her life, and a divorce was finalized. The writer Henri Bataille, who knew all the principles, then based a play, *La femme nue*, on this story, and the play became a great success in Paris. Emma and Claude eventually had a daughter and married.

Between the roaring success of *Pélleas* and the public scandal of Debussy's marital life, more was at stake than mere aesthetic appreciation in the dim critical reception afforded *La mer*'s premiere, which occurred on October 15th, 1905, two years after he had begun composing it. It was conducted by Chevillard at the Concerts Lamoroux, one of Paris's pre-eminent concert series. The program included music by Beethoven, Franck, D'Indy, and Berlioz. By all accounts a less than ideal performance, *La mer*'s first hearing was an outright disappointment to those expecting another static tableau like *Nuages*, or the half-lit psychological interiority of *Pélleas*. Famously, Debussy's ardent admirer Pierre Lalo complained in public that "I neither hear, nor see, nor feel, the sea." Debussy responded to him forcefully:

> The heart of the matter is that you love and defend traditions which, for me, no longer exist or, at least, exist only as representatives of an epoch in which they were not all as fine and valuable as people make out; the dust of the past is not always respectable.[7]

In contrast to the tepid or negative reaction of Lalo and others, Louis Laloy effused that the concert had given the public:

[7] Trezise 1994, 25.

> …a new work by Claude Debussy, which is among the loveliest, the most harmonious, the most captivating, and at the same time one of the broadest and most powerful not only in music, but in the whole of art, and I almost would say in nature, so near the elements does one find oneself in this work, as though close up against things.[8]

In 1907, *La mer* traveled to Boston, where it was generally well received, and to New York, where it elicited hilariously negative reviews.[9] In 1908, *La mer* returned to Paris, conducted by Debussy himself. (A piano duet version had been performed there in February 1906.) Although the composer had never previously conducted his music in public, the performance was a rousing success, and inaugurated a new period in his life as a traveling composer-conductor. The ecstatic audience cheered him through ten bows, and continued its cheers even when the next piece (by Lalo!) was begun.[10] From then on, *La mer* became a staple of the orchestral repertoire, with Debussy traveling to England and continental Europe as conductor of his own music. While never matching the orchestral *Prélude* in popularity, *La mer* continued to be performed in Paris every year.

La mer was Debussy's first important premiere after the psychological opera *Pélleas et Mélisand*e (1903), and provoked serious debate among Debussy's fanatical supporters (derisively referred to as *Pélleastres*). Why had he abandoned that exquisite floating they so cherished, for a style of greater assertiveness, heroism, and formal clarity? Laloy recognizes this complaint in his first review. Acknowledging that Debussy "is upbraided for not having written three new *Nocturnes*," Laloy explains that indeed *La mer* is "larger and broader, firmer in its foundations and richer in its contours." [11]

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[8] *Mercure de France*, Nov. 1, 1905, pp. 487–8. Reproduced in Laloy 1999, 191–192.
[9] See Rolf 1976, 323–330. For example: "It was not so long, but it was terrible while it lasted…We clung like a drowning man to a few fragments of the tonal wreck…." (p. 323). "Compared with this, the most abstruse compositions of Richard Strauss are as primer stories to hear and comprehend" (p. 327).
[10] Lockspeiser 1978, 119.
[11] Laloy 1991, 192.

After the celebrated 1908 performance, Laloy wrote a much longer appreciation of *La mer*, entitled "La nouvelle maniere de Claude Debussy," emphasizing the assertiveness of the music compared to the dreamlike vagueness of his previous works. "Until recently, it was an art of indications, nuances, or allusions." In *La mer*, however, "the melody, rather than remaining suspended or dissolving into the air, is now explicit, strong, and self-contained." *La mer* follows "a very clear plan, and the work's three parts have the role and form of a symphony [sic] first movement, scherzo and finale."[12]

This debate over Debussy's style reached its peak during the period of *La mer*'s and Debussy's international ascendance, and in 1910 a book about it, *Le Cas Debussy,* was even published.[13] Its authors solicited written responses from France's leading men of letters on Debussy's position within French music. The response by the critic Henri Gauthiers-Villars, using the critical pseudonym Willy, is particularly interesting for our purposes. Gauthiers-Villars was a strong supporter of Debussy, and left us the primary description of the delirious reception the 1908 performance received. His comments show both that, by then, Debussy's harmony had become a model for composers to imitate, and that even then the musical community was already quite aware of the techniques that my thesis will take such pains to document. The general tenor of his description is admiring, despite a hint of sarcasm in his use of the term "chemical analysis":

> One can perform a chemical analysis on certain works by Debussy's disciples and find only the bicarbonate of ninth chords on stepwise scale degrees, the acetate of dissonance in chains of major thirds, traces of unresolved appoggiaturas…

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[12] Laloy 1991, 199. The symphonism of *La mer* is explained and put into historical context in Hart 2001b. "La nouvelle manière" first appeared in *La Grande revue,* Feb. 10, 1908, pp. 530–535. It was reproduced with additional score example in S.I.M., Feb. 15, 1908, pp. 209–214. See Laloy 1991, 195–204. Marie Rolf contests this view in her comment, "Many authors and critics have claimed that *La mer* heralded Debussy's 'new' compositional style, which is essentially not true" (Rolf 1976, 203, n. 11).

[13] Caillard 1910. This account is based on Hart 2001a, which reviews the entire controversy, recounts the book's genesis, and summarizes its contents.

> And then, finally, to extend the limits of tonality, replace the everlasting major-minor dualism with a supple variety of modes, substitute a wave of glistening resonances to the rigid trilogy of perfect tonic, dominant, and subdominant chords—all that is quite something![14]

"Traces of unresolved appoggiaturas" suggests the way Debussy's textures often ambiguate dissonance, the main focus of Chapter 3. "Chains of major thirds" might be a reference to the whole-tone scale's augmented triads or to dominant ninth chords (i.e., G–B, F–A), both of which are basic constant elements of Debussy's harmony, as shown in Chapter 3. The suppleness in the "supple variety of modes" corresponds to the smooth scale-to-scale voice-leading I show in Chapter 4 and Chapter 5. The "wave of glistening resonances" which the writer says Debussy substitutes for "rigid" traditional harmonic function is precisely the nontraditional functional spectrum of loose post-tonal tonality which I propose in Chapter 6.

1.3 DEBUSSY ON ANALYSIS AND FREEDOM

In some ways, then, this study merely fleshes out and documents what has long been felt by critics and analysts. It also attempts to take seriously what Debussy had to say about music and analysis, as a counterweight to habitual ways of thinking about tonality. A continuing ritual in Debussy scholarship has been to preface an elaborate technical analysis with a rueful acknowledgement of Debussy's dismissive disdain for this very activity. Here we revisit some of his comments, with an ear towards forging an analytical approach that takes his ideas seriously.

Debussy left behind a lengthy trail of quotable praise for mystery and contempt for technical parsing in music. His own music criticism was strictly poetic and metaphoric, never naming specific harmonies, keys, or other technical elements. As Trezise puts it in the preface to his book on *La mer*, for Debussy "analysis was a wanton destruction of the mystery that formed the soul and heartbeat of music," and Trezise's own analyses "would probably have had little

[14] Hart 2001a, 380.

appeal to Debussy."[15] Roy Howat acknowledges this as well: "Debussy's writings are too well sprinkled with pungent remarks about analysis to be of comfort to anyone contemplating analysis of his music."[16] Both Trezise and Howat cite Debussy's first published piece of music criticism, in which Debussy elaborates on this theme:

> Grownups tend to forget that as children they were forbidden to open the insides of their dolls—a crime of high treason against the cause of mystery….And yet still they insist on poking their aesthetic noses into things that don't concern them! Without their dolls to break open, they still try to explain things, dismantle them, and quite heartlessly kill all their mystery.[17]

A parallel thread in Debussy's writings praises freedom and mystery in music. As an active critic, he regularly trumpeted an appreciation of instinct over intellect, of spontaneity over rules, and of naturalness over artificiality. His glowing 1901 review of Mussorgsky's song cycle, *The Nursery*, represents this line of thinking quite well:

> Nobody has spoken to that which is best in us with such tenderness and depth; he [Mussorgsky] is quite unique, and will be renowned for an art that suffers from no stultifying rules or artificialities. Never before has such a refined sensibility expressed itself by such simple means: it is almost as if he were an inquisitive savage discovering music for the first time, guided in each step forward by his emotions. 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.[18]

Debussy developed this devotion to the natural and instinctive early in his career, as a hands-on composer who followed his instincts at a keyboard. A famous description exists of his amazing facility with improvisation, written eight years after his death by a fellow student, Maurice Emmanuel. Looking back forty years, Emmanuel describes Debussy improvising at the piano as a 22-year-old conservatory student, in 1884:

> A disheveled head peeped through the door, and the student who entered, soon seating himself at the piano, was already the man he was to become. At the piano we heard chromatic groanings in imitation of the buses going down the Faubourg Poissonière, groups of consecutive fifths and octaves, sevenths which instead of being resolved in the

[15] Trezise 1994, ix.
[16] Howat 1983, ix.
[17] Debussy 1977, 13. A different translation is in Howat 1983, ix.
[18] Debussy 1977, 20–21.

> proper way actually led to the notes above or were not resolved at all; shameful "false relations;" chords of the ninth on all degrees of the scale; chords of the eleventh and the thirteenth; all the notes of the diatonic scale heard at once in fantastic arrangements; shimmering sequences of arpeggios contrasted with trills played by both hands on three notes simultaneously. For more than an hour he held us spellbound around the piano, his shock of tousled hair constantly shaking as he played. Eventually the supervisor, Ternusse, alarmed by these strange noises ringing through the corridors, burst in and brought our "lesson" to an end. Debussy was a dangerous "fanatic" and we were ordered to be off.[19]

From our point of view, as we seek to find some order in Debussy's tonality, what is most striking about Emmanuel's description is not that Debussy broke rules—we expect that—but that in every case the building blocks of his improvisation are the detritus, the common harmonic materials, of tonal harmony. Arpeggios and trills are basic tools of the nineteenth-century piano virtuoso, ninth chords do occur contrapuntally even in Bach, Romantic symphonies depend on dominant eleventh and ninth chords, whole-tone scales arise in Liszt and Mussorgsky. Debussy played with them freely.

In 1901, seventeen years later, Debussy explicitly stated what is implicit in his improvisational practice. He inveigled against "that silly obsession with overprecise 'forms' and 'tonality,' which so unfortunately encumber music."[20] Here we have Debussy himself putting the term *tonality* in sarcastic quotation marks. This has important implications: that the very idea of tonality, as a systematic entity, raised hackles in his mind, and that as a composer he was seeking to forge a tonality that was vague, loose, or the opposite of "overprecise."

From this we can draw a further conclusion. His harmonic and textural innovations do not merely aim to replicate tonal effects with new harmonies, like substituting one kind of dominant-function harmony for another. Rather, they aim to change the listener's sensations of tonal function, making them imprecise. They loosen or destroy tonality's tonic-dominant oppositions, and in so doing obliterate much of its goal-orientation. That radical reinvention of

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[19] Lockspeiser 1962, 58–59.
[20] Debussy 1977, 41. Cited by Matthew Brown as an example of Debussy's "bitter campaign" against "conventional compositional practice" (Brown 1993, 127).

function is as central to the "feel" of the music as the better documented elements of texture and harmony. In Chapter 6, I propose and describe a *functional spectrum* between tonics and non-tonics in *La mer*. To the extent that the analysis is convincing, it merely demonstrates analytically what Debussy himself implied as his goal, to "drown the tone" and in so doing make tonality imprecise.[21] It is in this spirit that I take up the analytical tasks which Debussy so denigrated, and therefore beg his indulgence, even if some of his music's mystery is diminished.

If musical expression is "too precise for words," then so is harmonic function in Debussy's music. Certainly it is immensely more nuanced than our impoverished terminology can begin to express. The purpose of rethinking tonicity for *La mer* is to document the kaleidoscope of its tonics and near tonics, in a way that corresponds more closely to how we may actually experience them. Of course, it can never do so completely, but I hope that this attempt brings us closer to the rich listening experience that *La mer*'s audiences treasure.

1.4 THE ANALYSIS OF POST-ROMANTIC REPERTOIRE

In a descriptive survey of Debussy's tonality, Boyd Pomeroy puts his finger on a central conundrum for musical analysts:

> As a preliminary observation we could note a striking divergence of perception between musical scholars (especially analysts) on the one hand and the listening public on the other, regarding Debussy's harmonic language or tonal practice in a general sense. While analysts have usually considered this aspect of Debussy's art to be rather problematic in the sense of abstract, elusive, or otherwise difficult to grasp,…it would be fair to say that this perception has not been shared by concert audiences; on the contrary, Debussy remains one of the most enduringly popular composers of the post-Romantic era. Although there are many reasons for his music's evident accessibility, not least among them is surely its instantly identifiable tonal idiom or "accent."[22]

[21] See footnote 1, above.
[22] Pomeroy 2003, 155.

Of course, as we have seen, *La mer*'s rich, capricious harmony did not immediately find universal acceptance, but Pomeroy's point is well-taken. If Debussy's music has become so easy for listening audiences to understand and enjoy, why does it remain analytically "problematic?"

This question really has two very different answers, one stemming from the habits of tonal analysis (see Chapter 2), and the other from the particular historical context in which this music was created. *La mer* belongs to a large category of post-Romantic music from the early twentieth century that, while remaining pitch-centric, relatively consonant, and often triadic, dispenses with most of the technical features associated with traditional major-minor tonality, such as functional chord progressions. As such, analytical techniques intended for music that is more traditional do not quit fit it. Nor do techniques created for more radically modern music.

Of course, by 1905, the common practices of 18th-century tonality—contrapuntally delimited dissonance, melodic periodicity, cadential formulae, monotonality, and a key hierarchy perceived through powerful metaphors of goals, arrivals, and delays—had been steadily loosening for 100 years, from Beethoven through Rimsky-Korsakov. But in the first decade of the twentieth century, it is as if tonality's last bastions, already weak, suddenly crumbled under a flood of new inspirations and experiments: expressionistic dissonance, nontriadic polyphony, scale segments as chords, disjunct melodies, dissonant or nonexistent tonics. Some representative premieres in the time of *La mer* show the full bloom of late Romanticism co-existing with the birth of modernism:

> Richard Strauss: *Don Quixote* (1898), *Salome* (1905), *Elektra* (1909)
> Sibelius: *Finlandia* (1899), Symphony No. 1 (1899), Symphony No. 2 (1902), Symphony No. 3 (1905)
> Schoenberg: *Pelleas und Melisande* (1903), Chamber Symphony No. 1 (1906)
> Puccini: *Tosca* (1900), *Madama Butterfly* (1904)
> Mahler: Symphony No. 3 (1902), *Kindertotenlieder* (1905)
> Skryabin: *Poem of Ecstasy* (1908)

In the context of Strauss' *Salome* or Schoenberg's *Pelleas und Melisande*, *La mer* sounds slightly conservative in its harmony and phrasing. And although the experimental tonalities of

this time have been labeled "transitional," (i.e. from tonal to atonal styles), the label is deeply misleading. In fact, only a few of these composers, such as Schoenberg and Bartok, continued to compose nontonal and dissonant music in the following decades. Strauss followed *Elektra* with *Der Rosenkavalier*, and Stravinsky followed the *Rite* (1913) with his relatively diatonic neoclassical works.

More importantly, *La mer* and its contemporaries exhibit such a bewildering range of tonal aesthetics and harmonic techniques that the term "transitional tonality," in the singular, is misleading. It varies from one composer or composition to the next, so there can be no single system to it. In fact, Debussy's post-*Pélleas* music is wide-ranging, moving both away from tonality (piano *Images* II, *Jeux*), and closer to it (*La mer*, Cello Sonata, etc.). In the lens of the narrative implied by the term transitional, *La mer* is a slight harmonic retreat, for all its misty charms.

To further confuse matters, the term tonality is itself a sheltering umbrella for myriad contradictory meanings, grouped in two main categories. As defined most broadly by Brian Hyer in a useful survey, *tonality* refers to "the systematic arrangements of pitch phenomena and relations between them," but it also "most often refers to the orientation of melodies and harmonies toward a referential (or tonic) pitch class."[23] Hyer is correct: the term *tonality* can refer to any pitch-related system, but it normally implies the existence of something like a tonic. Although rumors of the twentieth-century demise of pitch-centric tonality haunt the historiography of modern music, a more balanced view is that post-Wagnerian late Romanticism gave birth both to music without pitch centers and also to the myriad individual tonalities of modern composers (transitional or not), each utilizing harmony and tonicity differently. The

[23] Hyer 2002, 726. The noun "tonality" is perhaps slightly broader than the adjective. As Hyer also implies, "tonal" decisively indicates tonicity (or "pitch centricity") whereas in its very loosest usage, "tonality" merely suggests that there is *some* harmonic system in the music, even if it is unrelated to pitch centricity.

extent to which these tonalities exhibit "systematic arrangements of pitch phenomena" varies tremendously, as do their means of "orientation…toward a referential (or tonic) pitch class."

In the case of Debussy, there often is agreement about pitch-centricity in the large (*La mer* is in D♭ major, *Nuages* is in B minor), but little about the possible system behind this tonic. Instead, his music is described with a now-familiar list of eclectic harmonic techniques, such as extended tertian chords, unusual scales, nonfunctional or modal chord progressions, Arabesque-like melodies, chromatic planing, and so on. Large-scale form is often fairly straightforward as well, with ternary form being the most common. Beyond this, though, there is little consensus about a system or process guiding harmony and tonicity in a composition. Analysts invent their own methods and adapt traditional tonal concepts, such as *hierarchy* or *function*, with varying degrees of success. The specific adaptions can be inferred from an analyst's terminology (*resolves to, passing harmony, cadence, dominant function*), but the adaptation is rarely spelled out. It needs to be inferred.

An additional factor complicating the analysis of Debussy's music is that his style evolved and changed over the decades. His early songs of the 1880s are still rooted in the triads, church modes, and chromatic mediants of French Romanticism, while at the other extreme, his quixotic ballet *Jeux* was upheld as a model of "vegetative form" by the modernist acolytes of Darmstadt in the 1950s.[24] Some of his many piano works mirror and parody vernacular styles, whether from Asia, Spain, or the United States, while at other times they experiment with gnomic dissonance. His three late Sonatas express an uncharacteristically classical poise, formal clarity, and harmonic restraint.

In his survey article, "Debussy's Tonality: a Formal Perspective,"[25] Boyd Pomeroy usefully addresses this variety by suggesting a "left-right continuum," as exemplified in a few

[24] Pomeroy 2000a, 12 and n. 12, which cites Trezise 1994, 51–3, as well as writings by Stockhausen, Eimert, and Boulez.
[25] Pomeroy 2003.

piano compositions. On the conservative end are those that employ some traditional harmonic functions, while at the other end are those that do away with both traditional function and triads as core harmonies.

La mer sits in the middle of Debussy's tonal continuum, as do his most popular middle-period works, such as the String Quartet in G minor (1894), *Prélude à l'après-midi d'un faune* (1894), *Nocturnes* (1899), *Pélleas et Mélisande* (1903), and the orchestral *Images* (1908–1911) including *Ibéria* (three inner movements). The findings and issues which I present in this dissertation are relevant to all these works.

The basic intention of this study, then, is to try to deduce a harmonic and tonal system for *La mer*, afresh, directly from its melodies and textures, without imposing, a priori, the functions, prolongations, and hierarchies upon which the analysis of earlier, tonal music has come to depend. To the extent that function (tonicity), linear prolongation, and hierarchy (harmonic embellishment) are only tenuously or fuzzily present in the music, we must alter the concepts to fit what the music does, rather than the other way around. *La mer* may be tonal, but we look in vain for consistent chord types as tonic chords, or for chord progression archetypes at cadences, let alone for hierarchical levels of contrapuntal reduction (as in Schenkerian analysis).[26]

I begin by proposing three foundational tenets.

The first of these is that post-tonal, pitch-centric music establishes tonic pitches or chords *by more than one means.* Although multifarious, these means are definable and not unlimited. Indeed, while the consonant major or minor triad will serve as one of several measures to compare degrees of tonicity (see Chapter 6), much of the kaleidoscopic charm and originality of the music lies precisely in the varied character and strength of its many tonic sonorities. There is

[26] Boyd Pomeroy and Matthew Brown have published Schenkerian-based analyses of all of Debussy's major orchestral works, except for *Jeux*. See Pomeroy 2000a (his dissertation), Brown 1993, and Brown 2003.

no reason, outside of academia's systematizing impulse, to presume that a composer as original and varied as Debussy would rely on a single technique for anything.

A second tenet or proposition offered here is that *La mer*'s technical apparatus derives more from late Romanticism than is often recognized. Essentially, this means that, as in the music of Wagner, Fauré, and Tchaikovsky, large portions of *La mer* float, unmoored to a key or a tonic, and when harmony does move or modulate, it mainly does so in scant half-step shifts, in a 19th-century manner, between magically distant-sounding scales or chords. And it is precisely this voice-leading machinery which allows the tonality to "turn on a dime," i.e., it slips and seeps anywhere at will.[27]

My final assumption, which goes against the grain of contemporary analysis, is that it is best to employ the three analytical concepts which were mentioned above only when the musical surface seems to *compel* their adoption. Developed for the tonality of the Bach-to-Brahms canon, *linear prolongation, chord function,* and *structural hierarchy* are so deeply ingrained in tonal analysis that it seems natural to apply them to Debussy's looser tonality. But of course it is precisely this looseness that makes these concepts suspect; I suggest that the music will embody them only partially and in changeable ways. The barest consensus that the music is pitch-centric hardly justifies the burden of importing tools designed for Bach and Beethoven. Ultimately, the tonality of Debussy's music may simply not be as "unified" tonally as that of, say, a Bach Prelude; its compositional technique may be dissolved by the mere act of harmonic reduction; if we expect to find predominants, we inevitably will. Let us not be guided, then, by analytical expectations derived from 18th-century tonality. [28]

[27] *La mer*'s symphonism is an additional reflection of 19th-century Romanticism's long reach, but by analytical consensus it is limited to this particular work among Debussy's compositions.
[28] On the other hand, the radical pitch-class egalitarianism of some set-theoretical analysis is even less attuned to *La mer*'s palpable pitch-centristic hierarchy.

The last tonal concept I invoke, *hierarchy*, is in fact the most applicable of the three to *la Mer*. There is often—but not always, and not always clearly—a hierarchy of harmonic tone over embellishing tone, of triad over scale-chord, of structural tonic sonority over nontonic embellishing chord, of main theme over transitional passage. A great deal of attention will be given in this thesis to discussing by what criteria we can glean the harmonic basis of Debussy's music. I temper Chapter 3's presentation of *La mer*'s four generative scale types with numerous ambiguous counter-examples. The point is not to squeeze the music into an all-explanatory harmonic theory of, for example, *scale-chords*, or to show which harmonic reduction is the "true" basis of a given passage. Rather, the most important part of the theory is to highlight the crucial harmonic ambiguities in the moment-to-moment listening experience, which any analytical system threatens to mask. To a much greater extent than with traditional repertoire, *tertian reductions*[29] *of Debussy's harmony conceal its harmonic organization*. The meaning of this apparently contradictory statement will become clear in Chapter 3's investigation into scale-chords and embellishing tones.

This investigation progresses from the more grounded to the more speculative aspects of my interpretation. Chapter 2 presents a basic agreed-upon overview of the music's formal, tonal, and generic characteristics, and surveys previous analyses of *La mer*. It then presents problems with specific interpretions, and proposes interrogating harmony and function afresh in the later chapters.

Chapter 3 approaches harmony and hierarchy in *La mer*, at first through the lens of scale theory. *La mer*'s harmony is attributed to the manipulation of four structurally similar scales (*diatonic*, *acoustic*, *whole-tone*, and *octatonic*) in various textures, partitionings, voicings, and with various chromatic embellishments. The chapter focuses on the permeable boundaries between harmony and embellishment, and between triad and scale-chord.

[29] That is, to triads, 7^{th} chords, and 9^{th} chords

Chapter 4 is about harmonic change, presenting patterns by which Debussy parsimoniously[30] connects chords and scales. It culminates in narratives of subtle harmonic modulation in portions of *Jeux de vagues* and *De l'aube à midi sur la mer*.

Chapter 5 draws on parsimony's second aspect, common tones (or pitch-class invariance), to show how common tones can provide direct explanations of harmonic organization without recourse to traditional tonal theory, and discovers their presence over larger and larger spans of time. Applied to a passage previously analyzed with tonal methods in Chapter 2, this method proves to be useful in its elegant directness and aural plausibility.

Chapter 6 broaches the issue of ambiguous harmonic function, proposes documenting a continuum between tonics and nontonics, and applies this to a short portion of *La mer* with a graphic representation that highlights varying types and strengths of tonicity. The last portion of this chapter presents the wonderful metaphorical fit between this tonal fluidity and that of the sea.

[30] That is, smoothly, with minimal voice-leading motion.

CHAPTER TWO: LA MER AND ITS INTERPRETERS

> Ernest Giraud: I am not saying that what you do isn't beautiful, but it's theoretically absurd.
>
> Debussy: There is no theory. You have merely to listen. Pleasure is the law.[31]

2.1 "BOTH FAMILIAR AND UNFAMILIAR": LA MER DESCRIBED

Before attempting a chronological survey of the scholarship produced by *La mer*'s many interpreters, I present a basic overview of the music itself, gleaned from these many studies and from my own observations. These comments highlight what might be termed a mainstream consensus about form, the view of *La mer* as a symphony, and its process of motivic interpenetration. After the literature review, I will broach the harder questions about harmony and tonicity, about which there is little consensus, to explain the inductive method adopted in the later analytical portions of this study. We begin with form.[32] (These following charts also are useful references to provide context for the detailed presentations in later chapters.)

De l'aube à midi sur la mer contains two principal sections, at m. 31 and m. 84, separated by silence (see Fig. 2.1, p. 20). Both sections are continuous. Each one has a large internal climax followed by tonal and metric dissipation; internal divisions are few and neither arrives at a consonant goal. The movement's joyously triadic ending (mm. 132–141) contrasts with the thicker harmony and chromaticism of all that precedes it (mm. 1–131).

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[31] Lockspeiser 1962, 206–7.

[32] Pomeroy 200a provides tables and discussions of form in each movement on pp. 139–140, 462–463, 196–208, respectively. Pomeroy reviews other interpretations of *Jeux de vagues* on p. 460, n. 25. Trezise 1994 provides condensed overviews on pp. 53–54, 60–62, 68–70.

1	31	84	122	132	135–141
Intro	Part I	Part II	Transition	Chorale	Cadence
	< > //	< >			
(Tp. call)	Fr. Horn theme	Cello Choir	"Idyll"	"Noon"	Dotted motive
B pedal	D♭ Pent/Acoustic	2-♭s	A♭ pedal	G♭ major	D♭maj/B♭min

Two-part form framed by Introduction and Coda (m. 132), D♭ major

Fig 2.1: Overview of De l'aube à midi sur la mer[33]

1 Intro	36	92	153	163	(171)	215	245–261
Lydian arabesque	Trill theme	Lydian arabesque		Trill theme	(extension)	Climax, (transition)	Tonic!
	<…..	crisis….			<	>	
(Consonant)	E Aug(maj7)	A Lydian		E Aug(maj7)	G♯ pedal, B♭7/A♭, WT		E Lydian

Continuous scherzo, dissonant tonic evolves to consonant E Lydian

Fig 2.2: Overview of Jeux de vagues

Jeux de vagues provides a wild profusion of short, fast, brief ideas in uninterrupted, constantly modulating flow. Pomeroy, who notes that it conveys "the iridescent play of the sea's surface,"[34] derives its form from its voice-leading rather than its architectural sections.

The tonal A B A form shown in Fig. 2.2 (m. 36, m. 92, m. 163) is largely obscured by the dissonance and weak bass of its tonic chord, E. Although ametric preparatory gestures clarify each appearance of E (i.e., in mm. 32–35, 153–162, 215–244; note the increasing lengths), other internal sections are also prepared gesturally (mm. 60–61, 104–105, 126–133), complicating any perception of this sectional scheme. The peaceful arrival at a (finally) consonant E tonic (245–

[33] The indications < and > in these charts indicate orchestral crescendos and diminuendos.
[34] Pomeroy 2000a, 458.

261) is both a resolution of the dissonant tonics of m. 36 and m. 163, and an echo of the introduction's consonant Lydian sonority, suggesting a much simpler form based on this symmetry of affect, shown in Fig. 2.3.

1	36	245
Gentleness	Wildness	Gentleness
Lydian consonance	Varied harmony	E Lydian consonance
Static scale-chords	Abrupt harmonic change	Extremely static scale-chord
Weak meter	Highly metric	Motivic deceleration

Fig. 2.3: Alternate form for Jeux de vagues

Fig. 2.4 indicates *Dialogue*'s rondo-like character, as the recurring C♯-minor "wind theme" (A1, A2, A3, and A4) returns in alternation with stormy, dissonant episodic ideas first heard in the introduction (including *De l'aube*'s trumpet call). Only A4 manages to cadence in the tonic, however, with the help of *De l'aube*'s Chorale. A1 cadences in A major, while A2 and A3 flow into the introduction's chromatic motive and wander at length. While in the first movement's ending, the B♭-minor triad fused itself onto the D♭-major tonic, in *Dialogue*'s stirring ending the strong cadential progression is *from* B♭ minor *to* D♭ major.

1	43	56	80	133	157	195	211	245	258	272
Intro(Ep.) (Tp. Call)		A1 Wind	Ep.1 < >	Chorale	A2 Wind (peace)	A3 Wind	Ep. 2 <	A4 Wind	Chorale > <	Coda
F♯-C pedal	G♯ pedal	c♯	WT	e♭	D♭ pedal	D♭	---	c♯- D♭ (A♭ bass)	b♭	D♭

Stormy rondo in C♯ minor (to D♭ major)

Fig. 2.4: Overview of Dialogue du vent et de la mer

Looked at from even further afar, as if squinting, *La mer* very much resembles a tonal symphony (see Fig. 2.5). Each movement has an introduction, followed by a primary tonic statement of a theme. The theme is varied as the music passes to other pitch centers. The tonic returns at the end, in triumph (*De l'aube* and *Dialogue*) or in gentle resolution (*Jeux de vagues*). The outer movements also have clear sectional tonal forms.

Movement title: Form	Off-tonic Introduction	Tonal Center of First Principal Theme	Tonal Center at Final Cadence
I. *De l'aube à midi sur la mer* Intro, A, B, Coda	I/1: B pedal	I/31: D♭ pent/acoustic French horn theme	I/135–141: D♭ major[35] (with B♭ minor)
II. *Jeux de vagues* Intro, A, B, A' Coda	II/1: F♯ minor?	II/36: E major (distorted) Trill theme	II/245: E major (add 6th, 7th, 9th)
III. *Dialogue du vent et de la mer* Intro, A, Ep, A, A, Ep, A, Coda	III/1: tritone pedal	III/56: C♯ minor (highly chromatic) Wind theme	III/270–292: D♭ major

Fig. 2.5: La mer *as symphony*[36]

As charted here, *La mer* looks like a Romantic symphony. The outer movements share a tonic, for which the key of the middle movement provides a chromatic mediant. There is motion across all three movements from I to ♭III, and then back to I.[37] Furthermore, though all three movements have off-tonic introductions, they subsequently cleave to the principle of

[35] The terms "major" and "minor" in this chart only indicate the presence of a major or minor third or triad on the tonic pitch; they do not imply tonal scales, voice-leading, or consonances.
[36] Bar numbers are indicated in the following way. I/136–141 is *De l'aube*, mm. 136–141. This practice is followed throughout this study.
[37] Nineteenth-century symphonies with chromatic mediant relationships between outer and inner movements include Beethoven's Seventh (A major / F major), Schumann's Third (E♭ major, C major), Brahms' First (C minor / E major !), and Brahms' Second (D major / B major). Most of these move to VI or ♭VI, not *La mer*'s ♭III.

monotonality within a movement. *Dialogue*'s play with parallel modes is another familiar Romantic feature.

The person who first noticed and articulated *La mer*'s resemblance to a symphony was Debussy's close friend Louis Laloy, in the 1908 review cited in Chapter One. It is echoed in the 1960s by the great Debussy biographer Edward Lockspeiser, who bluntly asserts, "*La mer*, laconically described by the composer as a set of 'Three Symphonic Sketches,' is in reality a three-movement symphony inspired by the interplay of these visual and aural associations."[38] Trezise chimes in as well, "*La mer* comes surprisingly close to the rhetorical and generic characteristics of the nineteenth-century symphony."[39] Perhaps Trezise's "surprise" derives from the idea that 19th-century symphonies, with their assertive rhetoric, their V-I–derived tonicity, and their traditional movement-length formal structures, stand in direct opposition to Debussy's well-known aesthetic of subtlety and Symbolist obliqueness, as well as his oft-asserted rejection of inherited forms. Referring to Schumman's Fourth, d'Indy's Second, and Franck (in general), Trezise goes on to cite as evidence of its symphonism *De l'aube*'s slow, mysterious introduction, the *accelerando* into a principal *allegro* section, the climactic chorale (in both outer movements), and "an assertive affirmation of the tonic" at the very end.[40]

Further evidence of symphonism surely lies in the brooding off-tonic openings of *Jeux de vagues* and *Dialogue*, the fortissimo brass triads that exultantly conclude *De l'aube* and *Dialogue*, and the two cyclic themes from the former that pervade the latter. (Neither of these themes, the trumpet's "call of the sea" at the beginning of *De l'aube*, I/12, and the low brass chorale at the end of the same movement, I/132, quite functions as in Franck; Debussy had used the cyclic principle more traditionally in his 1894 string quartet.)

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[38] Lockspeiser 1978, 28–29.
[39] Trezise 1994, 47.
[40] Mendelssohn's 'Scottish" Symphony also ends with a chorale.

In addition, *La mer*'s inner movement, *Jeux de vagues*, resonates with the antic capriciousness of Beethoven's symphonic scherzos, complete with their frequent changes of tonicity, if not their clear sectional forms. In terms of symphonic form and content, *Dialogue* is the most nearly conventional of all, a last-movement rondo with four tonic returns of its main "wind theme." The latter "is powerfully evocative of the Romantic second-subject style of the Russian symphonists and French counterparts," as Trezise rightly notes.[41] But above all, it is the music's "good continuity," that reminds the ear of the symphonic tradition. As Mark De Voto puts it,

> *De l'aube à midi sur la mer* has all the dimensions of a movement from a late Romantic symphony—a continuous presentation and reflection of limited thematic materials, in a coherent tonal scheme, over a period of about nine minutes. In this sense, this "symphonic sketch" is unquestionably symphonic.[42]

La mer is in many ways Debussy's most tightly organized multi-movement orchestral piece. As we listen to the music, there is often an uncanny feeling of family resemblance, of familiar sinew undergirding each new fleshed-out idea. Despite the fabulously apparent harmonic variety, the melodies and accompaniments of *La mer* often sound vaguely, or acutely, familiar. Scholars have thoroughly demonstrated that we can easily trace one source of this feeling of "familiarity within unfamiliarity" to *La mer*'s metamorphosizing, genetically related melodies, which recycle and embed elements from a small pool of intervals, contours, and rhythms. The literature emphasizes this "genetic" resemblance among *La mer*'s melodies and accompanimental figures, which melt into one another almost imperceptibly. [43]

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[41] Trezise 1994, 70. By this he means that his First Group of themes (III/1–50) is menacing, while the Second Group has "a yearning character not met elsewhere in *La mer*" (p. 70).

[42] De Voto 2004, 157. For further discussion see Hart 2001a. For the French symphony in the immediately preceding period, see Locke 1997. Locke mentions in passing "Debussy's color-drenched *La mer* (1903–5), a work that comes as close to anything in Debussy's oeuvre to being a symphony, which is to say not very close" (p. 186). He also quotes Brian Hart's conclusion that *La mer* is a "symphonic suite." (p. 192, n. 73).

[43] For tables of musical notation that shows this close motivic networking, see Berman 1965, Vol. 2, Exx. 280, 281, 282, 306 (no page numbers); Rolf 1976, 202–206; Howat 1983, 72–73, especially good on the melodic embedding and distortion of [0 2 5]; and Dömling 1976, 6,7, 9, 10 (*De l'aube*);

Fig. 2.6 shows this type of resemblance in the two expansive melodies heard at the beginning of the first movement of *La mer,* for solo trumpet (I/12–17) and French horns (I/35–40).

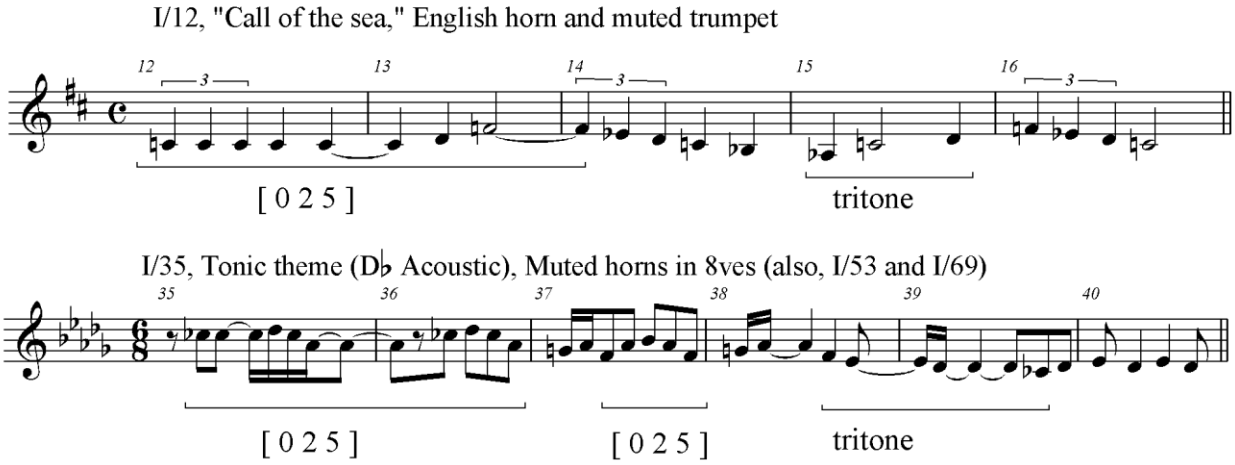

Fig. 2.6: "At once familiar and unfamiliar," I/12 and I/35 compared

Simon Trezise writes of these themes that "slight parallels between the motifs account for the uncanny feeling that the horn motif is at once familiar and unfamiliar, as so often happens in *La Mer*."[44] What are these "slight parallels between the motifs?" Perhaps one hears such things as the common triplet rhythms (or the 6/8 feel at I/35), the leisurely undulation of contour in each, the intervallically similar three-note cells (marked [0 2 5] in Fig. 2.6), the subtle hint of the tritone interval (D-Ab and Cb-F, respectively), and the comparable circling around their final pitches. Though the melodies are not the same, when one follows closely upon the other, the second indeed sounds "at once familiar and unfamiliar."

16–19 (*Jeux de vagues*); and 21 (*Dialogue du vent et de la mer*). Rolf describes it as a "generative process" which is not limited to *La Mer*: "In Debussy's music, a return of musical material is rarely a restatement. The cyclic treatment of the *Quartet* or the changing harmonic colors beneath the ever-varied melody in the *Prélude à l'après midi d'un faune* reflect the principle of non-repetition of which *La Mer* is merely a logical continuation. In *La Mer*, this process of continual transformation is apparent in virtually every musical parameter." (Rolf 1976, 202–3)

[44] Trezise 1994, 56.

It is difficult to convey the degree to which this motivic genesis and interpenetration seeps into every nook of the music, even in *Jeux de vagues*'s seeming patchwork quilt of diverse 4-bar ideas. Marie Rolf's analytical thesis (in Rolf 1976) is that *La mer* has a generative process, like those in nature: "just as Nature, and specifically the sea, is in a constant state of flux, so the fabric of Debussy's music is continually transforming itself melodically, harmonically, rhythmically, in timbre, and so on."[45] She demonstrates this primarily by showing these similar rhythms and intervals embedded in *La mer*'s melodies. "Melodic motives that at first seem quite new can be traced back to one or several former events or germ cells."[46]

Fig. 2.7 (p. 27) samples the development of four different rhythmic-intervallic motives across *La mer.* The appogiatura-like idea of Ex. #1 is the most pervasive of these throughout the three movements. It appears in all ranges, rhythms, and harmonic guises, and as the head of longer melodies. The pentatonic-like intervals of Ex. #2's motive are particularly prominent in *De l'aube*, but many of the leaping melodies in *Jeux de vagues* can be traced to it as well. Ex. #3's three-steps idea becomes important particularly when it employs three *whole*-steps, embedded in whole-tone and altered dominant harmonies. Finally, Ex. #4 shows that the chromatic lines which recur as quiet accompaniments and obbligati in the earlier movements rise to prominence as principal melodies in *Dialogue du vent et de la mer*.

These four motives also interact with each other. The two-note, "short-long" rhythmic motive which opens *La mer* (Ex. #1, I/3) , for instance, often combines with the other basic motivic cells when it embeds itself in longer phrases in all three movements. See, for instance, the last idea in Ex. #3, at II/154, which combines the short-long motive of Ex. #1 with a gradual descent derived from Ex. #3's three-steps motive. For further analytical observations of this nature, see note 43, above.

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[45] Rolf 1976, vi.
[46] Rolf 1976, 203.

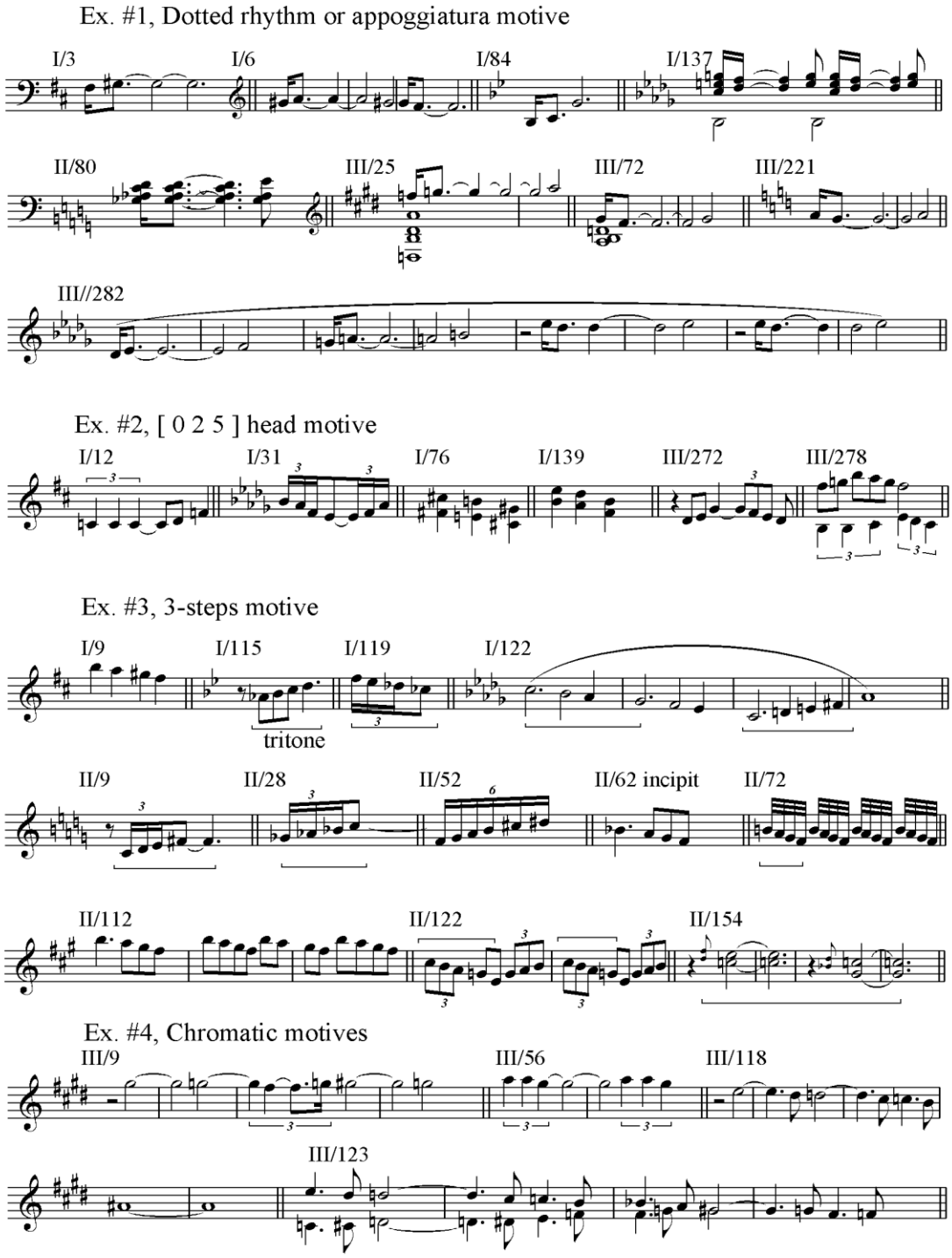

Fig. 2.7: Four motives that permeate La mer

Fig. 2.8 shows a further wrinkle. Not only are the important tunes which frame *De l'aube* very similar in contour, their arch contours are at the same pc (pitch-class) level.

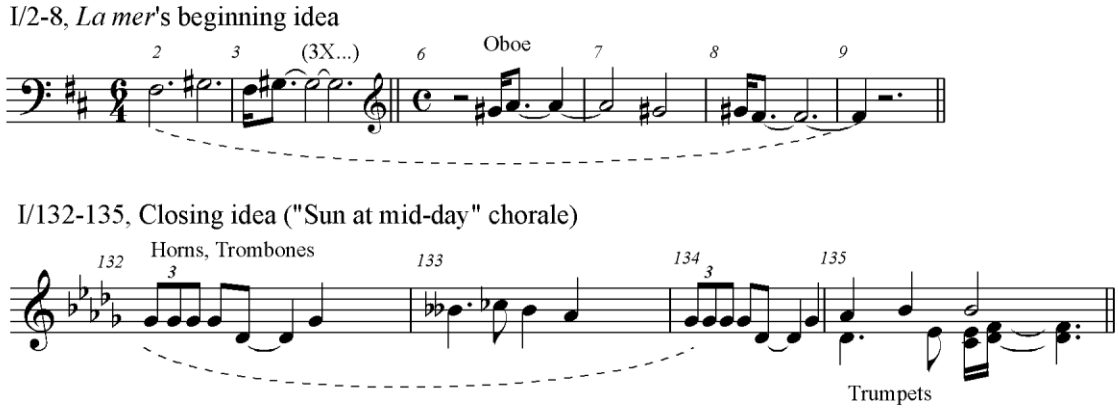

Fig. 2.8: Comparison of De l'aube's opening and closing themes

2.2 *LA MER*'S INTERPRETERS

La mer has been the object of more scholarly analyses, and more detailed ones, than any other single work of Debussy.[47] Some of the research described below is devoted just to *La mer*, but it is striking that, even in broader surveys of Debussy's music or biographies of Debussy, *La mer* invariably receives separate detailed analytical attention.[48] It seems to have become a kind of test case for Debussy analysis.

The composer Jean Barraqué's substantial article, "La mer, ou la naissance des formes ouvertes" was published posthumously in 1988 from notes dating from the early 1960s.[49] It

[47] *Pélleas et Mélisande* may have received more attention from music historians than *La mer* has, but as far as music theory is concerned, *La mer* has been distinctive.

[48] The most detailed, comprehensive tonal-formal analysis of *La mer* is found in Pomeroy 2000a. Dömling 1976, Rolf 1976, Barraqué 1988, and Trezise 1994 are devoted entirely to *La mer*. General Debussy studies that devote substantial, chapter-length analyses specifically to *La mer* include, in chronological order, Berman 1965, Howat 1983, Wenk 1983 (*Jeux de vagues*), Parks 1989 (*De l'aube*), and De Voto 2004 (mainly *De l'aube*). Additional analystical comments may be found in the biographies Lockspeiser 1962 & 1978, Barraqué 1962, and Lesure 2003, as well Max Pommer's analytical introduction to his 1972 edition of *La mer*'s score.

[49] Barraqué also offers some analysis of *La mer* in his biography of Debussy (1962).

describes *La mer*'s musical surface in gesture-to-gesture, bar-to-bar detail, with exceptional attention given to both orchestration and rhythmic details and a liberal sprinkling of idiosyncratic metaphors. (For example, the gossamer arpeggios at the opening of *Jeux de vagues* are described as "a veritable horizontal orchestration of silence."[50]) Barraqué's most influential insight, as paraphrased later by Mark DeVoto, is that *La mer* creates "a process in which Exposition and Development co-exist in an uninterrupted burst, which allows a work to be self-propelled, so to speak, without relying on a pre-existing model."[51] This explains his focus on tiny details of motivic and harmonic transformation and texture; he is fond of listing the numerous elements co-existing in a given passage, and the incremental changes they undergo.

While I question many specifics of Barraqué's analysis,[52] there is great value in his microscopic approach, with its attention to timbral blending, aggregate rhythms, metric play, and subtle intervallic connections and transformations. He returns often to the concept of embellishment or "embroidery," one of *La mer*'s most ambiguous aspects. (We cannot discuss long-term tonal processes without inferring them first from local tonics, which in turn must be inferred from the music's surface. Everything depends on how we handle this often-ambiguous surface.) My analysis of scales and hierarchy in Chapter 3 and Chapter 4 imitates Barraqué's focus on the surface, wherein lies what is characteristic and demonstrable about *La mer*'s tonality.

Barraqué almost ignores voice-leading in the abstract or the general question of chord function, although he emphasizes common-tone relations as pitch collections shift. However, his

[50] "Une véritable orchestration horizontale du silence" (Barraqué 1988, 29). Translation by author.
[51] De Voto 2004, 144.
[52] For example, his good account of *Jeux de vagues*'s fragmented formal process is confused by his use of sonata terminology (Exposition, Development, and Recapitulation, p. 29). Nor need he name the theoretical tonic supposedly implied by every nonfunctional dominant seventh sonority in the music (pp. 32–33).

labeling of the first metrically strong harmony in every phrase an "accent tonique" is similar to the approach to tonicity proposed in Chapter 6.

Lawrence Berman's massive 1965 dissertation, *The Evolution of Tonal Thinking in the Works of Claude Debussy*, shows in its first five chapters how specific aspects of Debussy's harmony and textures emerge from nineteenth-century harmonic practices, culminating in his mature music, from the *Nocturnes* on. These initial chapters trace in turn the influence on Debussy of Wagnerian chromaticism, of "the diatonic disintegration of functionality," of modality, and of "the Russian school" (Mussorgsky). Berman's fifth chapter lists the resultant harmonic routines that characterize Debussy's mature period: textural heterophony, the lowered seventh degree, the tonic pedal, the whole-tone scale, and so on. Berman dubs Debussy's mature tonal practice "modal-chromatic," and his interpretation is very similar to my own orientation towards scales, collections, and common-tones, and the harmonic ambiguities created by Debussy's textures. Although recognizing "Debussy's pioneering efforts to break with functional patterns," Berman does not explicitly provide criteria for evaluating tonic chords.[53]

His last chapter is devoted to *La mer*, as a kind of capstone study. Berman's fifty pages on *La mer* emphasize motivic metamorphosis throughout all three movements (see his Vol. II, Exx. 280, 281, 281, 299, 300, 305, 306). He also provides grand-staff harmonic reductions ("Schematic Designs") of each movement, as the basis for comments on the elusiveness of *La mer*'s tonality.

Walter Dömling's 36-page monograph, *Debussy: La Mer* (1976), is comprehensive, despite its brevity. It reproduces critical interpretation by Lalo and Laloy, and discusses Debussy's attitude towards program music and Impressionism. Dömling's main focus is a formal analysis of each movement as a frame for showing Debussy's constant re-use and transformation of motives and their intervals. Like Barraqué, he emphasizes that form diagrams

[53] Berman 1965,Vol. I, 186.

are misleading: "They mean hardly more than the most basic outlines, widely staked frames inside of which detailed musical happenings can go on undisturbed."[54]

Dömling does not address harmony, function, or voice-leading with any depth, although some of his labels for key are astutely free of tonal bias. For instance, he labels the opening {B♯, C♯, F♯, G♯} tetrachord "B pentatonic," rather than feeling forced to call it B minor or B major.

Marie Rolf's 1976 dissertation, "Debussy's *La Mer*: A Critical Analysis in Light of Early Sketches and Editions," focusses mainly on sketch study, framed with some history and some analysis of the music. She exhaustively reviews the evolution of *La mer*'s score, focussing on the differences between Debussy's working four-staff sketch, held by the Eastman School of Music's Sibley Library, and the autograph score.[55] In addition, Rolf compares all the published editions of *La mer*, including its various piano transcriptions, and the annotations in Edgar Varèse's personal conducting copy, which she obtained from Varèse's widow. She also narrates the process of the work's composition and reception, appending copious reviews of *La mer*'s early performances, particularly in the United States.

Although Rolf does not systematically analyze *La mer*'s tonality per se, she does offer a complete harmonic reduction of each movement, on a grand staff, notating initial harmonies, important bass pitches, and melodic incipits.[56] While not free of error,[57] these are extremely

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[54] Dömling 1976, 24. "Sie bedeuten freilich kaum mehr als gröbste Grundrisse, weit gesteckte Rahmen, innerhalb derer sich das musikalische Detailgeschehen ungestört ereignen kann." Translation mine.

[55] I was able to view and print a copy of the unpublished autograph score, as a visiting "Chercheur-Lecteur" to the Bibliothèque National de France's Music Library in Paris, June 2005. It is the basis of all subsequent printed editions, including most recently Rolf's own edition. Rolf's scholarship shows innumerable small changes and completions from the sketch to the autograph score, as one would expect for a work in progress. She also shows Debussy's revisions after *La mer*'s first performance. His two most significant changes from Durand's original 1905 edition to its second edition of 1909 are (1) the squeezing of two bars into one at the end of the first principal section of *De l'aube* (I/83 was originially I/83–84), and (2) the elimination of the prominent trumpet fanfares before the final reprise of the main theme in *Dialogue*, III/237–244. These fanfares have been restored in many later editions and are often included in performance.

[56] See Rolf 1976, 157–165, 181–189, 190–197.

useful, easily read reductions in musical notation of all of *La mer*'s harmony, motives, and scales, in order. Rolf also documents variation technique and motivic evolution as the primary musical process in *La mer*.

Arthur Wenk, in his brief analysis of *Jeux de vagues*, observes that in this music Debussy "separates tonal structure from thematic recurrence," an important insight shared by all .[58] Not only do main themes *not* recur in their original harmonic environment (on the whole), the sheer number of short, contrasting tunes interrupting each other all the way through, in constant modulation, "resist efforts to collect them into any smaller number of larger units, as suggested by the diversity of opinion among analysts, summarized in table 5" (p. 70). Indeed, the latter shows six different published form charts for this music, which are not in agreement with each other.

Wenk also observes motivic generation, static harmonic regions, and tritone root relationships throughout. While not all his observations hit the mark,[59] many are close to the findings I present below. For example, as I do, he sources [0 1 4] melodic segments throughout the movement back to m. 36; he demonstrates the harmonic variety played out over Debussy's climactic G♯/A♭ pedal in mm. 171–215; and he broaches the issue of hierarchy in tonal terms, finding neighbor tones and neighbor chords where others just see scales.

Roy Howat's 1983 book, *Debussy in Proportion*, examines Debussy's use of Golden Section proportions, primarily in the instrumental music. He dedicates four chapters of his book (pp. 64–135), well over a third, to *La mer*. Demonstrating these "GS" proportions in *La mer* requires a detailed consideration of form in all three movements, which in turn requires some

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[57] For example, at I/47, the beginning of the A♭ minor section in *De l'aube*, her harmonic sketch shows the harmony {A♭, D♭, F♭}, when in fact it is {A♭, C♭, E ♭, F♭}.
[58] Wenk 1983, 76. See also critical review in Parks 1985b.
[59] He reduces m. 82 to a B♭9, but this chord only appears with any clarity in mm. 90–91. Wenk then suggests that the next 80 bars elaborate m. 82's alleged B♭9, merely because they, too, employ dominant ninth sonorities.

description, if not a theory, of *La mer*'s tonality and compositional processes. Like the authors just described, Howat shows the interweaving of certain rhythms and intervals among diverse melodies and motives, primarily in musical notation with arrows showing the progress of particular intervals (shown on pp. 68–69, 72–73). He also presents the acoustic scale as a basic musical resource, rather than as a byproduct of interaction between other collections.

Richard Parks' 1989 book, *The Music of Claude Debussy*, is unique in this survey in that its focus is not on tonality, motivic transformation, or programmatic metaphor, but on pc-set genera and on formal partitioning.[60] Parks analyzes representative works from throughout Debussy's career utilizing the genera, or families of pc sets, supersets, and subsets.[61] In addition, he charts changes in nine form-defining parameters (meter, tempo, harmonic resources, "successive-attack activity," and so on) to explain his formal divisions. Parks' analysis of *De l'aube à midi sur la mer* (pp. 233–240) contrasts "kinetic" and "morphological" aspects of its form, and asserts that the movement utilizes three genera—the whole-tone, the diatonic, and the "8-17/18/19 complex": "the piece proceeds as a succession of brief passages (of from one quarter to sixteen quarter notes' duration) which mutate among the three genera."[62] (All together, Parks has recourse to five genera in analyzing Debussy's music. In addition to these three, he uses the octatonic and the chromatic.)

Although Parks has some excellent comments on the changeability of musical elements across the course of *De l'aube*, his inattention to tonal issues is hard to justify for a work in D♭ major.[63] By treating all pcs equally, i.e., in not eliminating passing or embellishing tones, his approach is radically opposed to the idea of embellishment which so concerns later chapters of

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[60] Reviewed in Green 1992. See also Parks 1980, 1985, and 1998 for further genera studies.
[61] Allen Forte explains the concept and the significance of pc-set genera in Forte 1988.
[62] Parks 1989, 234. The unwieldy term *8-17/18/19 complex* refers to three different 8-pc set classes with similar intervals. When ordered as scale-like collections, they each contain 5 semitones, 2 whole steps, and one 3-semitone gap, but in different orders.
[63] Pomeroy 2000a, 45–47, esp. n. 20, presents numerous critiques along these lines.

this study. On the other hand, despite this difference, it is interesting to see how similar a picture he paints to my introductory comments in Ch. 1: "A consistent trait is the mutability of all parameters: those which are emphasized vary, the degree and nature of changes within each vary, and their combination and interactions vary. The overall effect is a variegated and undulating musical surface…."[64]

Parks does address tonicity in his second chapter, "Tonality Imposed Through Other Means," in which he proposes five means by which Debussy "imposes" tonality in his music: "quantitative means of emphasis, invariance within a fluctuant pc field, qualitative means of emphasis, linearity, and implied emphasis by association with familiar harmonic conventions."[65] Park's wording meticulously avoids the tonal terminology which others freely employ (i.e. consonance, cadence, or triad), but his concepts overlap with my own definitions of tonicity in Chapter 6. A sustained bass note, for instance, receives "emphasis" both quantitative (sustained) and qualitative (it's in the bass). Parks also seems to use "tonality" interchangeably with "tonal center," at least in this particular chapter heading. Unfortunately, Parks fails to integrate these concepts when he arrives at the specific genera and formal analyses in the rest of his chapters.

Simon Trezise's 1994 *Debussy: La Mer* (a Cambridge Music Handbook) is the only truly general study of *La mer* in this survey. Stunningly well-rounded, it divides its attention equally among biography, criticism, performance, programmatic concerns, form, tonality, and motivic genesis. It even manages to add to Rolf's sketch studies, discovering in a newly found, unpublished *La mer* sketch a harmonic change in the reprise section of *Jeux de vagues* (II/163).[66]

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[64] Parks 1989, 239.
[65] Parks 1989, 22.
[66] The final E augmented(maj7) version of these two bars was preceded by a sketch that hinted at a G♯ bass, and a purely whole-tone scalar basis. This would have seeded the G♯ bass pedal which now begins at II/171 eight measures earlier (Trezise 1994, 15). See my discussion of G♯ as binding agent in Chapter Five.

Trezise's discussion of *La mer*'s tonality, while brief, is extremely astute and attuned to avoiding the thoughtless use of traditional tonal ideas to analyze this music. Although "the old hierarchy… hardly exists," he adds, "this is not to say that there is no sense of hierarchy or function in *La mer*'s harmony."[67] He also suggests that, across *La mer*'s three movements, there is a tonal evolution towards clearer function:

> *Jeux de vagues* mediates between the harmonic informality of the first movement and the triadic starting point of the principal theme in the finale. Earlier parts of the movement indicate the presence of a tonic by substituting complex harmonies for the triad. The opening, for example, later proves to be the adumbration of the tonic, but at first one can only hazard a guess as to its position within the hierarchy.[68]

David B. Pomeroy's dissertation adapts Schenkerian analysis to Debussy's free tonality (Pomeroy 2000a). By far the most thorough and systematically argued analytical study of those considered here, the 634-page work covers every movement of Debussy's multi-movement orchestral works—*Nocturnes*, *La mer*, and *Images* (with *Ibéria*), a total of eleven movements—which are charted in 215 extremely detailed, multi-tiered voice-leading graphs.

Pomeroy declares a fundamental analytical assumption on page one of the study: "Debussy's penchant for denigration of the humble triad notwithstanding, triadic consonance remained the fundamental basis of his music."[69] While recognizing the music's "systemic" (tonal) and "extra-systemic" (non-tonal or collectional) aspects as the sources of Debussy's harmony and form, he essentially uses a functional voice-leading method for interpretation-by-graphing, adapting Schenkerian analysis to Debussy's music, modifying its concepts as he feels appropriate. He justifies this approach as follows:

> The justification for subjecting music as *un*-common in practice as Debussy's to trial by voice-leading graphs can only be as a heuristic device, a means to the end of clarifying:
> 1. underlying communalities of tonal process with those of earlier tonal music.
> 2. the individuality of Debussy's large-scale chromatic processes…or of tonal forms that appear to embody some kind of structural paradox….

[67] Trezise 1994, 91.
[68] Trezise 1994, 91.
[69] Pomeroy 2000a, 1.

> 3. 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 modes. [70]

In practice, this means that Pomeroy finds tonal narratives for individual movements partly based on their employment, or their subversion, of Schenker's descending fundamental lines (*Urlinie*). Thus, for example, he reads *Nuages* as a B minor work with a non-descending 5-line, reflected in the work's static quality. *Gigues* (originally called *Gigues tristes*) is a kind of tonal tragedy, stemming from its failure to reach an unattainably distant tonic region (D major, from an A♭ tonic). *De l'aube* has an unorthodox *ascending* background, disrupted by the "subversive agent," C♭. And so on.

The great value of Pomeroy's study is its detail and its conscientious justification of almost every interpretive act. He graphs and discusses each subsection, stopping to conceptually interrogate each tonal process (a favored term). Compared to other methods, "trial by voice-leading graphs" forces the analyst to lay his or her cards on the table, so to speak. The graphs conspicuously declare what the analyst wishes to foreground—or conceal. More than the other studies here, the different methodology which I have developed was forced to confront his detailed interpretations of every measure.

On the other hand, the mere presence of pure triads at final cadences is not proof that triadic consonance is "the fundamental basis" of the music. It relegates all the other notes in the scale, which often are stable aggregate harmonies in a thick texture, to a secondary role. While I also assert the importance of triadic consonance in understanding harmonic function in Debussy, Debussy's occasional use of triadic consonance implies much more to Pomeroy. This difference leads us to radically different understandings of *La mer*'s harmony and processes—even though occasionally our graphs converge.

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[70] Pomeroy 2000a, 11-12

2.3 THEORIES OF HARMONY AND TONIC FUNCTION

We now turn to looking at the interpretation of harmony and tonic function in these studies, to justify the method adopted in the later chapters of this study. After such a flood of analysis, one might well ask, is there anything new one might say about this music? Is it not understood by now? Why chart the same passages, again and again?

One way to begin to approach this question is to simply ask: Is there a common descriptive vocabulary? Do analysts even see the same tonal areas in *La mer*? The short answer is, yes and no. In fact, there are differences both in description, and in the assumptions behind the description, and these differences often involve tiny, local details as much as, or even more than, the large-scale forms. Everyone identifies the principal sections of *De l'aube* as occurring at mm. 31–83 and 84–121, but they don't describe the tonics or principal harmonic resources involved identically. For Trezise, the French horn theme (see Fig. 2.6) uses the D♭ Acoustic or Lydian-Mixolydian scale,[71] while Pomeroy sees it as combining Octatonic and Diatonic collections.[72] Trezise speculates that *Dialogue*'s Wind theme is in C♯ Phrygian, whereas most analysts prefer the term C♯ Minor.

The explanation of larger-scale processes is often based on a sequence of purported tonics. For example, Howat sees a tritone motion across the gap between *De l'aube*'s two main sections: "This symmetrical sequence of D♭ to E to B♭ to D♭, with its pendulum effect, forms another large scale tidal impulse, most strongly discernible at the tritonal jump [i.e., E to B♭] between the two Principal Sections."[73] But is a tritonal jump really discernible (between m. 83 and 84)? Not all analysts even see the E and B♭ as tonal centers. And was the initial motion

[71] Trezise 1994, 89.
[72] Pomeroy 2000a, 151–158, esp. p. 154 (his Ex. 3.5b).
[73] Howat 1983, 71. Howat's GS theory depends on reading a tonal return to D♭ major at m. 132, but as we see below, the Chorale in that bar is indisputably in G♭.

really from D♭ to E?[74] By what criteria does one determine these? What is a tonic in *La mer*, anyway?

In one sense, the problem stems from harmonic reduction. In textures as ambiguous as Debussy's, we tend to be able to find what we need, to justify one interpretation or another. For this reason, charts of tonal centers in *La mer*, reduced to a single pitch-class name, are necessarily misleading, naming tonal centers as if they were firm realities, when in fact they may be only glancingly hinted at by a bass pedal tone, buried under a roiling stew of diatonic dissonance, changing pc collections, disjunct key relationships, and undertheorized chromatic embellishment.

The challenge of objectively or "musically" reducing *La mer* for the purpose of understanding its tonality can be seen by looking at one particular passage, the gentle introduction to *Jeux de vagues* (II/1–35), in order to return to it in later chapters, using my own methods (see analyses in Figs. 4.6a, 4.6b, and 5.1). This beautifully delicate beginning (Trezise mentions "gossamer-like tendrils of sound")[75] seeds the Lydian arabesque motive which dominates the middle third of the movement, mm. 92–162.[76] The Lydian motive, a winding diatonic melody accompanied by sustained seventh chords, is precisely the kind of texture that lends itself to harmonic reduction, such as a series of bass notes. Indeed, Berman, Wenk, and Pomeroy boil the passage down to three bass notes (F♯–C♮–G♯, for mm. 1–27) and a chord (B♭7, for mm. 28–35), which they then each comment on differently.

Fig. 2.9 (p. 39) shows the final eight bars of the introduction. The first four bars of this passage are busy and polyphonic, and the last four consist of a monophonic, slow, whole-tone descent that introduces the "Trill theme" of m. 36. Both Pomeroy and Trezise reduce this

[74] Pomeroy (2000a, 158) sees the "eventual tonal destination" of mm. 31–83 as G♭ in m. 67, not E in m. 72. Although he mentions B♭ major as a possibility, Trevise (1994, 57) discusses the 2-♭ region starting in m. 84 as having "attention focused on C as a latent tonic, hence the Dorian-mode feel."
[75] Trezise 1994, 62, likely referring specifically to the trills in mm. 7–8.
[76] The motive infiltrates the rest of *Jeux de vagues* as well, see Fig. 2.7, Ex. #3, p. 28, above.

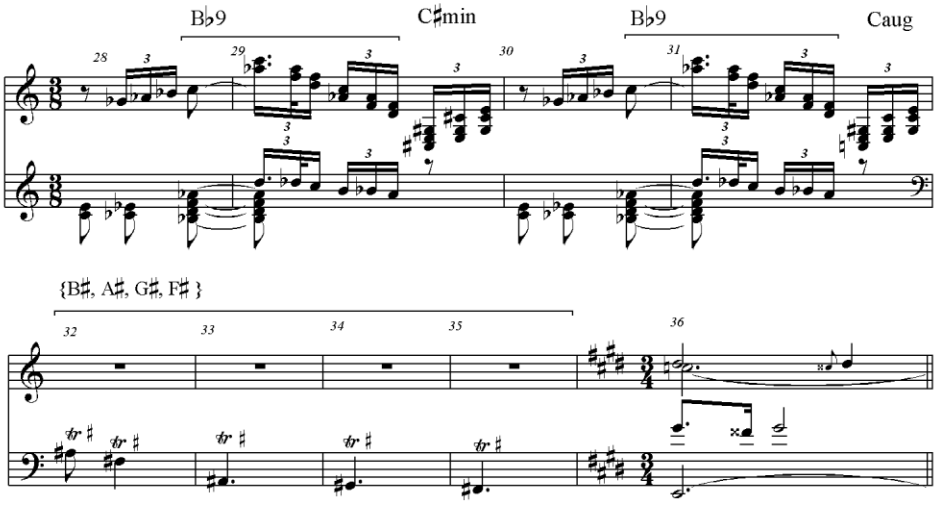

Fig. 2.9: The challenge of harmonic reduction (II/28–35: B♭7?)

passage to a B♭7, functioning as a chromatically displaced dominant of m. 36's E. Pomeroy in particular goes to great lengths to justify this functional interpretation, citing B♭7 sections preceding each principal part of the movement's ternary scheme and the occasional use of ♭V7 in *Dialogue* as well. But out of the entire Introduction, this chromatic passage is the one section that is not at all harmonically transparent, and the issues it raises for analysis are well worth pausing over.

Unlike the preceding, static harmonic regions above bass C and bass G♯, mm. 28–31's B♭9 arpeggios appear in the *middle* of a brief, extremely chromatic phrase, which presents the chords Cmaj, Bmaj, B♭9, C♯min, Cmaj, Bmaj, B♭9, Caug, in rapid succession. While B♭9 is the most sustained of the four chords in each two-bar idea, it is neither the first chord or the last, which are the usual suspects when we wish to determine a chordal hierarchy. (Barraqué, as ever wedded to the musical surface, does not reduce this sequence to B♭9, emphasizing instead the chromatic motive E–E♭–D–D♭ embedded in the chords.)[77] An oboe also chromatically

[77] Barraqué 1988, 29–30.

embellishes the B♭9, moving through D–D♭–C–B–B♭–A; its B uncharacteristically clashes with the A♭–C of the B♭9 arpeggio.

More importantly, this chromatic phrase is not the last thing heard in this section; the slowly descending trills on A♯–G♯–F♯ are. In other words, B♭7 is doubly disjunct from the tonic which it purportedly serves as preparatory dominant. It is separated from the tonic both by the whole-tone line of mm. 32–35 (which admittedly contains an enharmonic B♭ and A♭) and by its medial position in the sequence of chords. It is important to acknowledge the level of abstraction or simplification required of Debussy's complex music to enable functional theorizing, such as this concept that Debussy employs a ♭V7 in place of V7 to prepare the E tonic. Let us recall that the latter is actually an Eaug(maj7) tonic sonority, with respect to which Trezise observed (fn. 68, p. 36 above), "at first one can only hazard a guess as to its position within the hierarchy." When both dominant and tonic are so modified, at some point the sequence's tonic-establishing function must surely evaporate.

Returning to the Introduction as a whole, what insights are brought to its tonal structure? Berman notes that the roots of his harmonic reduction are a whole-tone subset, echoing the quality of the Lydian motive's four-note head, C–D–E–F♯, as well as the unaccompanied melody that ends the section (mm. 32–35).[78] While insightful, this does not acknowledge that all of the harmonies above these notes are diatonic modal collections. This whole-tone quality is as abstract as Howat's alleged tritonal jump in *De l'aube*.

Wenk takes Berman's whole-tone insight a step further, yoking it to a tonal model:

> The opening progression may be regarded as a whole-tone version of the traditional progression, ii–vi–IV–V–I, since Debussy's pedal points, F–C–G♯–B♭–E, all come from the whole tone scale on E. The tritone relationship B♭–E…replaces the traditional tonic-dominant relationship as an axis for the movement.[79]

[78] Berman 1965, Vol. I, 232.
[79] Wenk 1983, 68.

This says less than it appears to, because, even if whole-tone collections sounded above this bass, they would do the exact opposite of the Roman numeral progression: a defining characteristic of whole-tone subsets of a single whole-tone scale is their intervallic similarity to each other.

Pomeroy, again emphasizing the B♭7 as dominant substitute, derives the progression from a diatonic ii–V–I model, in the five stages shown in Fig. 2.10.

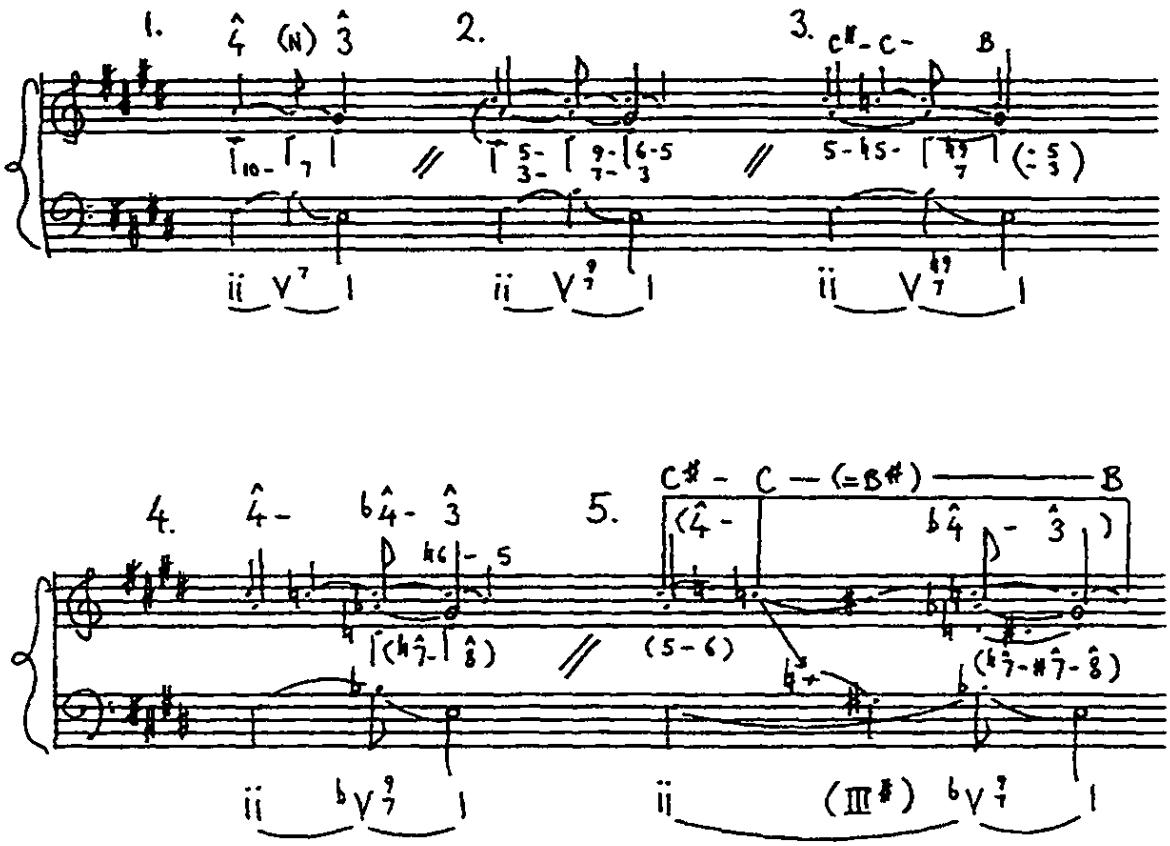

Fig. 2.10: Pomeroy's tonal derivation of II/1–35[80]

[80] Reproduction of Pomeroy 2000a, 469, Ex. 5.8.

Pomeroy comments on this analysis as follows:

> Ex. 5.8 [my Fig. 2.10] traces the stages through which this section's *seemingly elliptical succession of chromatic harmonies* can be derived from such an elementary diatonic model….The intervening harmonies on C and G♯ (supporting two statements of the 'Lydian theme') seem to arise more as by-products of the chromatic upper line than as functional entities in their own right (note the line's extravagantly darting registral play, irresistibly conjuring a mercurial surface of sun-glint and cloud-shadow)… [81]

Whether or not one is convinced by the particulars of Pomeroy's presentation, there are two factors working against it: first, it is in *five* stages (perhaps that is why the word "elliptical" was on his mind). More significantly, even at his most detailed, fifth stage, which finally generates the bass's C and G♯, the rich scales sounding above these notes, C Lydian and G♯ Mixolydian, have not yet been derived. Are they secondary, mere color? Might they not participate in a voice-leading or modulatory process as well? In fact, the bass's F♯, C♮, and G♯ all support full 7-pc scales, subtly partitioned and voiced, and these scales are not visible in any of the analyses mentioned so far. (The G♯, in particular, supports a complex G♯13 chord with added passing tones.)

What is striking in these analyses as well is their frank resistance to the harmony's beautiful element of surprise and freedom. The harmony is not just "seemingly elliptical;" it truly *is* elliptical—as Debussy constantly said he believed it should be. My purpose in the following chapters is to build a theory of tonality that does not rush to reduce away its scales, or consider scales as stand-ins for triads, and ♭Vs as stand-ins for Vs. The intention is to emphasize Debussy's roots in a post-Wagnerian world, where tonal centers had already begun to dissipate in a free chromatic mist.

It seems to me that the problem of harmonic reduction is nearly insoluble in Debussy's music. In three central chapters on harmony and voice-leading, rather than worry about better

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[81] Pomeroy 2000a, 467 (emphasis added). His Ex. 5.7 indicates this chromatic upper line as C♯ (m. 5), B ♯ (m. 18) , C♮ (m. 28.3, m. 36), B (m. 38).

methods of reduction, I describe a system of harmony in *La mer* based at times on scalar subsets and scale-to-scale (rather than key to key) modulation. This allows us to stay very close to the specific musical "surface." Chapter 3, Interpreting Static Harmony, describes harmony at the moment-to-moment level, showing the textures in which a scale, with or without a clear bass note, *can* constitute a harmonic region. Scales are not always color added to a triadic skeleton; in Debussy's mainstream works they are aggregate harmonies that resist the analytical reduction to tertian harmonies or tonic pcs. Chapter 3 presents the minute differences in sonority which reduction necessarily conceals, and in which reside Debussy's harmonic mastery. I then analyze degrees of chromatic embellishment of these scalar harmonies, which eventually leads to consideration of harmonic change in Chapter 4.

The most unexpected finding in the research undertaken for this study is the extremely close voice-leading with which Debussy modulates, using Wagnerian-like chromaticism between "distant" tonal regions. This *parsimony* (or close voice-leading) is demonstrated throughout Chapter 4. The leaping F#-C bass in *Jeux de vagues*'s Introduction, for example, is shown to occur within a collectional world of subtle, minute pc accretions and transformations.

Chapter 5 focuses on a second aspect of parsimony, pitch class invariance (or common tones). I present evidence that common tones organize large swathes of *La mer*, in hitherto unobserved ways, at the local, medium, and long-range levels.

We now turn to a second problem: harmonic function. The idea of function, or even tonicity, is also problematic in much analysis of Debussy's music. It is a thankless task to seek regular functional patterns in Debussy's harmonic successions. Despite the efforts of several *La mer* analysts to show chord progressions as a distortion or adaption of traditional progressions,

the music's variety and Debussy's own verbal disavowals strongly resist such legislated analytical order with respect to chord progression.

The evidence that *La mer* merely adapts, rather than completely re-invents, traditional harmonic function is almost entirely indirect, and yet the first of these strategies is assumed or implied in much of the interpretation of the music. *La mer* has a tonic, D♭ major. It is monotonal. It occasionally employs dominant-preparatory pedals. Is this a sufficient basis to employ the language of traditional functionality in Debussy?

Pomeroy's list of Debussy's "form-functional phenomena of a traditional nature" includes "those of cadential closure or half-cadential caesura" and "thematic contrasts such as the antecedent-consequent period."[82] These categories do indeed fit certain moments in *La mer*, such as the parallel phrases of *Dialogue*'s Wind theme, which are both of half-cadential character. Yet they do not describe the harmonically static arabesques, whether fast (*Jeux de vagues*'s Lydian motive, m. 12 ff) or slow (*De l'aube*'s main Horn melody, m. 35 ff). Nor do they allow us to differentiate between the many half-cadence-like themes. The A♭-dominant ending of the E♭ minor chorale (III/133–140) is perhaps like a modal half-cadence, but how should we interpret the surprise C major ending of the B Acoustic trumpet call (III/31–37)? Half-cadential? Modulatory? What do we call the much more frequent endings of tonic-less dissipation (both of *De l'aube* two main sections, several of *Dialogue*'s episodes)?

Even the overall key of the work is not established by traditional means. *La mer* as a whole is indeed in something resembling a key; it is "in D♭ major." Yet these words misleadingly imply a more decisive and conventional tonic than the music provides. Actually, the D♭ major of *La mer*'s first movement only appears briefly, towards the movement's

[82] Pomeroy 2003, 164.

beginning (mm. 31–42), and at its very end (mm. 135–142). This covers only 20 bars out of 142, and as we will see, its return is ambiguous. Let us look at these two passages in turn.[83]

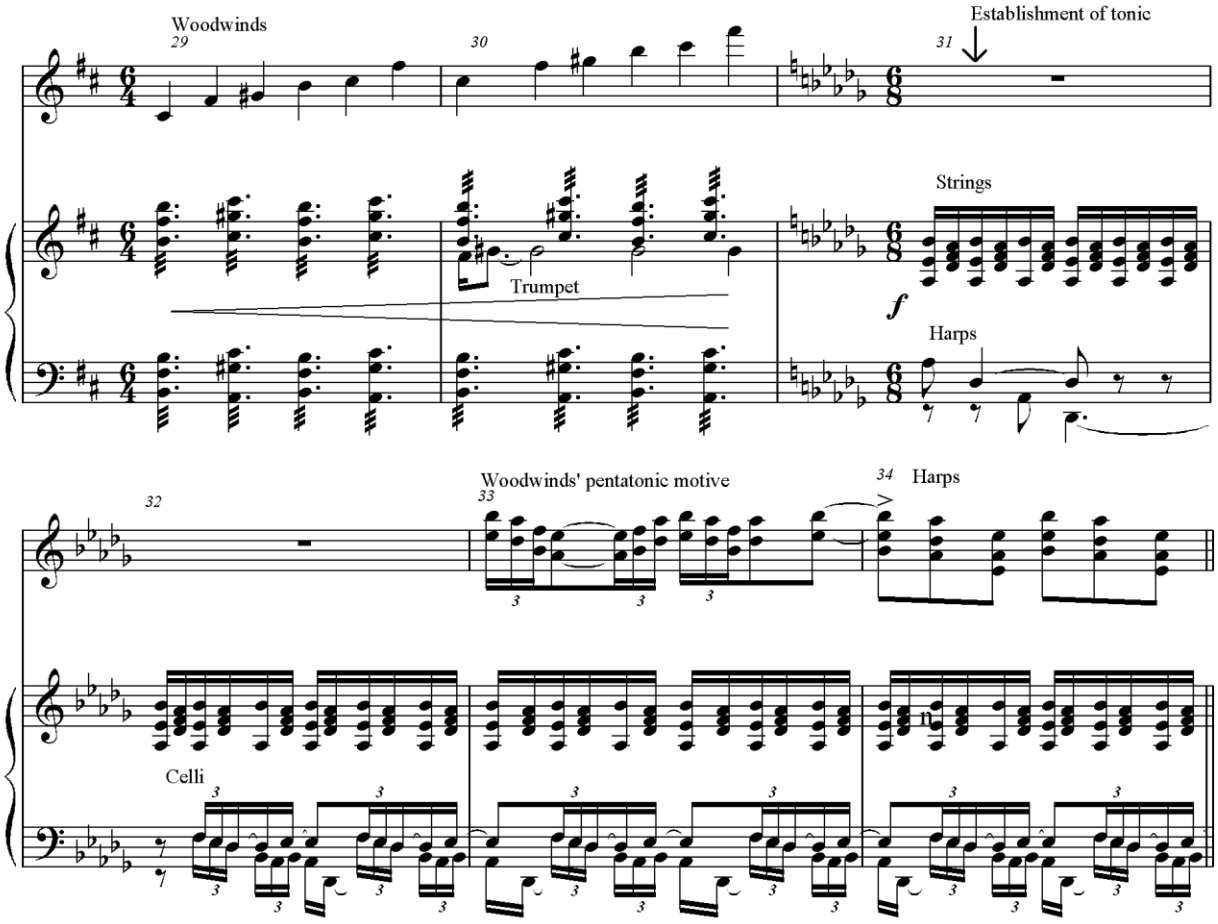

Fig. 2.11: De l'aube *presents its initial tonic, I/29–34*

The first of these two D♭-major moments is shown in Fig. 2.11. It cuts in after a brooding introduction centered on B♮ (I/1–30). From the point of view of traditional tonality, this initial establishment of the tonic is crucial, and by traditional standards this brief passage displays more

[83] In contrast, D♭ returns very strongly throughout the rondo-like last movement. See III/56ff, III/157ff, III/245–292.

weaknesses than strengths. There is no preparatory dominant chord to announce the tonic's arrival. There is no chord succession (let alone "progression") within the presentation of the main theme, only a sustained (or "inert," as Pomeroy calls it[84]) D♭-major pentatonic harmony, in shimmering figuration, with an occasional added C♭ (♭$\hat{7}$) or G♮ (♯$\hat{4}$) in the meandering French horn melody (m. 35ff., not shown). There is no harmonic cadence at the end of the theme.

On the other hand, the border between m. 30 and m. 31 in Fig. 2.11 offers a clear boundary of sorts, with its change of scale-chord, of meter, of texture, of motive, and of instrumentation. The D♭ scale of m. 31 is the first stable pitch collection heard up to that point in *De l'aube*, after the brooding, chromatic Introduction. There is an embedded D♭-major triad in the rapid string figuration, the first major triad heard up to this moment in *La mer*.[85] Although there is not a sustained, metrically strong bass D♭, the harps' subtly syncopated A♭–D♭ motive in m. 31 strongly affirms the tonic when it is first presented. (These pitch classes are also common tones—the only ones—with the harmony that ended the previous section.) The tail of the cello ostinato continues to echo the A♭–D♭ bass, in a metric syncopation. The famous French horn melody which follows in m. 35 also finally settles on the pitch D♭, after many bars' meandering.

The analytical explanation for this type of tonic is that it is *presentational* rather than functional. In other words, it is not established by a dominant-tonic relationship, or by so-called *position-finding*.[86] D♭ major pentatonic is merely presented in textural figuration, and the ear accepts it as tonic, particularly following the dissonant introduction. It arrives as a kind of *fait accompli*. The ear is "presented" with an unchanging, relatively consonant saggregate harmony,

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[84] Pomeroy 2000a, 16.
[85] There is a D9 with added tones in mm. 17–18, but it is brief and less consonant than this tonic.
[86] Position finding refers to the establishment of tonics simply through the voice-leading which characterizes diatonic music, particularly the resolution of the tritone to a consonant third in an authentic cadence, even when no key has been established. This technique is widespread in the later nineteenth century. See Harrison 1994 and Swinden 2005. On presentational tonicity, see Bass 1988 (on Prokofiev), Harrison 1994, and Smith 1986.

and accepts it as a tonic. In Debussy's music, this type of tonicity predominates. Charles Smith, writing of tonic presentation in nineteenth-century music, explains that presentational tonality

> has as much to do with brute-force reiteration, registral prominence, and motivic fixing, as with anything that can be more systematically described. That the presentational is the more potent variety of tonality is suggested by the ease with which it overpowers the functional elements, and has its own way. [87]

In fact, throughout *La mer*, the overwhelming majority of the tonic sonorities are presentational, although several are also articulated with preparatory gestures. Some of the latter echo traditional dominant sonorities, and some do not.

The strongest evidence that traditional functional syntax is unimportant to Debussy is at the ecstatic final cadence of *Dialogue* (III/270). *De l'aube*'s chorale (I/135) returns just prior to this, buried in fast neighbor-tone figuration, and transposed to a powerful B♭ minor (see the music in Appendix B, Fig. B.5). The chorale concludes with a deeply satisfying crescendo to a D♭ major buried in frenetic pentatonic figuration (III/270). This is the movement's, and in some ways all of *La mer*'s, fundamental moment of triumphant tonal closure. It is one of the few explicit cadential chord progressions, perhaps the most explicit one, in *La mer*.

Yet this closure is achieved with a motion from the submediant, considered one of the weakest possible in traditional harmony. If B♭ minor, vi in D♭, can in this sense "function as a dominant," perhaps the idea of function needs to be interrogated. A great deal of analytical effort has gone into accepting various V7-like sonorities as standing in for the traditional one, and indeed, *La mer* is suffused with such rhetoric: constant dominant ninths, whole-tone versions, ♭V7 (especially in *Jeux de vagues*).[88] And yet, if the fundamental symphonic-like closure of the music can occur so convincingly with neither a V7-like sonority, nor a $\hat{5}$-substituting bass, the whole issue must be reconceived. The conclusion I draw from these observations is that Roman

[87] Smith 1986, 129. Richard Bass, describing music by Prokofiev, echoes this, saying "the tonality is established more through persistence than through traditional tonal functions." Bass 1988, 210.
[88] See Pomeroy 2000b, for a discussion of chromatically displaced dominants.

numerals are a very poor tool for analyzing *La mer*. They are often unrelated to harmonic function, or to understanding tonics or chord progressions. Not corresponding to its harmonic techniques, they are like a metric ruler that is forcibly made to measure something which it was never designed to fathom, such as color or density. The scholar who questions traditional tonal functions most consistently is Trezise.[89]

We can observe this as well by returning to *De l'aube*, looking this time at its final harmonies. The return to D♭ at the end of the movement shows even more clearly how Roman numerals tend to confuse the understanding of tonicity in Debussy's music. The music arrives at a D♭ major triad only in its last seven bars, which conclude with a *tutti* gesture (see Fig. 2.12).

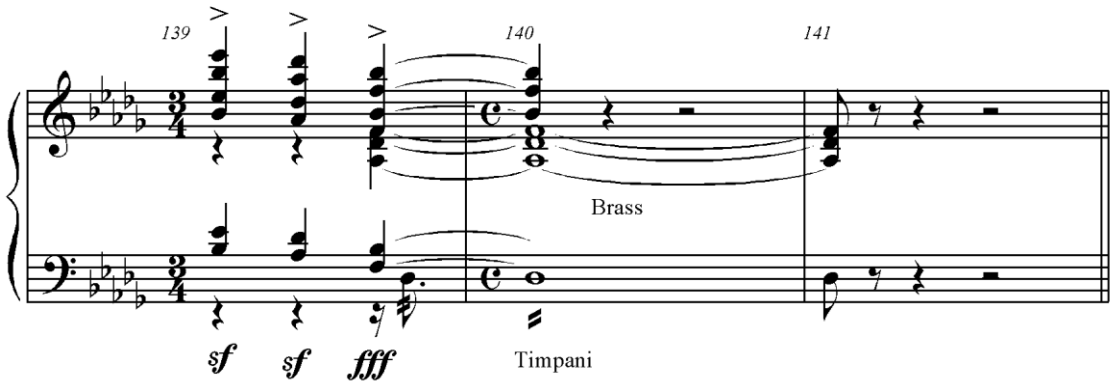

Fig. 2.12: What is De l'aube*'s closing tonic*? *(I/139–141)*

In *De l'aube*'s very final bar, we finally hear the pure D♭ major triad, without added tones. This sonority has been withheld for the entire movement. Trumpets and trombones sound the chord in second inversion, while the timpani alone rumbles a bass D♭. However, the chord's

[89] "Each movement may be satisfactorily explained in terms of a tonic of some sort, usually associated, at least in the closing bars, with a major triad. But if one moves a little closer to the music – its real sound and notation – one soon realizes that major-minor tonality has very little to do with the tonal materials of *La mer*." (Trezise 1994, 87)

attack is not articulated "in the clear;" rather, it happens in tandem with a B♭ tonic, as the rest of the orchestra lands very heavily on the perfect fourth, F–B♭, in m. 139, after four bars of rocking between the two triads. Though the combined chord at m. 139.3 is perceivable as both B♭m7 and D♭maj(add6), the B♭ is much stronger at first. As Pomeroy wisely states, "this [D♭] tonic is rendered somewhat provisional in the foreground by the simultaneous insurrection of the second half's 'rival tonic,' B♭."[90]

If we then look at this cadence in the context of what precedes it, there is even less clarity as to D♭'s supposed tonic function. Fig. 2.13 shows the three events preceding this "cadential triad": an A♭-major "dominant pedal" (m. 122), a G♭-major chorale (m. 132), and the final D♭-B♭ bass ostinato (m. 135) that ends on the mixed-identity cadential chord shown above.

	122 A♭ dominant ped. (chromatic)	132 Chorale in G♭ major (melody: G♭)	135 Closing motive D♭ and B♭ triads	Last chords 139.3 B♭min7 (melody: B♭)	140.2- D♭ maj
D♭maj:	V7 alt	IV?	I, vi	vi7 or I(add6)	I
G♭maj:	?	I (strong)	V, iii	iii7 or V(add6)	V
B♭min:	?		III, i	i7 (very strong)	III

Fig. 2.13: Conflicting functions at end of De l'aube *(I/122–141)*

These three preceding musical events cause the final D♭-major triad in mm. 140–141 to sound even more ambiguous as to function, despite its well-worn sign of symphonic finality (sustained brass triads). As the figure shows, these three events might allow the final triad to be perceived alternately as a tonic, as a dominant, or as a mediant chord, respectively. A D♭–B♭

[90] Pomeroy 2000a, 612.

bass ostinato begun in m. 135 emphasizes the D♭ metrically, but the B♭m7 harmony is sustained longer, over a strong bass. Is D♭ just the mediant of a B♭-minor tonic?

Secondly, this D♭-B♭ codetta directly follows a short hymn-like chorale that is indisputably in G♭-major (I/132–135, shown in Appendix B, Fig. B.3, p. 187). Both of its two parallel phrases begin with a pure G♭-major triad, and its brass melody begins on the pitch G♭. In this context, when the chorale ends on a D♭-major triad in m. 135, D♭ can sound like the dominant of G♭, as if the chorale had ended in a half-cadence.

Preceding the G♭-major chorale is a dreamily dissonant interlude (I/122–131) based on an A♭ pedal, supporting various complex altered dominant sonorities, such as A♭13 and A♭ WT. Although *La mer*'s analysts label this as a dominant preparation for the concluding D♭ tonic, it actually is not at all clear in context what the A♭ is dominant *of*. As Trezise puts it, A♭ is "the pitch that might automatically be called the dominant of D♭ major were Debussy's harmony functioning traditionally."[91] Neither the music immediately preceding nor immediately following the A♭ pedal implies a D♭ tonic in any way. It arrives out of a kind of transitional, dissipating whole-tone soup (I/115–121), and the pure, consonant G♭-major triad which follows it asserts its own presentational tonicity, not least by resuming the meter after the A♭ pedal section had almost come to a complete standstill. The G♭ theme, nearly tritone-free, also resolves the dissonance of the complex A♭ chords. (In fairness, A♭'s dominantness had been at least hinted at by the web of decelerating tritone motives immediately preceding it, mm. 119–121. They suggest whole-tone E♭7s and A7s, which could plausibly stand in for the traditional function of V7 of V, in D♭.)

Perhaps in Debussy's free tonality, a dissonant dominant sonority is all-purpose; it simply announces that the next chord might be a tonic, as long as it is more consonant and lasts long enough. If we allow ourselves recourse to these principles to explain the presentational tonicity

[91] Trezise 1994, 59.

of *De laube*'s initial tonic (I/31, see Fig. 2.11, p. 47), might it not also be true of this closing passage? Perhaps harmonic function can arise from changes of texture and from changes in general levels of dissonance, rather than from exact chord qualities, or even the scale degree of a chord's root.

A lot of ink has been spilled discussing function and tonicity in *La mer*, and the D♭ tonicity of *De l'aube*'s ending is an uninterrogated given in most of these discussions. Berman suggests that "the subdominant enters at measure 133 to interrupt the functional V–I connection."[92] De Voto writes that G♭ "represents a subdominant inclination to the D♭ axis of the movement and there is further motion in that direction [….] before the pendulum swings back to the center, the most confident harmonic progression in the entire movement, from IV to I at mm. 134–135."[93]

Pomeroy offers that, "in its auxiliary approach to the tonic from the subdominant side, [the progression G♭ to D♭] parallels Section 1 [mm. 1–30, improbably read as iv/iv – iv – I]."[94] The terms *functional V–I connection , from IV to I,* and *auxiliary approach* are *a priori* assertions of traditional function. They are not inferred from all the musical elements of this particular passage, and they strongly conflict with some of them. They discount the potential tonicity of the G♭ chorale. They hugely minimize B♭ minor's importance after m. 135, showing it as an auxiliary expansion of D♭,[95] or explaining it as the result of B♭'s important earlier roles in the

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[92] Berman 1965, Vol. I, 226.

[93] De Voto 2004, 157. The "further motion" is accurate; Debussy employs ♭VI and ♭VII of G♭ during the phrase.

[94] Pomeroy 2000a, 168. Regarding the iv/iv–iv6–I interpretation, see his p. 147 and p. 151, where he concedes that "the plagal progression (iv6–I) connecting Sections 1 and 2 is rendered maximally unfamiliar-sounding…" He concedes that it is "obscured by a certain 'fuzziness' of outline," and that "unconventional manipulations of register and secondary parameters…can dramatically weaken the (perceived) tonal-functional effectiveness of traditional harmonic progressions." See Fig. 2.9, mm. 29–30, for the music which he claims approaches the D♭ tonic from a iv6 (F♯minor/A). The texture embellishes B–F♯ fifths with contrary stepwise motion.

[95] D♭ is stemmed, while poor B♭ is a stemless black notehead floating next to it, in the voice-leading reductions I have found. See Rolf 1976, 165; Pomeroy 2000a, 169.

movement.[96] It is as if the belief or foreknowledge that D♭ is due to return at the end prevents the analyst from acknowledging the overwhelming, powerful, sustained B♭-minor brass chords. Phenomena that diverge from the theory are "decoration," "expansion," "color," or "auxiliaries," always secondary, regardless of their phenomenological presence.

It is often observed that Debussy's harmonies "exist in the moment," but the implications of this observation are rarely teased out. I suggest the possibility of hearing *all* the consonant triads at *De l'aube*'s close as tonics, without a hierarchy by which D♭ must rule, control, or hold sway over the rest of them. After the long flow of decelerating whole-tone clusters that preceded the entire section, nearly any consonant triad would have attracted to itself a sense of tonicity.

It is significant that, in spite of the functional confusion around the ending, *De l'aube*'s D♭ tonic is extremely clear compared to many of those elsewhere in *La mer*. Consider, for example, the alleged B♭ major of *De l'aube*'s second principal section (I/84ff), or the purported E major of the first principal theme of *Jeux de vagues* (II/36ff). The point is this. If even the *tonic* key of *De l'aube*, the supposed framing reference for all modulation or contrast, functions differently or more indecisively than traditional tonics, should not function and indecisiveness attract a major part of our analytical attention? Is the time not ripe for re-conceiving function in loose tonality?

After the three chapters on harmony and voice-leading described above, this study's conclusion, Chapter 6, proposes reconceiving function for Debussy's music as a simple spectrum between tonics and nontonics. In this model of hearing *La mer*, we perceive a series of presentational tonics of varying strength, duration, coloration, and formal placement, which modify and change in the parsimonious ways shown in Chapter 4. A method for comparing the strength of presentational tonics is exemplified in a graph of the evolving tonicity of *De l'aube*'s

[96] Berman (1965, Vol. I, 227) writes that the final tonic is "horizontally and vertically inseparable from VI—a heterophonic fulfillment of the neutralization principle."

Introduction (I/1–30). It is hoped that this analytical method highlights the sensation of constant change and recoloring noted by *La mer*'s earliest admirers.

CHAPTER THREE: INTERPRETING STATIC HARMONY

> Debussy: No faith in the supremacy of the C major scale. The tonal scale must be enriched by other scales.
>
> Giraud: What's that?
>
> Debussy: Incomplete chords, floating. *Il faut noyer le ton*.[97]

3.1 SCALES IN STEPS

Debussy delighted in using scales and chords besides the major and minor ones of older classical music. This is so commonly noticed and reported as to seem an analytic given, noncontroversial and hardly needing proof or interpretation. Debussy often trumpeted the need for breaking with tonal scales and chords, and every music history text reiterates his fascination with the church modes, with the whole-tone scale, with the thick polyphony of the gamelan ensemble, with Asian pentatonicism, and with Spanish folk music.

There is an important distinction to acknowledge at the outset. Debussy used new scales and harmonies in two ways. A significant subgroup of his music involves the intentional imitation of exotic ethnic styles, including the ones just mentioned, and the use or parody of vernacular styles (as in "Golliwog's Cakewalk"). In these cases he uses the scales and harmonies of popular and ethnic music. On the other hand, in the bulk of his music (including *La mer*), he uses nontraditional scales without specific reference to a particular music culture or genre, as the basic material of his output, and this "scalar" approach became a touchstone technique for generations of subsequent composers. It is this use of scales that interests us at present: innovative scale use as a basic pitch resource for concert composition.

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[97] Lockspeiser 1962, 206.

Even contemporary critics noticed the presence of new scales and chords in Debussy's music, often attributing his music's special attraction—or repulsion—to their use. One anguished New York music critic, reviewing an early American performance of *La mer* on March 21, 1907, in Boston, even calls the traditional diatonic scale and major triad (which Debussy supposedly rejected), "points of basic structure on which we…rest our troubled souls." The full excerpt reads as follows:

> His [Debussy's] music is the logical outgrowth of the school of impressionistic composition…It would be idle to deny that composition along these lines has certain possibilities. But when a composer abolishes from his outfit all the elementary units which have existed in music since its inception as an art form, when he kicks the diatonic scale into the street and puts his curse upon the major triad he asks us to give up all points of basic structure on which we have been accustomed to rest our troubled souls.
>
> - Review of *La mer* by a "Mr. Henderson," *The Sun*, New York, n.d. [1907?][98]

A century after its premiere, and with the score closely in hand, we can perhaps assuage Mr. Henderson's anguish. The diatonic scale has not been kicked into the street and the major triad has not been cursed, or not as much as the reviewer believes. *La mer* relies heavily on both the diatonic scale and the major triad—in fact, the final harmony of each movement of *La mer* is a pure major triad—but uses them in very new ways. *La mer* also combines these "points of basic structure" with other, nondiatonic scales—the *acoustic*, the *whole tone*, and the *octatonic*. These four scales may be conveniently referred to as the *whole-half family* because they share the following two fundamental properties:

1. The scales climb exclusively in whole steps and half steps.

2. The scales never contain consecutive semitones.

We will expand on the characteristics of these "W/H scales" shortly.

It is not my claim that *La mer* is based exclusively on the four scales described below, nor does one particular scale hierarchically "control" its harmonic kaleidoscope, the way, for

[98] Quoted in Rolf 1976, 328.

example, the C major scale "controls" Mozart's *Jupiter* Symphony. In fact, the sense in which these scales actually exist in *La mer*, their real "being," is actually highly problematic. The presence of *La mer*'s scales is often much more ambiguous than the E scale in Fig. 3.2, below. Some passages rely on scale segments (5 or 6 pcs), and others merely prolong an even smaller group of notes—a perfect fifth interval, or a triad, or a tetrachord—without clearly implying any background scale at all. Passages that are based on a scale are often complicated by additional chromaticism, whether embellishing or modulatory. In other words, scales can often only be determined for a given measure of music by "reading in" an extra note or two, using the principles which I call *the Simplicity Bias* and *the Rule of Pitch-Class Inertia* (see section 3.3), or by positing a hierarchy of scale-tones over chromatic embellishments, based on analogies to tonal chromaticism (see section 3.4)

I would add that the somewhat tenuous ontology of these scales also illustrates, with particular clarity, an inherent dilemma at the very heart of this enterprise of musical analysis, particularly for post-tonal music. Without a theory of musical organization, we fail to reveal any harmonic order, which as analysts we naturally seek to uncover. But the more we attempt to define harmony in some abstract system, the more of the music's detail we must conceal, the further we are from the music's surface and the listener's rich sensations, and the more we impose our *system*'s priorities on that listener's multifaceted, kaleidoscopic perceptions and associations. We gain in analytic clarity, but as we impose our assumptions ("A♯ is an embellishing tone"), we can lose the music's authentic, unmediated particularity.

This uncertainty is oddly fitting for *La mer*'s extremely tentative tonicities and vague phrasing patterns, which are so central to Debussy's aesthetic. I'd like to suggest that by Debussy's time, earlier areas of compositional concern, such as how to adapt 18th-century forms to a freely chromatic harmony, are of less interest than the variety and unrootedness of tonality in general. The divisions we will struggle to demarcate, between structural and embellishing

harmony, or between chromatic embellishment and true modulation, or even between chord and scale, directly reflect Debussy's mist-shrouded aesthetic of subtle change and tentativeness. That which Debussy's varied textures and harmonies "kick into the street" is not the major triad or the diatonic scale, but the analytical sureties we tend to harbor towards tonal music. As musical analysis ought not to efface those very qualities which critics most cherish in the music, this chapter aims in particular to elucidate analytical ambiguity and present it as a positive value.

We begin here with some of the features of scales built from whole steps and half steps, and the distinction between scales, pc collections, and set-classes. (Additional scale theory is provided in Appendix A, p. 177.) Section 3.2, The Harmonic Ambiguity of the Scale-Chord Texture (p. 66) demonstrates the basic concept of the scale-chord in different textures. Section 3.3, Determining Harmonic Backgrounds (p. 74) presents collectionally ambiguous textures and suggests how best to describe them, using the Simplicity Bias. The last section (p. 89) addresses chromatic embellishment within a collectional environment.

THE FOUR WHOLE-STEP/HALF-STEP SCALES

In the overwhelming majority of its measures, *La mer*'s harmony depends on only four scale types: *diatonic*, *acoustic*, *whole-tone*, and *octatonic*, from which all its chords are derivable. With the possible exception of the Acoustic scale (also called Lydian-Mixolydian), the importance of these scales in early twentieth century music has been long recognized in analytical literature.[99] While differing greatly in sound, these whole-step/half-step scales are so similar in terms of intervallic content that they explain two fundamental aspects of *La mer*'s harmony: its common-tone/half-step voice-leading, and its seemingly profuse chord types. The latter, whether traditional tertian chords or innovative scale-segment chords, are *always subsets*

[99] See Berger 1963, Cohn 1991, Forte 1991, Harris 1980, Taruskin 1987, Tymoczko 2002 and 2003, van den Toorn 1983 and 2003, and Whitall 1975.

of these four scale types. It is in this sense that Debussy may reasonably be labeled a "scalar" composer. In many ways he is the galvanizing inventor of what Tymoczko refers to as the "scalar tradition—and even a 'common practice'—in twentieth-century music."[100]

La mer also makes frequent use of the *major pentatonic scale* and its subsets, especially in *De l'aube à midi sur la mer* and *Jeux de vagues*. However, since the pentatonic is itself a subset of the diatonic and the acoustic collections, I will address it in conjunction with those scales. Other "gapped" scales, such as those with augmented seconds (i.e., the harmonic minor, "Hungarian minor," the hexatonic, and "harmonic major"), are much less prominent in Debussy's orchestral music, with the exception of the Spanish-tinged *Ibéria* and certain moments in *Pélleas et Mélisande*. When scales or chords with augmented seconds do appear to occur in *La mer* (for instance, at II/36, II/107–108, or II/179), it is not necessary to posit a new scale type. I will show simpler explanations of these harmonies—as subsets of our four scales, as semitone-resolving distortions of them, or as parsimonious chromatic chord successions.

The position asserted in these two chapters on *La mer*'s scales is not that scales explain all of Debussy's textures or tonics, nor that Debussy merely *uses* these four scales. It is that they explain specific aspects of his tonality. In terms of harmony, the scales' similar structures determine a delimited, relatively consonant chordal vocabulary, spanning a range from traditional triads to 6-pc scale-based simultaneities (see Fig. 3.2, below). Conversely, Debussy's tall chords (5-pc chords of the 9^{th}, of the 11^{th}, etc), give rise to these, and only these, scale-types. Furthermore, attributing musical passages to particular scales allows us to define "chromatic," foreign tones within them. In the absence of traditional functional chromaticism, scales are also an efficient route to explaining chromatic voice-leading, which is extremely smooth ("parsimonious") from scale to scale (see Chapter 4).

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[100] Tymoczko 2006, 220. Tymoczko cites studies using "similar methods" for music by Fauré, Stravinsky, Bartok, Skriabin, Prokofiev, and others.

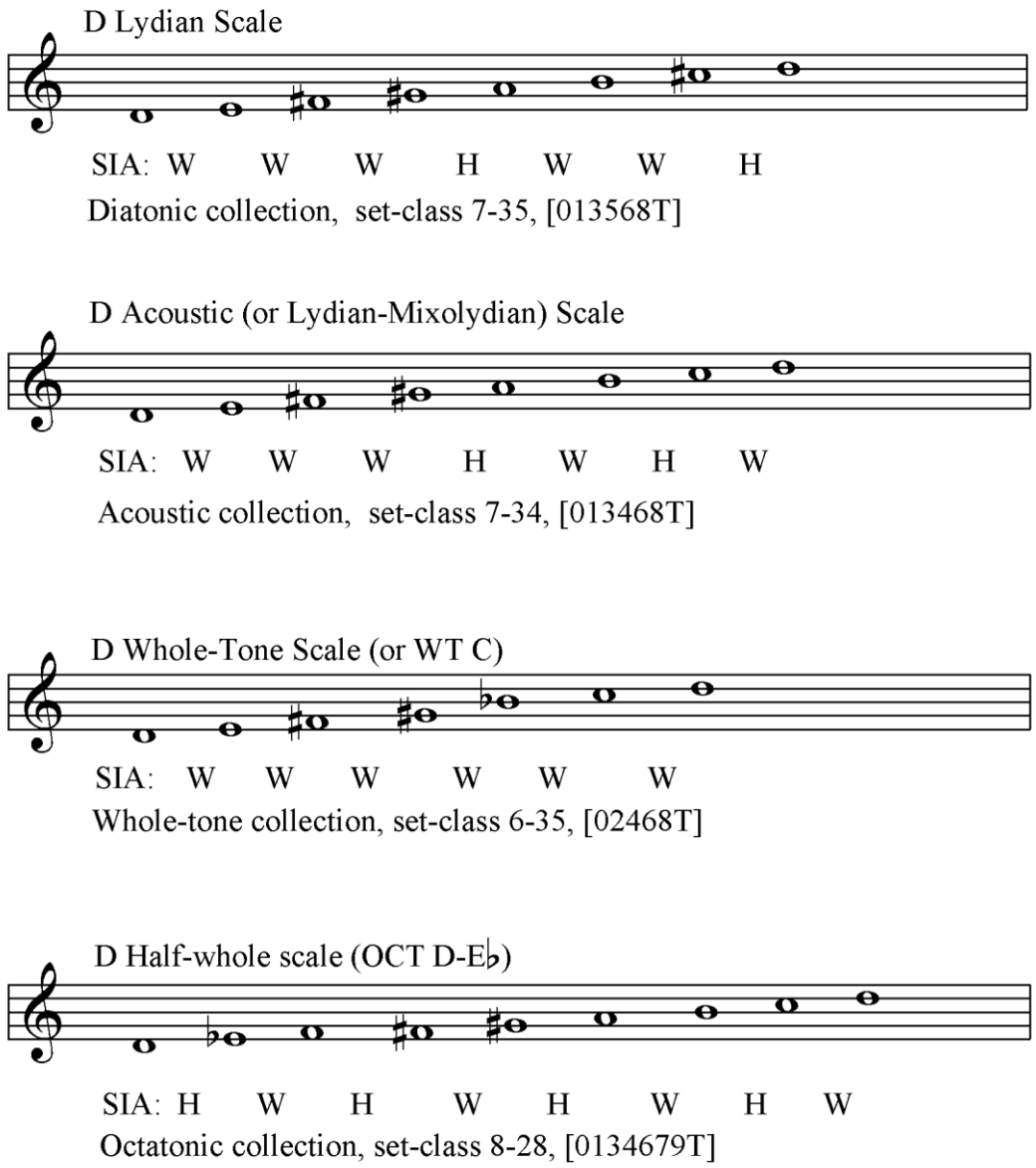

Fig. 3.1: Four scales, set-classes, and SIAs

Fig. 3.1 shows the four W/H scale-classes beginning on the pc D. The particular transpositions and modes are chosen so as to maximize common tones between them, as we will see in Chapter 4. The interval structure of each scale is shown below each staff as a particular string of Ws and Hs. This series of intervals in a pc collection (or scale) is referred to as the

scale's Successive Interval Array, or SIA.[101] These strings of Ws and Hs , or SIAs, are not a casual or incidental annotation. They exactly define each scale type. Each particular interval pattern determines with great precision all harmonies derivable from that scale, the qualities of all of its tertian harmonies, its number of perfect fifths (important for tonic sonorities in *La mer*), its tritones (important for [0 2 6], dominant-like harmonies), and so on. Thirteen additional SIAs derived from these four scales by modal rotation are shown in Appendix A, Fig. A.1 (p. 180).

Note the exclusive use of half steps and whole steps in all the scales, and the absence of consecutive semitones. These two restrictions are hugely significant. They constitute the key conditions for *La mer*'s scale-derived harmony. The ban on [012] semitone clusters in these scales is based on the fact that such clusters never appear as chords, vertically, in *La mer*.[102] Of course, Debussy often uses the chromatic scale melodically, but we will interpret such usage as chromatic embellishment within a W/H scalar environment. In other words, Debussy's generally consonant orchestral harmony is the authority by which we develop our theory; it is necessary for the concept of chromatic "nonscale tones." In accordance with Tymoczko 2006, we review below the constraints this puts on Debussy's scale structures. The ban on [012] harmonies is the single most consistent aspect of his harmony in these popular works. The central importance of this issue cannot be overstressed. Appendix A, Scale Theory, includes a short demonstration that the *only* collections that can be built given these restrictions are the four shown in Fig. 3.1.

[101] SIAs are usually shown with half-step integer counts rather than the Hs and Ws used here. D Lydian's SIA, for example, can be represented as 2-2-2-1-2-2-1, rather than WWWHWWH.

[102] The exception that proves this rule is in *Jeux de vagues,* mm. 225–6 and 229–30. The apparent [0 12 4 6 8 T] in those bars' pcs, {D♯, E, F, G, A, B, C♯}, lends itself to a simple tonal explanation. The outlier pc, E, is an anticipatory tonic pedal in the low strings, far below the harps' B whole-tone runs. It is very comparable to a "V7 over tonic pedal" effect in tonal harmony. A few of Debussy's experimental piano works, such as *Brouillards,* or *Des pas sur les neiges,* do contain harmonies with dissonant semitone clusters.

COLLECTIONS, SCALES, SET-CLASSES, and MODES

PC collection is a broadly useful academic term for any specific harmony. We can call a scale a collection (as in "collection of pitch classes") when we are interested in emphasizing a group of pcs without regard to a particular tonic pitch, a particular bass note, or a particular modal rotation of the scale. (These last three terms normally amount to the same thing.) The same 7-note, diatonic, three-sharp collection can be realized as D Lydian, B Dorian, A major, and so forth. The term collection allows us to get away from the notion that this group of seven pitch classes is necessarily only generated from a particular modal W/H pattern on a D tonic, a B tonic, or on any other note from the set. The sobriquet *collection* suspends tonal judgment, that is, it neither confirms nor denies rumors of pitch centricity. This is especially useful when pitch centricity is absent or indecisive, as so often it is in *La mer*.

The term *collection* can also refer even more broadly to a *set-class*, without reference to a particular transposition, as in *acoustic collection* or *whole-tone collection*. The set-class representing each scale is also shown in Fig. 3.1, in bracketed integer notation. Thus, the D Lydian scale is a particular instance, a specific transposition and rotation, of the more general [0 1 3 5 6 8 T] set-class, also called *the diatonic collection* or *set-class 7-35*. The integers in brackets represent each note in the scale and refer to the intervallic distance, in half-steps, from the first note to each subsequent note in the collection, when it is in *Prime Form*. Set-classes have a standardized index number, such as 7-35, and are always listed in Prime Form. The Prime Form of 7-35 takes the shape of the Locrian scale, which for D Lydian is G♯ Locrian.

The terms *scale* or *mode* are preferred when the music suggests a tonal center or tonic, which in *La mer* usually implies a diatonic or acoustic scale. For this reason we will speak of *collections* more often with respect to whole-tone and octatonic passages, which often provide the most dissonant and least pitch-centric passages. However, in Debussy *collections* and *scale* are rarely mutually exclusive.

For example, the D Acoustic scale shown in Fig. 3.1, {D, E, F♯, G♯, A, B, C}, is a particular instance of set-class 7-34, the Acoustic collection. The Prime Form of 7-34 is [0 1 3 4 6 8 T] which Debussy happened to employ at this same transposition in his G♯ dominant pedal at III/43-55 (Fig. 4.5a).[103] The term *acoustic scale* for this Lydian-Mixolydian, "major, ♯$\hat{4}$, ♭$\hat{7}$" scale derives from the fact that its pitches correspond to the first thirrteen partials in the overtone series. Although a few of these overtones do not quite match the notes of the tempered scale, the term Acoustic represents the scale, as well as the 7-34 set-class which it embodies.[104]

Similarly, the D Whole-Tone scale is a particular instance of set-class 6-35, [0 2 6 8 T]. In fact, there are only two whole-tone collections, referred to in this study as WT C and WT C♯.[105] D Whole-Tone replicates the pc content of WT C. The D Half-Whole scale, {D, E♭, F, F♯, G♯, A, B, C}, is of one of only three octatonic collections, instances of the octatonic set-class 8-28, [0 1 3 4 6 7 9 T]. We will refer to the three octatonic collections as OCT C-C♯, OCT C♯-D, and OCT D- E♭. The pc names indicate a unique semitone that each contains.[106]

Our four primary collections may be rotated to produce *modes* with distinct, unique SIAs. For example, rotating D Lydian (WWWHWWH) to its second note, E, generates the E mixolydian scale (WWHWWHW).

Because of the asymmetry in the acoustic and diatonic SIAs, each can generate seven unique modes. The diatonic modes correspond to the six church modes, along with their recently acquired cousin, Locrian. For similar reasons, there are seven distinct modes for the acoustic scale, although they do not (yet) have a standard nomenclature. These acoustic modes can always be described as a diatonic mode with a single alteration: "Lydian ♭$\hat{7}$," "Mixolydian ♯$\hat{4}$," or

[103] The Acoustic Scale's Prime Form can be thought of as its fifth mode.
[104] See Howat 1983, 48–49, for further explanation and references.
[105] Other terms for these two collections are WT I and WT II (Van den Toorn, Forte, and Bass) and wt-A and wt-B (Pomeroy).
[106] Forte 1991 refers to them as Coll. I, Coll. II, and Coll. III respectively.

"Lydian-Mixolydian." For this reason some analysts, such as Lawrence Berman, refer to them as the *composite modes*.

While a full investigation of the intervallic properties of these four collections is beyond the scope of the present study, it behooves us to contrast one particular intervallic aspect of each. A collection's potential for expressing consonant tonicity in *La mer* derives from the number of perfect fifths it contains, since the perfect fifth is necessary for major and minor triads. Thus, the diatonic collection's SIA allows for perfect fifths on six of its seven pcs. These are all potential tonics, as is assumed in traditional modal theory. In the three-sharp collection, consonant tonics can occur on D, E, F♯, A, B, and C♯. Only G♯, with its locrian diminished fifth D, is an unlikely tonic. The acoustic collection contains four perfect fifths. Of these four potential tonics, in *La mer* only the Acoustic Scale's tonic ever functions as such. (For example, D♭ is tonic, within a D♭ Acoustic harmony, at I/35–40.)

The whole-tone collection is limited intervallically. Its one single distinct mode has the SIA WWWWWW. The octatonic collection has only two distinct modes. Its only possible SIAs are HWHWHWHW and WHWHWHWH. Further rotations of either of these two scales must replicate one of these SIA patterns. Furthermore, all whole-tone scales map onto themselves at T2, T4, T6, T8, and T10, while all octatonic scales map onto themselves note-for-note, at T3, T6, and T9. This *tranpositional symmetry* explains why there are so few distinct transposed octatonic and whole-tone pc collections, especially as compared to the diatonic and acoustic collections.

Each of the fourteen diatonic or acoustic modes, with their fourteen unique SIAs, employs five Ws and two Hs. As a matter of fact, the list of fourteen diatonic and acoustic SIAs shown in Fig. A.1 (Appendix A, p. 180) are exhaustive. No other seven-pc W/H scales without successive semitones are possible.

The four scales are very similar in structure to each other, in spite of the unending diversity of sound they generate. First of all, for all four scales, the only adjacent scale-intervals

are half steps and whole steps, with no augmented seconds and no thirds. As none of these scales contains two consecutive semitones in scale order, none contains chromatic scale segments, such as the dissonant trichord [0 1 2]. A third similarity among these scale types is that they all pass through an octave in a similar number of total steps: six for the whole-tone scale, seven for the diatonic or acoustic scale, or eight for the octatonic. They are collections of similar cardinality.

Finally, *all 3-note stepwise scale segments in these four collections are diatonic* (that is, they will always match three consecutive notes from some diatonic scale), because the SIA for any such segment must be WH, HW, or WW, which are obviously all embedded in the diatonic scale's HWWHWWW pattern. For this reason Tymoczko refers to the acoustic, whole-tone, and octatonic collections as the "locally diatonic scales," which are useful to Debussy precisely because they are "different from—*but not too different from*—… the music of the classical tradition."[107] A large number of 4-, 5- , and even 6-note segments from all three nondiatonic scales are also present in diatonic scales. Richard Bass echoes this:

> The adaptability of either collection [the whole-tone and octatonic; he ignores the acoustic] as a deviant element in tonal writing derives principally from the large number of diatonic scale segments and traditional chordal sonorities it contains.[108]

These similarities (the restriction to whole tones and semitones, the consecutive semitone constraint, the similar cardinality, and the "local diatonicism") profoundly strengthen the ability of the acoustic, the whole-tone, and the octatonic scales to invoke, mimic, and distort a large number of diatonic and tonal effects. It means, for instance, that diatonic melodies transported to these nondiatonic scales, will rarely be more than one or two half-steps away from their original intervallic structure. Similarly, chords in these scales are "different, but not too different," from tonal chords. Many have familiar diatonic qualities, like the triads and seventh chords of the diatonic scales. This is a result of the fact that *all* scalar thirds in *all* the four collections are

[107] Tymoczko 2006, 225. Emphasis original.
[108] Bass 1994, 158. His Table 1 lists tonal chords derivable from whole-tone and octatonic scales.

diatonic (minor thirds and major thirds), since any two-step segment in any of them can only be constructed as W+H or W+W. Even the non-diatonic diminished fourth created by the H+W+H segments in the Acoustic and Octatonic scales have a certain tonal resonance, because this segment also can occur in the Melodic Minor and Harmonic Minor scales of common practice tonality.

Another similarity that results from the common intervallic features we have described is that the octatonic, acoustic, and especially the whole-tone scales embed numerous complete, incomplete, altered, or extended V7 chords. For instance, the sonority {F, G, B} (an incomplete G7), or transpositions of it, are found once in the diatonic, twice in the acoustic, four times in the octatonic, and six times in the whole-tone collection. The sonority {F, G, A, B} (an incomplete G9 chord), or transpositions of it, occurs once in the diatonic, twice in the acoustic, and six times in the whole tone collection.

Debussy also uses other dissonant chords embedded within the W/H scales, most of which are familiar from 19th-century chromatic music. For instance, the consecutive major thirds of the whole-tone scale make all of its triads augmented, a common 19th-century chord (Liszt, Mussorgsky). The octatonic allows diminished seventh chords with added upper neighbor whole-steps, the outer limit of dissonance in common-practice harmony.[109]

We can summarize these observations about the whole-half family of scales by saying that in *La mer* Debussy's scales present a kind of "chromatic modality." That is to say, as long as the octave is spanned in about seven steps, and consecutive semitones are avoided, these scales are equally usable alternatives to the traditional major and minor scales: they offer similar melodic intervals and chord structures, while providing subtly new tinges of color and feeling.

[109] Of the four collections, the octatonic has the most varied harmonic potential, embedding both tonal chords and nontonal, dissonant ones (i.e., E♭7/Cmaj). The latter have no role in *La mer*.

Lawrence Berman describes Debussy's use of scales in this way:

> The degrees heretofore considered chromatic, or foreign, to a particular major or minor scale must now be considered 'modal alternatives' of that scale. …That is to say—we are not dealing with a chromatic continuum, but with a construct in which each of the twelve chromatic tones has an equal opportunity, theoretically, of being one of those seven elements.[110]

3.2 THE HARMONIC AMBIGUITY OF THE SCALE-CHORD TEXTURE

One way Debussy reinvented harmony was through textures of busy figuration that express a complex total harmony, which I will refer to as a *scale-chord*. Fig. 3.2 (p. 67) shows the texture at the climax of the First Principal Section of *De l'aube a midi sur la mer*, I/73–74. This texture was cited by Barraqué for its polyrhythmic complexity;[111] he reads seven different meters into the music (including a viola part omitted here). The brackets on the music indicate the various lengths of the simultaneous repeated figures.

Debussy's swirling, polymetric ostinati sustain a harmony containing six different pitch classes. The aggregated vertical sonority sounding on the first three eighth note beats is shown on the second system, demonstrating how dense the chord is. The trumpet's line adds A♯ to the 6 pcs already sounding, yielding the 7-note E Acoustic collection, {E, F♯, G♯, A♯, B, C♯, D}, shown below the music.

The passage in Fig. 3.2 does not clearly project E as the root or tonic of the E Acoustic scale, and it is better to refer in this case to the E Acoustic collection. The preceding bar does have a sustained E bass, but it never returns, and none of the other parts particularly highlight E in a sustained or convincing way. The bass from here on arpeggiates D, B, and eventually G♯.

Using the habits of tonal theory, we might observe that this bass arpeggiates the notes of an E7 chord. However, this is undercut by the prominent overlay of pentatonic figuration, the

[110] Berman 1965, Vol. 1, 140.
[111] Barraqué 1988, 22.

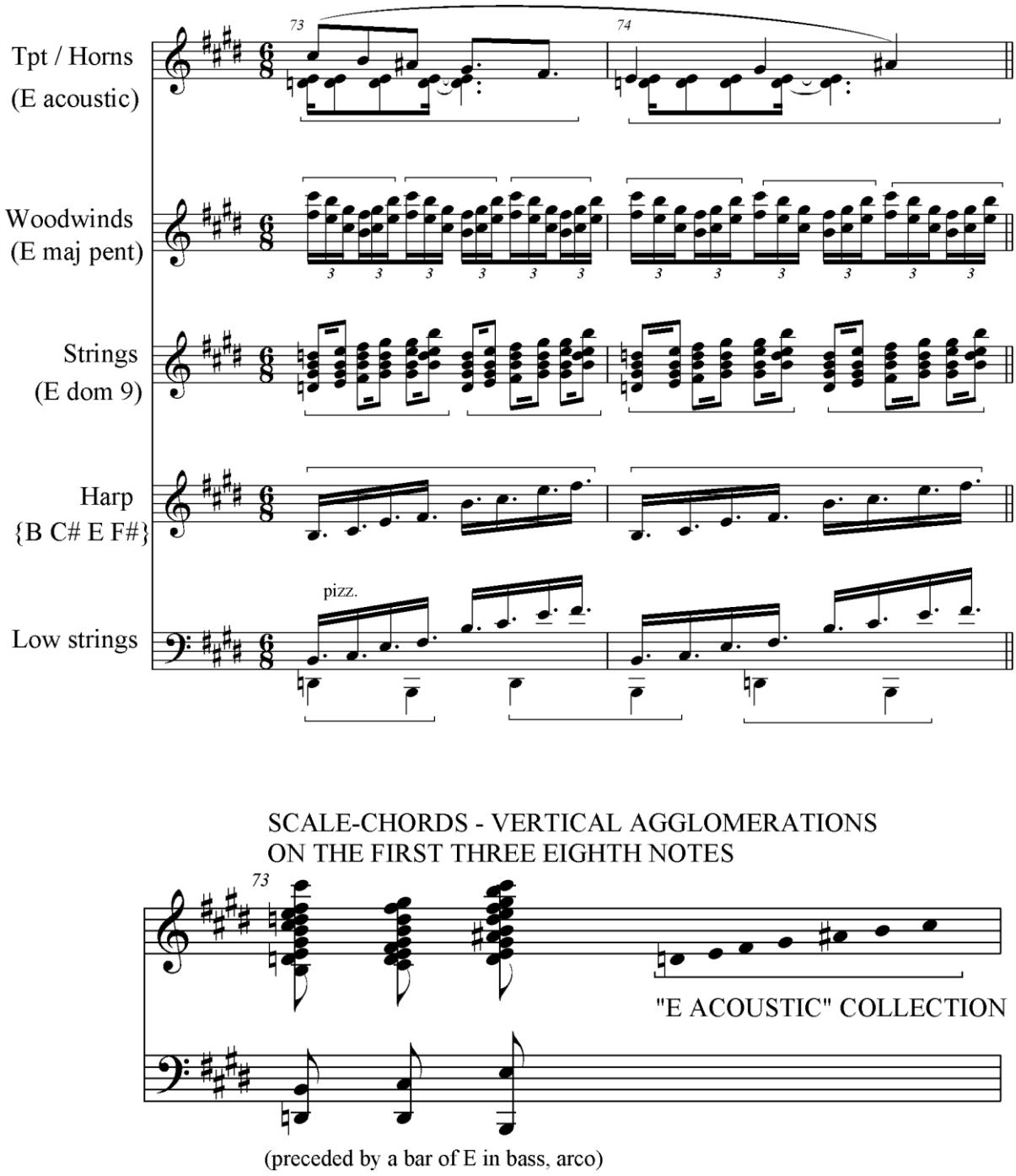

Fig. 3.2: A scale-chord (I/73–74, E Acoustic)

constant 6-pc harmonic density, and the liquidation of E's presence as the texture develops. The dominant feel of this passage is so watered-down as to become something altogether different.

Individual choirs partition Fig. 3.2's scale-chord into slightly less dense groups of 4 and 5 pcs: E major pentatonic in the woodwinds, Edom9 in the strings, and so on. Another traditional aspect of this texture is its voicing. The dense scale-segment portions are all in the treble range. The low range is much sparser.

Typically, the accompanimental figures in scale-chord textures provide a virtual block chord of only 3 to 5 pcs, while the melody's winding arabesque includes additional notes of the scale within a short time span. The accompanimental harmony may be perceived as a chord—for instance, a triad or a pentatonic chord. When the texture is sufficiently thick—for example, when there are two arabesques at the same time, in addition to the accompaniment—then all the notes in the scale become a single, static, harmonic region, a trembling, 7-pc near-simultaneity (here the academic label "vertical simultaneity" is not always literally true). The chord verges on being a full scale, the notes of which chase each other so closely that it is as if they sounded simultaneously, through the alchemy of Debussy's texture. While individual timbres within the texture almost always include tertian subsets it is less tertian or contrapuntal—the traditional categories for understanding vertical sonorities—than it is a piled-up scale segment. (Appendix B shows a few departures from this technique, with examples of counterpoint and block chords.)

Debussy may sustain such a scale-based harmony for a single bar, or as long as ten or twenty bars. When extended for the course of a phrase, as often happens with Debussy's big orchestral themes, the busy surface activity masks harmonic stasis. As Barraqué says, "the music turns on itself in such a delirium that it gives an impression of fixity."[112] Pomeroy refers to these textures as "harmonically inert arabesques."[113] In the complex stasis of Debussy's layered textures, harmonic rhythm depends on change of scale more often than it does on change of bass, or on the meter, let alone on the music's surface rhythm.

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[112] Barraque 1988, 22.
[113] Pomeroy 2000a, 16.

Debussy's layered textures thus create a world in which the harmony is most easily described as a succession of scales acting as harmonic entities or regions. In this, his tonality differs radically from contrapuntal, triadic tonality. It is tempting, therefore, to reduce *La mer*'s harmony to a series of scales, as we do in later chapters. But to describe the harmony most faithfully, it is important to make further distinctions in how the scale appears texturally.

The scale-chord texture developed historically out of Debussy's winding ornamentations, whether melodic or accompanimental, which are basic to his style over several decades. Fig. 3.3 shows a brief passage from his String Quartet (1894). In this excerpt, Debussy embellishes two lines (cello and second violin) within the four-part chorale texture with constant triplet neighbor figures. Here, the harmony is a series of inverted seventh chords, in a four-part chorale whose individual lines are nearly, but not strictly, parallel. Seventh chords do sound on nearly every quarter pulse, and the neighbor figuration embellishes this basic harmony. In other words, in this passage the arabesque figuration still has a tonal meaning, as a decoration of tertian sonorities.

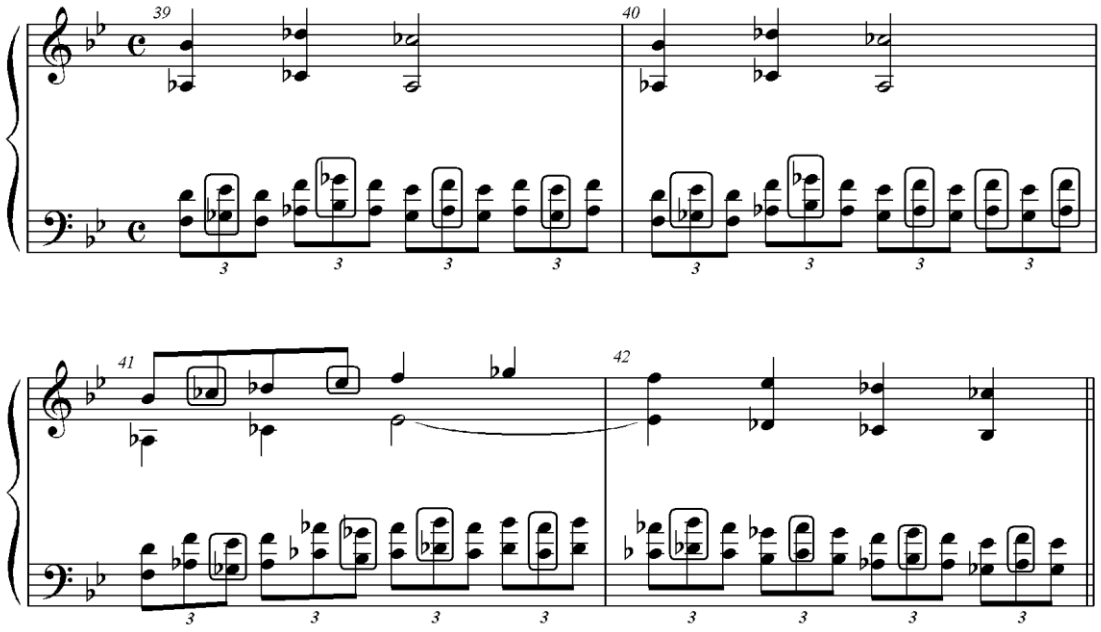

Fig. 3.3: String Quartet in G minor (1894), 1st mvt., mm. 39–42

In Fig. 3.4 from *Prélude à l'après-midi d'un faune*, however, Debussy combines two melodic lines containing triplet figures at different speeds with two sustained triads, G♭ major and E♭ minor.

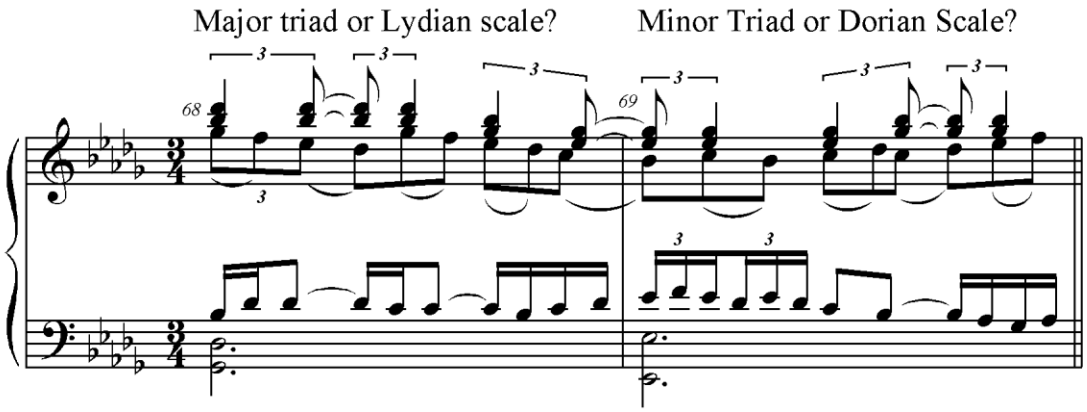

Fig. 3.4: Prélude à l'après-midi d'un faune *(1894), mm. 68–69*

The lines are shown here as inner voices, but they are actually thickly doubled in many orchestral registers. The polyphony's rhythmic complexity and its arabesque turns nudge the harmony away from an apparent triadic conception (G♭ major and E♭ minor) towards one of scale-chords (G♭ Lydian and E♭ Dorian). For example, the simultaneity in the second bar, at the first note of the second triplet sixteenth, is {E♭, C, D♭, E♭, G♭}.

Fig. 3.5 (p. 71) shows an excerpt from *L'isle joyeuse*, a 1904 piano work written concurrently with *La mer*. The accompaniment provides a syncopated A major triad, while two melodic lines moves in parallel thirds along the A Acoustic scale. The lines contain embellishing neighbor figures, taking turns daubing the background triad with the colors of the A Acoustic scale. The added tones hint at A7, Amaj(♯11), and other typical Acoustic scale colors.

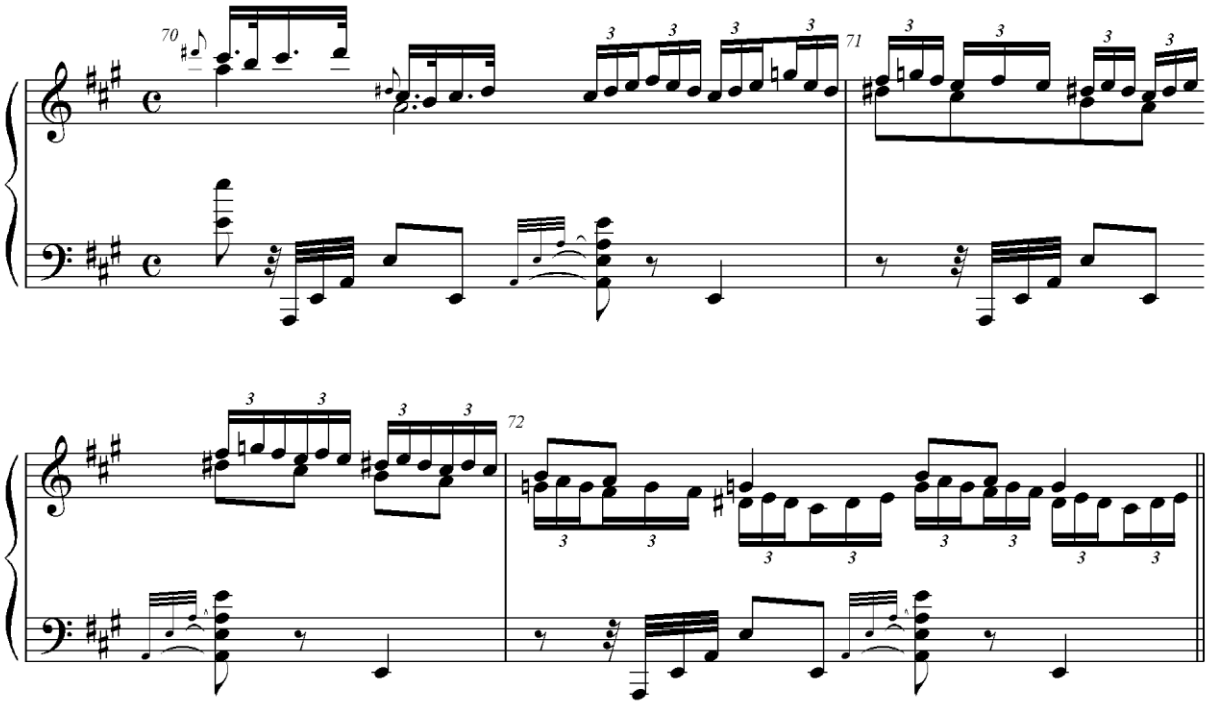

Fig. 3.5: L'isle joyeuse *(1904), mm. 70–72*

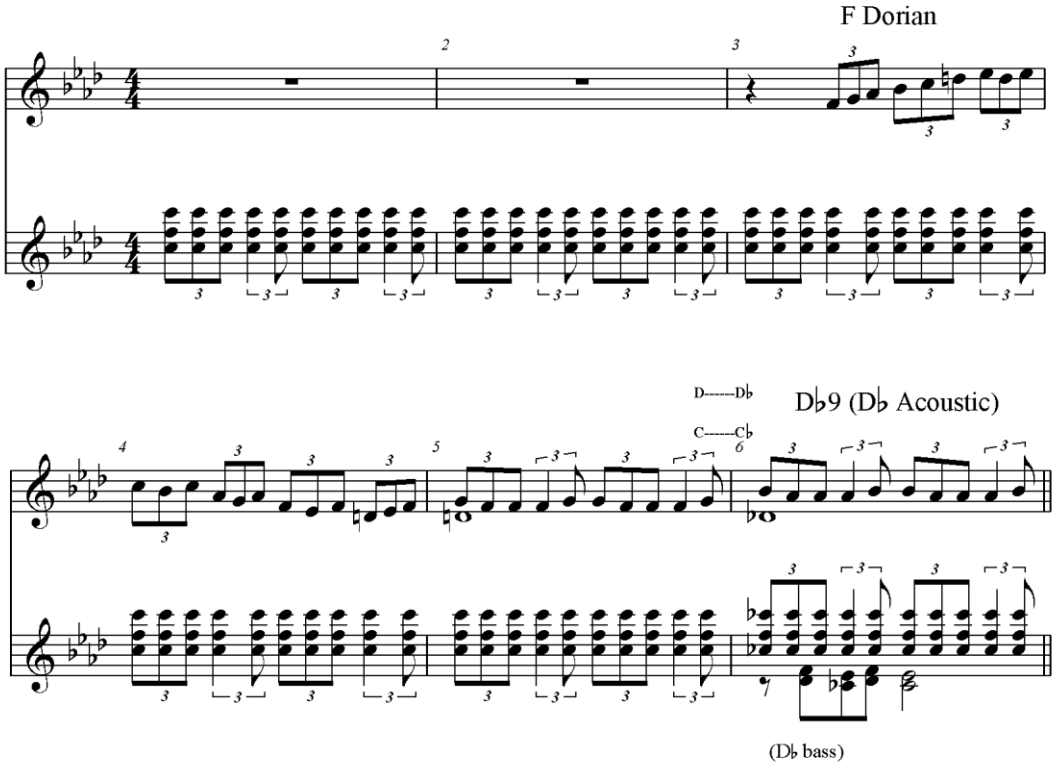

*Fig. 3.6: F Dorian Arabesque (*Fêtes, *mm. 1-6)*

Fig. 3.6 (p. 71) shows the familiar main motive in *Fêtes*, from *Nocturnes* (1899). This movement is perhaps the clearest example within Debussy's orchestral output of purely scale-based writing. This motive is transposed throughout *Fêtes*, to A Mixolydian, C♯ Whole-Tone, A♭ Dorian, B♭ Mixolydian, E Mixolydian, and so on.

All the pitches in mm. 1-5 of Fig. 3.6 come from a single scale, in this case, a 3-flat diatonic one (B♭, E♭, and A♭), and all of the scale's pcs are present in the music. The theme has an F tonic, or pitch center, and bears the coloration of the Dorian scale on F. The tonic pc F is implied harmonically by the accompaniment's F-C ostinato, the tonic-establishing perfect fifth familiar from common practice harmony as well as from folkloric drones around Europe. The tonic pc F is also emphasized melodically by the tune's arch-over-F contour. The Dorian sound distinguishes the music from minor-key common-practice tonality, but it still is clearly minor, and clearly has a tonal center—more clearly than is typical in Debussy.

The *texture* of Fig. 3.6 consists of a busy arabesque against an accompanying perfect-fifth ostinato. (This accompaniment is very sparse; Debussy is better known for the lush harmony of Fig. 3.2.) The melody in Fig. 3.6 winds rapidly through all the notes of the F dorian scale, and although it would be possible to describe the melody as an embellished arpeggio of F, A♭, C, and E♭, that is, as a combination of tertian "chord tones" and tonal embellishments such as "passing tones," the embellishments have a harmonic importance they would not have if the accompaniment were less sparse and static, if it were a chord succession of some sort. That is, *the phrase's harmonic color comes from the arabesque,* a winding stepwise line, rather than from a chord progression. This reflects the fact that the passage's harmony is unchanging, without even a concluding, cadential chord change. Even in this simple example of a perfect fifth asccompaniment, *the scale becomes a kind of harmonic entity*, and it verges on being a scale-chord.

In Fig. 3.7, Debussy recasts the *Fêtes* melody of Fig. 3.6, transposing it, tweaking it by half-steps, and setting it against a new accompaniment. All the pitches in Fig. 3.7 belong to the C Whole-Tone scale. (When the entire passage is transposed up a half-step in the next four bars, all the pitches then belong to the C♯ Whole-Tone scale.)

Fig. 3.7's melody fills in all the notes of a scale, in this case, WT C. The accompaniment's two ostinati (bass half notes, rapid treble parts) provide 4-pc "French sixth" sonorities (inverted) above A♭ and D, with an added F♯-E neighbor figure. Thus the accompaniment provides as much whole-tone color as the melody does, unlike the previous example, where only the melody provides the characteristic Dorian color. But regardless of these different pc divisions between melody and accompaniment, in both passages, the entire scale is a static harmonic field, a scale-chord, despite busy surface activity.

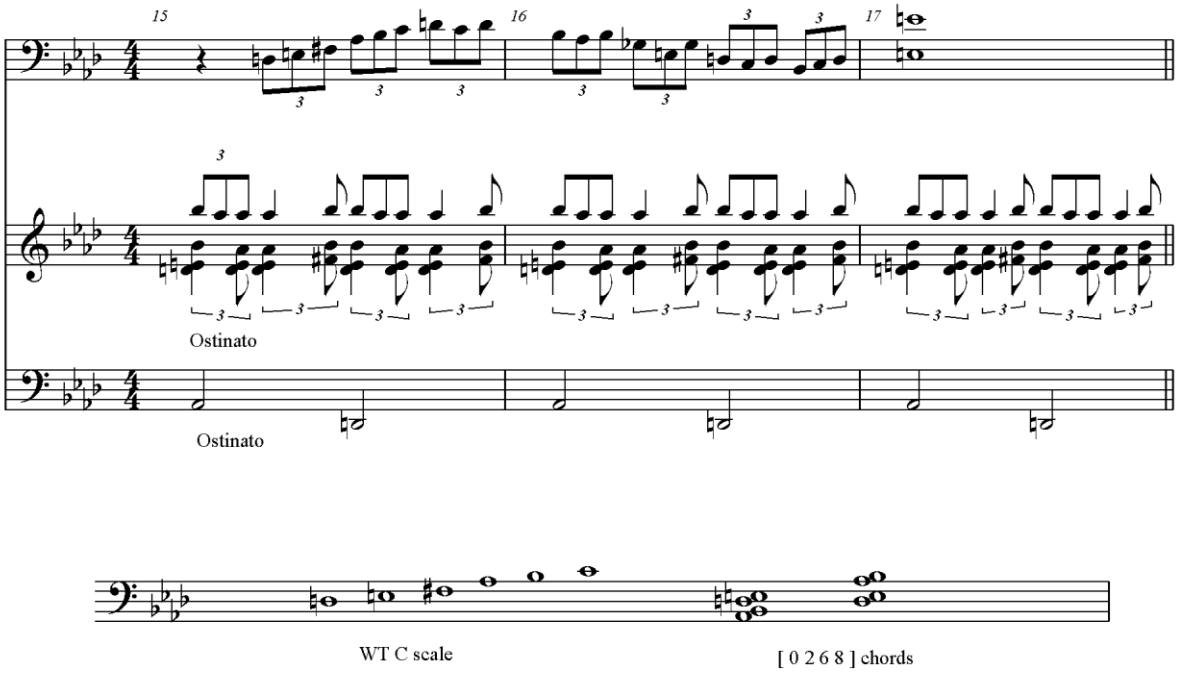

Fig. 3.7: Whole-tone collection (Fêtes, mm. 15–18)

The last two examples are not equally tonal. Fig. 3.6 is pitch-centric; it is in F Dorian. Fig. 3.7 is not; its [0 2 6 8] (French sixth) whole-tone chords are too dissonant to be a tonic sonority, at least in the context of *Fêtes*, where they are heard *in relation to* Fig. 3.6's perfect fifths. This idea of *relative consonance as tonic determinant* is an important component of my theory of loose tonality.

In Debussy's orchestral works, the major or minor triad acts as a reference point, as a kind of relative yardstick, of consonance, and therefore of tonicity. (The late orchestral work, *Jeux*, on the far borders of loose tonality, is an exception.) In theory, at least, a whole-tone-derived chord *could* act as a tonic chord, if it is the most consonant chord in a work. By the same token, though, the tonality of such a piece would be that much further from triadic tonality. At any rate, the *Prèlude*, *Nocturnes*, *La mer*, and *Images*—twelve substantial orchestral movements—all employ consonant triads for their strongest tonics.

3.3 DETERMINING HARMONIC BACKGROUNDS

Specifying a generative harmony for a musical phrase can help us to describe the local tonality: its "color," its stability, its degree of pitch centricity, and so forth. However, the musical evidence for a particular harmony is often unclear or ambiguous. A scale may appear only partially, or several different scales could contain the music's pitches. A sheen of decorative chromaticism can further obscure matters, and as the texture thins further ambiguities may ensue. Harmonically reducing a passage to a scale or a tertian chord eliminates what is most characteristic about the music. The surface details are at least as important as the deeper patterns we consider in later chapters.

There are two important principles that will help us to determine generative harmonies for a given passage. I call these two assumptions *The Simplicity Bias* and *The Rule of Pitch Class Inertia*. They both depend on the idea that *La mer*'s harmony is often triadic and relatively

consonant, and therefore that tonal perceptions of consonance and dissonance can be invoked in our analysis. On the other hand, in focusing rigorously on the precise sounding harmony and in avoiding harmonic reduction to familiar tonal objects, both principles resist glibly assuming the primacy of preconceived harmonic entities, such as tonal triads, or even the W/H family of scales.

On the evidence of the form charts and key areas labeled by Berman, Barraqué, Rolf, Trezise, and Pomeroy in Chapter 2, Debussy analysts generally share these two common-sensical assumptions, although they are never stated explicitly, and are not applied identically. My purpose here is to make them explicit and to show how they might guide interpretation.

This first assumption is that our analysis should add as few imaginary pcs to the music as possible, and such added pcs should be acoustically simple, i.e., consonant. It is not the purpose of scale theory to impose full scales willy-nilly, on all available pc collections, thick or thin. In cases where a scale appears only partially, we do not necessarily imagine a full scale that fills in its gaps; this is especially true when only 3 or 4 pcs are present in a passage, whether as triads and seventh chords, or as whole-tone scale segments.

A kind of corollary to this is the idea that when we hear a major or minor triad in Debussy, it does not necessarily imply a scale, let alone the traditional tonal scales over their modal or nondiatonic brethren. In other words, unbiased harmonic analysis should add as little complication to the musical surface as possible, while still yielding some harmonic insight. This principle of scale selection is akin to the Hippocratic principle, "first, do no (tonal) harm," or the legal axiom "innocent until proven guilty." In loosely tonal music from the early twentieth century, it is appropriate to depend on the concepts, "tonal until proven nontonal," "consonant until proven dissonant," and sometimes, "diatonic until proven nondiatonic."

When we do hear 5 or 6 pcs in a scale-chord texture, on the other hand, the ear tends to couch the sound in whichever parent scale *would most maintain the consonance level of the*

given pcs, unless earlier context contradicts this aural expectation. This is most apparent with the "one-pc shy" harmonies—particularly the acoustic hexachords and whole-tone pentachords that Debussy uses in routine ways throughout his career. When we see their typical signposts, we can assume those scales, even if they are incompletely presented.

I do not mean to suggest by this that one is always aurally filling in scale gaps, but simply that actual, sounding pcs usually suggest a scale and tonic, and that one does not expect a more dissonant collection than is currently sounding. It is also unhelpful to try to relate sounding pitches to abstractions such as, for instance, a set-class complement or an improbably chromatic cluster, as Forte and Parks sometimes attempt, or to an imputed process of diatonic-octatonic interaction, as Pomeroy occasionally asserts, following in the tradition of Stravinsky analysis by Arthur Berger and Pieter van den Toorn.[114] In Debussy's relatively consonant sound-world, relatively consonant scales are a more plausible source of harmony.

In practice, the Simplicity Bias is not a perfect guide, but at least it gives us a basis from which to reason. In the following examples, it guides us to name a chord over a scale where possible, to prefer the pentatonic scale to a full diatonic one, and to choose the diatonic modes (except for Locrian) before the nondiatonic ones. Among the nondiatonic scales, when evidence is ambiguous, the tonal preference will generally be acoustic scale first, before the whole-tone or octatonic scales. Most importantly, it resists a strong bias we learn from tonal analysis, that a major triad or a minor triad stands for, invokes, or implies, its corresponding 7-pc tonal scales, and vice versa. In harmony as free as Debussy's, no such aural expectation should be present.

Admittedly, some harmonies are not so easily compared as more dissonant or more consonant, and some progressions are too chromatic to be subsumed under scale theory. In these

[114] The acoustic scale is a simpler and more direct explanation for many of his passages than the "diatonic-octatonic" interaction often conjured up in Debussy analysis. Compare Trezise 1994, 55, 75, with Pomeroy 2000a, 154.

cases the Simplicity Bias will not help us. It is, after all, a bias or preference, rather than a rule or law.

Let us now see how this works as we seek to describe sonorities in a few key moments. We are not obsessed with imposing scales here; we are simply seeking to describe harmonies with as little distortion as possible.

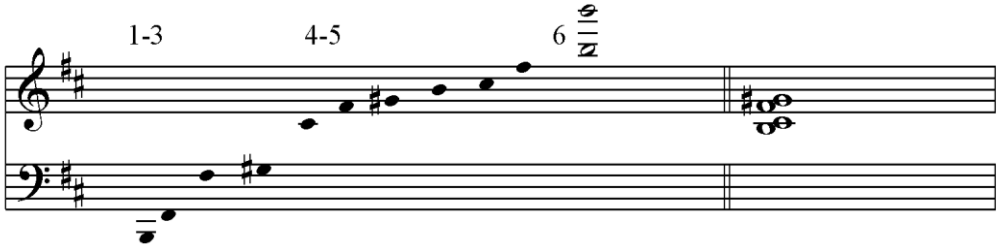

Fig. 3.8: A colorless, consonant tonality on B (I/1–6)

La mer opens with only four pc's—B, F♯, G♯ , and C♯—above a B pedal. Fig. 3.8 provides a harmonic reduction, at pitch, of the first six bars, during which this chord spreads upwards from a low range. The pcs form a tonally vague, but relatively consonant, quintal tetrachord. The B-F♯ fifth roots B as the definite pitch center or tonic. With only four sounding pcs, and no third above the bass to complete a triad (no D or D♯ above B), it is not at all clear if a fuller sound will emerge. The Simplicity Bias would guide us to *not* seek a parent scale for the set of four pcs.

To some ears, the G♯ portends that {B, C♯, F♯, G♯} will turn out to come from the B major scale or the B pentatonic scale, not illogical given Debussy's penchant for pentatonicism. Pomeroy, for example, says, "Note that the opening bars imply a pentatonic B *major*, rather than

the B minor specified by the key signature…."[115] The scale's third, D♯ never emerges, however (except as a brief chromatic appoggiatura in m. 8). Instead, the movement takes off with chromaticism and increased dissonance from m. 6 on.

Well-intentioned speculation about the introduction's closeness to B minor or B major is mistakenly biased towards common-practice tonality. The statement, "*La mer* begins in B minor because the key signature has two sharps in it," is just as misguided as, "It suggests a pentatonic B major because it contains G♯."[116] Distracted by the irrelevant criteria of common-practice tonality, both comments fail to focus on the specific sound of {B, C♯, F♯, G♯}.

A less biased observation would be that *La mer*'s initial harmony sounds pitch centric, rooted by the perfect fifth from B to F♯. Lacking a third, it has little coloration, though, without extremes of consonance (no third with the bass, no stack of thirds) or dissonance (no minor 2nds, or tritones, or sevenths with the bass). These two features—definite tonal centricity, but no third—are its essential features, even when Debussy reprises it (mm. 23-30) in a thicker, 5-pc, texture. (The one added pc, A, is treated like a lower neighbor to B.) These features contrast with all the rich harmony that is to follow, allowing us to slip into the colorful sea gradually.

To my ear, the general sonority of *De l'aube*'s Introduction, past the colorless opening sound, is actually slightly closer to B minor than B major because of the important role played by the pc D in mm. 18–19. But that is not to say it sounds minor, or even that its tonal system is

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[115] Pomeroy 2000a, 148, n. 24, emphasis in original. This contradicts his minor reading of the opening harmonic region, in which B minor is enharmonically iv/iv of D♭ major. See n. 94, p. 53, above.

[116] If we look at this merely as a technical question of scales and their subsets, {B, C♯, F♯, G♯} in fact belongs to six W/H scales: B Lydian, B Major, B Acoustic, B Mixolydian, B Dorian, and B melodic minor. The other B scales (B whole-tone, B octatonic, B Aeolian, or B Phrygian) contain specific chromatic clashes with the sounding tetrachord. Our ear might also not particularly expect B Dorian or B melodic minor, as the (absent) third of the tonic triad, D, would form a dissonant tritone with the sounding G♯.

triadic. In fact, in its paucity of tertian sonorities, it primarily sounds different from the rest of *La mer*, which may well be the intention. The Simplicity Bias asks us to leave the tetrachord alone.

The trumpet's "Call of the Sea" in *De l'aube*'s Introduction (Fig. 3.9) recurs throughout *La mer*. The melody's hexachord, {A♭, B♭, C, D, E♭, F} belongs to two scales, C Aeolian (if we add a G) and A♭ Acoustic (if we add a G♭). (Let us temporarily ignore the dissonant bass on B and A, which creates an octatonic collection with the trumpet melody's initial {C, D, E♭, F}.)

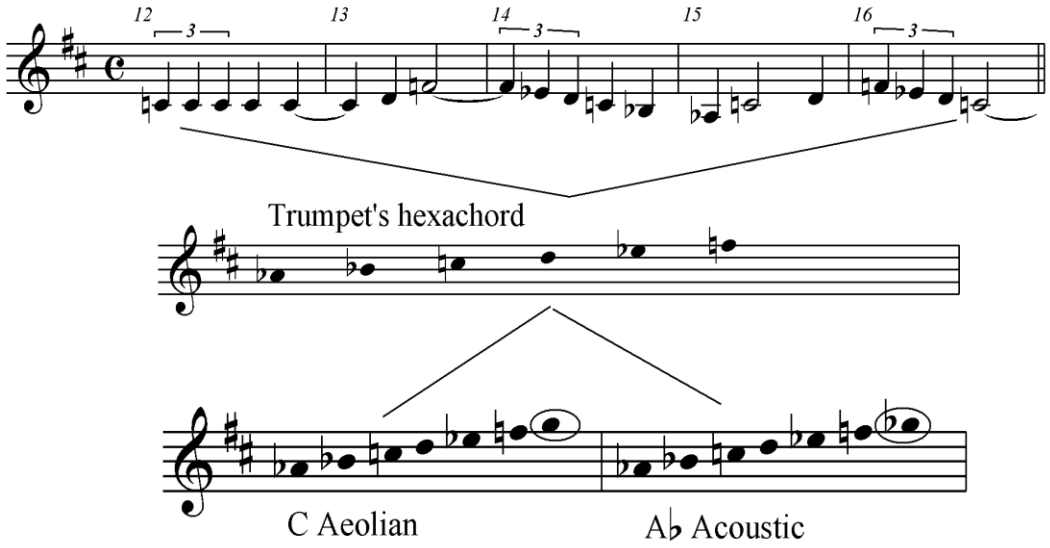

Fig. 3.9: Aeolian or Acoustic? (I/12–16)

The G♭ of the A♭ Acoustic scale would add a dissonant sound, the tritone, against the melody's sustained headtone C. Furthermore, the tune circles around a C, on which it begins and ends. All analysts of this melody therefore correctly choose the diatonic C Aeolian scale over the A♭ Acoustic, instinctively relying on the Simplicity Bias. (The extremely dissonant bass undermines this perception, creating a brief octatonic inflection instead.)

The fact that two different seven-note scales all contain the trumpet's hexachord leaves the way open for future reharmonizations, however, and that is precisely what Debussy does. At the movement's first climax (I/73, see Fig. 3.2), the transposed trumpet call (at T8, beginning on G♯ instead of C) is now a subset of both the G♯ Aeolian and E Acoustic scales. This time, Debussy bathes the melody in the E Acoustic collection, which is precisely analogous to the A♭ Acoustic scale we just rejected. The theme then recurs throughout the third movement, both in acoustic and whole-tone scale environments.[117] The trumpet call's potential for a more dissonant harmonization is realized throughout *La mer*, a process made possible by fact that the original C Aeolian melody lacks the scale's fifth degree.

We now turn to the main theme of *De l'aube à midi sur la mer* (Fig. 3.10, p. 81) to demonstrate that even when there is a stable scalar harmony, the music may still divide the scale between basic harmony and decorative tones. Is *La mer*'s tonic sonority D♭ Major Pentatonic, or D♭ Acoustic?

The D♭ Major Pentatonic figuration that introduces the main theme in *De l'aube* sounds by itself, complete and pure, for four bars (mm. 31-34). After the third-less B tonality of the Introduction (mm. 1-30), D♭ Pentatonic, with its embedded D♭ major triad, provides a much more decisive tonic sonority.[118] Four D♭ scales contain the pentatonic pcs: Major, Lydian, Mixolydian, and Acoustic. The horn theme enters on an emphatic C♭ (m. 35), shifting from a potential D♭ major scale to D♭ Mixolydian. This C♭ is commonly called a "♭$\hat{7}$," which is a

[117] Specifically, it sounds at III/34 (B Acoustic, see Ex. 4.8), III/98, 104, 110 (WT C♯), III/235 (A Acoustic), and III/234 (E♭7). The tune's head motive is also the basis of *La mer*'s ♯motivic build-up at the final huge climax (III/272–289), both in the bass's quarter triplets and in various faster treble voices (see Fig. 2.7, Ex. #2, p. 28, above).

[118] The pentatonic chord as tonic sonority has numerous nineteenth-century precedents. Berman cites Chopin's Etude (Op. 15, No. 5) and Barcarolle (Op. 60) as early examples (Berman 1965,Vol. I, 44ff). For a historical review of pentatonicism see Day-O'Connell 2007.

precise and widely understood label for the pitch. However, the "♭$\hat{7}$" description is still subtly biased towards the tonal scale, implying that we might hear the C♭ as an alteration of the major scale, rather than as a sheer added color—as if C♮ had in any way been implied by the preceding D♭ major pentatonic harmony.

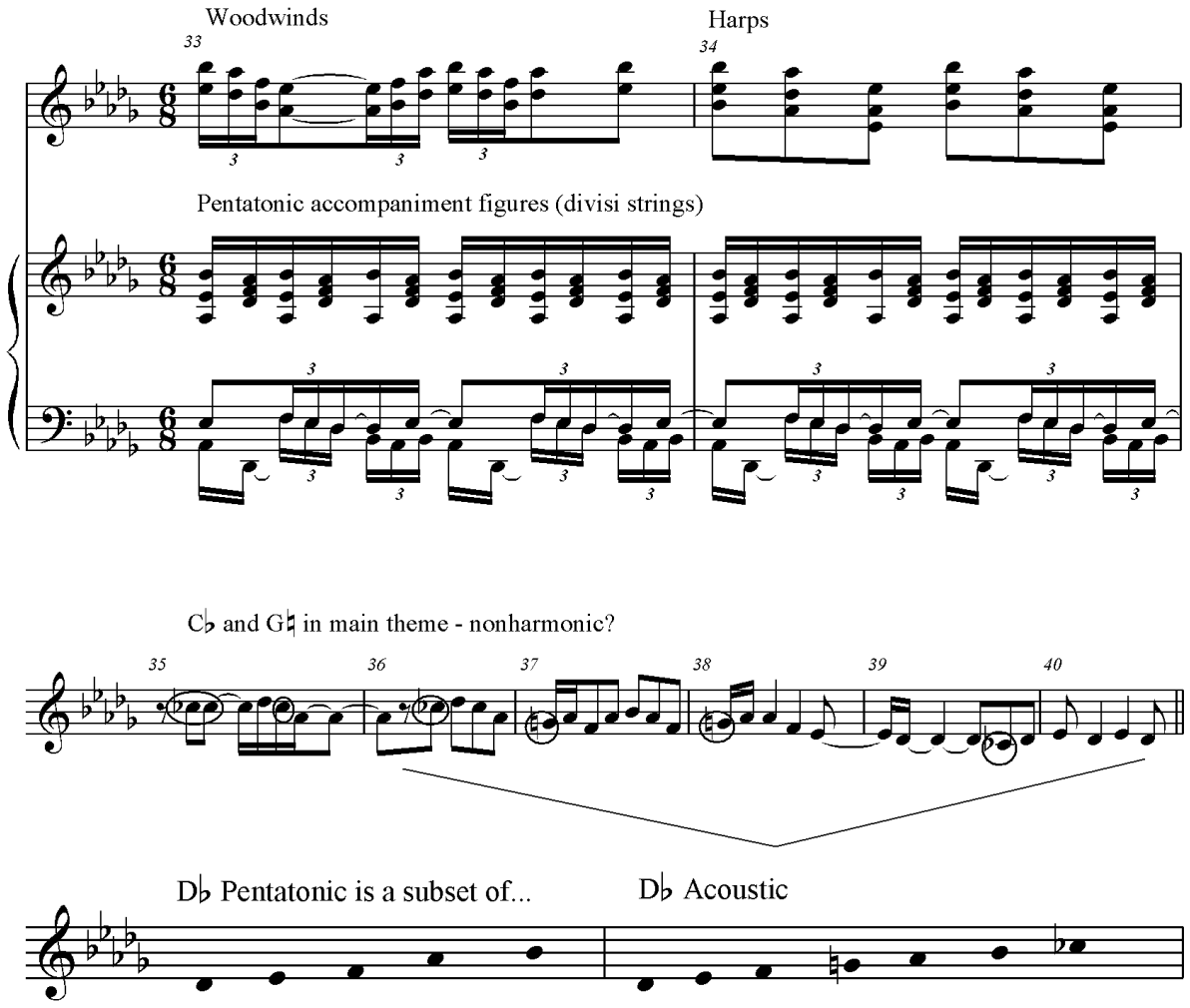

Fig. 3.10: Pentatonic or Acoustic?(I/33-40)

The distinction is not trivial. Pomeroy's reading of this entire movement's tonal narrative depends on this assumption of a major-scale norm that has been subverted chromatically. He

hears C♭ as initiating a "tonal subplot" in which an unorthodox, *ascending* Urlinie of A♭–B♭–C–D♭ is derailed by this foreign C♭. The C♭ is reinforced in the following A♭ minor section, also read as an altered (minor) dominant. The subversion is eventually resolved with the fortuitous appearance of C♮ in m. 122's altered A♭7 chords.[119]

A less tonally biased narrative would emphasize other aspects of the music. It is preferable to call C♭ a harmonic added tone, a minor-7th dissonance above the bass's occasional D♭, which increases the pentatonic scale-chord's density to 6 pcs.

The arrival of G♮ appoggiaturas on successive downbeats (m. 37 and 38) completes the 7-pc collection, confirming it as D♭ Acoustic. Yet the unvarying D♭ pentatonic accompaniment never incorporates G or C♭ (♯$\hat{4}$ and ♭$\hat{7}$), and so these two notes act more like nonharmonic melodic tones than like chord tones, against the relatively consonant, timbrally blended pentatonic background. This perception is indicated on Fig. 3.10 with circled notes. Even though the D♭ Acoustic scale accounts for every single pitch in this passage, it is preferable to call it a pentatonic scale-chord embellished with two additional scale tones, than to call it a 7-pc scale-chord. By preserving Debussy's harmonic partitioning, this respects the music's sound.

The next example introduces a few complications in naming a harmony using the Simplicty Bias: an incomplete scale, a chromatic passing tone, and more intricate rhythms. Fig. 3.11a (p. 83), from Debussy's *Sirènes*, shows the undulant, dreamy motive sung by 16 women's voices (mermaids) throughout this last movement of the orchestral *Nocturnes*. Disregarding the brief A♯ in the upper-register's repeated motive as a chromatic passing tone, the passage contains six, and only six, pitch-classes. The accompanimental figures sustain four of these, B–D♯–F♯–A, a simple B7 chord familiar from tonal harmony. However, the A is not an equal partner to the

[119] Pomeroy's overtly tonal hearing of this section (I/31–87) takes the diatonic D♭ major scale to be normative: "A striking aspect of this section is its deliberate withholding of C natural, the tonic key's diatonic leading note, the conspicuous absence of which serves to heighten the omnipresence of its chromatically inflected counterpart" (Pomeroy 2000a, 157–158). He explains his large-scale interpretation of C♭ as subversive agent on pp. 132–144, esp. 142–143.

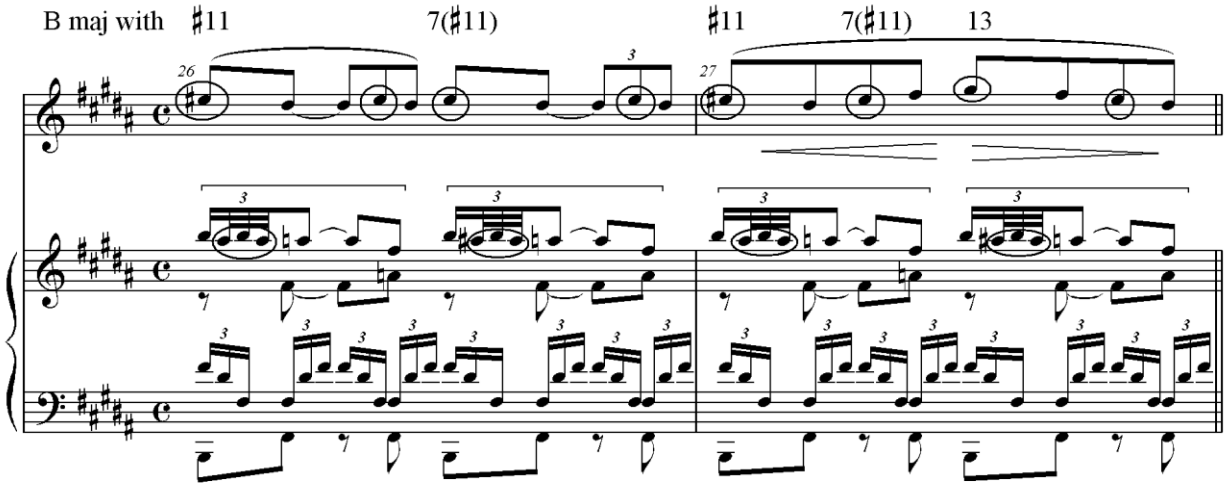

*Fig. 3.11a: Acoustic or Octatonic? (*Sirènes, *mm. 26-27)*

other three pcs, due to its rhythm and its appearance within a chromatic line. The stepwise melody, vocalized wordlessly by a female choir, adds two more pcs, E♯ and G♯. The full hexachord, {B, D♯, E♯, F♯, G♯, A} thus constitutes the stable harmony of the passage.

As far as deriving the passage from a scale is concerned, these 6 harmonic pcs almost fill in an octave, leaving only a major third gap between B and D♯. The hexachord belongs both to B Acoustic, and to OCT D-E♭ , as shown in Fig. 3.11b.

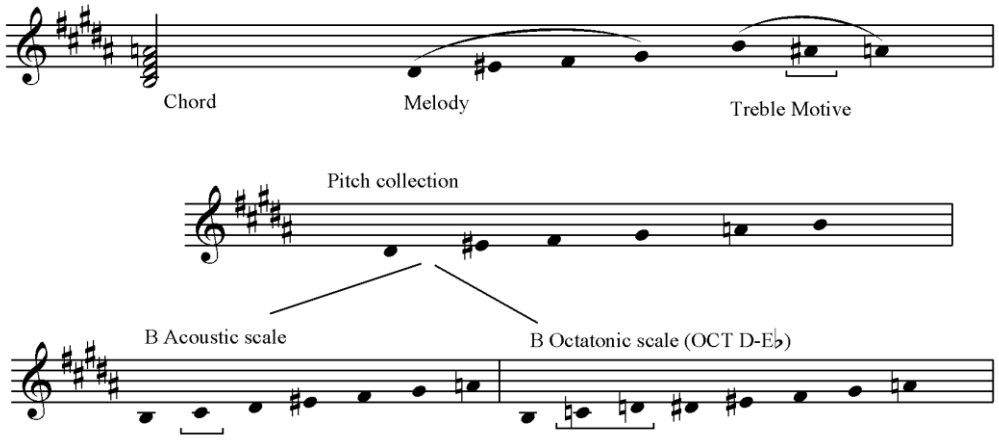

Fig. 3.11b: Harmonic reduction of Sirènes, *mm. 26-27*

If we were pressed to choose between these as the generative collections, the B Acoustic scale would be a better choice, because its missing C♯ is much less dissonant and tonally disorienting than the missing C and D of the B octatonic scale.

The harmonic relationship between melody and accompaniment is more intimate in this passage than in the last (D♭ pentatonic) one, however. The line between harmony and embellishment breaks down. The melody's E♯ and G♯ do not belong to the accompanying B7 chord, but these pcs are rhythmically emphasized and repeated, strongly coloring the B7 harmony with their ♯11 or 13 shading. The phrase's constant repetition gravitates toward perceiving it as background figuration, rather than foregrounded tune. Of course, E♯ and G♯ are also neighbor tones, resolving down by step to tones within the B7 chord (D♯ and F♯, respectively). The E♯-D♯ motion, in particular, unfolds like a surreally slow trill or mordant on D♯. However, unlike traditional dissonance figures in tonal counterpoint (such as 4-3, 7-8, and so on), the D♯ to which E♯ resolves is already sounding in the accompanying chord, as is the G♯'s note of resolution, F♯. This undermines our hearing them simply as nonchord tones resolving to chord tones, and it accentuates the sheer harmonic richness of a ♯11 and 13 against the B7 sonority. (Actually, E♯ is set against a richer background than G♯ is. The rare G♯s at m. 16.3 and m. 18.3 are heard only with {B, D♯, F♯}, preceding the As by an eighth note, whereas E♯ does repeatedly sound against the full B7, creating a fleeting, 5-pc, "B7 ♯11" simultaneity.)

In tonal harmony, nonchord tones and their resolution give a sense of motion toward a goal. Here, E♯ and G♯ simultaneously bear two harmonic aspects—one of added harmonic colors, and another of nonchord tones resolving by step. This double hearing is a good example of the perceptual ambiguities which are central both to Debussy's technique and his aesthetic.

Finally, let us return to the A♯, Debussy's chromatic passing tone, which is chromatic to the B7 chord, as well as to the B acoustic scale. The A♯'s role is more dynamic than the term "embellishment" implies, because it actually introduces the chord's "true" seventh, guiding the

ear to it, twice in every measure, like a kind of reverse leading tone. The B–A♯–A–F♯ ostinato (with a triplet turn around every A♯) also affects the harmony's density, causing the harmonic succession Bmaj, Bmaj7, B7 twice in every bar.

This passage's three-part texture consists of the B-major figuration and two contrapuntal figures, one of which (the vocal part) adds to the scale-chord effect, while the other (the A♯ line) chromaticizes a W/H scale. It is very typical of Debussy's technique that these contrapuntal lines keep out of each other's way. The mermaids guard the terrain between D♯ and G♯, while the A♯ line is mainly at the top step of the B-B octave. They dance around each other, enacting a sort of "pc-space détente."

My second assumption for understanding "background" or "generative" harmonies is that a particular referential chord or scale is perceived as continuing and guiding the harmony, even if some of its notes are left out, until such time as they are actively contradicted by chromatic alternatives. That is, when a scale or chord has been heard, the sonic image of the complete set of notes still leaves its trace, even when some of the pcs begin to "drop out."

The *Rule of Pitch-Class Inertia* is germane when Debussy modulates by subsets, as shown in Chapter 4, but it also applies to Debussy's "liquidating" cadences. These are musical endings in which some pitches of an active scale or chord disappear before the music comes to a halt. All three movements of *La mer*, and several interior cadences, come to an end in this way, in a subtraction or stripping away of added tones that reveals, in the last few bars, a major triad or a single pc as the ultimate tonic, which had previously been wrapped up inside a thicker chord.

For example, the surprisingly quiet, gentle end of *Jeux de vagues* (II/245-261) yields a stable E Lydian collection that gradually liquidates down to a major triad. A♯ drops out after m. 250. Harps continue to arpeggiate the pentatonic-like pcs {C♯, D♯, F♯, G♯} against a sustained

Emaj(add6) chord, yielding a typical Debussyan 6-pc scale-chord. When the harps stop, we are left with a *ppp* E major triad, the only pure consonant triad in the entire movement. The Rule of PC Inertia implies that this cadential triad is gently colored by the aural trace of the rest of the scale (2^{nd}, $\sharp 4^{th}$, 6^{th}, 7^{th}).

At other times, Debussy can exploit Pitch-Class Inertia to subtly undermine the conclusiveness of consonant, final sonorities. These tentative endings are a Debussyan trademark, and worth understanding with some precision. Most commonly, he liquidates the dissonant fifth in a diminished or augmented triad, without replacing it with a perfect fifth. Even though the dissonant interval is no longer sounding, it has not been explicitly resolved to a traditional consonance, and its aural shadow or after-image undermines the cadence's sense of rest.

This is acutely felt at the end of *De l'aube*'s First Principal Section (I/72–83), where the E Acoustic collection, which we observed sounding so thickly above D and B in Fig. 3.2 (p. 67), gradually simmers and boils down to {G♯, B}, and then just to {G♯}. Even though it is gone, the tritone D's destabilizing shadow, the "presence of its absence," makes these final notes sound dissonant and uneasy. (See also the penultimate staff in Fig. 5.3, p. 148.)

Fig. 3.12 (p. 87) shows a similar process at the end of an entire movement: the wispy final bars of *Nuages*. By Pitch-Class Inertia, Debussy undermines the (absent) consonant fifth of the movement's B minor tonic triad.

The last harmony of the last phrase is G7/B, with an emphasis on the B-F tritone in the muted horns' downbeat melody. Although G and F disappear, leaving only a rumbling B-D dyad in the timpani, F♯ never materializes to cover up the remaining aural inertia of the F. The shadow of the F-over-B dissonance clouds the seeming peace of the pizzicato final unison Bs. It is

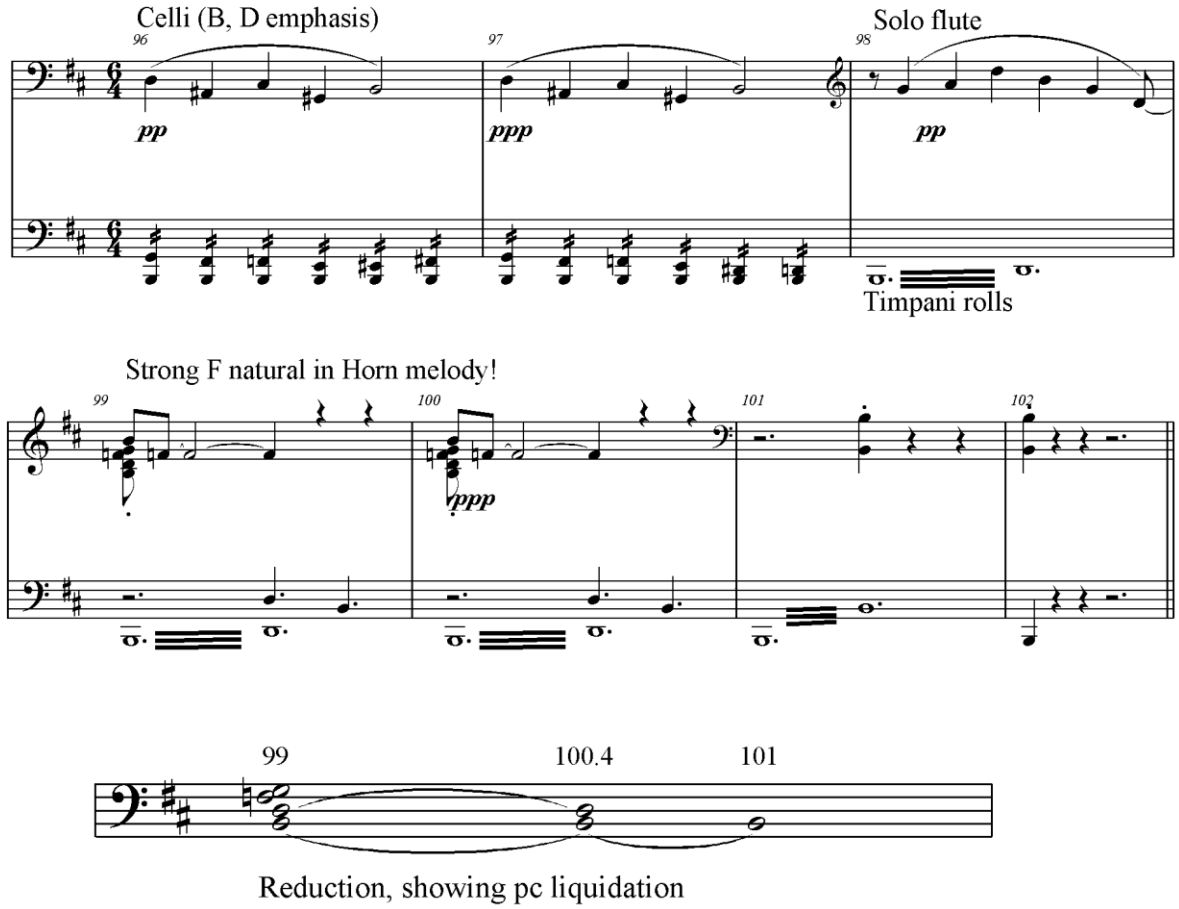

Fig. 3.12: Pitch class inertia in the conclusion of Nuages

particularly audible here because this ending contrasts with the very first sound of the entire movement, a placid perfect fifth between B and F♯.

Fig. 3.13 (p. 88) gives another example of how pc inertia can undermine a seemingly consonant cadential sonority, in this case, a consonant major 3rd, A♭-C. In these last ten bars of Debussy's *Gigues* (from the orchestral *Images*), a sustained whole-tone pentachord, {A♭, B♭, C, D, E}, is at first fully present in overlapping figures which emphasize the A♭ augmented triad's pitches.

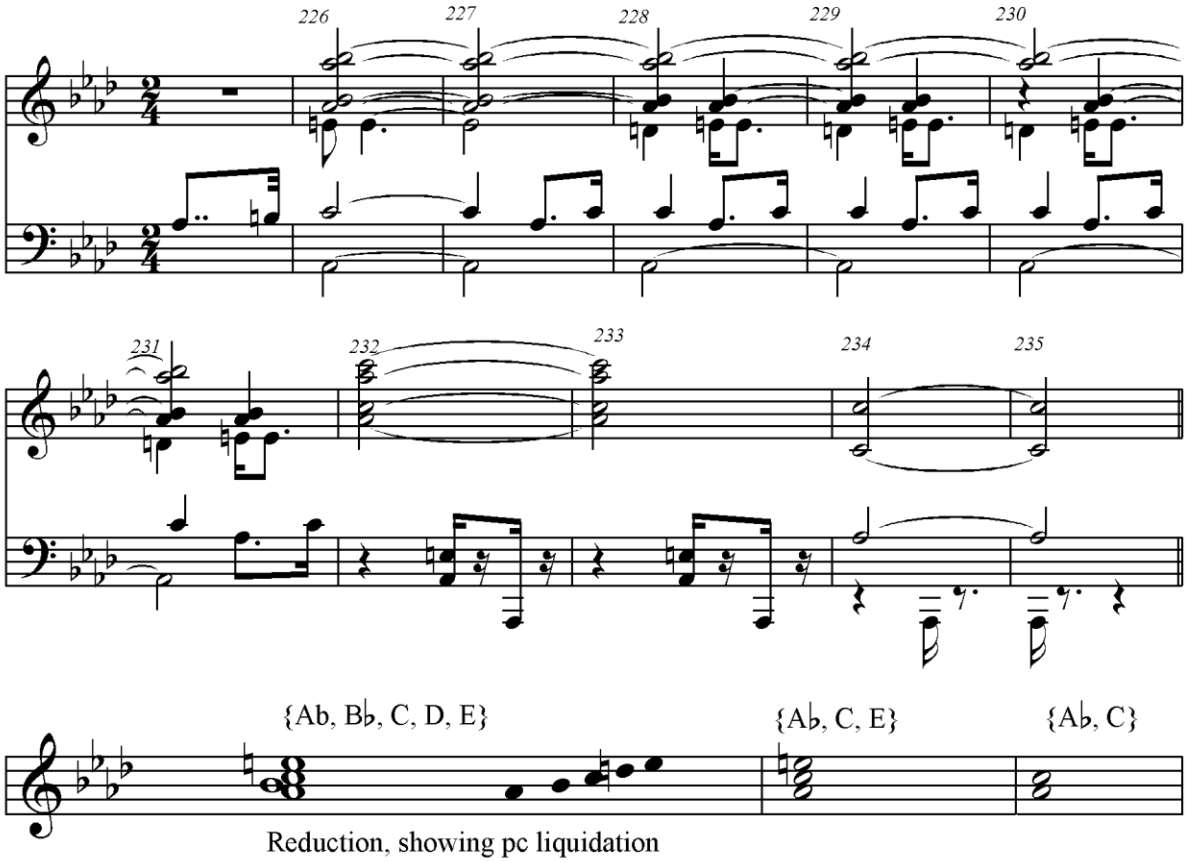

Fig. 3.13: Pitch class inertia in the conclusion of Gigues

The texture strips down to a sustained {A♭, C} dyad, with a hint of E in cello pizzicati four before the end. This environment prevents hearing the major third as part of an A♭–major triad. As Pomeroy writes, a "process of whole-tone dissolution …yields an ending shrouded in tonal ambiguity."[120]

One reason Pitch-Class Inertia is particularly perceptible at final cadences is that it mocks a well-established figure of traditional tonality, the "liquidating cadential triad." That is, it is extremely common in the final bar of standard tonal works for the tonic pitch to emerge from the cadential tonic triad, at the very end of a movement, as a single sustained pc, standing in for the consonant tonic triad. Using the Rule of Pitch-Class Inertia, however, these consonant tonic

[120] Pomeroy 2000a, 377.

sonorities at the end of *Nuages, Gigues,* and *De l'aube*'s First Principal Section (I/31-83) stand in for dissonances. Theodor Adorno vividly conveyed the undermined tonicity of these floating endings when he wrote in 1927, a propos Debussy's endings in general,

> As [Debussy] imaginatively presupposes music as a constant sounding, the soundscape which he suddenly steps into, so he leaves it suddenly and allows us the illusion that it continues further, because its real end is unreachable.[121]

3.4 CHROMATIC EMBELLISHMENT AND BLURRED CATEGORIES

We have seen throughout this chapter that in Debussy's scale-chord textures, stepwise melodic ornaments of a basic tertian harmony, while resembling tonal "nonharmonic tones," also verge on becoming harmonic. The hierarchical ambiguity of the E♯ and G♯ in *Sirènes* (Fig. 3.11) is the norm; the unambiguous, dense E Acoustic scale-chord in *De l'aube*'s first climax (Fig. 3.2) is the exception. In addition, when a melodic line cuts through a scale segment in consecutive semitones, the nonscalar tones can be perceived as foreign, slipping between the scale's whole-steps, much like chromatic passing tones in tonal harmony. We saw a simple example of this with the A♯ line in *Sirènes* (Fig. 3.11a).

In this conception of a two-tiered harmonic structure, we reveal a background or "generative" pc collection by (1) eliminating chromatic tones to reveal a scalar pc collection, which in turn (2) may conceal a basic tertian (or other) chord under a few embellishing scale tones. Since this hierarchy is analogous to that of tonal harmony, it is instructive to compare the tonal perception of chromatic embellishment to the perception of embellishment in Debussy's sound world. How do we know when a foreign tone is a foreign tone? Just as there was not a single definitive hearing of *Sirènes*'s added scale-tones, we may encounter double meanings in the interpretation of chromatic embellishments.

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[121] "Wie er die Musik imaginär voraussetzt als stetes Klingen, in dessen akustiches Bereich er plötzlich eintritt, so verlässt er sie plötzlich und lässt uns die Illusion, sie dauere weiter, weil ihr reales Ende unerreichbar ist." Adorno 1927, 161. Cited in Dömling 1976, 12. Translation mine.

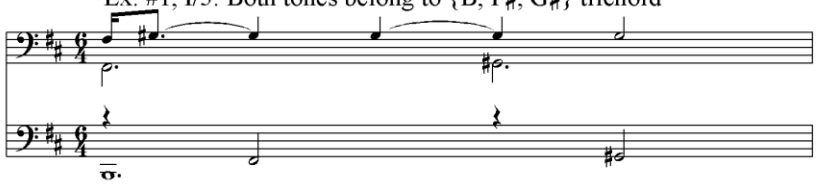
Since the scale-chord textures which Debussy chromatically embellishes may themselves be nondiatonic (i.e., the acoustic, whole-tone, or octatonic), it is helpful to refer to chromatic embellishments as *nonscalar*, *noncollectional*, or simply as *foreign* (foreign to the current background scale). We may also borrow the tonal terms *chromatic passing tones, neighbor tones,* or *appoggiaturas*, depending on their resolution.

Understanding these tones permits a scalar understanding of some complex passages in *La mer*. Without it, we can not perceive the four controlling scales behind most of *La mer*. On the other hand, it is important to recognize an important difference between the use of these foreign tones, and the use of dissonant embellishment in tonal harmony. In the latter, there is a clear separation between dissonance, both chromatic and diatonic, and consonance. In fact, a hierarchy between background harmony and surface embellishment or decoration is essential to the understanding of tonal music, whether for a listener or an analyst. In Debussy's music, which contains a great *range* of dissonance levels, foreign tones may not be heard as such, especially when the background scalar harmony is itself incomplete, undetermined, or modulating. Foreign tones can on occasion even be less dissonant than scale tones.

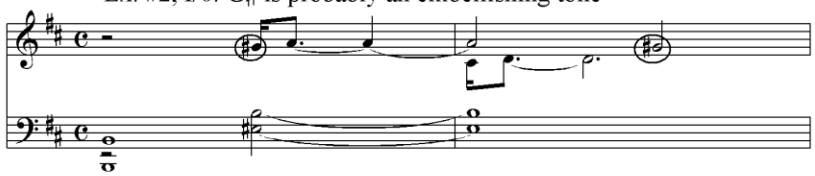
We can get a better handle on the issue of embellishment and hierarchy by tracing the harmonic progress of the appoggiatura motive that opens *La mer* and develops all the way to *Dialogue*'s close, as sampled in Fig. 3.14 (p. 91, also see p. 27, Fig. 2.7, Ex. #1, above).

The dotted-rhythm motive shown throughout Fig. 3.14 always moves by step (usually a whole step) against a static harmonic field. In tonal music this motion is associated with dissonant embellishment, but in some cases both tones of the motive are harmonic. For example, at I/3 (Ex. #1), both tones are part of the background harmony. The second example is rife with ambiguity; we return to it at the end of this chapter, in discussing chromatic embellishment. Ex. #3 places the motive over a triad, allowing the unambiguous interpretations marked on the score.

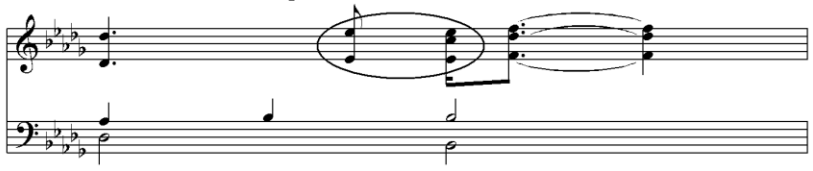
Ex. #1, I/3: Both tones belong to {B, F♯, G♯} trichord



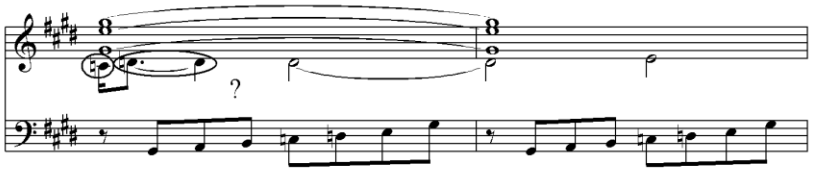
Ex. #2, I/6: G♯ is probably an embellishing tone



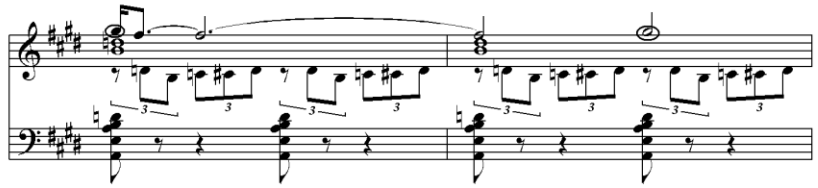
Ex. #3, I/135 (simplified): {E♭ , C} embellish {D♭, F}



Ex. #4, III/49: app. or p? (Is harmony G♯aug, E7, or D Acoustic?)



Ex. #5, III/72: Chord is B min/A pedal, G♯ is diatonic app. and n.



Ex. #6, III/284: Chord is G7, passing A forms a G9

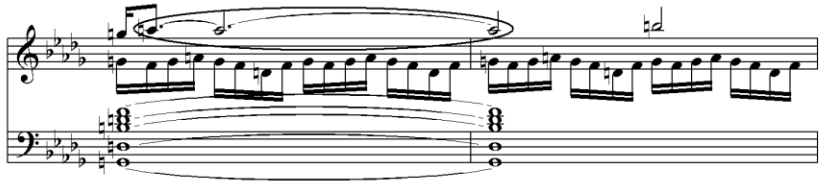


Fig. 3.14: Harmonic analysis of appoggiatura motive

Ex. #4 is collectional, however, and the harmonic meaning of the dotted-rhythm motive is not quite clear. The passage is strictly rooted in the D Acoustic collection (under a G♯ pedal), but the texture resists reduction to one or another tertian harmony. The most sustained tone of the melodic motive is D, but D could be heard as a prolonged passing tone, especially since it is dissonant against the pedal G♯. Ex. #5 is simpler; G♯ is an upper neighbor to the prevailing Bmin/A harmony. Ex. #6 clearly contains a passing tone, but as in Ex. #4, the passing A is so sustained that it turns a G7 into a G9.

Having examined stepwise embellishments derived primarily from a background W/H scale, we now turn to the subject of chromatic embellishment. (This is not to be confused with chromatic modulation, in which a tone foreign to the prevailing scale signals an actual change of harmony.) Figs. 3.15a and 3.15b (p. 93) show two versions of *Jeux de vagues*'s Trill theme, supported harmonically by the dissonant tonic chord {E, G♯, B♯, D♯}.

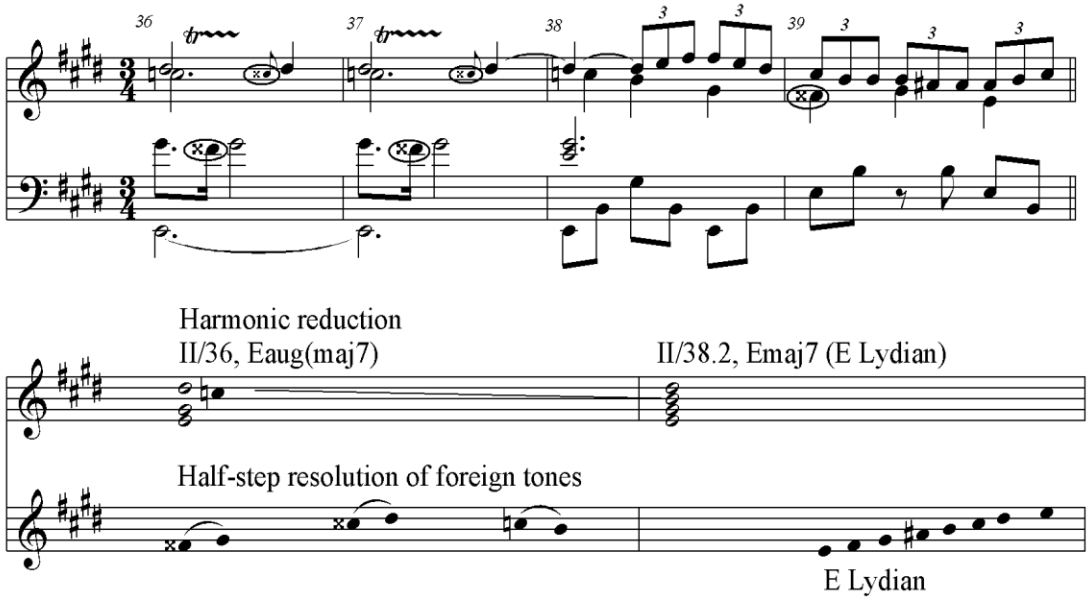


Fig. 3.15a: Chromatic embellishment in Trill theme (II/36-39)

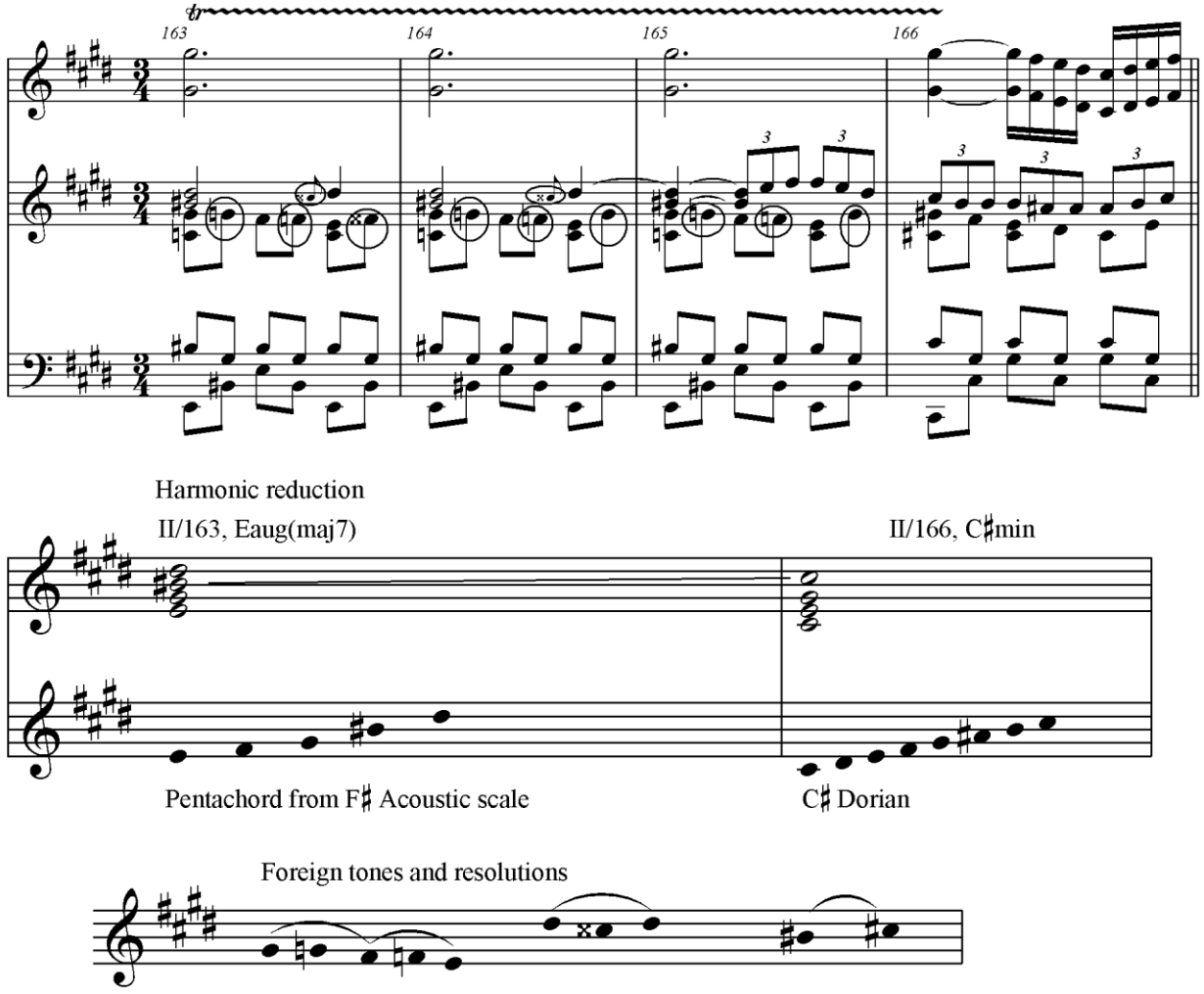


Fig. 3.15b: Chromatic embellishment in Trill theme (II/163-166)

Chromatic embellishing tones are circled and shown with their resolutions in the lower staves. Lower neighbors resolve up to D♯ and G♯ in the treble melodies. In Ex. 3.15b, the alto part's descending chromatic line from G♯ to E implies both the circled chromatic passing tones and, at a slower speed, a scalar F♯ passing tone against the tertian background chord, Eaug(maj7).

Harmonic reductions below the music show background chords and scales. Note that the prolonged, dissonant note in the opening E aug (maj7), C, clearly resolves by half-step, albeit

differently in each of the two statements: down to B at m. 38.2, and up to C♯ at m. 166.1. It is unclear if the melodic D♯, a dissonant 7th against the E bass, resolves when it begins rapid motion in the theme's third bar. The analysis also demonstrates that the dissonant tonic chord is contained within the F♯ Acoustic collection (here in its 7th mode, on E), which requires only a single half-step motion to become E Lydian in the theme's third bar.

Chromatic embellishment also occurs in the context of whole-tone scale-chord passages. In *Dialogue du vent et de la mer*, after the first appearance of the main C♯ minor theme (mm. 56-79), a long episode follows (III/80-132) that is based on the trumpet call from the opening of *De l'aube*. Consisting almost entirely of whole-tone and dominant-seven harmonies in chromatic sequence, it builds up tension and then climaxes in the passage shown in Fig. 3.16. Trezise says "the wave breaks" at this point.[122]

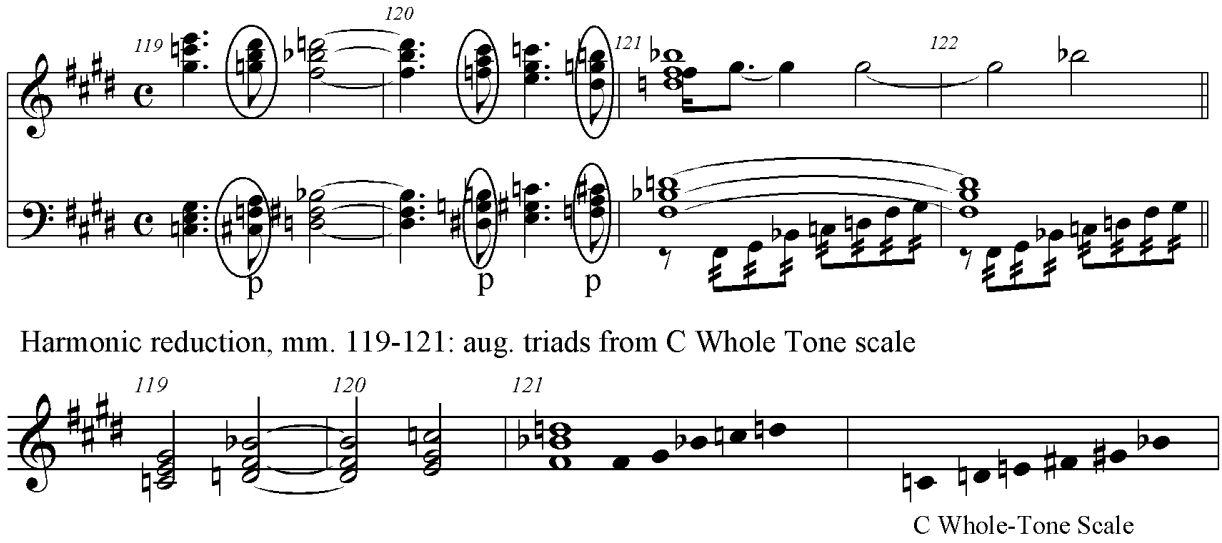


Fig. 3.16: Chromatic passing tones in a whole-tone context (III/119-122)

The harmony in Fig. 3.16 consists of parallel augmented triads embellished with parallel, weak-beat, chromatic passing tones. The upper parts descend as the lower parts ascend. Since the

[122] Trezise 1994, 71.

two whole-tone scales are mutually exclusive, all chromatic passing tones in Whole Tone C will belong to Whole-Tone C♯. These passing tones behave precisely like weak-beat chromatic passing tones in tonal harmony, except for the fact that the background augmented triads that they embellish are already dissonant by tonal standards. Metrically unstressed and homorhythmic, the passing foreign chords add only mild color to the music; they are harmonically "clean," never sounding at the same time as tones from the background scale. The harmonic reduction also reveals the music's basis in simple augmented triads in contrary motion, all from WT C. Each of the brief passing chords, however, expresses the complete WT C♯ collection.

The next example comes from the final transition to a consonant tonic at the end of *Jeux de vagues*. Following the movement's massive climax, this gradual decrescendo of dissonant and harmonically unstable figuration (II/216-244) resolves to a stable E Lydian texture (II/245-261). The effect of this arrival at consonance is gently conclusive, like foam washing up on a beach and disappearing in the sand. Fig. 3.17 (p. 96) comes from that penultimate section of dissonant figuration, gently winding down towards a cadence.

This passage utilizes both whole-tone collections, alternating on each downbeat (WT C, WT C♯, WT C, WT C♯). As in the last example, parallel chromatic passing tones slip between the scales' whole-steps. They are labeled "p." The whole-tone chords which they embellish, shown in the second system's harmonic reduction, are 4-pc and 5-pc whole-tone clusters.

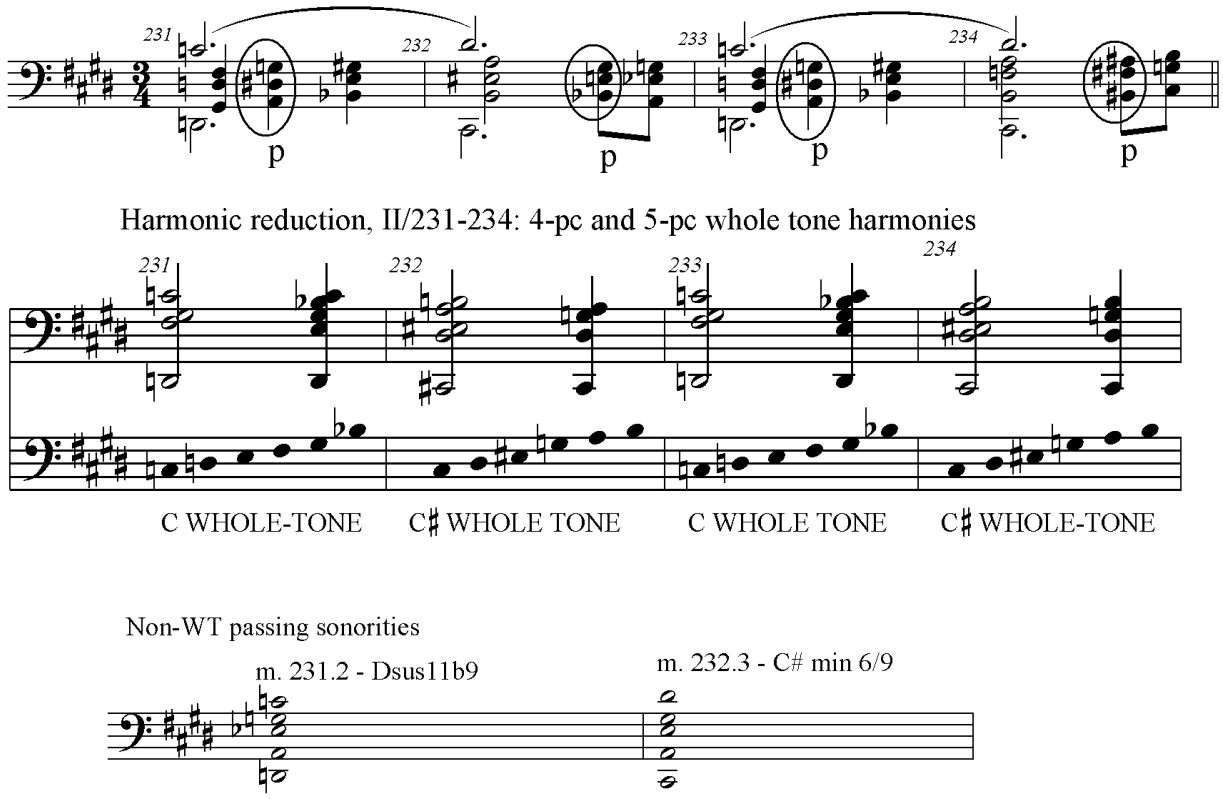


Fig. 3.17: Chromatic passing tones? (II/231-234)

While the chromatic passing tones may seem very similar to those in the previous example, their status as mere embellishments is much less clear, due to several complicating factors. First, the background whole-tone scale now changes on every bar, so there is a more active harmonic rhythm. In addition, the passing tones themselves are rhythmically almost as prominent as the tones from the controlling scale. That is, although they are never on a downbeat, they also move in quarters and eighths. Finally, unlike Fig. 3.16, the foreign passing tones sound against sustained collectional notes in the outer voices, creating brief, non-WT vertical sonorities that do not fit in to the passage's basic sound world.

These foreign harmonies, shown on the bottom staff of the example, are 5-pc, diatonic subsets. (Tonal chord names are given for them in the example.) While still perceivable as embellishments derived from chromatic linear motion, they are no more dissonant (and perhaps

less so) than the main whole-tone harmonies, so they fundamentally differ from tonal chromatic embellishment. On the other hand, the entire passage is surrounded by pure collections without chromatic passing tones,[123] so the context encourages hearing the non-WT simultaneities as foreign.

We close this chapter with three textures from *La mer* in which specific musical elements make the analysis of chromatic embellishment (p, n, app) increasingly difficult or inappropriate. The ambiguity of the chromaticism in these examples (i.e., between mere embellishment and actual harmonic change) constitutes a kind of transition to Chapter 4, which discusses parsimonious harmonic change.

We begin with the poignant oboe tune in m. 6 of the Introduction to *De l'aube*. We have previously observed the development of this short-long motive (Figs. 2.7 and 2.8, pp. 27-28) and its harmonic vacillation (Fig. 3.14, p. 91) throughout *La mer*. Fig. 3.18 (p. 98) shows three plausible ways we might interpret it harmonically in this early appearance, at I/6-7.

The oboe tune is the first tentative extension of the F♯-G♯, appoggiatura-like, dotted-rhythm motive that opens *La mer*, coaxing it up a step and transforming it into a short phrase. The sustained tones behind the oboe's melody collect themselves into the chords shown on the right of the figure. The oboe's G♯-A-G♯ melodic motion by semitone alters the B chord which supports it, generating the vertical simultaneities $B^{o}7$ (enharmonically) and $B^{ø}7$. Perhaps then, this is a simple three-chord succession, as depicted Fig. 3.18, #1. Yet the first chord lasts only a scant sixteenth note, and only one of the four parts is in motion during the two bars. The entire two-bar passage might be heard as a single embellished harmony, rather than a series of three chords.

[123] II/ 225–6: WT C♯; 227–8: C Acoustic; 229–230: WT C♯; 235: B♭13: 237–244: WT C♯.

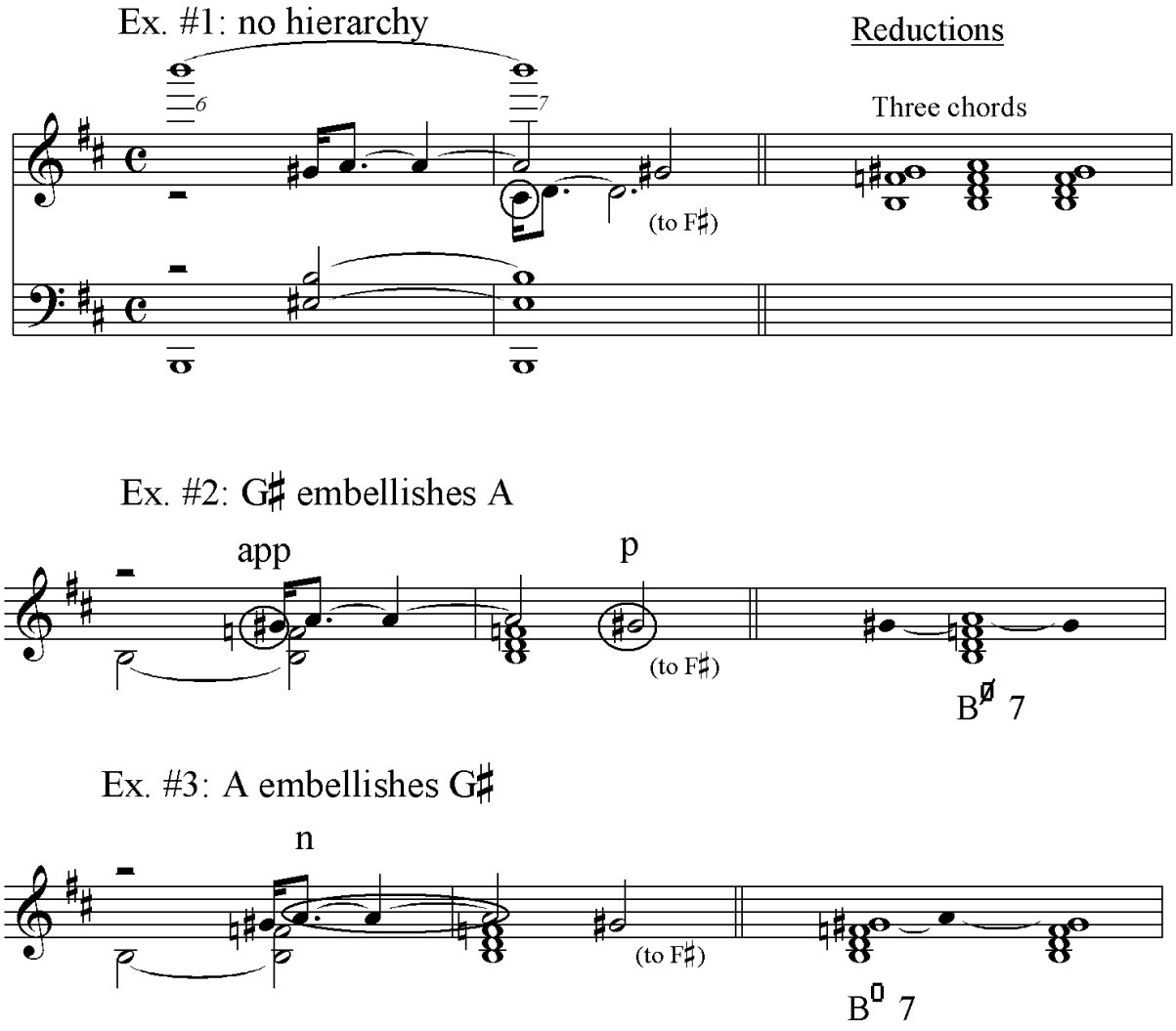


Fig. 3.18: Appoggiatura or neighbor tone? (I/6-7)

The melody's motion by semitone against a tertian background enables us to consider either the G♯ or the A as a chromatic embellishment. The *appoggiatura* interpretation (Fig. 3.18, #2) highlights its similarity to a traditional appoggiatura. G♯ is metrically accented and resolves up by semitone—but not to a more consonant sonority. The second G♯ passes down by step to a harmonic F♯ (not shown, see Figs. 4.7 and 4.8, below), as the dissonant tenor E♯ resolves up to the same tone.

The *neighbor motion* shown in #3 makes sense particularly because G♯ is already strongly established as a harmonic tone, as a member of *La mer*'s initiating tetrachord (mm.1-5), while A has not yet sounded. Yet the A is much longer than the G♯, and we can't easily compare the consonance of the two chords.

Clearly, this passage is ambiguous when we seek to define it with the concept of chromatic embellishment. If we look at it from the point of view of pc collections and a consonance-based pc hierarchy, it becomes much simpler. As will be shown when we return to these bars in the harmonic narrative of the entire Introduction at the end of Chapter 4, both A and G♯ immediately become stable scale-chord tones in the next bar, a constant B-A-G♯-F♯ motive. It is the tenor E♯ that turns out to be an long appoggiatura to a consonant F♯. In this case, a collectional approach, while still allowing for embellishing tones, reveals a harmonic consistency—the continuation of A and G♯—that a sole focus on chromatic embellishment conceals.

We end this chapter with two quiet, harmonically complex phrases from *Dialogue*'s ominous Introduction. They employ the drifting chromatic motive that develops throughout *Dialogue*, both as a separate motive and as a long extension for the Wind theme.[124] The question is, do they employ chromatic passing tones, or do the chords actually change?

Fig. 3.19 (p. 100) presents a collectional (scalar) interpretation of the chromatic motive. Chromatic passing tones are circled, leaving as a harmonic skeleton a complete presentation of the D Acoustic collection, shown on the second and third systems. (The rotation is unclear, because the nominal bass, F♯, is difficult to hear in such a low range.)

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[124] III/175–194 and 199–210. See also Fig. 2.7, #4 (p. 28).

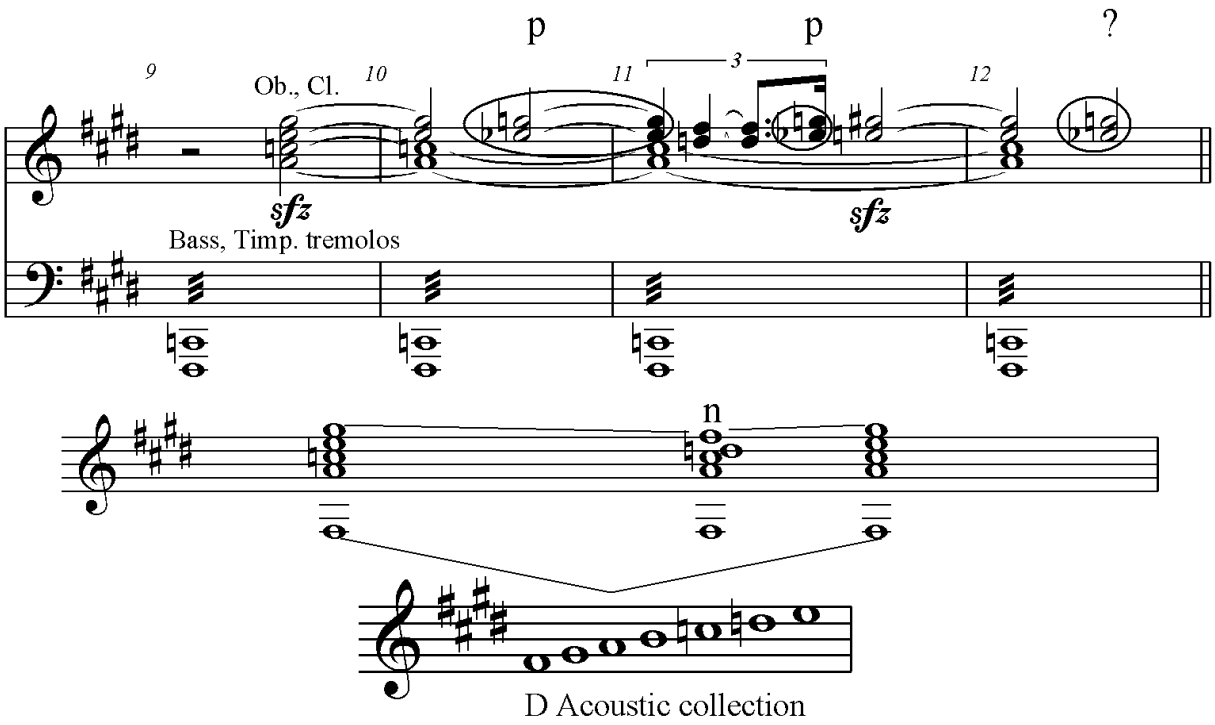

*Fig. 3.19: Harmonic change or chromatic embellishment? (*Dialogue, *mm. 9-12)*

The harmonic skeleton provided on the second system suggests an additional hierarchy, in which the central D7 chord is the result of lower neighbor motion in the two upper voices. Indeed, the passage seems almost too clear an example of tonal counterpoint, within a post-tonal, collectional environment.

Buttressing this view further is the fact that the D Acoustic collection has popped up throughout *La mer.* It is hinted at briefly in the center of *De l'aube*'s Introduction (I/18-19), it is a mediating collection in *Jeux de vagues*'s Introduction (II/5-7), and is about to appear, static, complete, and under a sustained G♯ pedal, as a kind of dominant preparation for the first appearance of the Wind theme in m. 56 (III/43-55). (All these passages are analyzed in Chapter 4; see Figs. 4.5-4.8.) The simple act of circling these embellishing tones in Fig. 3.19 suddenly

enables a collectional narrative, in which Debussy presents D Acoustic with increasing clarity over the course of *Dialogue*'s Introduction.

The last circled pcs in Fig. 3.19, m. 12's E♭ and G, undermine this neat analysis, however. They might be considered incomplete chromatic passing tones or incomplete lower neighbors, yet they are embedded in a distinctive $A^{ø}7$ chord. As the phrase's final sound, this chord is marked for consciousness, and one hesitates to diminish its harmonic significance by circling E♭ and G as outliers. In the course of the phrase, the dyad 's duration nearly equals that of E-G♯. Furthermore, the repetition of the G♯-G idea from m. 9 to m. 12 makes it motivic. In fact, G♯-G *is* the passage's essential idea, regardless of what we circle, and as if to demonstrate this, the descending semitone idea makes its own claims throughout *Dialogue du vent et de la mer*, suffusing most of its off-tonic episodes. In fact, the descending semitone motive is also the incipit of the movement's contrasting Wind theme, transposed up a half-step to A-G♯.[125]

Debussy repeats the chromatic motive of Fig. 3.19 a few bars later. As Fig. 3.20 shows (p. 101), we can read into this second presentation of the chromatic motive another pc collection, the "no sharps" diatonic scale. But the passage has two new harmonic wrinkles. First, the bass's sustained F♯ is now foreign to the collection, giving rise to more dissonant chords than appear in most of *La mer* (for example, m. 20's Dminor/F♯). Secondly, all four voices in the initial Cmaj7 chord now participate in the chromatic line, rather than just the top two parts, creating the disjunct chord progression: Cmaj7–E♭min7–Dmin–E♭min7–Cmaj7–E♭min7.

[125] The following little chart of these events demonstrates two narratives for *Dialogue*'s introduction, one motivic and one collectional. The second line shows the gradual striving upwards to A melodically, while the third shows increasing harmonic-tonal clarity, culminating in *Dialogue*'s tonic triad, the first pure triad heard since the end of *De l'aube*:

III/9 (Fig. 3.19)	III/43–55 (Fig. 4.5)	III/56 Wind theme's incipit (Fig. 4.2)
G♯ –G, dissonant chord	G♯ treble pedal	A-G♯ incipit
Chromaticized D Acoustic	D Acoustic / G♯	C♯ minor triad

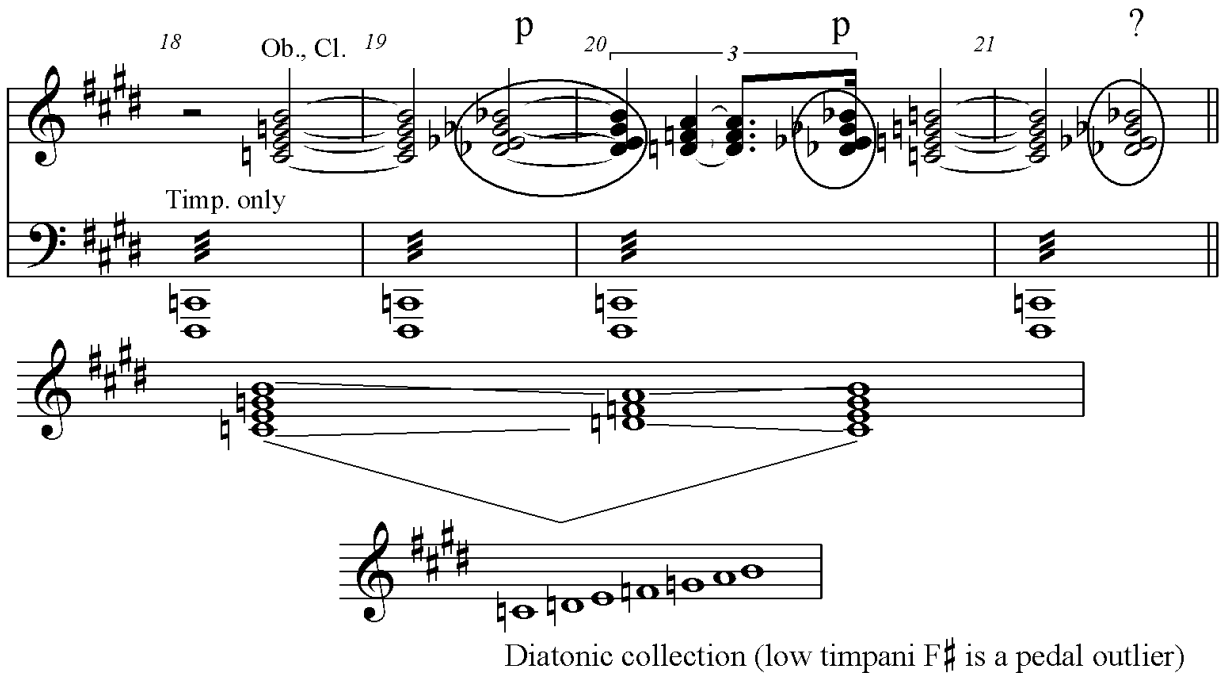

Fig. 3.20: Harmonic sequence or embellished scale? (Dialogue, mm. 18-21)

The last chord in the sequence becomes even more clearly an instance of chord change, rather than an "incomplete chromatic neighbor chord." Unlike the previous example, where the D Acoustic collection's presence has importance over a longer span, the most significant aspect of Fig. 3.20 is Debussy's smooth connection of tonally unrelated chords, Cmaj7 and E♭min7. This example points the way directly to the subject of our next chapter, harmonic change and modulation in *La mer*.

CHAPTER FOUR: HARMONIC CHANGE AND VOICE-LEADING

> One can travel where one will and leave by any door. Greater nuances.
>
> – Claude Debussy, on harmony[126]

4.1 VOICE-LEADING PARSIMONY WITH CHORDS

This chapter examines how Debussy's harmonies, whether chords, scales, or other collections, subtly change color by retaining common tones while shifting in half-steps. Such extremely close transformations are known in academia as *parsimonious voice-leading*. (Parsimony, one of the seven deadly sins in the Middle Ages, here refers to the "stingy" unwillingness to move any but the minimal number of voices by the smallest interval.) Smooth voice-leading is particularly important as the basis for nineteenth-century chromaticism, and as such, it is the common inheritance of Debussy's generation as well. For Debussy, as a child of the Romantic era in music, as the summer pianist of Tchaikovsky's patroness, and as a fervent lifelong admirer of *Parsifal*, freely chromatic chordal connection would have been a common, near-universal harmonic technique, over which he achieved fluent command.

For a post-Romantic composer who supposedly ushered in the era of modern music by escaping the grip of stifling harmonic traditions, this similarity may seem unexpected. Yet it is a fact of glaring obviousness to all who spend time with his scores, regardless of analytical orientation, and I would argue that it is in fact Debussy's most direct and consistent technical link to Romantic harmony.[127]

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[126] Lockspeiser 1962, 206.

[127] A case could be made that a greater originality lies in Debussy's immensely varied diatonic practices, such as the three very different presentations of diatonic collections in II/187–202.

The two distinct aspects of voice-leading parsimony are the transformation of pc collections by half-step, and the use of common tones, a phenomenon usually referred to as *pitch-class invariance*. The present chapter focuses on harmonic change that employs both aspects, while Chapter 5 discovers additional uses for pitch-class invariance. Together, they show how deeply parsimony operates as a unifying harmonic principle in *La mer*, from the smallest to the highest levels of organization.

The first section of this chapter presents parsimonious chord-to-chord relations from all three movements (Fig. 4.1, Fig. 4.2), with special attention to the "split fifth" triadic transformation (Fig 4.3). We then look at parsimonious scale-to-scale modulation in the abstract (Fig. 4.4) and in two passages from *La mer* (Fig. 4.5, III/30-55, and Fig. 4.6, II/1-18). We close with a detailed harmonic narrative of the Introduction to *De l'aube à midi sur la mer* (Fig. 4.7, Fig. 4.8).

The various routes of triadic transformation in chromatic music are taxonomized in the neo-Riemannian scholarship of the 1990's, including numerous articles by John Clough, Jack Douthett, Richard Cohn, and David Lewin.[128] Much of this focuses strictly on triads, and is therefore not directly applicable to *La mer*. As Fig. 4.1 shows, *La mer* tends to transform seventh chords or dissonant trichords rather than simple triads—when its textures even are reducible to tertian sonorities rather than to scalar harmonic regions.

The chromatic harmonic successions of Fig. 4.1 are selected from throughout *La mer*, and presented in the order they are heard. The chords in the example are tertian reductions of very complex orchestral textures, often of a collectional nature, lasting anywhere from one beat (I/89.3) to four bars (I/84). Reduction is always problematic with Debussy, of course, and these

[128] See Cohn 1998 for a survey of this literature and bibliographic references.

do omit important colorations to each harmony, usually added melodically.[129] However, these reductions to seventh chords make the music's nineteenth-century debts clear, and for the present study that is all they need to do.[130] The graphic method adopted here and in other figures in this chapter is for empty noteheads to indicate common tones, and for black noteheads to indicate half-step voice-leading motions. Analytical descriptions of these examples follow.

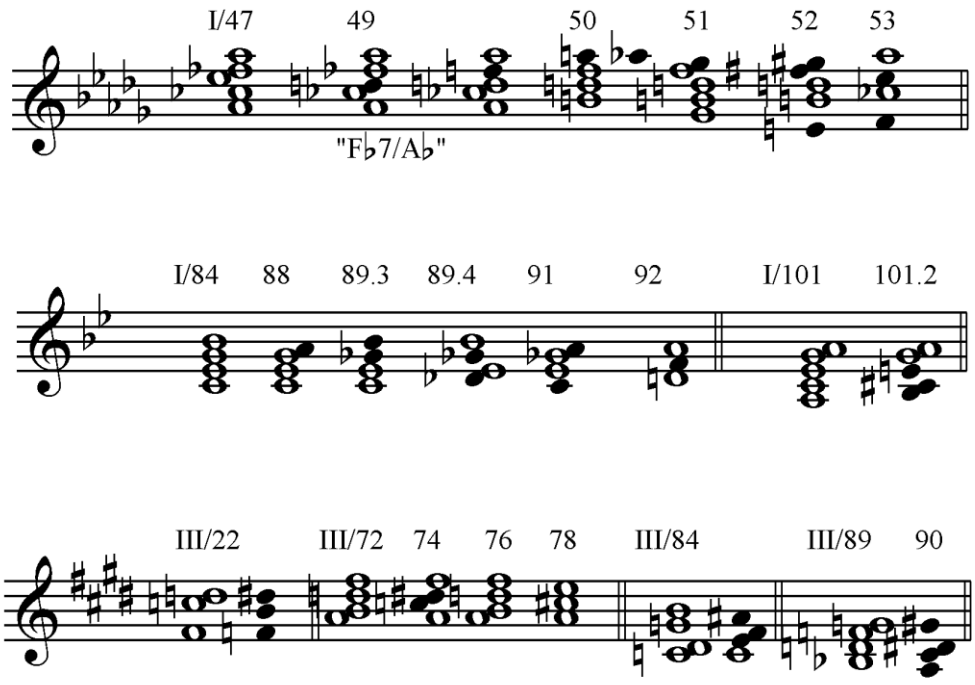

Fig. 4.1 Parsimony in chord-to-chord progressions

In the passage from I/47 to I/53, Debussy passes from one A♭-minor tonic to another (despite the bass F in m. 53), traversing along the way sonorities which are conceived as distant

[129] For example, the two chords in I/49 support a winding melody that adds B♭ and C♯ to the harmony, hinting at incomplete E Acoustic and OCT C♯-D collections. Even the simple A^{ø}7 chord at I/101 is buried in fast scales and neighbor motion.

[130] Childs 1998 offers a model of seventh-chord transformation that fits Fig. 4.1, I/47–91.

in traditional tonal harmony. Black noteheads indicate any pc that has changed from one chord to the next. The reduction shows that in most cases, only a single transformation occurs at a time.

Since the chords are common tonal sonorities, it is tempting to think of their tonal functions, but this must be resisted. Only the chords in m. 49 are close in tonal terms to A♭ minor (Ger+6 and vii^{o}7/V, respectively). The E9 in m. 52 is close to an enharmonic F♭7, the Ger+6 in A♭ minor, but it does not quite behave as one. (In fact, the E9's voice-leading exactly reverses the resolution of the "Tristan chord," at pitch, offering ascending parallel minor-seventh motion, rather than descending motion.)

The cello choir theme at I/84ff is in a nominal B♭ major, but the reduction shows how little it contains of the key's tonic. (It also omits an occasional pedal F, which grows in duration as the passage continues, and which supports a sense of B♭-centricity.) One can think of mm. 84-91 as decorating an A^{o}7 chord with three of the chord's upper chromatic neighbors (B♭, D♭, and G). A pure A^{o}7 finally arrives without substitution in m. 91, just prior to its resolution to a consonant triad in m. 92. This is the nearest thing in the entire passage to an authentic cadential progression. (Fig. 4.1 shows that the other upper neighbor, E♮, is finally used at 101.2, in one of Debussy's rare traditionally functional harmonies. In the key of B♭ major, the chord at 101.2 is a vii^{o}7/V, with app. A.) As this theme develops (through to m. 122), the texture gradually moves away from these tertian sonorities to chords reducible to whole-tone scale-segments, in a kind of functional breakdown. Interestingly, in spite of the evaporation of tonal function, the parsimonious voice-leading continues.

The harmonies from *Dialogue* shown on the last line of Fig. 4.1 are less tonal. At III/22, Debussy connects whole-tone trichords parsimoniously. At III/72-78, he embellishes a ii-I motion chromatically. The dissonant downbeat at III/84, a rare sonority in *La mer*, is like a parsimonious appoggiatura to the second chord, the Fr+6th sonority that dominates *Dialogue*'s

first tonic-less Episode (III/80-132). The odd progression at III/89-90, from the same Episode, is extremely unusual in *La mer*. The effect is of a slightly cadential arrival on an A Lydian tonic.

The following example combines parsimonious chord change with the harmonic ambiguity of linear motion discussed in the last chapter. Fig. 4.2 shows the beginning of *Dialogue*'s Wind theme. The music seems harmonically straightforward, a mere triad with a few nonchord tones, but its prominent ascending chromatic line bears aspects both of chromatic embellishment and of harmonic change.

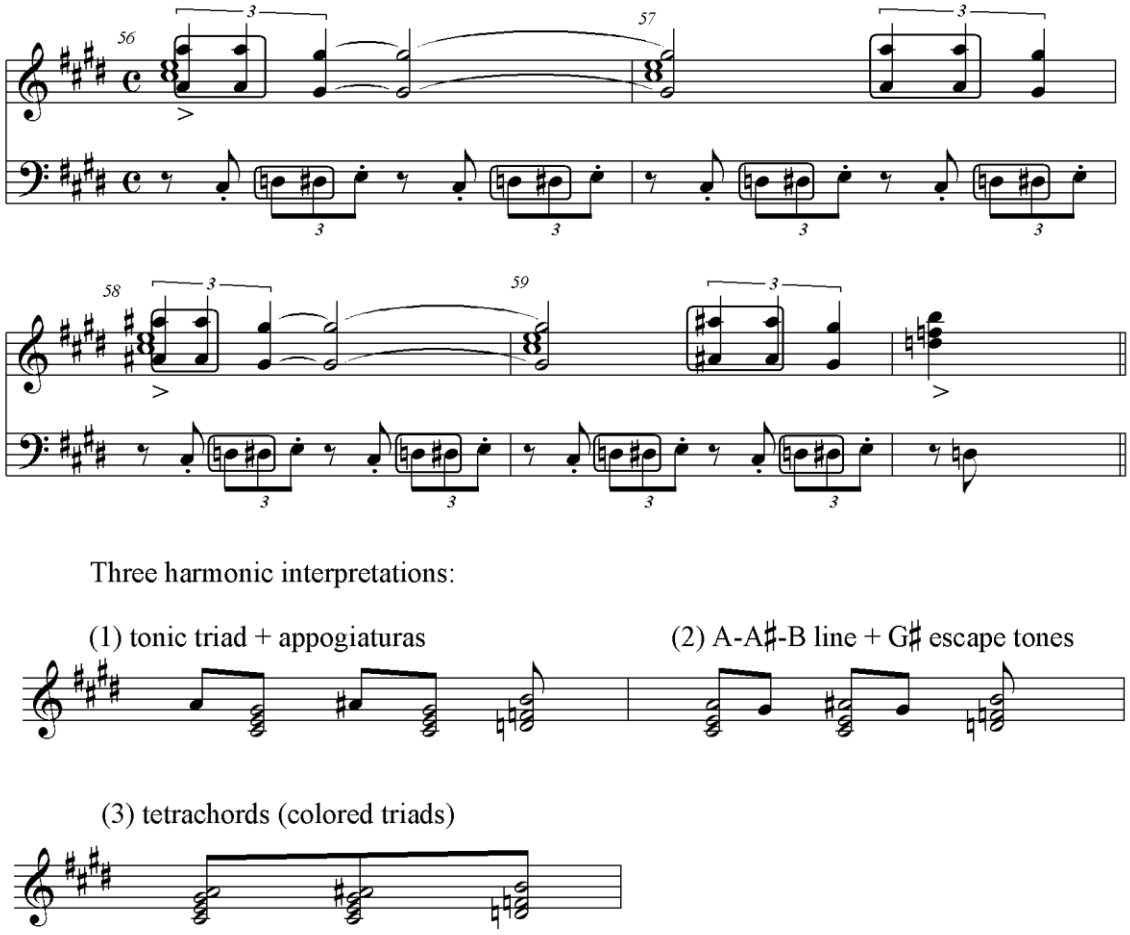

Fig. 4.2: Tonic triad with foreign tones? (III/56-60, "Wind Theme")

At first glance, mm. 56-59 appear to clearly sustain a treble C♯ - E- G♯, but the tentative, breezy melody above it allows more than one harmonic interpretation. In fact, the accompaniment only sustains a "tonic third," C♯-E, to which the melody adds an accented A. Expecting a tonic C♯ minor triad, it is most convenient to consider the A to be an embellishing tone, a traditional appoggiatura. But from a voice-leading point of view, the A is a structural harmonic tone, because it rises chromatically through A♯ to B, with strong metric emphasis. In this view, G♯ is an elongated escape tone.

A third interpretation, reconciling these two, is to accept both notes as equally harmonic; perhaps the initial tonic sonority is {C♯, E, G♯, A}, a "minor with added sixth tonic," with the A morphing upwards over a stable triad. There is a precedent in *La mer* for such a tonic chord: the A♭min(add F♭) tonic at I/47 (see Fig. 4.1, p. 105). But unlike that case, here C♯'s 5th and minor 6th, the G♯ and the A, are never heard together. Their presentation in one melody allows the interpretation of either one as an embellishing tone. Note as well that G♯ and A displayed a very similar harmonic indecisiveness in the Oboe theme at the beginning of the first movement, (discussed with Fig. 3.18, p. 98).

A constant murmuring chromatic motive in the low strings also slightly undermines the identity of the C♯ minor triad. Although it merely fills in the gap between C♯ and E with two passing tones, D and D♯, the motive's rhythm accents the D more than the other pitches. Does this imply a C♯ Phrygian scale? More likely, at this speed and in such a low range, the motive is just a blur. In fact, the motive blurs the meter as well as the triad, since we may hear its syncopated, harmonically consonant outer notes (C♯ and E) as metric stresses that conflict with the two-bar metric regularity of the treble melody. If so, it sends a pulsing feeling across the entire stormy movement, which it pervades, morphing along the way.

La mer's harmonic changes, whether between tertian chords or scale-chords, regularly employ one particular voice-leading transformation, the "split fifth." In this paradigmatic motion, the fifth of a minor triad splits into its two chromatic neighbors, creating a dominant seventh sonority. (This transformation precisely reverses the resolution of the Ger+6th chord to a second-inversion tonic triad.) Callender cites as a tonal precedent for the split-fifth transformation a chromatic modulation in Mozart between the keys of C♯ minor and C major employing the parsimonious progression G♯maj–G♯min–E7/G♯–G7. [131] Mozart's split-fifth motion from G♯min to E7/G♯ is shown in Fig. 4.3's first bar (see p. 110.)

This same split-fifth relationship recurs throughout *La mer*, couched in Debussy's freer scale-chord harmony. Fig. 4.3 provides harmonic reductions of six passages based on the split fifth model. In all of them, the local tonic sonority is the initiating consonant triad, with or without added scale tones. Let us first review those which are closest to the tonal, triadic model.

The minor tonic triad in the first example below (I/47, also shown in Fig. 4.1 above) already contains an added minor sixth, so the transformation does not literally require a split fifth, merely a motion from E♭ to D♮. The 4- and 5-pc chords shown at II/5 do involve a split fifth, but the split occurs in separate registers: C♯-D in the bass, and C♯-C in the treble.

The split-fifth operation occurs directly in a single register only in the final example of Fig. 4.3, during the peaceful idyll at the center of *Dialogue* (III/157ff). Harmony is extremely static here, as twenty-two bars of a constant, sustained D♭-major triad finally give way to A7/C♯ at m. 179, over a continued pedal bass. This chord then moves by a single half-step shift to Cmaj(add6) in m. 183. The triad's three voice-leading strands never disappear, and the Wind theme returns (m. 195) by means of an adroit strategy that treats its opening ♭$\hat{6}$–$\hat{5}$ motive as the result of an ascending sequence from the previous measure (see example).

[131] In Mozart's Piano Concerto, K. 453, second movement, mm. 86–90. Callender 1998, 231.

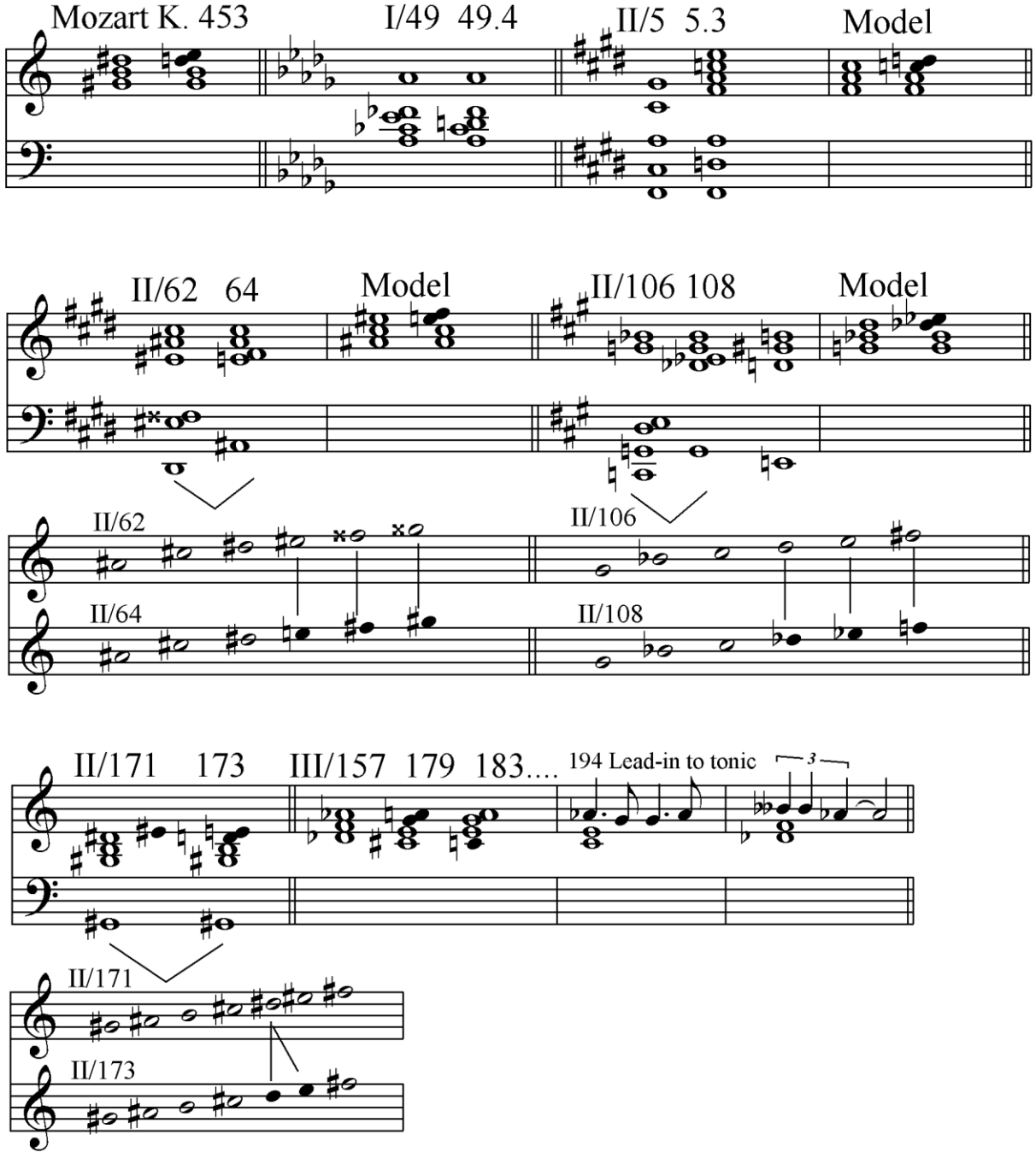

Fig. 4.3: "Split fifth" transformations

The other three split-fifth passages in Fig. 4.3 are more complex. The parallel passages at II/62 and II/106 treat the initial minor triad both as a tonic chord and as the upper degrees of a dominant ninth chord. At II/62, for instance, the upper voices sound a fast rhythmic ostinato on A♯-C♯, which combine with the melody's first notes to strongly suggest an A♯ minor triad. At the same time, the basses play an almost inaudible low D♯. Together they create a nearly rootless D♯9 chord. The harmony shifts at II/64 to F♯7/A♯ (or F♯9/A♯, see following system). The passage thus develops from the split fifth model a mechanism for juxtaposing two dominant ninth chords whose roots are a minor third apart, D♯9 to F♯9/A♯. (Such harmonic juxtapositions had nearly become a Debussyan cliché by the time of *La mer*.)

Fig. 4.3, II/62, provides two voice-leading models for this harmonic sequence: a tertian one (labeled "Model") and a scalar one, on the following system, which compares all the pcs heard with each chord. It shows a transformation between two hexachords, subsets respectively of A♯ Melodic Minor (or D♯ Acoustic) and F♯ Mixolydian, which do not maximally intersect. The same music recurs at II/106, transposed down an augmented second. In this example, then, we are moving away from tertian parsimony and towards scale-chord modulation.

Finally, the passage at II/171 (bottom of Fig. 4.3), which is the beginning of the enormous G♯ pedal that marks *Jeux de vagues*'s joyous climax, utilizes the split-fifth relationship in a frankly scalar environment. The chordal interpretation happens to be at the same transposition level as the Mozart example Callender cites. But Debussy's contrapuntal texture demands the scale-chord interpretation shown in the next system, in which G♯ Dorian's fifth, D♯, generates the E Acoustic collection with a single split. We turn now to these collectional transformations in *La mer*.

4.2 SCALE-TO-SCALE PARSIMONY

Debussy's scale-to-scale parsimony is well-recognized. Pomeroy, for instance, refers to "modulation between diatonic and non-diatonic sound worlds via chromatic manipulation of a limited repertory of pitch classes" as a "highly characteristic technique in Debussy's chromatic practice."[132] These sound worlds, for the most part, consist of scale-chord textures employing the referential collections (scales) defined in Chapter 3.[133] We will now flesh out Pomeroy's insight more thoroughly, and see its application to *La mer*.

We focused at the beginning of Chapter 3 on the exact arrangement of whole-steps and half-steps in the W/H scale family. Noting their local diatonicism, we emphasized their intervallic similarity to each other and to their consequent ability to generate the common harmonic materials of tonal music. We now look at the scales' propensity for overlapping and intersecting with each other, which is a consequence of their similar SIAs. This propensity is the theoretical foundation for Debussy's smooth scalar voice-leading, which exploits a network of close relationships among the W/H scales.

Debussy's most frequent routine for chromatically adjusting a scale-chord texture is to maintain some common-tones, while also performing just *one* of the following operations:

(1) change a single pc up or down by semitone

Ex.: move E to E♯ to change B Mixolydian to B Acoustic

(2) *split* a tone into its chromatic neighbors

Ex.: split E into E♭ and F to change C Whole-Tone to A♭ Acoustic

(3) *merge* tones into their chromatic neighbor

Ex.: merge E♭ and F into E, change OCT D- E♭ to D Acoustic

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[132] Pomeroy 2000a, 149.

[133] Referential collections, or RCs, is the common academic term for the most common harmonic set-classes in twentieth century music, among which the four W/H scales are the most prominent.

Scalar parsimony has received analytical attention in recent research by Richard Bass, Clifton Callender, and Dmitri Tymoczko, who systematically examine parsimonious transformational relationships among various scales, including those found in *La mer*. (Actually, parsimony and common tones are so widespread in Debussy's music that most tonal analysis of Debussy touches on them at some point, albeit not always as systematically as Callender et al.)

Bass's 1994 essay focuses on whole-tone and octatonic interactions in music by Debussy, Skryabin, George Crumb, and others. He shows the pitch-class invariance (common tones) between these scales in a table (p. 159), and demonstrates its application in Debussy's alternation between close collections to embellish a G♯7 chord in a piano piece, "Feuilles Mortes."[134]

Clifton Callender's 1998 article on voice-leading in Skryabin covers similar ground a bit more systematically. Significantly, Callender adds the acoustic scale to Bass's whole-tone and octatonic. Essentially, Callender presents parsimonious transformational possibilities between the same three nondiatonic scales which I have found in *La mer*. (He also cites the same G♯7 alterations in "Feuilles Mortes," that Bass offers, with reference to the same scales.)

Just as neo-Reimannian analysis categorizes minimal voice-leading motions between triads and seventh chords (i.e., P, L, and R operations), Callender demonstrates three transformational operations between the three scale types (or their larger subsets): inclusion relations, half-step motion (P), and split relations (S).

Inclusion relations are not a trivial aspect of Debussy's harmony, as his harmonic subtlety has as much to do with changing emphases and partitionings within a stable scale-chord as with actual chromatic change of pc content. For example, the E Acoustic scale-chord climax of *De l'aube*'s First Principal Section (Fig. 3.2, p. 67), which partitioned the collection into disparate subsets, dissipates its energy by a gradual thinning process, leaving only the pc G♯ in m. 83.

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[134] This musically rich essay suffers from inattention to alternate, acoustic-scale explanations in many of his examples.

Similar single-pc additions and removals occur in the collectional narratives provided below for Fig. 4.6 and Fig. 4.8.

The last of Callender's transformations, the S or split function, was discussed in connection with Fig. 4.3. It is particularly important with scale transformation because it allows an increase from a 6-pc scale to a 7-pc scale, and then to an 8-pc scale. *Fusing* or *merging* (i.e., from {C, D} to C♯) is the corollary to splitting. It also is important, allowing parsimonious motion from 8- to 7- to 6-pc scales. Its tonal pedigree lies in the augmented sixth's voice-leading resolution by contrary half-steps to a common tone at the octave.

Callender then systematizes the transformational relationships from scale to scale. Splitting any note in the whole-tone scale creates an acoustic collection. Splitting another, carefully chosen note will convert the acoustic collection to an octatonic one; the two splits must be at opposite poles from each other in pc space. This gives Callender the theoretical foundation for building networks of closely-related scales, specifically, scales separated by a single transformation (see his Fig. 11, p. 227). He comments:

> The completed network structure shows the acoustic collection as an important mediating sonority between whole-tone and octatonic sonorities. The mediating potential of the acoustic collection echoes an interesting property of its step interval content.[135]

This "interesting property" is that the Acoustic Scale's SIA embeds nearly the entire SIAs of the other two, which we see if we line them up together:

Acoustic: H W H **W W W W**
Whole-Tone: W W **W W W W**

Acoustic W W **W H W H W**
Octatonic: H W H **W H W H W**

[135] Callender 1998, 227.

Dmitiri Tymoczko's 2006 article, "Scale Networks and Debussy," examines what he calls "the scalar tradition in post-common-practice music," focusing on seven scale types and their "maximal intersections." To Callender's whole-tone, acoustic, and octatonic scales, he significantly adds the diatonic (as well as three others not found in *La mer,* such as the hexatonic). These scales maximally intersect when a single parsimonious operation can change one into another, and Tymoczko demonstrates that only the acoustic scale has this relationship with the other three. (Any other pair of scales from these four, such as the whole-tone and the diatonic, are related by two operations, not one.) Like Callender, he raises the profile of the acoustic scale: "The acoustic scale might be described as equally diatonic, octatonic, and whole-tone."[136] The author also shows that the nondiatonic scales do not maximally intersect with their own transpositions. In other words, from a transformational perspective, C Acoustic is closer to Whole-Tone C than it is to G Acoustic.

Tymoczko then builds the Scale Networks (actually three-dimensional "lattices") which were promised by his article's title, and demonstrates sequences of these very closely related scales in four pieces by Debussy. One of these is "L'isle joyeuse," a piano work composed in 1904 at the same time as *La mer* (see p. 71 for a brief excerpt). It uses the A Acoustic scale as its central reference point, as a base from which to shift to A Lydian, A Whole-Tone, and so forth.

Roy Howat, who devotes Chapter 5 of his *Debussy in Proportion* to "L'isle joyeuse," also recognizes the acoustic scale's importance as the source of the music's main theme.[137] He emphasizes the A Acoustic's closeness to A Whole-Tone; the former's E-F♯ can merge into the latter's pc E♯. As Howat explains, "[The acoustic scale] needs only one substitution…to become a whole-tone scale, and thus for the tonality to be immediately threatened." As a result, "the

[136] Tmoczko 2006, 17.
[137] Howat 1983, 46–63.

acoustic scale is a powerful dramatic weapon, holding the tonality constantly at the edge of a precipice.…"[138]

Fig. 4.4 shows common tones between all possible pairs of the four D scales presented at the beginning of Chapter 3 (p. 59), and the simplest transformations between them.

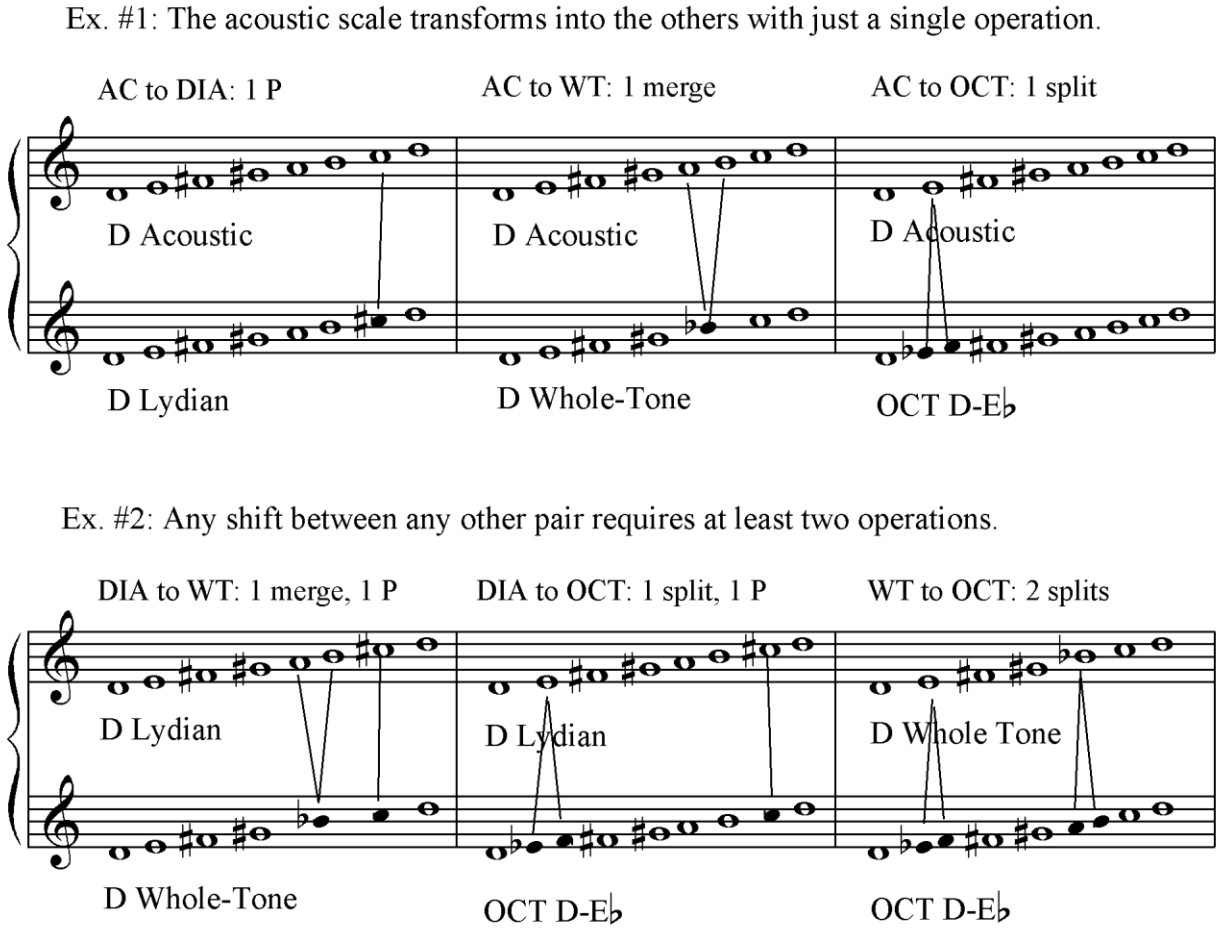

Fig. 4.4: Common tones and transformations among the W/H scales[139]

[138] Howat 1983, 48–49.

[139] The chart omits one possibility for changing an acoustic to a diatonic scale. In the first bar of Fig. 4.4, in addition to raising D Acoustic's C to C♯, we can lower its G♯ to G, to generate D Mixolydian. This reflects the two modal modifications that can generate any acoustic mode. D Acoustic's fifth mode, which corresponds to A Melodic Minor Ascending, is A major (♭3) as well as A Dorian (♯7).

Notice that only the acoustic scale maximally intersects with each of the others. It is unique in this respect; only the acoustic has an "all-but-one-pc" closeness to the diatonic scale, to the octatonic scale, and to the whole-tone scale. The acoustic's status as chameleon is significant in *La mer,* where common-tone modulations dominate. This mediating role may explain why most of Debussy's modulations involve an acoustic collection, as the next two examples show.

To see how this works, we now turn to particular examples of parsimonious scale modulation, beginning with an extensive passage from *Dialogue du vent et de la mer* that exhibits smooth modulation between maximally intersecting scales, which in this case reflect the music's formal divisions. The example also illustrates chromatic embellishment, and the range of sonorities which we might perceive as bearing tonic or dominant function.

Fig. 4.5a (p. 118) shows the second half of *Dialogue*'s tense, tritone-suffused Introduction (mm. 30-55). Scale names are provided above the score, and foreign tones are circled. To clarify the two scalar modulations in this music, harmonic reductions and collections are provided in Fig. 4.5b (p. 119).

The music initially sustains a B7 accompaniment, to which the soprano vocal melody adds the complete B Acoustic gamut from B to G♯, including the passing C♯ (m. 33), which was absent from the B Acoustic *Sirènes* excerpt we saw in Fig. 3.11a and 3.11b (p. 83).

Thus, the passage begins with a complete presentation of the B Acoustic scale (mm. 30-40). This mutates by a single *split* operation to draw a few chords from an octatonic scale (mm. 40-42). These immediately shift again, by a single *merge* motion, to a third scale, a rotation of the D acoustic sale, for an extended dominant pedal section (mm. 43-55). There is also a chromatic interruption back in mm. 35-37, as the first phrase cadences on chords foreign to the reigning B Acoustic scale (C min/F♯, Cmaj). These give the effect of the phrase ending on a non-tonic, "away" chord, which in tonal terms is perhaps like a half-cadence, or a brief modulation.

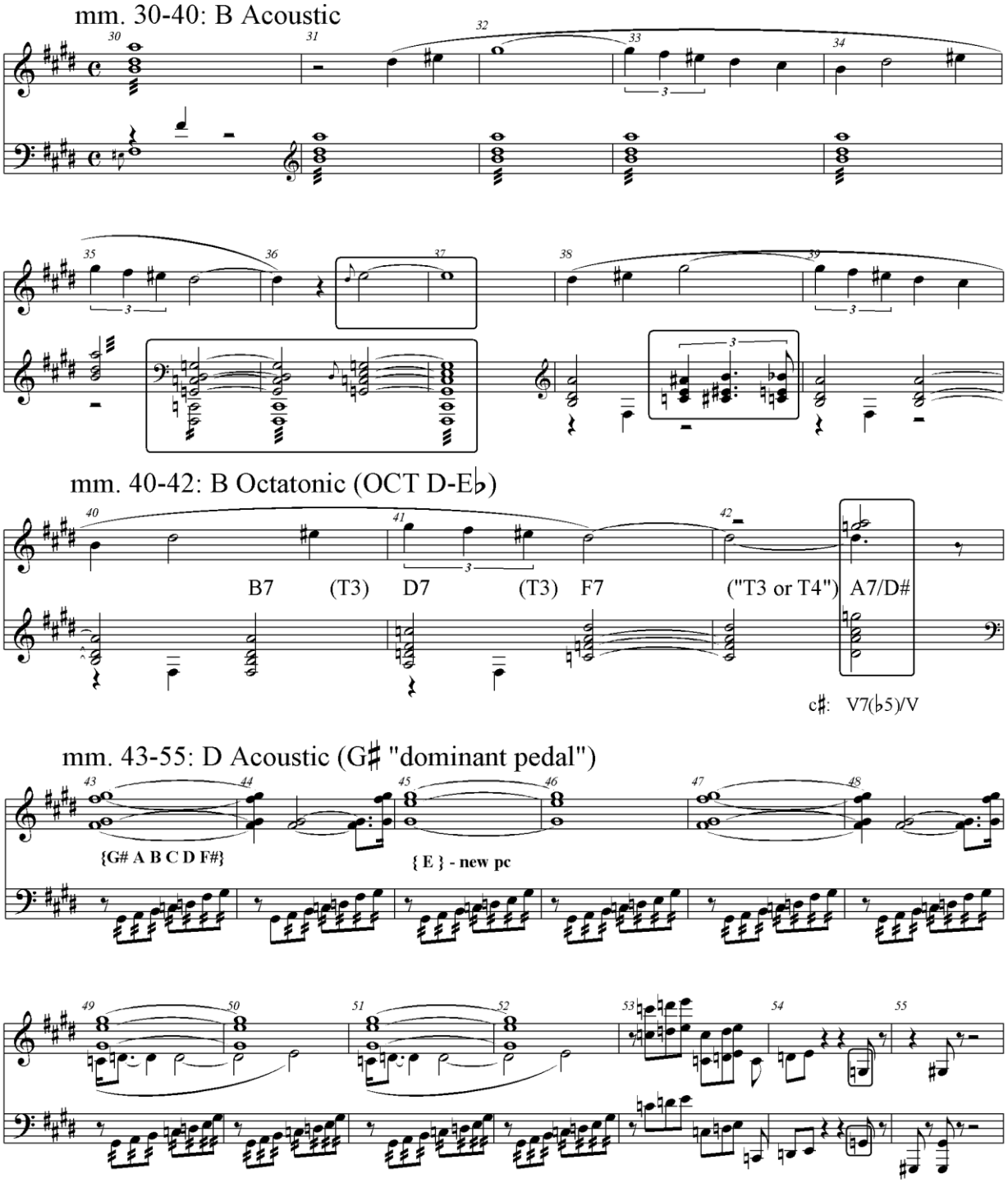

Fig. 4.5a: Scale-to-scale modulation in Dialogue *(III/30-55)*

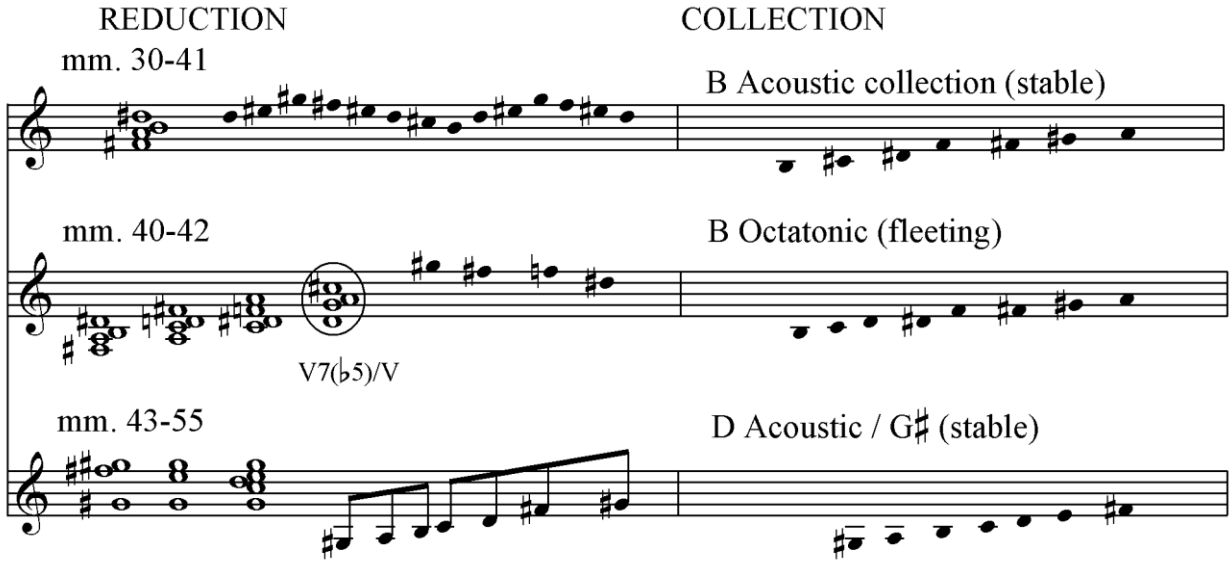

Fig. 4.5b: Harmonic reduction and background scales of III/30-55

In m. 42, the C♯ disappears, to be replaced by C and D, which appear within a brief, rising chord sequence: B7/F♯, D7/A, F7/C. The chords form a chromatic sequence, a succession of dominant seventh sonorities transposed at T3. This particular chord succession, combined with the trumpet's melody notes, strongly suggests a B Octatonic scale, OCT D-E♭. These minor-third-related dominant-seventh chords are a fairly common octatonic indicator, for example in music by Rimsky-Korsakov. (While the chords do indeed belong to a single octatonic scale, they completely lack the octatonic's unique potential for dense, biting dissonance, as in Stravinsky's *Petroushka* or *The Rite of Spring*. This is a historically more conservative instance of octatonicism.)[140]

On the other hand, granting the presence of the octatonic as a background scale in mm. 40-42 allows us to recognize the extreme voice-leading economy of this chromatic scale shift.

[140] In general, the octatonic scale's appearances in *La mer* are partial and brief. The diatonic, acoustic, and whole-tone scales appear with greater clarity and frequency. Some alleged instances of octatonicism, such as I/33–40, are more simply explained as based on the Acoustic scale.

Fig. 4.5c shows the six common tones between the B Acoustic and B Octatonic scales, and the one split operation (C♯ to C-D).

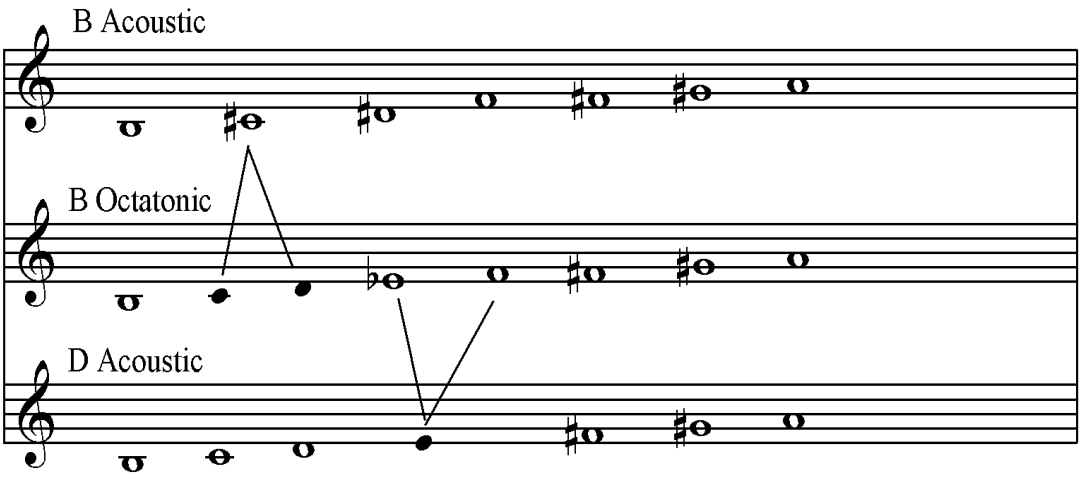

Fig. 4.5c: Parsimonious voice-leading between three collections in III/30-55

The chord circled in Fig. 4.5a, m. 42, is an example of Debussy employing a chromatic harmony that can be interpreted as deriving from the tonal tradition. The B7-D7-F7 sequence (mm. 40-42) ends with a brief French sixth sonority, {D♯, G, A, C♯}, which does not strictly belong to the OCT D-E♭ scale (G and C♯ are "outliers"), nor to the coming D Acoustic scale. This chord is derived by a "fuzzy transposition," or imprecise continuation of the T3 sequence of dominant seventh chords. Transposing the previous F7/C upwards at "T3 *or* T4" generates this A7/D♯ harmony. This nonscalar chord functions very much as a chromatic appoggiatura to the extended scale-chord which follows. Like an upper neighbor tone in tonal harmony, the upper whole-step trill of this chord, G-A, prominently descends by semitone to the following F♯-G♯ dyad, which anchors the second half of this passage.

This D♯ chord is also very close to two other traditional tonal predominant functions, helping to prepare the coming G♯ pedal passage. Substituting F𝄪 for G, as a D♯7 (♭5), it is a

V7(♭5)/V in c♯ minor. Enharmonically, it is also an inversion of the standard French sixth chord in the key of C♯ minor, albeit with slightly different voice-leading:

Fr+6 resolution, C♯ minor:	*La mer* , III/42-43:
A -- G♯	A -- G♯
C♯ -- B♯	C♯ -- (C in next scale?)
D♯ -- D♯	D♯ -- (D or E in next scale?)
F𝄪 -- G♯ (up)	G -- F♯ (down)

The following long, ominous passage (mm. 43-55) employs a new pc collection, D Acoustic / G♯ bass (a modal rotation), which lasts for 13 bars, using only the seven pitches,{G♯, A, B, C, D, E, F♯}. It shares six pcs with the transitional octatonic hinted at in mm. 41-42 (see Fig. 4.5c). The octatonic's brief E♭-F has merged into the D acoustic's E, although the merge does not occur immediately in the music. At the start of the G♯ pedal passage (mm. 43-44), only the 6 pcs common to both scales sound. The new note, E, is introduced in m. 45, as a slow, melodic, lower neighbor to F♯.

What is immediately new in this final, D Acoustic passage is its texture, consisting of three different rhythmic elements:

(1) sustained F♯-G♯ and E-G♯ dyads in upper voices, with the constant high G♯ sounding like an inverted pedal,

(2) fast ascending scales in the bass, from G♯ to G♯, beginning on the "and of one," and

(3) the return of *De l'aube*'s closing appoggiatura Horn motive (I/135), rhythmically extended and down a half-step (C-D-E), in the mid-range (mm. 49-52).

This passage emphasizes {G♯, C, E, F♯}, an enharmonic G♯aug7. But its sustained parts —the high woodwind dyads on F♯-G♯ or E-G♯, the rising Horn appoggiatura motive—never quite line up to create this G♯aug7 as a vertical simultaneity. Instead, these lines emphasize the D Acoustic collections's whole-tone span from C to G♯. Against the rising bass scales, we hear such sustained treble chords as {G♯, F♯}, {C, E, G♯}, and {D, E, G♯}—all whole tone subsets of

the type which replace the V7 chord in nineteenth century music.[141] The C♯ minor main theme of the movement does follow in m. 56, and in retrospect, the G♯-pedal passage sounds very much like a dominant preparation for a principle tonic region, as in a sonata by Beethoven, but refracted through Debussy's loose tonality.

The claim I make here, that Debussy often modulates between scales by means of maximal intersection and parsimonious half-step motions, depends largely on the perception of *hierarchy* in his harmony, that is, it depends on eliminating some notes or chords as embellishing elements, leaving others as fundamental background structures. Ferreting out these three scales requires ignoring important chromatic embellishments in m. 35-36, 38, and 54 (G♮); inferring OCT D-E♭ from mm. 41-42's harmonic sequence rather than from an obvious scale-chord texture; and downgrading a French sixth sonority as an appoggiatura chord.

The claim of parsimonious modulation also depends on the concept of voice-leading space or pitch-class space, a circular 12-semitone universe in which any *potential* half-step voice-leading transformation is assumed to *actually* occur. For example, the split from B Acoustic's C♯ to OCT D-E♭'s C-D never actually occurs in a particular voice or register, the way

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[141] Pomeroy considers this heptachord an altered whole-tone collection, not an unaltered acoustic one. He says the rising motive "subtly undermines whole tone hegemony by filling the gap from G# to C with the dyad A-B [i.e., rather than A#], pitches foreign to the operative whole-tone context" (Pomeroy 2000a, 203–204, n.59). I argue that, while the whole-tone sound of C–D–E–F#–G# is indeed predominant (if not quite "hegemonic"), there is, in fact, no "operative whole-tone context" to undermine, precisely because the one missing pc needed to complete the whole-tone collection, A#, never appears at all, while A and B appear in every bar. In my view it would be better to state that, within a consistent acoustic {G#, A, B, C, D, E, F#}, the passage emphasizes G#, C, D, E, F#, over A and B. Even the preparatory French sixth chord discussed at length above (m. 42), which has many whole-tone elements, is also a subset of the acoustic and the octatonic collections. is also an acoustic subset.

Pomeroy's comment is free of technical error, but it exemplifies the lack of a priori recognition afforded the acoustic scale in scholarship by van den Toorn, Forte, Bass, and Parks. Pomeroy does mention the scalar motive's "combination of whole-tone…and diatonic elements," which speaks to the acoustic collection's chameleon-like interval structure; it maximally intersects with the whole-tone, the diatonic, and the octatonic scales (see Fig. 4.4, p. 118).

that Fig. 4.1's direct semitone motions occurred. Yet given Debussy's consistent use of maximally intersecting scales, it is fair to claim parsimony here as well. The Rule of Pitch Class Inertia provides further support.

Tonal functions, on the other hand, remain more open to interpretation than hierarchy or modulation. Let us briefly consider the function of the extended B7 chord in the first half of Fig. 4.5a. It is not a dominant of E, in that nothing that precedes or follows it implies E (and there are only E♯s in the music). In terms of sonority, the B7 is more consonant and long-lasting—and therefore tonic-implying—than the stormy, chord-shifting, tritone-laden passage preceding it (mm. 1-29). As the very stable initiating sonority behind an important theme in the movement, the B7 chord attracts tonic function, as does the Bmaj or B7 behind the *Sirènes* melody (Fig. 3.11a, p. 83).[142] On the other hand, if it is a local tonic, it is weaker and less rooted than the C♯ minor tonic triad of the principle theme that arrives in m. 56. Tonicity in Debussy is relative and contextual, rather than an absolute quality of sound.

Just as the B7's function as tonic or nontonic sonority is unclear, even the G♯'s "dominant-of-C♯ function" only emerges after the fact, after we hear the C♯ minor chord in m. 56 as an initiating tonic sonority. It is a "sort-of" G♯7, dissonant in its whole-tone inflection relative to the preceding B7. It is a re-invented analogue to dominant function, made fresh by its slow, contrary-motion counterpoint (F♯–E and C–D–E). Both of these fuzzy functions—the B7's relative tonicity and the G♯ pedal's attenuated dominantness—vividly exemplify how Debussy clouds functional sensations such as tonic or dominant.

In accord with these observations, Chapter 6 addresses tonic function not in terms of absolute identity (what "is" a tonic), but rather in terms of a particular passage's *range of functional affinity between tonic and non-tonic*. Whether or not Debussy's subtle tonics can be compared to those of earlier music, they certainly are heard in relation to each other within a

[142] For more on these concepts, see Chapter Six, as well as Harrison 1994, 76–82

given piece of music, and they can usefully be compared. Rather than the stable functional tropes of traditional tonal harmony, Debussy's music sets up a *spectrum* of function.

We now turn to a much shorter and more subtle passage, the exquisite opening bars of *Jeux de vagues*, which illustrate both subtle collectional change and a further wrinkle in chromatic embellishment. Previous analyses of this passage were critiqued in Chapter 2 (pp. 38-43); I address this music here, in terms of scale-to-scale modulation, and then again in Chapter 5, using pitch-class invariance.

Fig. 4.6a (p. 125) provides the first half of the movement's introduction (II/1-17). Harmonies—whether tertian or collectional—are named below the staff, with voice-leading transformations named above the score (most involve C♮ and C♯). This passage illustrates gradual increase from three to seven harmonic pcs, a thickening process, along with parsimonious chromatic motion, as the music shifts from a subtle F# minor (mm. 1-7) to a stable C Lydian (mm. 8-17).

Fig. 4.6b (p. 126) illustrates the hesitant parsimony of this modulation in the form of a chart. The figure summarizes each harmony on the left-hand side of the page, and then shows the same pitches on the right, aligned in order to highlight the specific process of pc accretion, retention, or transformation. Lines to black noteheads indicate chromatic shifts. The chart clarifies that each tiny harmonic shift in this passage, whether of a full scale or of a smaller collection, is by a single alteration, at least through m. 17.

Let us review this modulatory process. An initial diaphanous texture of harps and tremolo strings in mm. 1-4 contains the trichord {G♯, A, C♯}, scarcely grounded by an occasional, offbeat bass F♯. This opening trichord contains two enharmonic common tones with the previous movement's final D♭ major chord, with the new pc A likely derived from A♭ as well. These three pcs present an extremely ephemeral F♯ minor tonicity, an essentially rootless [015]

tremolo.[143] Tonicity is finally strengthened a bit at the woodwind entrance in m. 5 by a sustained, pianissimo cello F♯.

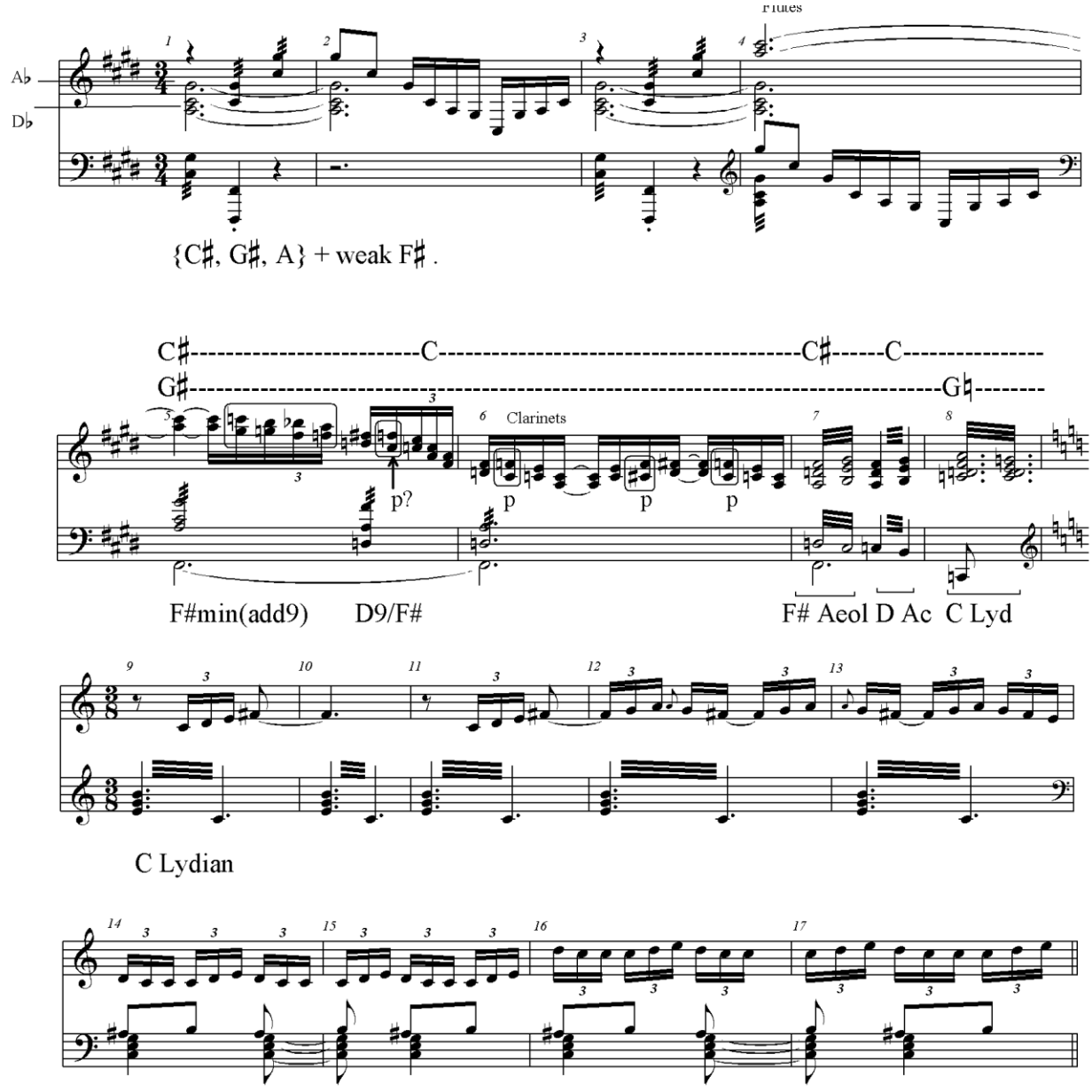

Fig 4.6a: Parsimonious modulation in Jeux de vagues *(II/1-17)*

[143] In modern jazz, this [015] trichord is a common rootless stand-in for a tonic minor triad.

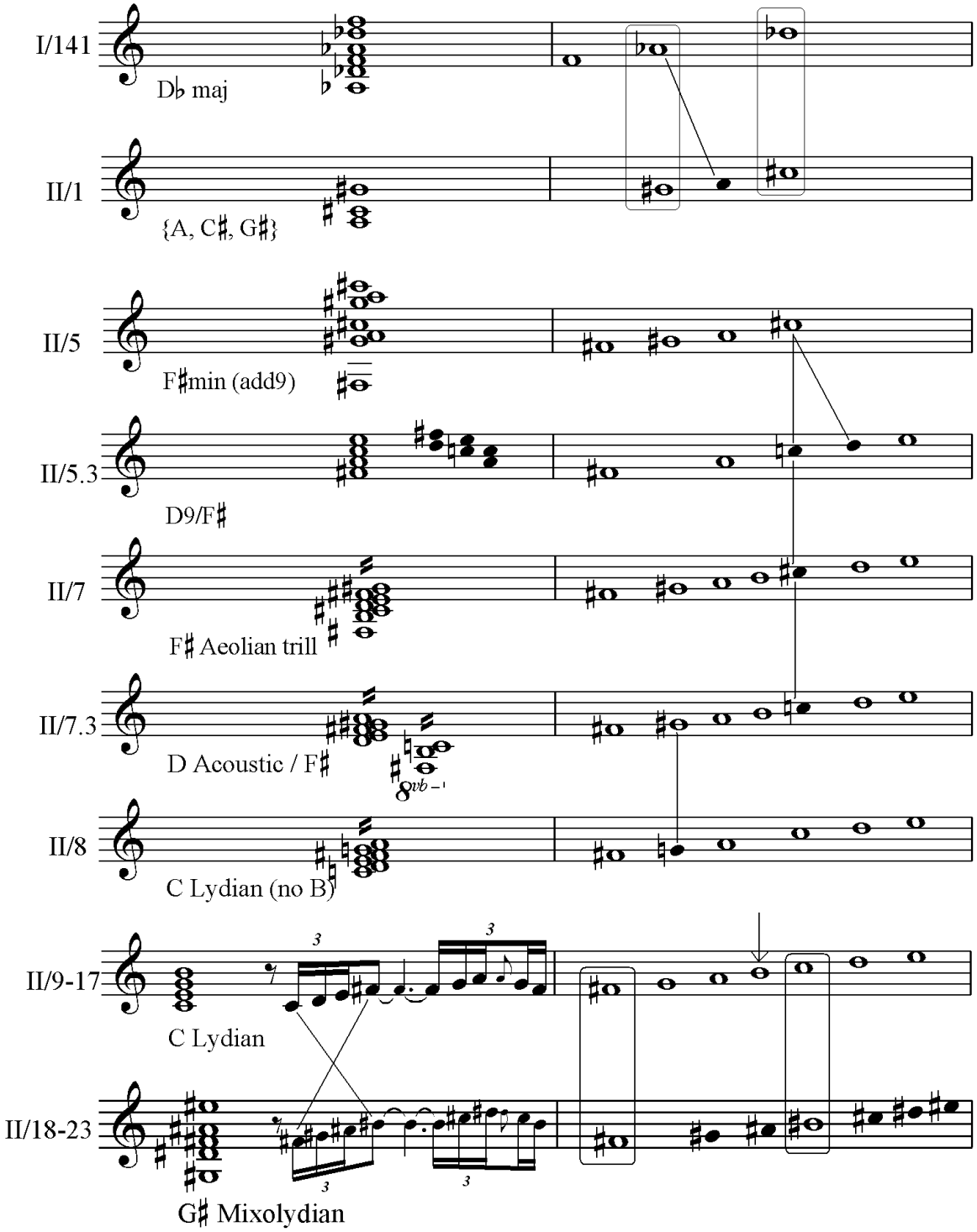

Fig. 4.6b: Collectional parsimony, II/1-23

The arpeggios at the end of the woodwind runs in mm. 5-6 can be reduced to D9/F♯ or F♯ø7 chords. (Resisting reduction, they exhibit the harmonic ambiguity discussed at length in the last chapter.) Including the new pitch D, they provide a 5-pc harmony by splitting C♯ into C-D, adding the single new pc E, while omitting the previous G♯.

Pitch-class density increases until m. 7, which contains two pure, complete 7-pc scale-chords, expressed as muddy trills in the strings. These two collections, F♯ Aeolian, and D Acoustic/F♯, maximally intersect, as C♯ again splits into C and D.[144] However, now the shift is between 7-pc scale-chords, rather than the 4- or 5-pc chords of m. 1-6.

There follows in m. 8 a shift to a new scale, a C Lydian hexachord (B is absent at first), which maximally intersects with D Acoustic. The shift is achieved with a further minimal, single half-step change, from G♯ to G♮.

After such quicksilver reversals of usage for C and C♯, the new thematic section beginning in m. 8 employs C♮ not only as a chord tone (in a C maj7), but as the new tonic of an extended presentation of the C Lydian scale. As in *Dialogue*'s Introduction (p. 118, above), the modulation has been prepared with maximal common tones: the five pc's of the D9 chord in mm. 5-6 are all present in the C Lydian scale: {C, D, E, F♯, [G], A, **[**B]}. While B is not a retained tone, it is part of those D scales that contains a D9, such as D Mixolydian. The only really new pc in the C Lydian scale is G, a chromatic alteration of G♯.

The harmonically static C Lydian theme that follows in m. 9 exemplifies Debussy's beloved arabesque shape, a winding melody over an accompanying seventh chord. The most important meoldy in *Jeux de vagues*, it is both absorbed into other themes (mm. 36-39) and acts as a chattering descant for slower melodies (mm. 171-179).

[144] In theory, C♯ need only shift to C, not split, as D is already present in F♯ Aolian. However, the score explicitly offers a split, C♯ to C and D.

The C Lydian passage also displays a further kind of chromaticism we occasionally encounter in Debussy, in the alto voice's constant vacillation between B and B♭ (mm. 14-17). If the alto's B-B♭ "resolved" down to A, the B♭ would be a foreign passing tone. Instead, the scale hesitates between C Lydian (with a B) and C Acoustic (with a B♭), echoing the earlier harmonic indecisiveness of C and C♯.

Finally, as shown at the bottom of Fig. 4.6b, the passage ends in a shift to G♯ Mixolydian, as foreign a W/H scale to C Lydian as there can be. After the pastel harmonic subtlety of mm. 1-8, this is a bold move, but it is cleverly concealed in a kind of harmonic double-entendre. The only common tones between the scales, C and F♯, are the outer voices of the Lydian motive, indicated in the musical example, which flips up to reverse the role of these two pcs.

We have seen how chromatic tones can both embellish a scale and change a collection, depending on their permanence. Sometimes a tone can flit between these two functions. It might begin as a foreign tone and become a stable chord tone, while a harmonic tone suddenly is cast into the wilderness as a chromatic embellishment. The beautiful woodwind runs in parallel thirds near the beginning of Fig. 4.6a exhibit such a shift, in the evolution of the function of the pitches C♯ and C♮. Foreign passing tones, as I interpret them, are marked on the score. Specifically, at the same time as the background harmonic collection wavers several times between C♯ and C—a voice-leading concern—the chromatic "shadow" of each (C or C♯, respectively) also appears as a foreign tone. This blurs the distinction between the music's surface decoration and the deeper chromatic voice-leading of the real harmony.

The flute's initial, sustained A-C♯ third is clearly triadic, and the immediately following C♮ in its descending run is a foreign tone. However, on the third beat of m. 5, as the accompanimental figures replaces C♯ with D, the C♮ in the arpeggiated flute lines is clearly part

of the D9. C has suddenly reversed function, from embellishing tone to harmony note, particularly clearly because of the arpeggiation.[145] Therefore, the C♯ which immediately precedes these arpeggios—m. 5, beat 3, 2nd sixteenth note, marked with an arrow—would seem to be a quick foreign tone, a standard chromatic passing tone within a D–C♯–C line. The C♯ chord tone, which previously was the fifth of F♯ minor and the headtone of the flute melody, is now decorating the split-fifth operation.

Or is it? It so happens that, during the instant in which this particular C♯ sounds, C♮ has not yet replaced it harmonically, nor has D9 sounded. Its function, which is in transition at the very moment it sounds, is infinitesimally ambiguous.

We have now reviewed in some detail three large categories of chromaticism in *La mer*: chromatic embellishment, chord-to-chord transformation, and scale-to-scale parsimony. Armed with these three concepts, we can see the order in most of *La mer*'s wild textures, and we can create harmonic narratives that document Debussy's extremely incremental progress from one collection to the next. Modulation by inclusion, parsimony, and liquidation are Debussy's most common strategies. Other passages that lend themselves to such a narrative are the long whole-tone-based dissipation of *De l'aube*'s cello choir theme (I/105-121), the G♯/A♭ pedal at *Jeux de vagues*'s climax (II/171-224), and *Dialogue*'s thrilling, harmonically unpredictable final episode before the triumphant final return of the Wind theme (III/211-244).

The Callender/Tymoczko network of scale relationships implies a completely different measure for harmonic distance in Debussy. Rather than the close and distant key hierarchy of the 18th century, Debussy'sW/H scales relate in degrees of voice-leading parsimony (i.e., how many common tones they contain) and in potential for consonant tonicity. In Debussy's tonality, the B

[145] If stepwise motion is involved, harmonic function is always less clear, as discussed with the E♯ in Sirènes, Fig. 3.11.

Acoustic and D Acoustic harmonic regions we saw in *Dialogue*'s Introduction (Fig. 4.5a) are closely connected, since Debussy achieved the modulation with one split and one merge operation, using the octatonic collection as a kind of post-tonal pivot chord.

In *Jeux de Vagues*'s Introduction (Fig. 4.6a), the modulation from F♯ minor to C Lydian was achieved similarly, through the mediation of D Acoustic. Although F♯ and C are functionally very distant in a Schoenbergian sense (from a minor key to its major flat dominant region, with Lydian inflection to boot!), the approach adopted here de-problematizes this relationship. It is not distant at all. In Debussy's system of common-tone related scale-chords, the F♯ Aeolian-C Lydian modulation is between closely related harmonic regions. Debussy carries it out through two successive minimal transformations, each buried within brief, blurred scale-chord textures. This could well be what Debussy had in mind by the statement used as this chapter's epigraph, "One can travel where one will and leave by any door."[146]

The success and simplicity of a collectional approach to harmonic analysis vividly demonstrates the problem posed by harmonic reduction, as alluded to in Chapter 2. Reducing the *Jeux de vagues* Introduction to tertian sonorities, such as the F♯min(add9) in m. 5 and Cmaj7 in m. 12, eliminates half of the pcs in each scale chord, obscuring the scalar parsimony that makes modulation easy. Focusing on scale degree $\hat{1}$ as tonic (rather than on the complete pc content), it then creates artificial analytical puzzles, such as, Why did Debussy modulate to the ♭V region? Why is it Lydian rather than Major? Are there parallels or precedents to this ♭V relationship in tonal harmony?, and so on. It cannot be overstressed that this puzzle stems directly from the decision to reduce the harmony to a tertian chord or a tonic pc. *Harmonic reduction immediately conceals these clear procedures of scale modulation and pc-collection-building*. Both processes are discernible only at a level close to the musical surface. In my view, they are the real core of Debussy's tonality, to the extent that it is systematic at all.

[146] Lockspeiser 1962, 206.

Chapter 1 cited Brian Hyer's two-tiered definition of tonality: systematic arrangements of pitch phenomena (harmony) and the orientation towards a tonic pitch class (tonicity and function). The evidence reviewed thus far suggests that Debussy's "free" harmony is in fact fairly systematic. He derives vertical sonorities and horizontal harmonic regions from W/H scales, employs familiar tonal chords statically or in unfamiliar succession, and embellishes these with chromatic passing tones, neighbor tones, and appoggiaturas. He modulates, whether between tertian chords and scalar textures, parsimoniously. He builds and dissolves pc collections by subtle degrees.

4.3 HARMONIC HIERARCHY AND MODULATION

While it is beyond the scope of the present inquiry to catalog all types of modulation in *La mer*, we will end this chapter by confronting a thornier passage, the 30-bar Introduction to *De l'aube*, where scales are incomplete, harmonies appear to be nonscalar and nontertian, and the line between embellishment and modulation is even more confusing.

The Introduction to *De l'aube* is dark and harmonically obtuse. Previously, in five different musical examples, we have analyzed several portions of the first sixteen bars, which contain three gestures: a pentatonic build-up, a plaintive oboe fragment, and a longer trumpet melody, "the Call of the Sea." In Chapter 3, I inveigled against the widespread temptation to place the colorless pentatonic tetrachord which opens *La mer* in tonal context, such as a major or minor scale or triad, inclining instead towards a neutral description of its intervals and potential tonicity (I/1-5, Fig. 3.8, p. 77). (The great importance of these four pcs, unencumbered by tonal association, will become clearer in Chapter 5.) The ambiguity of chromatic embellishment in the oboe's plaintive call (immediately following the tetrachord, mm.6-8) was then shown (Fig. 3.18, p. 98). Fig. 2.8 (p. 28) demonstrated the oboe theme's striking enharmonic similarity, in contour and absolute pitch content, to the Chorale which closes the movement. Finally, we discussed the

ambiguity of harmony (or scale) in the trumpet's "Call of the Sea" (I/10-16, Fig. 3.9, p. 79), as well as its vague resemblance to the Horn theme that immediately follows the Introduction (Fig. 2.6, p. 25). We can now turn to gleaning a convincing harmonic narrative for the entire Introductory section.

The analytical approach involves harmonic reduction, using the now familiar idea of chromatic embellishment and a new one, longer-range harmonic hierarchy based on acoustic consonance. The opening eight bars offer an illustration of harmonic hierarchy over a slightly longer harmonic span than the chord-to-chord level. Fig. 4.7 provides a reduction of these bars.

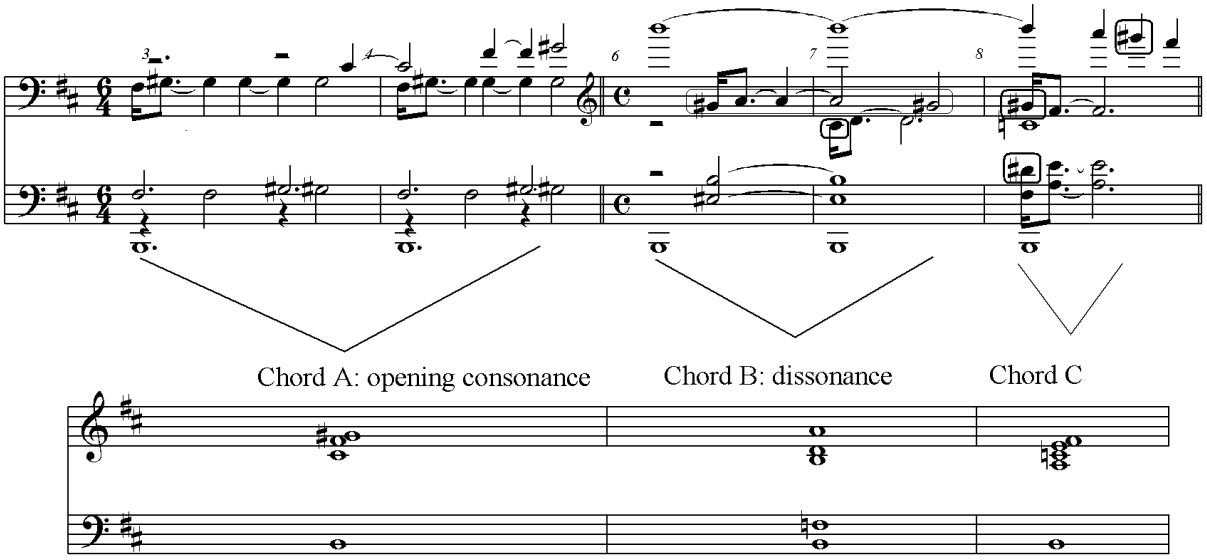

Fig. 4.7: Chord hierarchy, I/3-4, 6-8

Fig. 4.7 reduces this passage to three chords, labeled Chord A, Chord B, and Chord C, shown below the staff. Chord A is {B, C♯, F♯, G♯}, a placid [0257] consonance arising from motivic superimposition during *La mer*'s first five bars. Chord B combines the sustained pcs B, D, and F with the melodic line that vacillates between G♯ and A. (At any particular moment Chord B includes *either* G♯ *or* A; Chord B is "B ^{o}7 *or* B^{ø}7," enharmonically.)

The phrase cadences and resolves to Chord C, {B, C, E, F♯, A}, which does not include the sixteenth-note appoggiaturas on the downbeat of m. 8. As Debussy voices it, the chord can be described as either "Bsus11♭9" or "F♯ø7/B."

Just as a tonal chord progression can be analyzed as an expansion of a one or two chords, so can we hear Chord B, the diminished chord in mm. 6-7, as an embellishment of A and C, due to its position, its dissonance, and its smooth resolution. Chord B is a kind of appoggiatura harmony resolving to Chord C. While both chords are dissonant compared to Chord A, Chord B contains the B-F tritone, while Chord C contains a perfect fifth against the bass, B-F♯, and concludes a four-bar phrase. Chord B therefore "resolves" to Chord C, even though the latter is not a simple tertian sonority.[147] As a result, due to its ending of a phrase, its relative consonance, and its slight pentatonic kinship to Chord A, Chord C is somehow more fundamental than Chord B to the tonality of the introduction of *De l'aube*. And voilà—we have a hierarchy of chords as well as melody notes. (If this principle of relative consonance and formal position is accepted, it opens the door to perceiving post-tonal harmony with loosely tonal ears, as a complex metaphoric scaffolding of analogies to full and half cadences, phrase groups, melodic periods, and so on).

I propose a harmonic narrative for hearing these first eight bars. Its initial, placid-sounding pentatonic tetrachord, {B, C♯, F♯, G♯}, is waylaid by the chromaticism of mm. 6-7, but then resolves, half-restfully, on Chord C. To use tonal language, Chord B "embellishes" Chords A and C; Schenkerian analysis employs the terms "decorates" or "expands." Chord B's dissonant harmonic tritone against the bass makes it less tonic-like, and so less important in the tonal hierarchy, than A or C. If traditional harmony offers a chordal hierarchy of functions based on

[147] Chord C contains both a minor ninth (B–C) and perfect eleventh (B–E). Chord C's 5 pcs also contain a transposition of Chord A's 4 pcs; {B, C♯, F♯, G♯} at T10 = {A, B, E, F♯}. Although they sound very different, the two chords therefore share important pentatonic intervals.

relationships among scalar triads, with the tonic at the center, I propose that in Debussy, the main mechanisms of hierarchy are relative dissonance, metric accent, and formal placement.

The concepts of embellishing tones and harmonic hierarchy, if applied without tonal bias, explain Debussy's loose tonality. They allow us to can glean harmonically significant musical objects from the surface chaff, showing harmonic organization in otherwise obscure passages. The coming collectional narrative of the Introduction relies on these concepts.

Fig. 4.8 (p. 135) provides a harmonic reduction of each section of *De l'aube*'s Introduction, mm. 1-30. The motives of the Introduction express an arch form, ABCB'A', shown at the top of the figure. Sections A and A' contain overlapping pentatonic ostinati and introduce the appoggiatura motive; Sections B and B' are the plaintive oboe tune derived from it, and Section C, the dissonant middle center of the arch, contains a longer musical phrase, the meandering trumpet "Call of the Sea."

In the grand staff at the top of Fig. 8, black noteheads indicate short notes and white noteheads indicate sustained tones. The third staff simplifies the harmonies of sections B and B' to show the basic voicing in some sections. The fourth staff spins a tale of harmonic progress from this information. That is, the harmony of the Introduction reflects the arch formed by these melodic ideas. The purpose of this analysis is to discover a method of harmonic modulation, if any, in these mysterious waters.

The first tone heard in *La mer* is a quiet bass B, followed by tentative neighbor motion between F♯ and G♯. The latter meld in overlapping stepwise ostinati, from which surges the appoggiatura motive on the same pcs, as the bass B gets louder. This gradual harmonic increase in pc density (1 to 2 to 3 to 4) is shown on the fourth staff, as the generative tetrachord begins to coalesce harmonically.

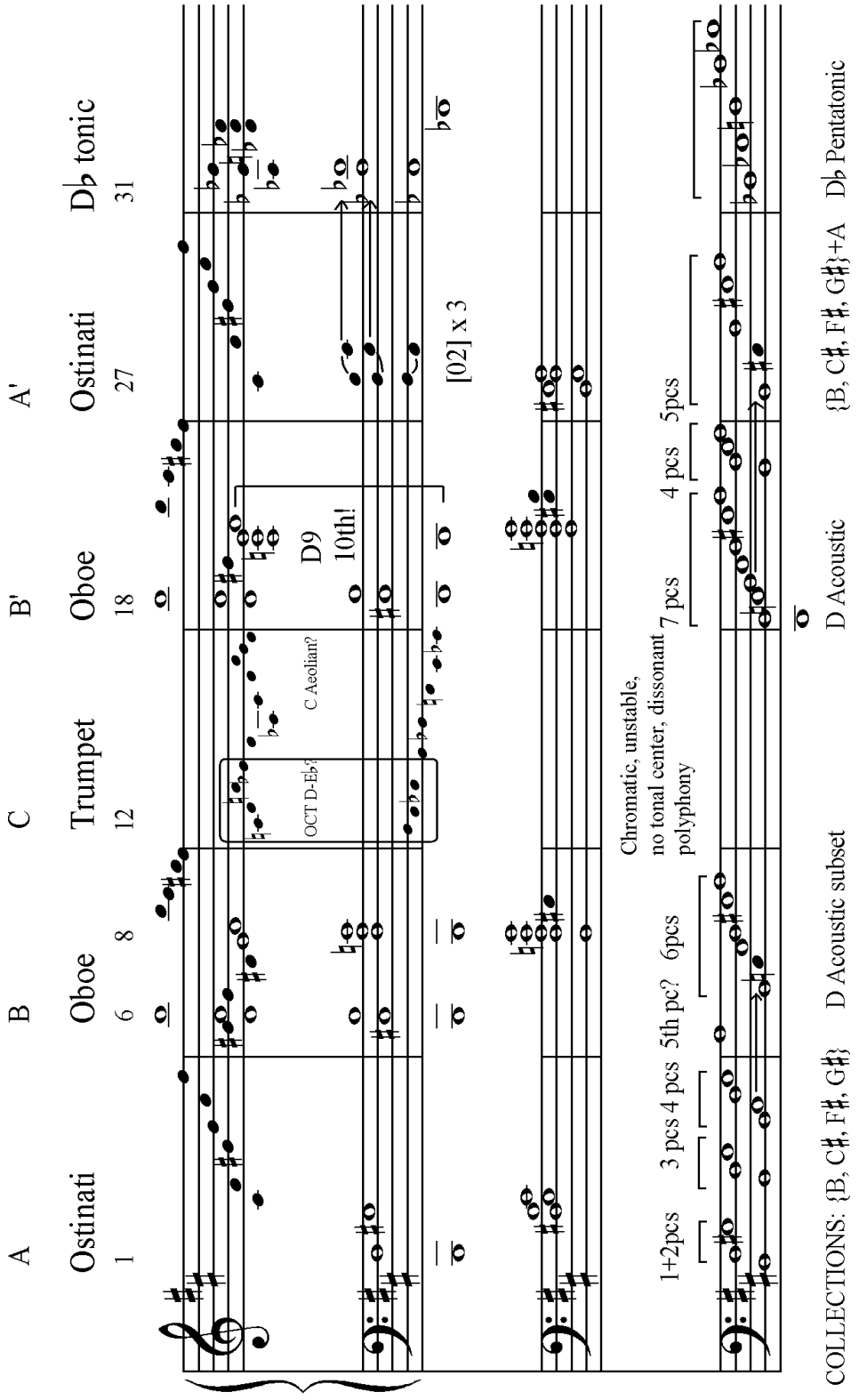

Fig. 4.8: Harmony in De l'aube*'s Introduction (I/1-31)*

In m. 6 the oboe motive introduces an important new pc, A. At first, undermined by the B-E♯ tritone below it, its status is unclear. But when it is echoed in the high strings' descending line in m. 8, we realize it has become a permanent addition, the 5th collectional pc. At the same time, the C♯ which had been an essential member of the harmonic fabric suddenly disappears at the cadence in m. 8, replaced by C♮. By the end of m. 8, then, the collection has grown, by individual pc accretion and a single half-step shift, to {B, C, E, F♯, G♯, A}. (See bottom staff.) This is a D Acoustic hexachord, over a bass B; the only note missing from the collection is D itself.

Section C is marked by a radical change of texture. It lacks even a rumor of pitch centricity, and is something completely different that interrupts the careful harmonic continuity we have seen. In place of the bass pedals and sustained chords of the surrounding music, Section C contains dissonant two-part polyphony between the trumpet and an equally meandering, chromatic bass. It feints at first towards an OCT D-E♭ heptachord, {A♭, A, B, C, D, E♭, F} in mm. 12-13, but does not maintain it. Whether by accident or design, it is interesting that OCT D-E♭ is the only octatonic collection that maximally intersects with D Acoustic.

Section B' brings harmonic order back, by reintroducing the oboe motive in compressed form, including the F♯ø7/B harmony seen before and the descending tetrachord. However, there is a significant change: the bass now provides a sustained D, and for the first time we hear a major tenth between bass and a treble voice. We also hear the full D Acoustic scale for the first time, partitioned into Debussy's habitual dominant ninth chord with melodic ♯11 and 13 (as in *Sirènes*, p. 83 above). This is the Introduction's central moment of harmonic arrival, the first and only time it offers a major tenth (and a perfect fifth) above a bass note. It is as if, now having arrived at such a non-brooding moment, the music must work its way back to the opening {B, C♯, F♯, G♯}.

There follows a short transition based on the high descending tetrachord, {B, A, G♯, F♯}. The other pcs (C, D, and E) drop out, and the descending idea's binds the departing D Acoustic collection to the returning {B, C♯, F♯, G♯} tetrachord. When the opening material returns (m. 27), in the form of overlapping ostinati that blur the harmony together, the tetrachord is enhanced by the addition of B's lower neighbor, A.

While the Introduction's mood is murky and expectant, and its harmony is mainly not tertian, this short narrative can help us to see that Debussy modulates between collections by very delicate steps, even when there are dissonant harmonic interruptions.

CHAPTER FIVE: TONALITY BY COMMON TONES

In Chapter 3 and Chapter 4, we have observed that *La mer*'s chromaticism bridges the conceptual span between *harmonic embellishment*, in which a background harmony is colored with temporary passing tones, appoggiaturas, and neighbor tones, and *harmonic change*, where chromatic tones initiate an actual shift to a new chord or new collection. In some cases, the line between chromatic embellishment and harmonic change may not be definable. We also observed that these modulations are often effected with extremely smooth voice-leading, and that one of Debussy's innovations was to extend parsimony, the tool used by 19th-century composers to connect tonally disjunct triads and seventh chords, to other harmonic entities, such as 9th chords, scale segments, and even the four W/H scales.

Parsimony really involves two distinct techniques, minimal voice-leading motions and the retention of common tones. Both techniques are present when Debussy moves between maximally intersecting scales, with five or six common tones and a single transformation, split, or merge operation. Of these two techniques, the use of common tones is the more important and consistent, for it alone adequately explains Debussy's other technique of modulation, by incremental pc accretion and liquidation, which Callender referred to as inclusion relations.

Debussy's retention of common tones between successive chords or scales has long been noticed by analysts, regardless of the observer's analytical concerns. Pitch-class invariance is equally important to David Pomeroy's Schenkerian charts and Dmitiri Tymoczko's geometry of maximally intersecting scales. As David Kopp says in an article on pentatonic common-tones in two piano pieces, "It is common knowledge that [Debussy] regularly employed common subsets to mediate transitions between different scale types," adding that "the large degree of overlap of

subsets among different scalar source sets facilitates the simultaneous presence of multiple modes of harmonic organization."[148] In Chapter 4 we observed this "overlap of subsets" in the Introductions to *Dialogue* and to *Jeux de vagues,* and we have also noted in *De l'aube*'s Introduction the building and the dissolution of the D Acoustic collection, pitch by pitch. In spite of the interruption caused by the trumpet's Call, the common tones {E, F♯, G♯, A, B} linked the framing B-centric harmonies to a brief, central, D Acoustic collection.

This chapter presents evidence that pitch class invariance and collectional rotation influence broader levels of harmonic organization as well. I prefer to avoid calling this a "prolongation" of specific pitch classes, because this Schenkerian term implies the presence of tonal counterpoint and tonal functions. In fact, some of the graphs in this chapter bear a superficial resemblance to Pomeroy's, but our conceptions and perceptions of Debussy's tonality are strikingly different. The biggest difference is that mine does not imply several levels of hierarchical scaffolding, let alone traditional harmonic functions. What I hope to highlight is simply that the pitch classes that are prominent in *La mer*—longer, louder, more heavily orchestrated, at the peak of an arc, head-tones of primary themes, bass notes, and so on—often are retained, continuing to float as a fixed pitch class (and often at a fixed register), gathering together disparate harmonies and embedding themselves in tonally improbable contexts. If we listen without tonal expectations—as if we had perfect pitch and no experience of common-practice harmony—the effect is a very direct, immediate feeling of change-within-constancy, like a single object being illuminated by different lights, or like the shifting surface of water. Returning to the meaning of this technique at the end of the study, I suggest that it beautifully evokes *La mer*'s oceanic program by means of several convergent metaphoric paths.

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[148] Kopp 1997, 262–3. Kopp cites as an example Phillipe Charru's 1988 analysis of Debussy's piano preludes, which trace "the interaction of the different source collections in Debussy's *Preludes* by means of analyses predicated on invariant three-note motives, which, acting melodically and as harmonic focal points, underlie disparate surface manifestations of key and mode."

My method throughout this chapter will be to observe common-tone relationships without attributing functional meaning to the technique, or comparing the large-scale patterns it generates to those of common-practice tonality. Indeed, observing this system based on common tones changes the general view of tonality from the essentially dynamic conception of common-practice harmony (as a journey through complex routes, with deflections and arrivals), to a more static conception, involving kaleidescopic recoloration of, or obsessive returns to, the same constant sound (in this case, G♯). To put it differently, the analysis in this chapter is completely independent of the ideas of function developed in Chapter 6. For now, this simplifies our task; observing pc-invariant relationships without speculating about tonicity or chord progression allows Debussy's harmonies to "exist in the moment," each one its own potential tonic.

Pitch-class invariance operates in *La mer* at several hierarchical levels. Its most direct and audible employment is in the recurrence of the main themes of all three movements at pitch, but reharmonized. The French Horn theme of *De l'aube,* with its initial C♭, first appears harmonized in a D♭ Pentatonic/Acoustic environment. (I/35). It soon recurs within A♭ Melodic Minor (I/53) (or perhaps F^{ø}7, both are rotations of D♭ Acoustic), and then a third time in Cb Lydian (I/69). This last entrance is cut off by the climactic shift to E Acoustic in m. 72. It fits harmonically because the theme's first three pcs, C♭-D♭-A♭, are common tones to all of these collections, and because Debussy treats all the notes in a scale a potential harmonic tones.

Jeux de vagues's Trill theme (II/36) also undergoes a process of reharmonization at pitch. The tune's prolonged D♯ headtone is retained from the Introduction's G♯ Mixolydian passage, and each recurrence also begins on D♯. The initial appearance is supported by an uncharacteristically dissonant tonic chord, {E, G♯, B♯, D♯} or Eaug(maj7). *La mer*'s interpreters rightly see the movement's tonal process as one in which this sonority progresses towards the eventual consonance of the Coda's E Lydian scale-chord texture, confirmed at the very end by a

pure E major triad.[149] The theme's reharmonizations (II/163, 167, 179, 183) within the movement's tonal and thematic reprise offer a harmonic counternarrative, though, in which the dissonant tonic chord's three upper voices, which form their own G♯ major triad, are voiced with increasing conspicuousness (triple octaves, trills, dynamics). G♯ migrates to the bass, E disappears, and the D♯ headtone becomes the springboard for a plethora of other tunes, always over the G♯ pedal, which is recolored by a long series of G♯ scales as the music dances in climactic frenzy.

In sum, Debussy employs pitch invariance and collectional rotation to develop the dissonant tonic of *Jeux de vagues*. By rotating the tetrachord once (making G♯ the bass), he highlights a different tonicity, already implicit in the G♯-major triad's heavy orchestration within the first dissonant tonic at m. 36. This parallels his rotation of *De l'aube*'s D♭ Acoustic collection around the French horn theme.

The recurring Wind theme of *Dialogue* undergoes extensive variation as well, and always begins at pitch, with the A-G♯ motive. However, the types of variation and extension are more harmonically traditional, and as a result this movement sounds quite old-fashioned compared to *Jeux de vagues*.

Pitch-class invariance has other uses, to which we must now turn. I offer three examples, covering successively longer swathes of music. The first explains the sources of *Jeux de vagues*'s dissonant tonic within the movement's Introduction (Fig. 5.1). We then review numerous manifestations of *La mer*'s opening pentatonic tetrachord, {B, C♯, F♯, G♯}, which binds together *De l'aube* and, distorted, is the source for the dissonance in the second movement (Figs. 5.2, 5.3,

[149] Trezise words this with great care; he says that the dissonant harmony on E "becomes increasingly identified as the tonal center" as it is "subject to several transformations." He also recognizes that the B♭9 only gradually "comes to function as a dominant" to the E harmony. We share the insight that *Jeux de vagues*'s tonality is a developmental process (Trezise 1994, 63).

and 5.4). We close with the powerful role of the pc G♯ and its upper neighbor, A, throughout *La mer*'s three movements (Figs. 5.5a, 5.5b, and 5.5c).

5.1 PREPARING THE DISSONANT TONIC OF *JEUX DE VAGUES*

In Chapter 2, we looked at harmonic analyses of the Introduction to *Jeux de vagues*, mm. 1-35. Arthur Wenk interpreted it as analogous to a circle-of-fifths chord progression, while David Boyd Pomeroy derived it from the voice-leading of a chromaticized ii-V-I pattern. Both of these explanations involved dismissing most of the Introduction's foregrounded pitch material and applying Roman numerals to the resultant harmonic reduction. Pomeroy emphasized a buried B♭7, perhaps to fulfill the tonal requirement of a dominant preparation for the dissonant E tonic. The following account of how the Introduction prepares the tonic of m. 36 rejects all talk of traditional tonal function, whether substituted, elided, reversed, or chromatically displaced. Instead, it assumes that the music's foregrounded gestures provide their own innovative logic.

In Chapter 4, we observed in detail how subtly Debussy moves from the initial weak F♯ minor to C Lydian in m. 12, relying on pc accretion and voice-leading parsimony. I will show here that in the full Introduction (mm. 1-35), Debussy smoothes the way to m. 36's {E, G♯, C, D♯} chord in two ways. As we have seen, he often relies on common tones between maximally intersecting scales (see also, Fig. 5.1b, below). In addition, the augmented tonic triad can be heard simply as the result of retaining G♯ and C, the two most foregrounded pcs throughout mm. 1-35 (Fig. 5.1c).

Fig. 5.1a (p. 143) surveys the important initiating gestures of this passage, reviewing the progress of the passage's most evident source of continuity, the solo tritone motive, first heard in C Lydian at m. 9 and m. 11. Its appearance in mm. 18, 20, 28, and 30 transposes both the chord and its accompaniment up a tritone. This flips its C-to-F♯ span to F♯-B♯, and the accompanying chord becomes F♯maj7, at least in the tenor range. However, the bass does not move up the same

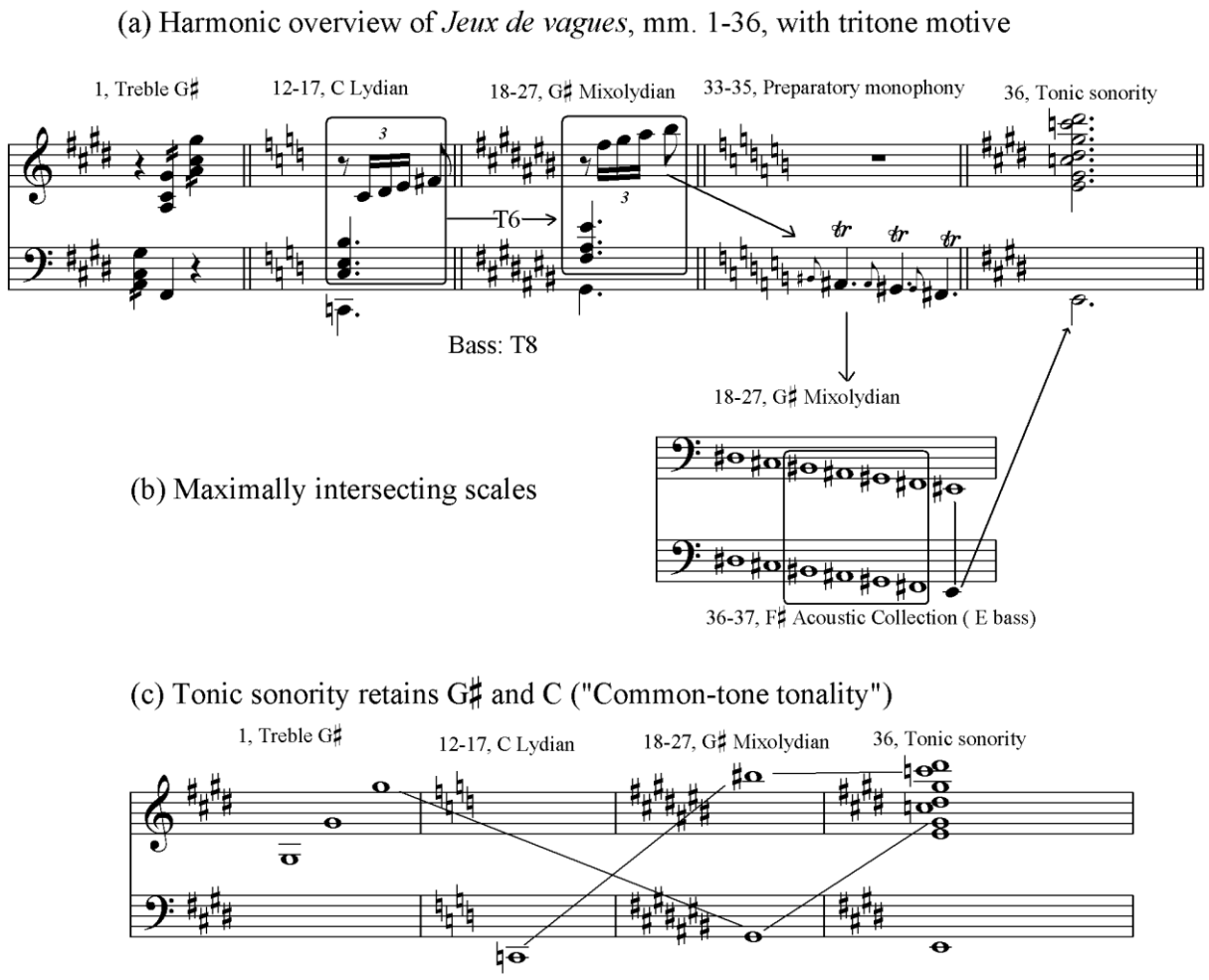

Fig.5.1: Common-tone voice-leading, (II/1-36)

parallel tritone to F♯. It goes a step further, to G♯, and this turns m. 18's F♯ Lydian sound, in the upper voices, into a G♯13 chord. In effect, Debussy has transposed C Lydian at T6 , and then rotated the resulting F♯ Lydian to its second mode, G♯ Mixolydian. The two collections share only 2 pcs, as far apart as possible for diatonic scales, and they are F♯ and C, the emphasized outer tones of the tritone motive.

At m. 33 the developing texture is interrupted when the tritone motive recurs, untransposed but inverted, without accompaniment, in surreal slow motion. This radical change

of texture and meter signals a musical interruption. The unexpected monophony prepares the ear for the arrival of a significant musical statement, which arrives with the dissonant E tonic of m. 36. This preparatory function is much clearer than the dominant-substitute-function attributed to the metrically weak B♭9 chord in mm. 28-32 (shown on p. 39); among other factors, the monophonic descent is the last thing we hear before m. 36's Trill theme.

M. 36's Eaug(maj7) chord is part of a new scale, F♯ Acoustic/E, that maximally intersects with the preceding G♯ Mixolydian scale, as shown in Fig. 5.1b. The monophonic descent to E, therefore, not only employs the tritone motive's four pcs (in reverse order); it also walks through four of the common tones shared by the two scales, employing them as a harmonic pivot, to arrive at the one new pc, E♮.

In the modulation at mm.17-18, the motive's two outer pcs are the only common tones between the two scales. In the second one, all four are common tones, stepping down the scale to introduce E.

Thus, the dissonant tonic of m. 36 is much better prepared than other analysts have noticed. It is not a random, new event, nor is it necessary to derive it from a diatonic progression in the key of E major. The method is clear if we simply keep in mind how assiduously Debussy follows the principal of common tone modulation.

Fig. 5.1c shows the progress of the pcs G♯ and C, both of which are musically foregrounded in melody and in bass notes during the entire introduction. The opening tremolo chords send G♯ up two octaves and back. In m. 9 the Lydian motive, which enters over a strong C-tonic bass, itself springs from the note C. As we saw in Chapter 4, C♮ had insinuated itself into the music's fabric against the original C♯ as a nonchord tone, and, twice, as the result of parsimonious scale modulation. The subsequent transposition of the tritone motive foregrounds both C and F♯. C (B♯) is the central sustained treble tone of the arabesque melody from m. 18 to m. 27, while the bass maintains its G♯ for these same ten bars.

The markings on Fig. 5.1c show how Debussy plays with the emphasized pcs G♯ and C during mm. 1-35, sending them up and down over three octaves, in a very audible, plain way. The dissonant tonic chord of m. 36 does *not* grow out of a consonant tonic (although its augmented fifth does resolve to B in its third bar). The dissonant tonic chord arises from the retention of two pcs while the bass marches to E by common tones, a process that Debussy carries out with great clarity.

5.2 *DE L'AUBE*'S GENERATIVE TETRACHORD, {B, C♯, F♯, G♯}

We now turn to *De l'aube*'s opening collection,{B, C♯, F♯, G♯}, which has multiple purposes in *La mer*. Of course, as a pentatonic tetrachord, the collection's (0 2 5 7) set-class pervades the movement's many pentatonic textures (I/33, I/68, I/72, I/84, I/135, I/139), while its (0 2 5) trichords are even more widespread. We now will see many other uses for this collection, in *De l'aube* and in *Jeux de vagues.*

First, these exact pcs provide an important pun within the First Principal Section, mm. 31-83. When the D♭ pentatonic motive and its accompaniment of m. 33 are transposed to E pentatonic at the climax in mm. 72-83, the pentatonic motive now consists of the Introduction's four pc's, with added E. In its new E Acoustic environment, the motive's constantly repeated headtones (C♯, B, and G♯), now replicate enharmonically the exact opening pc's of the French horn theme (C♭, D♭, C♭, A♭), which had been associated with a very stable D♭ Acoustic collection. (The enharmony is shown below in Fig. 5.4, p. 152) As we saw above, by this point, the French horn theme itself has been played at pitch twice, and now appears a third time. Each pc invariant appearance is couched in a different scale. In fact, three of the four common tones between D♭ Acoustic and E Acoustic are {B, C♯, G♯}.

During this climactic passage in m. 72, in addition to couching the pcs in a new E Acoustic scale, Debussy creates dissonance by rotating the mode (i.e., changing the bass),

creating a radical change of mood for the 4 pcs and for the motive, which had initiated the entire section in an atmosphere of cheerfully consonant D♭ major pentatonicism (I/31-34). The pentatonic motive now becomes mysterious and tonic-less by the simple technique of rotating E Acoustic to its third mode, G♯ Phrygian (♯2). Rather than the stable, consonant, tonicity of the motive's original occurrence, a B-D-G♯ bass grinds with great dissonance against {B, C♯, F♯, G♯}. In this rotation, the collection lacks a perfect fifth above the bass (G♯-D is a tritone). The E collection then disappears, pc by pc, leaving only the four pcs with which the movement had begun (mm. 80.2-83), suddenly made dark and uncertain in their new {G♯, B, C♯, F♯} rotation. (Even when the tritone, D, has disappeared, we do not imagine it has been replaced by a D♯, using my Rule of Pitch Class Inertia.)

A second, surprising use of the tetrachord over a longer span of musical time is that the collection provides nearly every tonic pc during most of the movement, in mm. 1-83 and in mm. 122-141 , that is, in all but *De l'aube*'s contrasting middle section (the cello-choir theme at m. 84).

Fig. 5.2 charts structurally significant bass notes for these sections. In most cases they act as local tonic pcs. The bass pcs shown are from collectionally stable and pitch-centric moments in the music, especially beginnings and endings of phrases and sections, or bass pedal tones (m. 122).

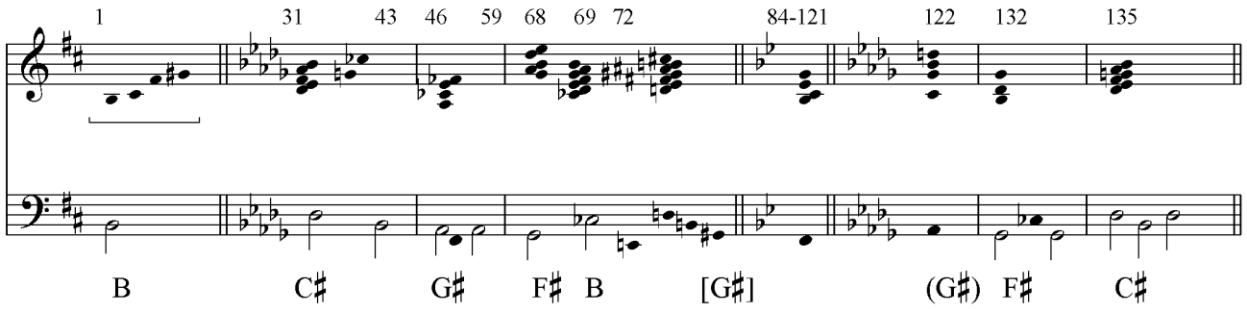

Fig. 5.2: {B, C♯, F♯, G♯} as bass notes in De l'aube à midi sur la mer

In the treble clef are some of the initiating or closing, tonic-like harmonies heard above these bass tonal centers. Pitch centers are shown as half-notes, while most non-tonic bass pcs are given as stemless noteheads. A quick glance at the bass clef shows the overwhelming presence of our four pcs everywhere except the Second Principal Section, the "foreign key" area of the movement. It is also noteworthy that an important bass in the First Principal Section that is not drawn from the generative tetrachord, the brief culminating bass pc E in m. 72, will become the controlling tonal center of *Jeux de vagues*, the next movement.

We have seen that *De l'aube*'s opening tetrachord has various harmonic purposes. It arises as a set-class subset within diatonic and acoustic chords and scales. As a transpositionally invariant pc collection it generates tonic-like bass notes and chord roots throughout the movement. We now will see the complex binding influence of {B, C♯, F♯, G♯} within *De l'aube*'s first half (mm. 31-83), which passes through a profusion of implicit tonal centers and scale types (despite its 5-flat, D♭-flat-major key signature). At the moment-to-moment level, one hears a real tonal journey in this section, full of color and movement. And yet, there is a feeling of even greater distance when we reach the Second Principal Section, the cello choir figure at m. 84ff. This distance is partly explained by the new textures, timbres, formal process (variations), and chord types in this section. However, the following analysis finds an additional, harmonic cause for this feeling of distance between the two principal sections of *De l'aube.* With appropriate adjustments for the acoustic scale's wrong note, all the different scales and tonics in the D♭ section are held together by the opening tetrachord {B, C♯, F♯, G♯}, while the two-flat collection of the cello choir section avoids them completely. These scales are shown in Fig. 5.3 (p. 148). Rather than a tonic key, this section constitutes a tonic region of closely-related collections.

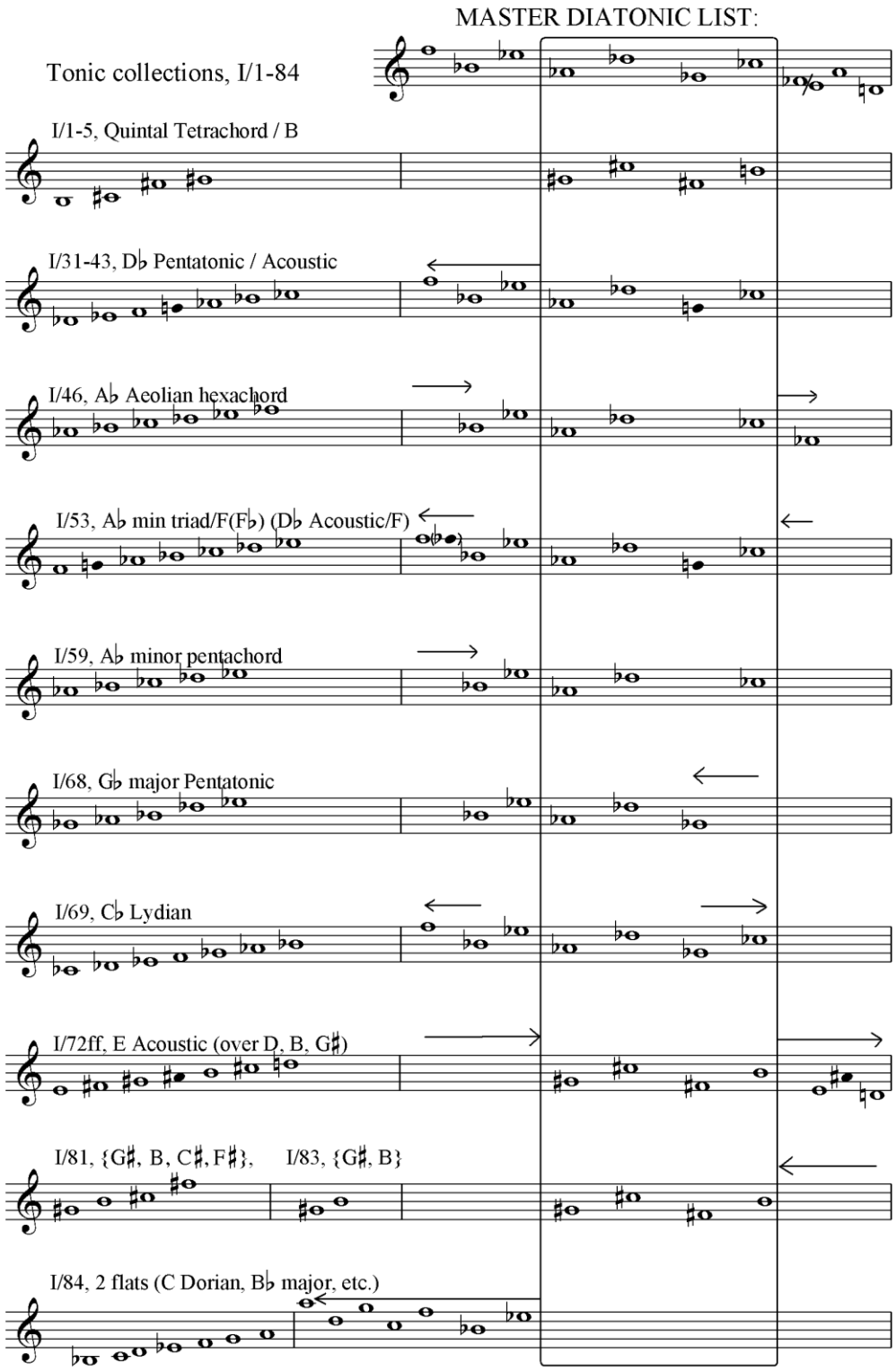

Fig. 5.3: {B, C♯, F♯, G♯} as common tones, I/1-83

Fig. 5.3 shows all of the principal scales used in this section, plus the first scale of the following section, in the order which we hear them, as the music flows by. On the left side of the figure, the pitches of each excerpt are presented and labeled as a scale or mode, according to the tonic sonority in the corresponding musical passage (they vary between five and seven pcs). On the right side of the figure, the same pitches are then reordered as a segment of the cycle of fifths, aligned with a master cycle-of-fifths diatonic list given on the top staff, ranging from A on the left to D on the right. Since the acoustic collection always is a semitone away from a diatonic one, it is presented on this chart with a single black note indicating the nondiatonic pc.[150]

The chart demonstrates a surprising relationship between these four pcs and the content of each scale. In effect, B, C♯, F♯, and G♯ (or their enharmonic equivalents) function as invariant "glue tones"[151] within a family of overlapping diatonic (or "diatonic-but-one") pc collections from throughout the First Principal Section. That is, at least three, and often four, of these pcs are common tones, as Debussy shifts between collections in this section, all grouped near each other within the cycle of fifths. In the next section, as the "two-flat" scale (F mixolydian or B♭ major) at m. 84 takes over, for the first time we hear a scale with none of the original four pcs in it, and this helps explain why the section sounds so distant from the rest of the music.

This layout allows us to see how the generative tetrachord's pcs mediate between all these closely related collections. The common tones are boxed together. In this layout, we can conceptualize each change of tonic collection as a shift to the right or the left, as shown by the arrows. The longer the arrow, the more change of pitch between collections.

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[150]There are two methods of deriving an acoustic scale from a diatonic scale. I have chosen the one that emphasizes the tonal discontinuity between m. 83 and m. 84.

[151] I borrow the term "glue tones" (and to some extent the methodology of this analysis) from Kopp 1997.

The climax of this section, utilizing the E Acoustic collection, moves the collection to the far right. The two-flat collection which initiates the cello theme is on the far left. In this circle-of-fifths frame, D is the only common tone between the end mm. 31–83 and the beginning of mm. 84-111. (Enharmonically, the two sections also share A♯/B♭, but this layout provides a useful metaphor for the distance between these two scales.)

The layout in Fig. 5.3 also shows that the generative tetrachord, which had provided a placid opening sonority for *La mer* in mm. 1–5, returns at the end of the section (mm. 81–83). However, now derived by liquidation from E Acoustic and rotated to provide a fifthless harmony on G♯, the same four pcs float, unrooted and weirdly ominous.

Fig. 5.3 demonstrates that in *De l'aube*'s First Principal Section, Debussy creates an original functional analogue for a tonic key, substituting for it a *tonic region of closely-related collections*. Although it sounds alive with richly changing harmony, it hangs around the same core 4-pc collection, which glues its various scales together. The chart demonstrates that, if each change of harmony is conceptualized as a modest horizontal motion along a circle-of-fifths axis, the change to the 2-flat collection at *De l'aube*'s principal formal division (at m. 84) constitutes a radical move in the sharp direction.

De l'aube's generative tetrachord also acts to connect it the following movement. There are two common-tone relationships which join *De l'aube* to *Jeux de vagues.* Both involve {B, C♯, F♯, G♯} in whole or in part. The most direct of these is very simple. At the moment-to-moment level, the last sonority of *De l'aube*, {D♭, F, A♭}, shares two pcs with the first sonority of the second movement, {C♯, G♯, A} (with a weak F♯ in the bass). By now, it is perhaps unsurprising that, once again, the common tones C♯ and G♯ come directly from our generative tetrachord. They also were the only common tones at the important juncture at I/30-31 (as shown in Fig. 4.8, p. 135, above).

The chord succession D♭ major (C♯ major)–F♯ minor is common in traditional tonality for modulation between chromatic mediant keys, such as D♭ major and E major. In tonal terms, it imposes mode mixture on a pivot chord:

C♯: I iv

f♯: V i

E: V/ii ii

What is innovative is that Debussy employs this technique, one of the few in *La mer* that is so close to common-practice harmony, across the seam between movements. It certainly bolsters the interpretations by Wenk and Pomeroy noted in Chapter 2, which viewed *Jeux de vagues*'s opening F♯ chord as a supertonic triad, marching functionally along in E major—except for the fact that the F♯ is almost not present until m. 5. Whether or not these functions are perceived, the common pcs C♯ and G♯ are as emphatic as can be in the musical surface. The substitution of the pc A for F recolors the C♯ and G♯, echoing the feeling of a tonal motion "deep into the flat side." This echoes the flat direction of the overall tonal motion:

De l'aube D♭ major

Jeux de vagues E major = F♭ major = ♭III of D♭

The way these framing sonorities of *De l'aube* and *Jeux de vagues* interrelate by mode mixture also foreshadows the play of parallel modes in *Dialogue*, which alternates between C♯ minor and D♭ major. In fact, if we combine the two overlapping trichords, we get the dissonant harmony which closes all of *La mer* at III/290-291, as a kind of apotheosis of mode mixture:

{ D♭, F, A♭} + {G♯, A, C♯} = {D♭, F, A♭, B♭♭}.

It is as if these framing sonorities are in a dialogue about pc-invariant combination.

The second way that {B, C♯, F♯, G♯} influences *Jeux de vagues* is in the creation of the obbligato which passes below the D♯ Trill theme at II/36. The tetrachord undergoes a melodic

process of distortion, shown in Fig. 5.4a, in which its outer pcs are compressed by half-step to create the pcs of the obbligato. This generates dissonance from its originally peaceful, pentatonic sound. The first stage of this occurs in *De l'aube*'s French horn theme, at I/36, which raises F♯ to G, offering the (0 1 4 6) sound of {F𝄪, G♯, B, C♯} (enharmonically). Then, in the obbligato which accompanies the main theme of *Jeux de vagues*, the upper note, C♯, is lowered to C, generating {F𝄪, G♯, B, C}, or (0 1 4 5).

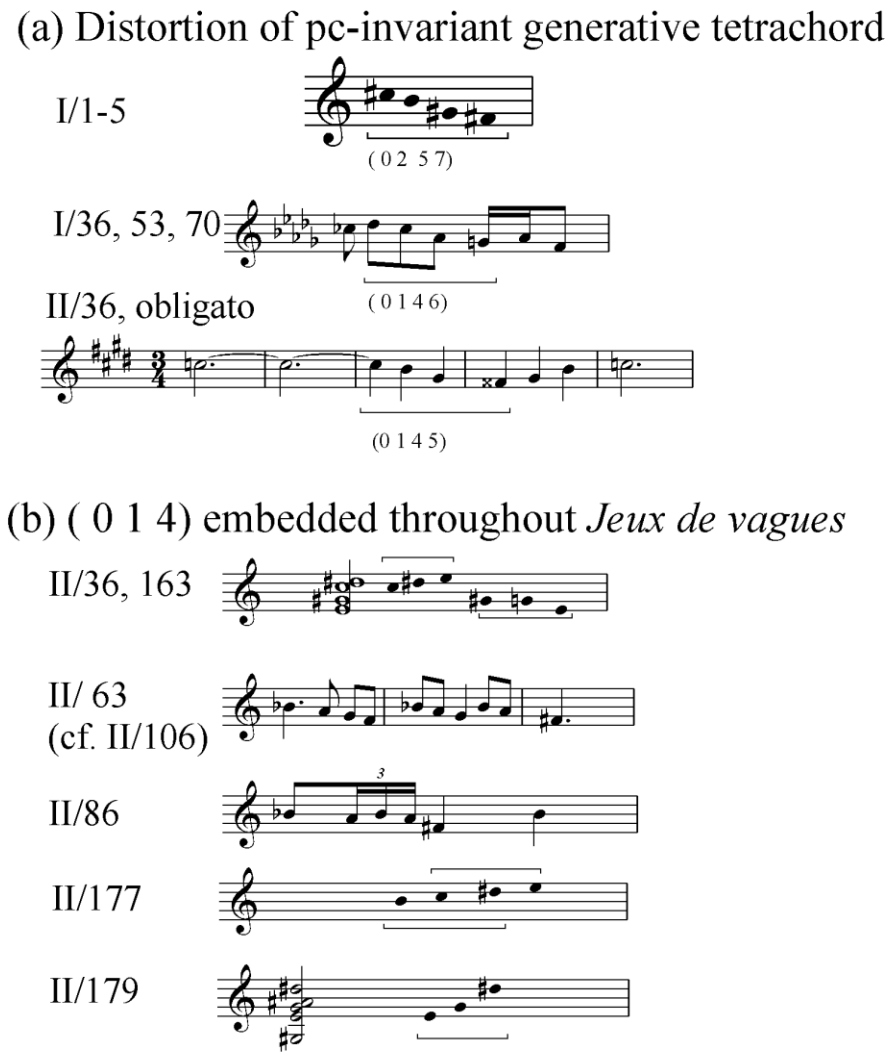

Fig. 5.4: Distorting {B, C♯, F♯, G}

The new (0 1 4) or (0 1 4 5) harmonies of this obbligato, rare or absent in *De l'aube*, recur occasionally in the melodies and sometimes the harmonies of the second movement, as shown in Fig. 5.4b. While each has a specific context that can explain its harmony directly, the (0 1 4) sound has been seeded by the common-tone distortions of *La mer*'s opening harmony, shown in Fig. 5.4a.

5.3 G♯ AS BINDING AGENT ACROSS *LA MER*

We saw the importance of G♯ in the beginning of *Jeux de vagues* , as discussed in connection to Fig. 5.1. I also mentioned G♯'s prominence in the entire second half of that movement. Now, in a final example of the importance of pc invariance in *La mer*, I propose looking at G♯'s (enharmonic) fortunes across the entire span of the three movements of *La mer*. Just as Trezise called *La mer*'s melodies "both familiar and unfamiliar," the ghostly recurring emphasis on G♯ and its two upper neighbors, A and B♭, makes its tolling returns both familiar (it is the same pc, again and again), and unfamiliar (its harmonization is richly varied, and it engages in constant shifting in register, texture, and timbre).

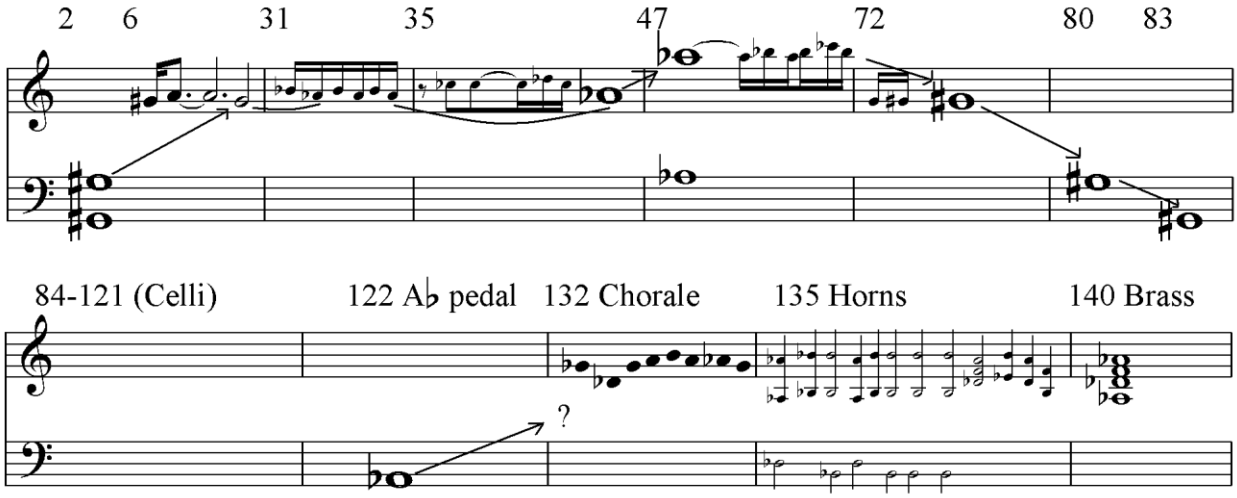

Fig. 5.5a: G♯/A♭ in De l'aube à midi sur la mer

Figs. 5.5a shows its role in *De l'aube*. As we saw above (p. 148), *De l'aube*'s First Principal Section (I/31-83) is unified by pc collections closely related to the initial pentatonic tetrachord and to the D♭ Acoustic "tonic region." Within this pc field, G♯ is a kind of first among equals. G♯ is the object of the opening dotted rhythm motive (m. 2), and it recurs as the most emphasized pc in all of the important melodies of this section. Fig. 5.5a shows also that it traces a giant arch in its shifting registers. From the low gloom of m. 2, it rises to a peak in the A♭-minor flute Arabesque in m. 47, and gradually descends back to the original register in the section's final bars.

G♯ plays no structural role in the Second Principal Section, and with the exception of the pedal at m. 122, is not particularly important in the movement's ending. The Horns repeatedly draw it to B♭ (m. 135), during the tonally vague final cadence of *De l'aube*.

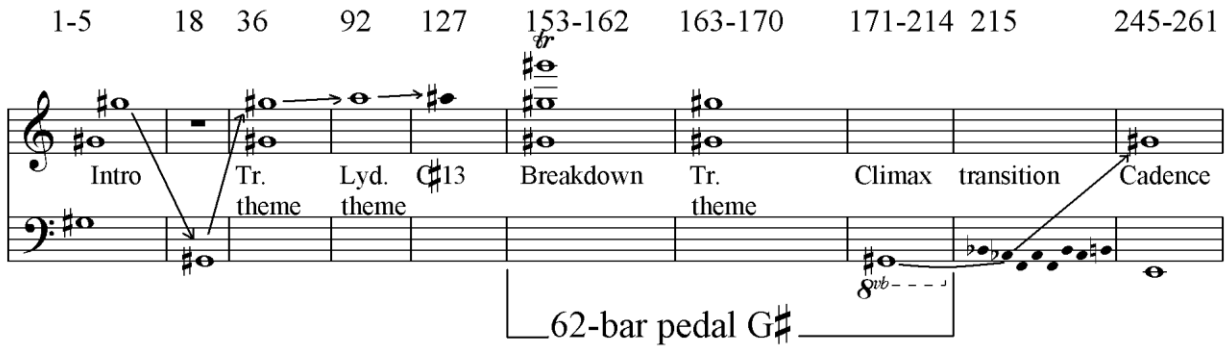

Fig. 5.5b: G♯/A♭ in Jeux de vagues

Jeux de vagues contains the most ingenious and emphatic use of this pitch class, as Fig. 5.5b demonstrates. We have seen its prominence in the Introduction and its retention in the Trill theme at m. 36 (Fig. 5.1). The first note at each of *Jeux de vagues*'s first two principal sections at m. 36 and m. 92, are G♯ and A, respectively.[152] As initiating sonorities, the half-step voice-

[152] These divisions follow the ternary scheme presented in Chapter Two, Fig. 2.2 (p. 20).

leading is relatively audible. (Pomeroy's interpretation of this G♯-A as a long-range upper neighbor to a $\hat{3}$ headtone is undoubtedly the most aurally cogent of his various *La mer* readings.)[153] A then moves up by another half step at an important internal division at m. 127, when the metric and phrase rhythm of the music suddenly is interrupted in the harps' ametric plinking out of C♯13 (A♯ is the 13th).

At m. 153, after a resumption of scherzo-like activity, the music's momentum breaks down again, in a vast expansion of the preparatory monophony which closed the Introduction (mm. 28-35, shown above in Fig. 2.9, p. 39). In triple octaves, all the strings trill on a G♯, supporting various augmented triads from WT C. This initiates an extraordinarily long G♯ pedal, a 62-bar section of the music, subsuming three different formal sections. The first of these, mm. 153-162, constitutes an interruption, a pause in which theme, phrase rhythm, and tonicity all break down. At m. 163, the movement's nominal resumption of the dissonant E tonic, the Trill theme returns, but as we have seen earlier, its dissonant tonic chord rotates to increasingly emphasize G♯ in the bass. Finally, the basses take over the G♯ pedal, now in a very low range, and there ensues a morphing, climactic reminiscence of the movement's themes, which are combined, fragmented, and developed in three-part counterpart, over longer spans of music, and with increasing frenzy. Only the bass is unchanging.

An ingenious aspect of this pedal is the harmonic variety which Debussy provides over the invariant G♯ bass of mm. 171-214, including five different W/H scale-chord regions and near-octatonic distortions of diminished seventh chords. The passage moves towards the keys of G♯ minor, E major, A major, and, triumphantly, G♯ mixolydian. The harmony never settles down, while the bass never changes. At the end of this climax, G♯ is reinterpreted as A♭ within a B♭7 and within WT C, and the bass eventually finds it way down to the movement's nominal tonic, E.

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[153] Pomeroy 2000a, 459–460.

In the Coda, the opening Lydian motive, now in the trumpet, is transposed down a scale degree, to end on $\hat{3}$ (rather than the $\sharp\hat{4}$ of its many previous appearances). Almost inevitably, the motive comes to rest on a mid-range treble G♯, the treble pitch that initiates the static E Lydian scale chord which closes *Jeux de vagues* (mm. 245-261).

In *Dialogue du vent et de la mer*, G♯'s role is much less abstract and varied than it is in the first two movements (see Fig. 5.5c). Aside from the preparatory G♯ pedal in mm. 43-55, the pc appears primarily in the Wind theme's prominent, foregrounded initial motive, A-G♯ (or its enharmonic equivalent B♭♭–A♭).

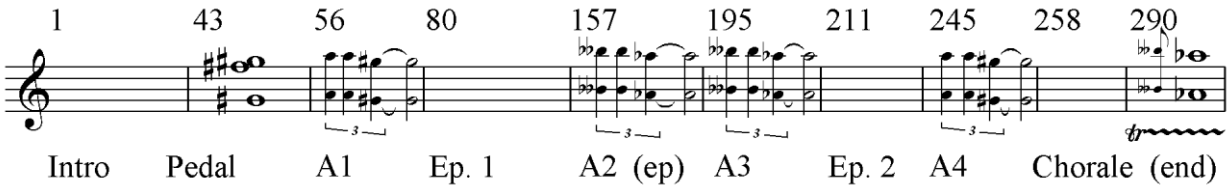

Fig. 5.5c: G♯/A♭ in Dialogue du vent et de la mer

The chromatic episode which extends A2 draws on the A-G♯ headtones, slipping below them chromatically, and returning to the original level at A3. For the most part, however, the episodes in *Dialogue* have little to do with G♯. They are extremely disjunct in their harmonies, leaping between different regions of pc space from bar to bar.

The A-G♯ head motive in *Dialogue* might also be heard as a long-range echo or playing out of the initial trichord of *Jeux de vagues*, {G♯, A, C♯}. This trichord, which retains two pcs of the D♭-major triad that closes *De l'aube*, now recurs as the initiating harmony of the Wind theme, either with added E (A1, A4, the C♯ minor presentations) or F (A2, A3, and m. 254, the D♭-major presentations).

In the discussion of the Wind theme in Chapter 4 (Fig. 4.2, p. 107) the harmonic ambiguity of the theme's A-G♯ motion was broached at length. However, the process of combining {A, G♯, C♯}, the trichord that opens *Jeux de vagues*, with F, the third of D♭ major, isn't fully achieved until *La mer*'s very last chord. At this culminating moment, over a strong tonic D♭-major sustained triad, the A♭ is trilled with its chromatic upper neighbor tone, as shown in Fig. 5.5c, combining into one sound the 2-pc motive which has initiated the Wind theme throughout *Dialogue.* In a sense, this dissonant tonic harmony, *La mer*'s very last sonority, summarizes pitch class invariance in the work. Yet, at the same time, the dissonant trill buries and blurs the sound of G♯—the very pc which, in kaleidoscopically changing timbres, harmonies, and registers, has unified all three movements of *La mer*.

CHAPTER SIX: INCONSTANT TONALITY

> Tonic and dominant had become empty shadows of use only to stupid children.
>
> - Debussy, in a letter to his friend Pierre Louÿs , January 22, 1895[154]
>
> Music is neither major nor minor. Minor thirds and major thirds should be combined, modulation thus becoming more flexible. The mode is that which one happens to choose at the moment. It is inconstant.
>
> - Attributed to Debussy by Maurice Emmanuel[155]

6.1 FUNCTION IN CHROMATIC MUSIC

Now that we have described Debussy's harmonic habits of subtly partitioned W/H scales, ambiguous embellishing tones, incremental pc modulation, maximally intersecting collections, and large-span common tones, we are ready to turn our attention in this chapter to developing an explanation of *tonicity* and *function* in *La mer*, one that reflects the sensations of fluidity and change so vividly portrayed in *La mer*'s early critical reception.

It is important to remember that Debussy is a child of Romanticism. Rather than reinvent tonicity from scratch, Debussy's music builds directly on 19th-century tendencies to avoid functional clarity. Seen in this light, his innovative harmony is an extension of Romanticism, rather than a revolt against it. While the techniques are his own, the sensation of clouded function was a compositional norm when he began. Debussy's "tonics by other means" were preceded by those of Wagner, Mussorgsky, Rimsky-Korsakov, and Fauré. This is plausible in terms of a lived compositional practice.

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[154] Debussy 1977, 76–77.
[155] Lockspeiser 1962, 206.

Arthur Wenk describes the musical techniques that were loosening tonality in the nineteenth century, including "increasing the number of temporary tonal centers in a single movement," "increasing the length of tonally ambiguous passages," "delaying the definition of a tonal center," "tonal parentheses," and "increasing the proportion of chromatic writing." In addition, "through a kind of harmonic inflation, increasingly dissonant chords, originally introduced for expressive purposes as decorations of diatonic harmonies, became accepted as structural elements."[156]

A particular important category of such dissonant chords contains sonorities, originally derived from dominant function, that no longer necessarily prepared or led to tonics. Dominant sonorities in the late 19th-century period were the most varied, the most dissonant, and the most functionally elusive category of harmony. Much of Debussy's rhetoric in *La mer,* particularly in *Dialogue*'s Episodes (III/80-97, 98-118) and in large swathes of *Jeux de vagues,* derives from this practice. As Pomeroy writes, "In later Romantic as well as early twentieth-century tonal music, what might be termed the gestural or rhetorical aspects of dominant-functional expression took on an ever-increasing importance in their own right." These often appear as "an extended buildup of dominant function over and above any locally operative sense of key."[157] With examples from Wagner, Franck, Dvorak, and Grieg, Daniel Harrison describes "dominant accumulation," "a single impression of unresolved Dominantness," "a general buildup of dominant charge that requires eventual resolution."[158]

As tonics become avoided, and dominant sonorities became used in endless sequence, avoiding their key-establishing potential, function becomes less and less defined. Daniel Harrison (1994), Kevin Swinden (2005), and Charles J. Smith (1986) have demonstrated the mixed functional meanings of harmonies in chromatic music, discussing "plural function,"

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[156] Wenk 1983, 116.
[157] Pomeroy 1999, 447–8.
[158] Harrison 1994, 154–5.

"colliding function," and "functional extravagance," respectively. Swinden demonstrates functional ambiguity by analyzing the multiple chordal membership of different scale degrees in innovative harmonic successions by Strauss, Liszt, Wagner, and others.

Harrison, although mainly concerned with reinterpreting Riemann's postulation of three harmonic functions (Tonic, Subdominant, and Dominant), also recognizes a kind of tonicity that has nothing to do with voice-leading, scale-degree affiliation, or tritone resolution. My criteria for tonicity in Debussy echo the ones that he suggests for late Romantic repertoire.

Harrison refers to something called "position asserting" (as opposed to "position finding"), comparable to the "presentational tonality" Smith described (see p. 47, above):

> One of the hallmarks of chromatic music was the discovery that the sensations of harmonic tonality could be separated from the sounding entities that traditionally produced them…Key centers can be created that are independent of the tonal structures that traditionally attend them. The importance that this technique has for chromatic music, as well as for most pitch-centered music of the twentieth century, cannot be overstated.
>
> In chromatic music, if the listener cannot find Tonic, Tonic often finds the listener. This process is essentially the inverse of position finding; instead of using intervals to find tonic, *a tonic is given and its intervals are thereby defined*.[159]

This paradoxical reversion of function makes formal placement seem more important than harmonic succession. It might be better to say that the formal positioning of the tonic (as an initiating or concluding sonority) can at times take precedence over consonance. (It is a kind of circular argument, at any rate; the question of how we know where we are even in tonal music is very difficult.)

As he develops his argument, Harrison discusses four techniques that strengthen a sense of tonicity, in the absence of traditional signposts.

1. Tonic function ends a composition.
2. Tonic begins compositional sections.
3. Harmonic stasis and immobility attract Tonic function.
4. Thematic exposition is heard in a Tonic context.[160]

[159] Harrison 1994,75–76. Emphasis added.

Harrison developed these criteria for late Romantic repertoire; he analyzes music by Busoni, Schoenberg, and Franck. But it is remarkable how well these criteria work for *La mer*, for instance, to explain the establishment of D♭ major in *De l'aube*, which we first looked at in Chapter 2, Fig. 2.11 (p. 45). *La mer*'s first static harmony arrives at m. 31, the beginning of a compositional section. The accompanying pentatonic harmony is immobile. It supports a thematic exposition, the French horn theme at m. 35. The tonic then disappears for about 100 bars, but at movement's end it is the very last thing we hear. Ergo, it must be a tonic.

Several other elements need to be added to this list for determining tonics, but it captures the *positioning* of Tonic very simply. Debussy often presents a short phrase whose first few beats declare a tonic-like triadic affiliation, to be immediately juxtaposed for a few bars with a more dissonant harmony. This happens with most of the short phrases in *De l'aube*'s First Principal Section. For instance, the phrase at I/59 alternates an initial tonic, A♭min9, with whole-tone subsets, on each downbeat. Phrases with a similar tonic-nontonic opposition are heard at II/36-39, II/62-65, and III/56-64. This implies that triadic, or nearly triadic, consonance is a basic criterion for tonicity, besides formal placement. It also suggests that we do not need dominants or predominants to have tonics. Rather, there is a simple spectrum between tonics and nontonics. A given harmony can situate itself anywhere along this spectrum. As we listen to *La mer*, each new sonority changes tonic quality—not only can roots move, but so can chord type, duration, rhythmic texture, range, formal process, and so on—and this contributes to the feeling of kaleidoscopic change.

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[160] Harrison 1994, 79–83. Harrison's position asserting, or Smith's presentational tonality, are also present in those traditionally tonal compositions that begin with any kind of tonic ostinato before a theme begins, such as Bellini's *Casta Diva*, Schubert's *Ave Maria*, and Mozart's G Minor symphony. It is almost like a law of nature: the first (consonant) thing you hear, you shall call tonic. However, in Debussy the ostinato can be almost anything—a scale chord, a ninth chord, an open fifth. But the idea of harmonic stasis attracting tonic function is the same.

6.2 A FUNCTIONAL SPECTRUM

Chord function in *La mer* spans a spectrum between tonics and nontonics, then, without firm, well-marked oppositions, such as that between tonic and dominant in tonal music. Either end of the spectrum can be more strongly defined or less strongly defined. Tonicity depends on a variety of factors addressed below. It is important to reiterate here that this discussion of presentational tonicity is inspired not in opposition to traditional tonality, but out of an attempt to reconcile theory with the pitch centers or keys which *La mer*'s analysts have asserted. There is an analytical consensus, for example, that I/47ff. is "in" A♭ minor, yet the passage has no conventional dominant preparation in harmony (it is preceded by a C♭9 chord) or bass motion (C♭-A♭). It is in the absence of such conventional tonal markers that I resort to the proposals offered here.

In Chapter 2, I proposed that the basic D♭ tonic of *De l'aube* is presentational. Using Harrison's criteria for presentational tonicity, Fig. 6.1 lists the main tonic sonorities in *La mer*'s outer movements, along with the harmony of any texturally distinct preparatory gesture; the latter are indented, without measure numbers. All of these tonic harmonies are the first harmony in a section. (*Jeux de vagues* is omitted because it is simply not reducible to this kind of summary chart.) The majority of these tonics correspond to those claimed by *La mer*'s interpreters.

While we are about to greatly refine this theory of function, at least such a chart represents actual harmonies that we hear, without claiming them in relation to a global tonic, but simply defined as chords with particular pcs. No other function is posited, not even dominant (note my preference for the phrase "preparatory gesture" to "dominant chord").

Most of the whole-tone-like sonorities in *La mer* do not make the list, for their lack of a consonant triad is sufficient to undermine a sense of tonicity. I included the whole-tone passage at III/94ff because it is extraordinarily stable and consistent, the longest single collectional usage

in *La mer* by far. But that is not to say that it is as strong, "centric," or rooted as the others. (The whole-tone-like trichord at III/211 is heard within a diatonic, 7-♭ collection.) In other words, although in my view all the following bear some degree of tonicity, they are also all different from each other. It is in this sense that *La mer*'s tonicity is inconstant.

Fig.6.1: Presentational tonics in De l'aube *and* Dialogue
Preparatory gestures are indented.

De l'aube à midi sur la mer	*Dialogue du vent et de la mer*	
1 {B, C♯, F♯, G♯}	15 C♮?	195 D♭ maj
31 D♭ pent / acoustic	30 B Acoustic, D♯?	211 {F♭, A♭, B♭ }
43 B♭7	G♯ pedal….	221 C7/F
47 A♭ min(♭6)	56 C♯ min	common-tone fanfare….
53 A♭ min/F	65 C♯ min	245 C♯ min
61 A♭ min(add9)	B min/A ….	G♯aug7….
D♭13….	78 A maj	254 D♭ maj
68 G♭ pentatonic	90 A maj7(♯11)	B♭ min….
69 C♭ Lydian	94-128 stable WT C♯	270 D♭ pentatonic
84 Cm7 (/F?)	B♭ aug / C, then {B♭, C, D}….	286 D♭ Lydian (no C) (encloses a G9)
92 D min/F	133 E♭ min / C-D♭ trills	
95 C maj(add6)	147 B♭ min	
99 B♭ maj	low A♭ trill….	
A♭7(alt)….	157 D♭ maj	
132 G♭ maj		
135 D♭ maj or B♭ min		

An attempt has been made to name each tonic harmony directly and accurately, without reducing, expanding, or altering it to make it more triadic. While most of these tonics are triad-like, note the harmonic variety, from the non-triadic tetrachord of the very beginning to the 6-pc scale chord of the last cadence. (A few of the more dissonant tonics I claim—I/43, III/94, III/211—fight our preconceptions of what tonicity means.)

In addition to the variety of these tonic types, the chart also reveals the paucity of tonics prepared by anything like a dominant chord. Only nine out of thirty-nine tonics come with a preparatory harmony, and of these, only four resemble traditional dominants with tonic resolutions (at I/68, III/56, III/157, III/254). The concentration of these in *Dialogue* suggests that as *La mer* proceeds, it gets closer to traditional function as it reaches its ending.[161] It is also significant that the only diatonic V7-I progression (the elided D♭13-G♭ pentatonic at I/68), is hardly the most structurally significant divide in the music.

What tells us that a tonic is there, if there is no cadential announcement, no break, no dominant chord? I have mentioned that *La mer*'s analysts understand that I/47 initiates a theme in A♭ minor, although it flows right out of the previous phrase's chromatic block chords. Specifically, it follows a full bar of C♭9 in busy figuration (the previous phrase is shown in Fig. B.2, p. 186). What factors allows this perception of it as a tonic?

First and foremost, m. 47 marks a change in rhythm and timbre. The arabesque accompaniments of the previous phrase are abandoned for a repeated-chord pattern, while a solo flute's new melody replaces that of the previous phrase's divisi strings. Harmonically, the new tonic A♭min(♭6) is tritone-less, and slightly less dissonant than the preceding C♭9. But the decrease in dissonance is not the main factor in declaring it a tonic. Changes in rhythm, texture,

[161] This is in accord with Trezise's discussion in Trezise 1994, 91.

and timbre trump the perception of triadic consonance in hearing an initiating sonority as a temporary tonic.

Six factors impinge upon the perception of presentational tonicity in *La mer*:

1. Formal placement and phrase rhythm. Beginnings and endings attract tonic function; this criterion generally dominates all others.

2. Duration/stability. Occasionally this gives rise to confusion. *Dialogue*'s whole-tone episode is so long (III/94-130) that it establishes itself as an aural reference point, but its dissonance causes an odd feeling to its tonicity.

3. Preparatory gestures, such as the monophonic trills in *Jeux de vagues,* or the G♯ pedal in *Dialogue,* can help establish a tonic. Many of these draw directly on nineteenth-century symphonic precedents.

4. Consonance relative to bass, with major or minor triad as reference, strengthen a sense of tonicity. Color is a useful metaphor for this untranslatable aspect of tonic sonority. Although we saw in Chapter 4 that scalar additions—4ths, 6ths, 7ths, and 9ths—are not just for color, but are part of the voice-leading fabric, in terms of the perception of tonicity, Debussy sets up the consonant triad (i.e., with a perfect fifth) as the relative measure of tonicity. But the variety of color is an important factor in making the long series of presented tonics qualitatively unlike each other. We have seen this recoloration process with respect to the repetition of main themes, but it is also true even when the tonic pc is staying the same. Each of *De l'aube*'s five successive phrases in A♭ minor (I/43-67) is differently colored and textured. They do not all have an A♭ bass, and the last phrase (I/64) even slips into OCT C♯-D, using Debussy's common-tone punning technique.

5. Melodic contour, especially in the treble range. Certain intervallic leaps mimic tonal melodies and suggest a pitch center. In the very beginning, a rising C♯-F♯ figure hints at an F♯

tonic, although the B-F♯ harmony with the bass suggests B more strongly. In this case, the ear is receiving mixed messages with respect to tonicity.

6. Strength, stability, and presence of bass reinforce a tonicity already established by other means. However, if it is not within a consonant chord and an initiating/concluding sonority, the bass alone can not create a strong sense of tonicity.

When all these criteria work together, we have the most conventional, clear, triad-like tonic sonority, as in *Dialogue*'s C♯-minor Wind theme. Let us call these, *strong tonics*. More often, though, the elements appear only partially, or conflict with each other in various ways, causing their tonicity to weaken, to float towards the nontonic end of the pool, so to speak. This is the "mechanism" by which *La mer*'s tonics float indecisively. Using the initiating/ending, root-position, P5th triad as a kind of comparative measure sets up a useful interpretive dynamic. It allows us to document the extent to which and the ways in which *La mer*'s tonicity is indecisive or capricious.

Specifically, it reveals that tonics are presented in varying color, strength, and clarity. Some tonic arrivals are mere static presentations, while others are clarified by preparatory gestures comparable to the dominant preparations of tonal music. These gestures include: radical changes of texture (monophony, II/32-35), dominant-like pedals (I/122-131, III/43-55), or complete silence (between I/83 and I/84). In many cases, though, signals can be mixed. A dissonant sonority initiating a theme attracts some tonic function to itself. A harmonious triad weakly voiced in the middle of a phrase does not.

When we evaluate the tonicity of particular passages using these criteria, we can explain why so much of *La mer* has that floating, kaleidoscopic sensation described by *La mer*'s early

critics. They allow us to see that even those passages with strong tonic function are different from each other. If we try to graph them we can see that they are always in flux.

Let us illustrate the changing tonicity of *De l'aube*'s Introduction. In the graphic representation of Fig. 6.2, the stronger tonics are low on the page ("rooted"), while weak or otherwise nontonic harmonies float higher, according to the degree of unrootedness. We saw this passage's ABCB'A' form and pc parsimony in Fig. 4.8 (p. 135). The purpose of the graphic is to claim that that the trumpet melody (section C) is so undermined by the dissonant counterpoint that it has virtually no tonic presence at all, whereas the next two sections are nearly equal to the consonant tonal rootedness of the first, A section. However, no part of the Introduction's arch form is nearly as grounded as the main D♭ tonic, which arrives in m. 31 with a constant major triad embedded within its pentatonic figuration.

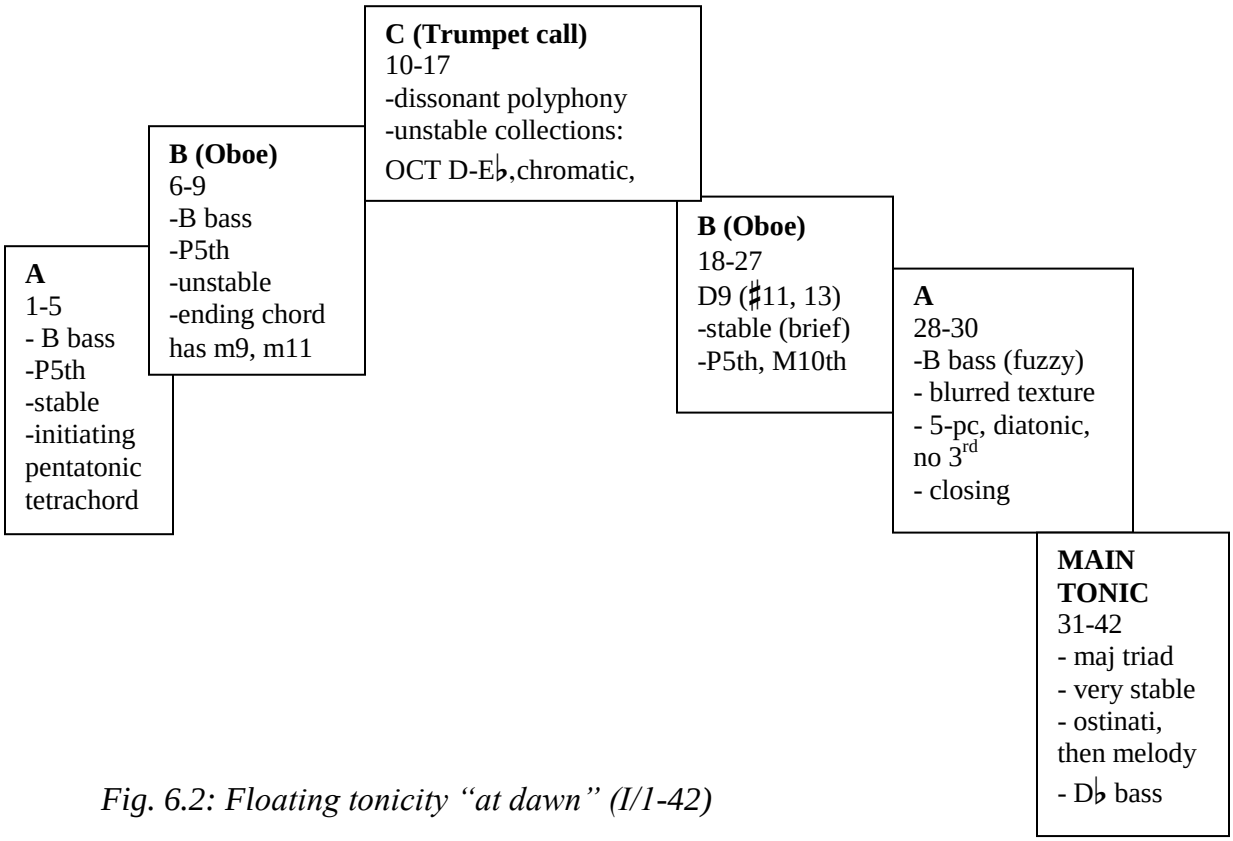

Fig. 6.2: Floating tonicity "at dawn" (I/1-42)

6.3 INCONSTANCY AS METAPHOR

This study has had two principal concerns: the indecisive establishment of pitch centers, and the technical basis of Debussy's harmonic kaleidescope, the colors of which often sound "at once familiar and unfamiliar." In conclusion, I hope to suggest some of the ways these support *La mer*'s program.

We have seen how, in the Introduction to *De l'aube à midi sur la mer* ("From Dawn to Midday at Sea"), a vague B tonal center is undermined during the very process of its establishment, to modulate to the more decisive D♭ major of the First Principal Section. This D♭ pentatonic tonal center is first intensified when it is subsumed within a D♭ Acoustic collection, and then completely abandoned, to a long arc of shifting, colorful collections. These collections, however, are subtly related, both by rotation and by common tones drawn from the initial quintal tetrachord and B bass. These common tones are as likely to be heard in accompanimental figuration as in bass pedals and thematic material. As invariant pitch classes, they truly permeate the entire fabric of the music.

One might think of them metaphorically as the substance that is always inside the kaleidescope. Shifting the instrument's position (or, for instance, rotating their pcs) reconfigures all their intervallic and functional connections. While they are the same substance, their affect is radically different. The best example of this is the amazing shift in mood from the same pcs at mm. 80–83 of *De l'aube.* B, C♯, F♯, and G♯ open *La mer* in a mood of colorless expectation. In the dissipation of texture which follows the E Acoustic climax after m. 72, these pitch classes, now heard over a D–B–G♯ quasi-ostinato, suddenly bear the brooding weightlessness of non-tonicity, as their collection not only lacks a perfect fifth, but in addition bears the pc-inertial brunt of the liquidated tritone, D.

In the fleet, darting gestures of *Jeux de vagues*, nothing has much time to present itself as tonic, and when E does, it is made dissonant by the retention of G♯ and C. By rotation and half-step resolution, this augmented triad searches for a way out of its nontonic status, seeming to settle on G♯ during a massive orchestral pedal build-up—only to gently detour back to a resolved, consonant E ending. (It actually is a 6-pc Lydian scale chord, an "E with nearly everything on it.")

Both of these aspects of *La mer*'s tonality, tonic ambiguity and unending recoloration, metaphorically support the amorphousness, indefinite borders, and shifting colors of the deep ocean, whether in the dim early morning, "l'aube," or shining at noon. (Of course, ambiguity and languor, whether they result from meter, harmony, or tonal center, are common traits throughout Debussy's musical career.) On the other hand, at other times tonal centers in *La mer* are very clear, as in the first arrival of D♭ pentatonic major, and especially in the tolling tonic triads across *Dialogue du vent et de la mer*.

It would be most accurate to say that Debussy's style, while including ambiguous tonal centers, is more generally characterized by a large *range* with respect to definiteness of tonal center. That is, a large part of *La mer's* felt inconstancy resides not only in its kaleidoscopically changing keys and pitch collections and its tonal indecisiveness, but also in the shifting *degrees* to which, and the changing *techniques* by which, any particular pitch center is made felt. Tonal inconstancy—in all of these senses—thus resonates strongly with the ocean's inconstancy. Of course, we don't listen for one thing, and other aspects of *La mer*—such as its interpenetrating motives, its rippling overlays of ostinati, its diving arcs from high to low registers, its inconstant phrase rhythms—are equally important to the program. But as this study has focussed on harmony, voice-leading, and tonicity, it is hoped that at least in these particular realms, Debussy's meticulously imprecise tonality is, to a certain degree, fathomable.

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APPENDIX A: SCALE STRUCTURES, MODES, AND TRANSPOSITIONS

A.1 GENERATING WHOLE-STEP/HALF-STEP SCALES

The following discussion demonstrates why Tymoczko's "consecutive semitone restraint"[162] in scale formation leads directly to these, *and only these*, four specific collections. We will begin with the whole-tone scale, which has the simplest SIA, and discuss how to generate the other scales from it.

The Whole Tone scale divides the 12-semitone tempered octave into 6 whole steps. This scale contains one and only one stepwise interval, the whole step. It is therefore remarkably symmetrical—any transposition by whole-step multiples of a whole-tone melody or chord will stay within the original collection. Its SIA is:

W W W W W W

Let us now derive the other three scales from the whole-tone scale. We introduce their needed semitones by splitting up a whole-step into two semitones, reordering the resulting Ws and Hs to prevent consecutive semitones. All scales created by this procedure must necessarily contain an even number (0, 2, or 4) of semitones.

In this way, we move from the whole-tone scale's 6W SIA (W+W+W+W+W+W) to SIAs containing a total of 5W + 2H. These are precisely the stepwise interval totals of the diatonic and acoustic collections. Splitting a single W in the whole-tone scale increases the number of distinct pitch-classes in the scale from six in the whole-tone scale to seven in the diatonic and acoustic scales.

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[162] Tymoczko 2006.

The Diatonic and Acoustic SIAs both contain a total of 5W + 2 H.

DIATONIC SIA (PRIME FORM):

	H	W	W	H	W	W	W
B	C	D	E	F	G	A	B

2W + 3W

ACOUSTIC SIA (PRIME FORM):

	H	W	H	W	W	W	W
B	C	D	E♭	F	G	A	B

1W + 4W

The consecutive semitone constraint determines that these and only these two collections may be built from our 5W/ 2H interval pattern, as is easily demonstrated. The five Ws can only be broken up by the two Hs in specific patterns: as 2W + 3W, giving the diatonic collection, or 1W + 4W, giving the acoustic. Other orderings, like 3W + 2 W and 4W + 1W, can always be rotated to provide one of these interval patters. Thus, the acoustic collection is the only possible 7-pc set besides the diatonic that contains exactly five whole steps and two nonconsecutive halfsteps.

If we take our 5W+2H scales and further split a whole step, we have 4 Ws and 4 Hs. With four half-steps, one and only one ordering of the stepwise intervals avoids consecutive semitones, and this is the extremely symmetrical, repetitive pattern of the octatonic scale:

OCTATONIC SIA:

	H	W	H	W	H	W	H	W
B	C	D	E♭	F	F♯	G♯	A	B

This scale has some important differences from the acoustic and diatonic scales. First, it has eight different pitches (hence the term octatonic). Secondly, its repetitious interval pattern gives it only two intervallically distinct modes: a half-whole pattern, or a whole-half pattern. Each of these two modal patterns occurs four times through the scale's modal rotations. Any

chord type we can draw from the scale also occurs in it at four levels of transposition, separated from each other by minor thirds (i.e., H + W). We saw this in the sequence of B7, D7, F7 at III/40–42 (Fig. 4.5a).

The octatonic scale appears in *La mer* much less frequently than the other scales. It often only lasts less than a bar, and it often appears ambiguously or partially. This ambiguity results in part from the ways it overlaps with the other three scale types.

A.2 MODES AND TRANSPOSITIONS

We now review the modes and transpositions of the W/H scales. Fig. A.1 (below) shows all of the intervallically distinct modes of the four W/H scales that were first shown in Fig. 3.1 (p. 59). There are seventeen W/H modes in all. The Diatonic and Acoustic scales each generate seven intervallically distinct modes, while the Octatonic only generates two modes, and the Whole-Tone scale *is* its only, unique mode. The reasons for this are related to the SIAs for each collection, which appear below each mode in a particular rotation.

The following chart, Fig. A.2, shows all possible *unique transpositions* of the four W/H collections. It omits any octatonic and whole-tone transpositions which replicate the pc content of those already shown. There exists a grand total of twenty-nine distinct pc collections derived from the W/H scales, distributed as follows:

two different whole-tone collections,

three different octatonic collections,

twelve diatonic collections,

twelve acoustic collections.

This chart is exhaustive; no other W/H collections (as defined in Chapter 3) are possible.

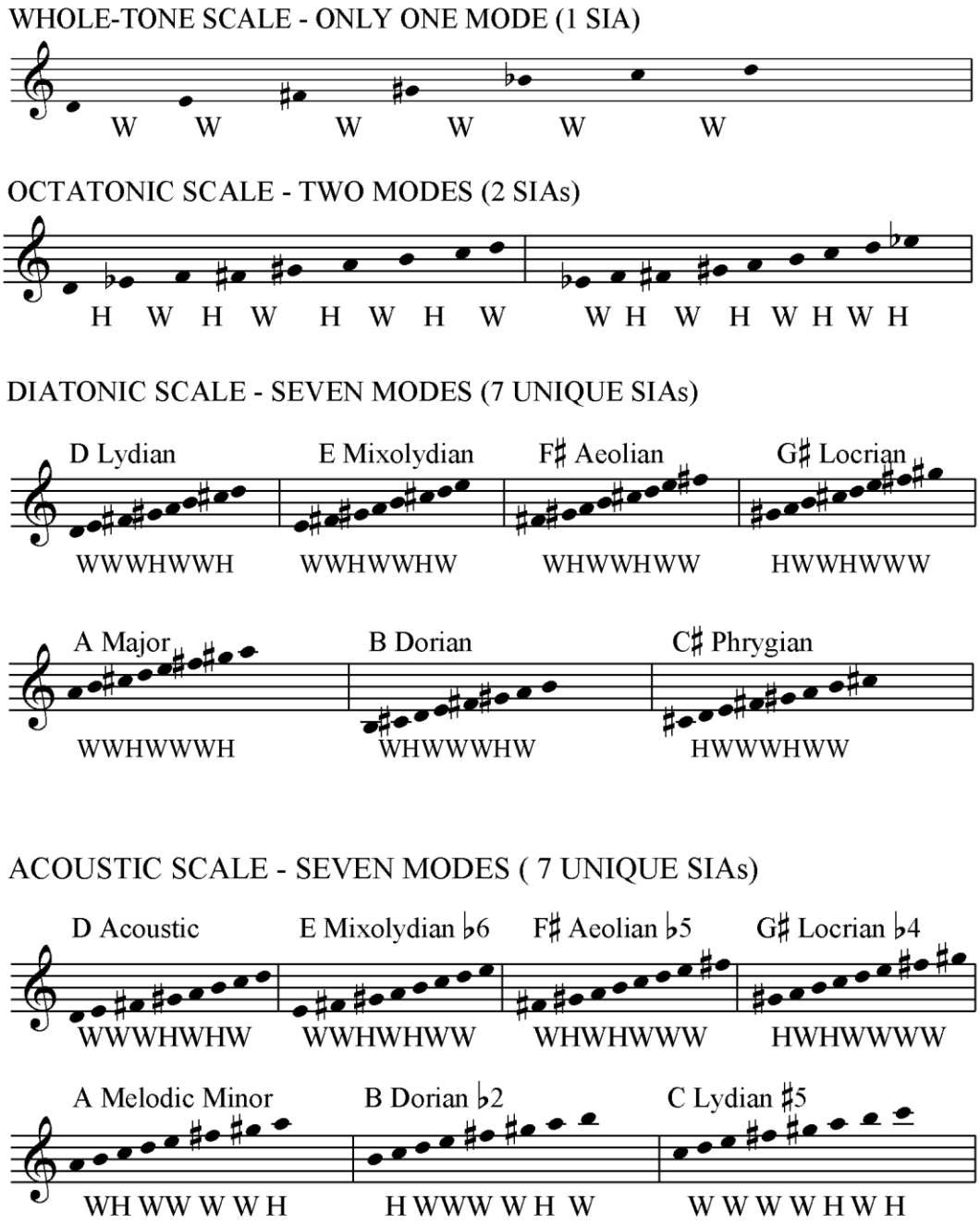

Fig. A.1: Modes of the four W/H collections

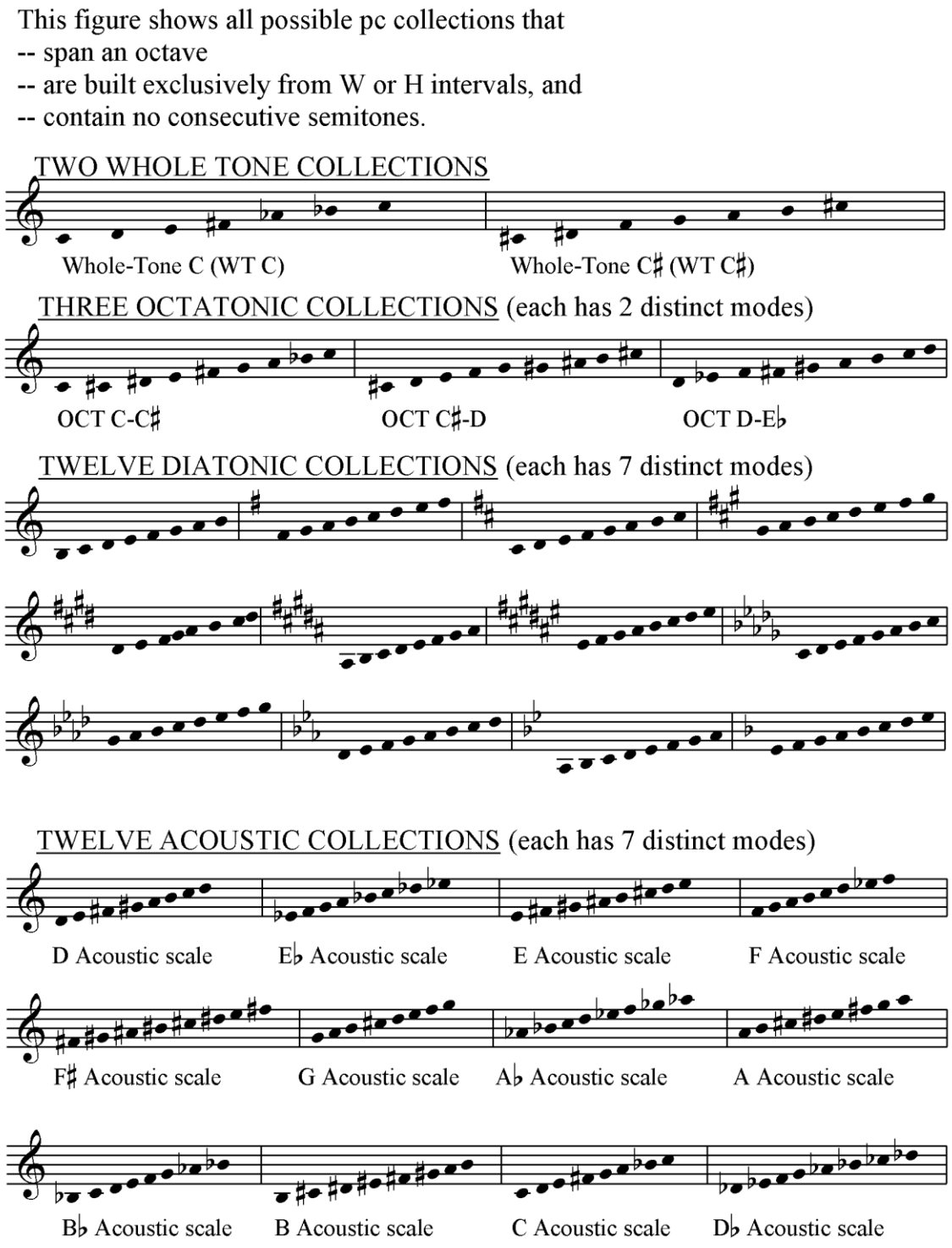

Fig. A.2: Transpositions of W/H collections

The whole tone and octatonic scales, with their extremely repetitious SIAs, generate far fewer distinct modes and transpositions than do the diatonic and acoustic. The whole-tone collection has only two unique transpositions: Whole-Tone C and Whole-Tone C♯, as shown in Fig. A.2. Whole-Tone D replicates all the pcs of Whole-Tone C, as Whole-Tone D♯ does so for Whole-Tone C♯, and so on, because of the collection's high degree of *transpositional symmetry*. Debussy actually takes advantage of this property in *Dialogue du vent et de la mer*. At III/98–103 we hear a whole-tone version of *De l'aube*'s trumpet call (first heard at I/12–16) in the low brass, against a tritone-heavy ostinato. This is sequenced up at T4 (a major third, III/104–109) and then at T2 (up an additional major second, III/110–114) with an altered cadence. All the notes in all three versions of the theme cleave to one single whole-tone collection. As if to prove the point, the whole-tone ostinato accompanying the first entrance continues, unchanged and untransposed, as it accompanies the next two entrances as well, without a noticeable shift in harmonic palette.

Similarly, as a result of the octatonic's extremely symmetrical interval pattern, there are in fact only three unique octatonic collections, shown in Fig. A.2. Any transposition or rotation of these necessarily generates the exact pitch content of one of the same three collections. All octatonic scales map onto themselves at T3, T6, and T9.

The diatonic collections are shown in Fig. A.2 in their Locrian rotation, while the acoustic collections are shown in their most familiar ordering, as Lydian-Mixolydian or Acoustic Scales. It is precisely because the diatonic and acoustic collections lack transpositional symmetry that there are so many possible distinct transpositions of them. Applying the modal rotations shown in Fig. A.1 to each of the distinct transposition of Fig. A.2, we generate a potential total of 84 different diatonic scales (12 transpositions x 7 modes) and 84 different acoustic scales (12 transpositions x 7 modes).

If we count set-classes, of course, there is just one set-class for each collectional type: set-class 6-35 (the whole-tone), set-class 7-34 (the acoustic), set-class 7-35 (the diatonic), and set-class 8-28 (the octatonic). Since all four collections are inversionally symmetrical (i.e., they invert onto themselves), all possible scales derivable from these Prime Forms can be generated merely by rotation and transposition, without the need for inversion.

APPENDIX B: NON-SCALAR TEXTURES

Scale-chord textures, while the most consistent tool in the construction of Debussy's harmony, are not a master key that unlocks the harmony behind every single bar he composed, and particularly not in a work as texturally varied as *La mer*. Here are a few examples of Debussy's most important alternatives to Fig. 3.2's scale-chord texture. These include one-to-one *counterpoint* (Fig. B.1), *parallel chords* or *planing* (Fig. B.2), and the cyclic Chorale theme (Figs. B.3, B.4, and B.5).

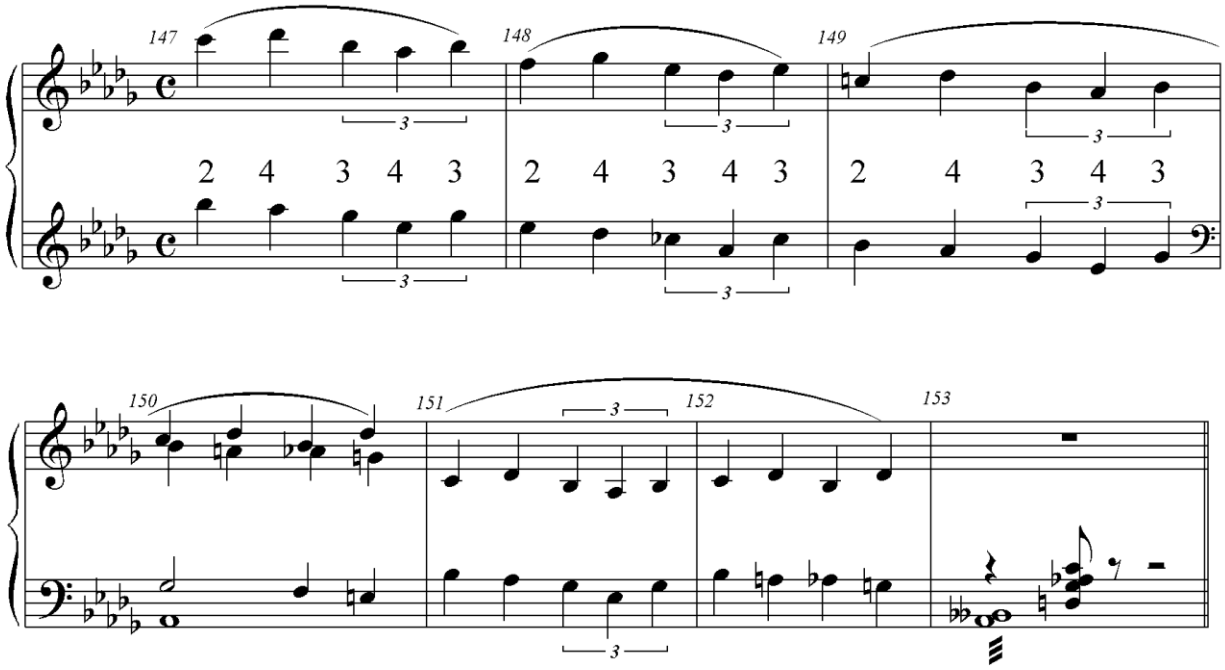

Fig. B.1: Two-part counterpoint (III/147–153)

First, in contrast to the thick accompanimental ostinati we saw in Fig. 3.2, *La mer* occasionally offers passages of true linear *counterpoint*. Fig. B.1, a delicate episode from *Dialogue*, contains two real lines, sequencing a one-bar motive in homorhythmic counterpoint. This mainly diatonic passage is harmonically austere by Debussy's standards. With the exception of m. 150, only two pcs sound together at any given moment, and each line is subtly doubled in triple octaves. Merely naming the scales used in this passage (5- and 6-flat diatonic scales) does not explain its harmonic vocabulary, its tonicity, nor the chromatic line in m. 150 and m. 152.

Actually, most of *La mer*'s truly contrapuntal textures (that is, of simultaneous melodies without accompanimental figuration) tend to the other extreme, that of free chromaticism in at least one line. Examples include the music at II/60–63, II/82–86, and III/60–64.

In the absence of a thorough investigation of dissonance in Debussy, it is extremely difficult to pin down his contrapuntal technique or techniques with any precision. Between Fig. 3.2's accompanimental blur of 6 pcs and Fig. B.1's crystalline dyads lie many textures that partake of both qualities, of both blurriness and of intervallic clarity. In the general sense of simultaneous melody, all of Debussy's orchestral music is highly polyphonic, but as any one line gets faster, more scalar, and more repetitious, it tends towards the harmonic wash of layered ostinati for which he is known.

Parallel chords (or "chordal planing"), both diatonic and chromatic, are purportedly a Debussyan trademark, but these are rare in *La mer*, and less frequent in the rest of his music than commonly supposed.[163] The brief phrase in Fig. B.2, a transitional idea following the first principal theme of *De l'aube*, shadows its melody with parallel block harmonies, all but one of which are of dominant quality. These are shown in the harmonic reduction above the music. No

[163] Classic examples of planing are *La Cathedrale engloutie*, mm. 28–40 (consonant triads), mm. 63–65 (dom. 7^{th} chords), and *Nuages*, m. 14 (dom. 9^{th} chords).

W/H scale includes all the pitches heard in all these chords; 11 out of 12 pcs appear in these few bars. Nor can we convincingly eliminate any of these pcs as embellishing chromaticism.

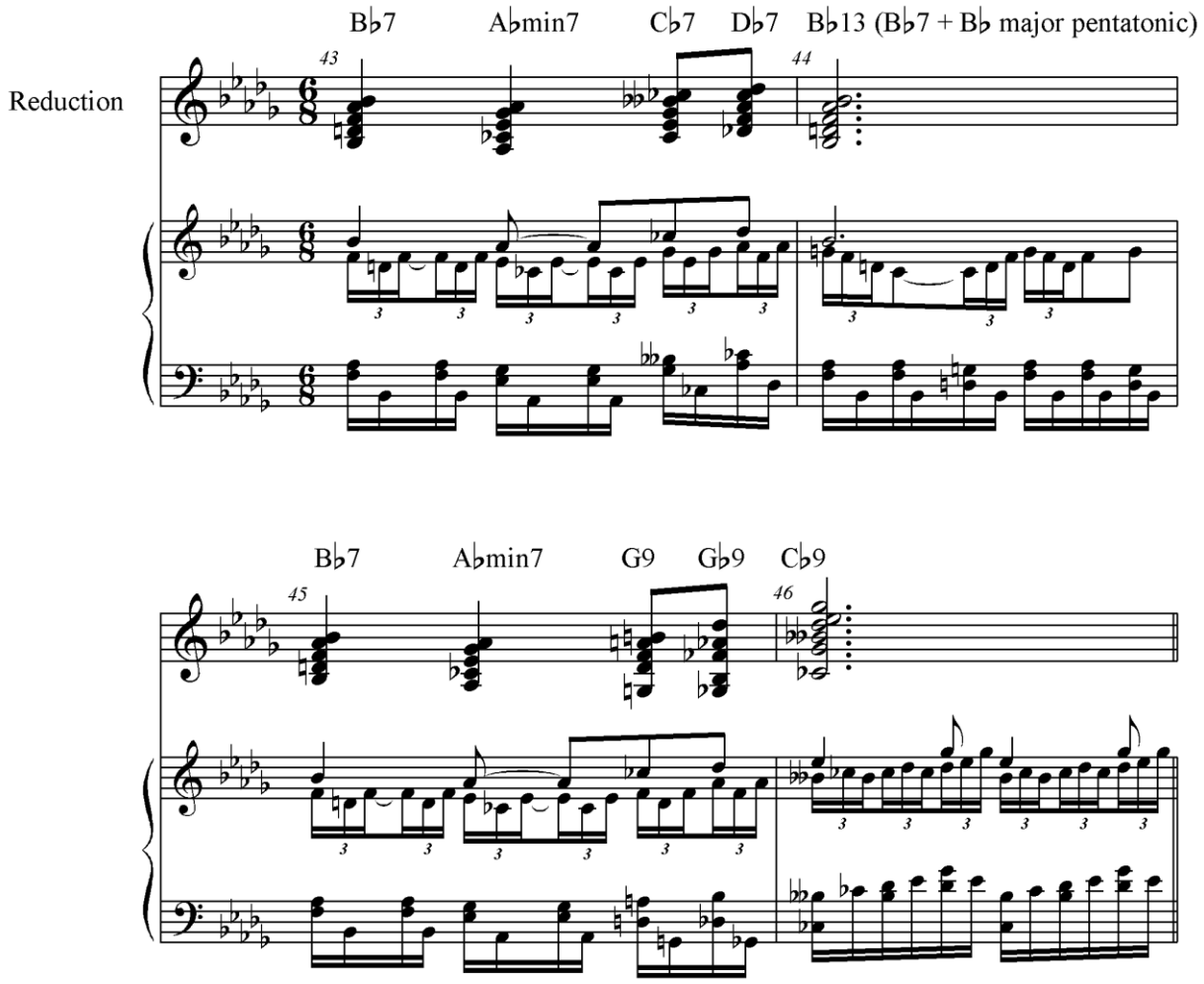

Fig. B.2: Chromatic planing (I/43–46, simplified texture)

The chords of Fig. B.2 vary in pitch-class density. While mainly using 4-pc seventh chords, the last three chords, all dominant ninths, employ 5 pcs each, while m. 44 employs a 6-pc scale segment by superimposing a B♭ major pentatonic motive on B♭7 figuration (B♭7 + B♭ pent = B♭13), only one pc shy of the complete 7-pc scale-chord texture of Fig. 3.2. Also, note the

contrary (i.e., *not* parallel) motion between the chromatically descending bass and the rising upper parts in m. 45. In short, *La mer*'s best example of parallelism is hardly a textbook example of the technique.

A very different-sounding example of parallel harmonies occurs in *La mer*'s frequent employment of chromatic sequences of augmented and diminished triads.[164] While dramatically effective, these are boilerplate tricks of 19th-century music, from Weber to Wagner. They exemplify Debussy's traditionalism, not his harmonic innovation.

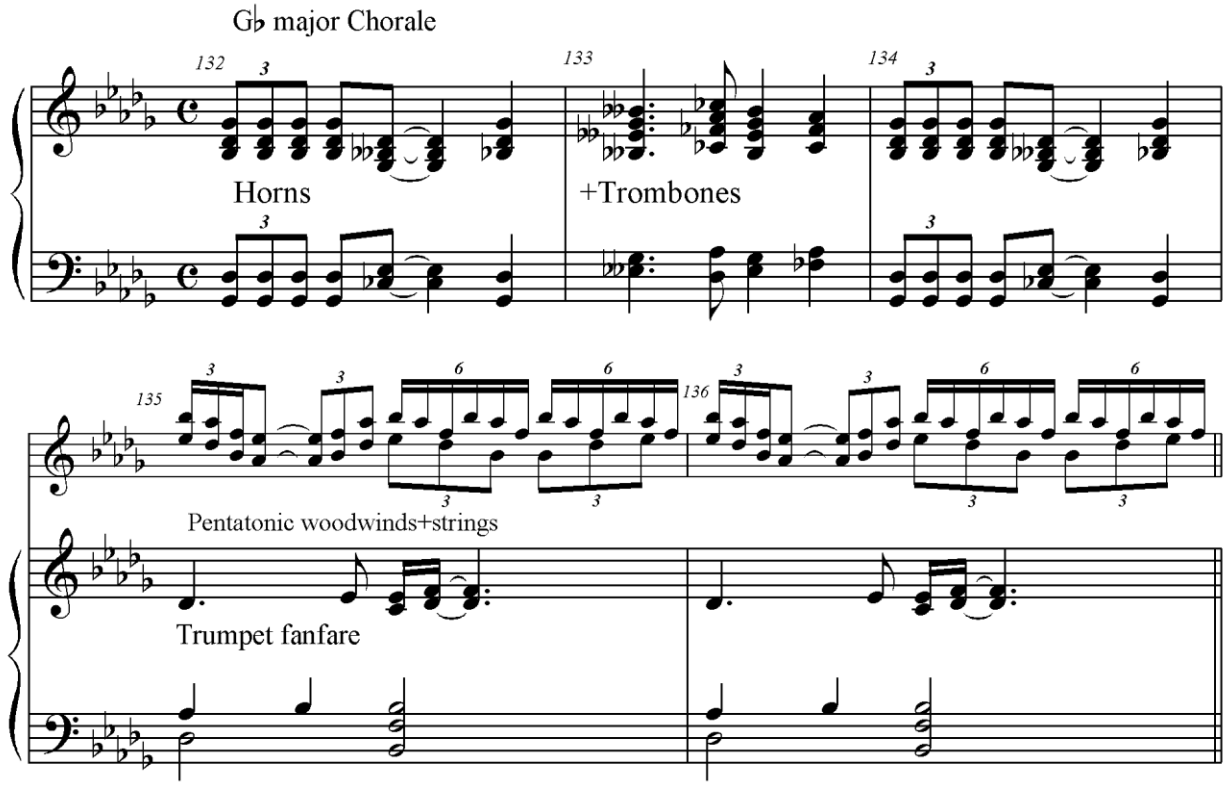

Fig. B.3: Chorale theme in block chords (I/132–134) with closing fanfares (I/135–136)

[164] For example, the C♯ minor wind theme in *Dialogues* employs chromatically ascending parallel diminished triads, buried beneath a leaping chromatic melody (III/60–61). See also the parallel augmented triads at III/119–122, shown in Fig. 3.16 (p. 94).

La mer's most celebrated chordal texture is the cyclic "chorale theme" shown in Fig. B.3. The nickname *chorale* refers to the block-chord texture of its first appearance, as *De l'aube*'s closing peroration. It then recurs twice in *Dialogue*, transposed to minor tonics and awash in increasingly stepwise figuration (Figs. B.4 and B.5). The last of these ushers in the main cadence at the end of *La mer*.

The theme's first appearance has often been programmatically linked to the image of the noonday sun at last breaking through *De l'aube*'s fog. Its simple texture, low brass timbres, and especially its simple harmony stand out in stark relief from the rest of the movement. The chorale's chords are mainly conventional major triads—the only pure ones in *La mer*. It does employ one 7th and one 9th chord, but it noticeably does not use the 6- or 7-note scale chords we have seen throughout this study. The chorale also employs conventional modal chromaticism ($\flat\hat{3}$, $\flat\hat{6}$, and $\flat\hat{7}$), but in its cyclic minor recurrences, Debussy makes it diatonic.

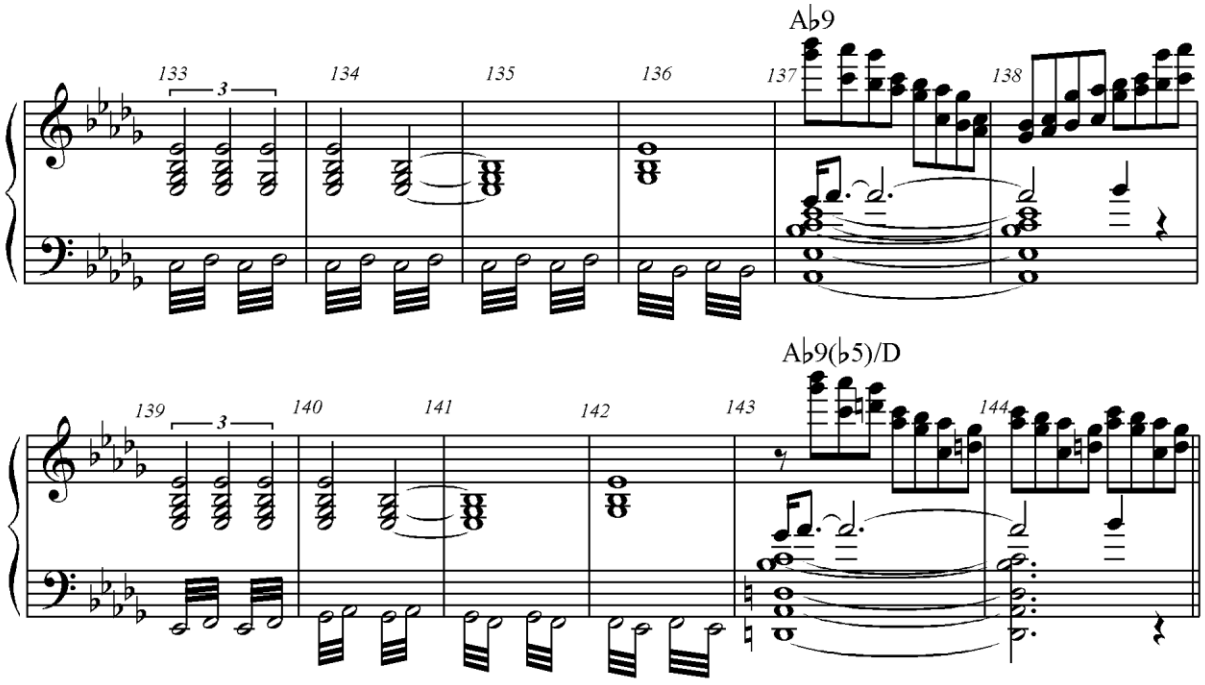

Fig. B.4: Chorale, E♭ minor reprise (III/133–144)

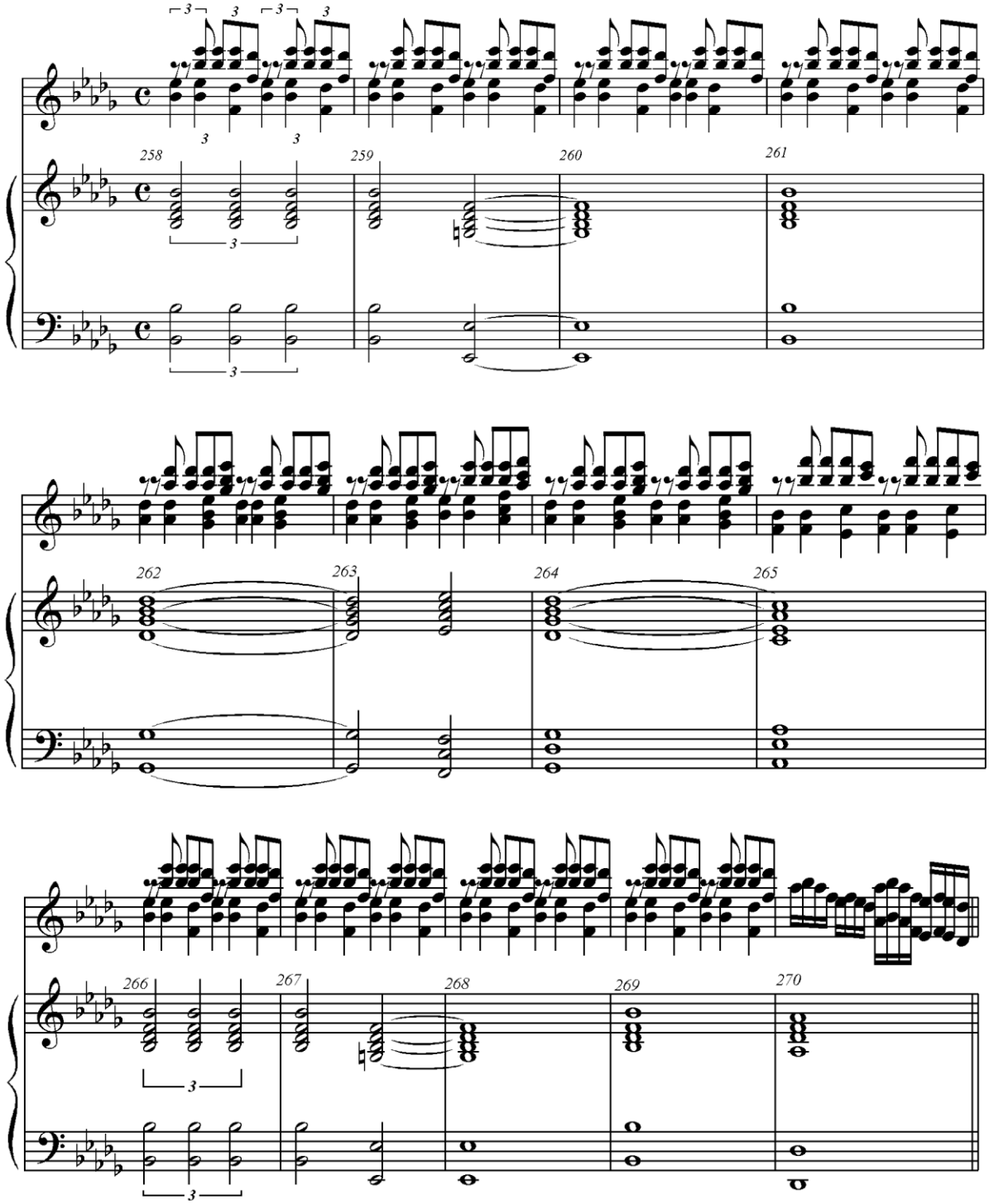

Fig. B.5: Chorale, B♭ minor climactic reprise (III/258–270)

These later appearances are more diatonic, but they also are closer to scale-chords, with thicker accompanimental figuration. The final appearance of the chorale culminates in a scale-chord (D♭ major pentatonic, III/270) rather than a simple triad, ushering in the coda with a fuzzy scale-as-harmony overlay.[165] This imitates perhaps the agglomeration of simultaneous polyphony in gamelan music which so struck Debussy's fancy. What began as a nonscalar, tonal chord succession in G♭ major (Fig. B.3) becomes a scale-chord at the final climax of *La mer*.

[165] A closing tonic harmony (III/286–289) adds G♮ to this, resulting in a 6-pc scale-chord, {D♭, E♭, F, G, A♭, B♭}, a segment of D♭ Acoustic. In terms of tonality, the first chord of each version of the chorale functions as a tonic (G♭ major, E♭ minor, and B♭ minor, respectively). All three end on different chords than they begin on, and so each gives the feeling either of ending on an open "half-cadence," or of a modulation.