

Lifting the Veils: Analyses of Debussy's "...Voiles" and "...La Cathédrale engloutie"

Claude Debussy knew his classics. He managed to combine everything from the late-medieval bourdon techniques to Javanese gamelan. However, not only did he create syntheses between different musical styles and techniques, his music foreshadows later twentieth century developments. In this article, André Douw proposes that if we count measures and re-interpret this eclectic style, the composer appears to presage much of what would be worked out by later generations of composers.

In 1909 and 1910, a group of young French musicians decided that the Société Nationale de Musique had become too conservative and partisan. Under the presidency of Gabriel Fauré, they founded the Société Musicale Indépendante (SMI), and organized discussions and concerts of their own music not unlike those of the *Viennese Verein für musikalische Privataufführungen* organized by Schoenberg right after the First World War, or like the "Evenings on the Roof" initiated in the early fifties by Robert Craft in Los Angeles. On 25 May 1910 at the second of these concerts, at the personal request of Fauré, Debussy played four of the piano preludes on which he had started working in December 1909. Among the four were ...*Voiles* and ...*La Cathédrale engloutie*. The critic of the *Monde Musical*, A. Mangeot, found them "remarquables". About the composer's abilities as a pianist he wrote: "Est-il un pianist qui possède une plus jolie sonorité que Debussy sur L'Érard? Je ne le crois pas. Ce serait une régal d'entendre jouer par lui du Bach et du Chopin."¹ It would take another year before the first book of preludes was to receive an integral performance, but some of them were among the first compositions of Debussy to be played outside of France.²

By this time, Debussy was considered to be one of the leading composers and his works were played incessantly in his home country. Eight years before his untimely death in 1918, he had written most of his great works. 1910 was also the year in which he met Igor Stravinsky, who would be influenced by him for a long time to come. However, the discussion around his name and his music was still characterized by the

most contradictory and misleading of judgements. For example, in the course of the years after its premiere in 1894, the *Prélude à l'Après-midi d'un faune* was found respectively "interesting", "lacking in heart and vigour", "unwholesomely charming", "amusing, suggestive, impressionistic", "formless, without rhythm, without accent", "childish, sickly" etc. etc. by the same (reactionary) journal *Le Ménestrel*. However, by 1911, the paper declared the piece to be "a most successful composition... a prime example of descriptive music."³ So much for the consistency and value of the judgement by contemporaries. Meanwhile, Debussy himself was, as he writes to Caplet on 23 March of that year, "at a dangerous turning-point in my life." Supposedly, the years 1910 and 1911 were not the happiest. After a final albeit secret and very tender extramarital affair, the composer withdrew to the intimacy of family life with his wife Emma and daughter Chouchou. As he wrote to Durand on 18 July 1908: "The external world scarcely exists for me."⁴

In this "splendid isolation", Debussy worked on his music which shortly after his death and ever since, was to be considered an expression of "... not only four centuries of music, but four hundred years of amatory culture."⁵

Although in the ears of his contemporaries this music sounded novel and advanced, its synthetic nature was recognized almost immediately. The sources from which this composer drew are eclectic to say the least. Late-medieval bourdon techniques, Renaissance church modes, classical functional harmony, the influence of popular music, nineteenth-century

1 Debussy played his preludes on an Erard which he had ordered for the occasion. François Lesure, *Claude Debussy, Biographie critique*, Klincksieck 1994, p. 323.

2 These were: *La Fille aux cheveux de Lin* by Franz Liebich in London (2 June 1910) and *La Sérénade interrompue* by Walter Rummel in Stockbridge, Mass. (26 July, 1910). François Lesure, *Claude Debussy, Biographie critique*, p. 322.

3 Marcel Dietschy, *A portrait of Claude Debussy*, Oxford 1990, p.161.

4 Marcel Dietschy, *A portrait of Claude Debussy*, p.160

5 A. Suarez in: *Revue Musicale*, May 1930, Pensée XLV. Quotation taken from Marcel Dietschy, *A portrait of Claude Debussy*, p. 161.

symmetrical tone scales and, last but not least, Javanese gamelan, are all blended together in a cheerful *ratatouille*. Working after a century of research into music of the past and the far away, this music's creator never hesitated to use a good idea when he saw one. As remarked, Igor Stravinsky was going to be heavily influenced by his French colleague. This study hopes to demonstrate that underneath an impressionist surface, at least in the case of two of the preludes, a stringent logic may be discerned if we measure the durations of what will later in the century be called "harmonic fields". The following analysis of ... *Voiles* argues that its construction may be best understood if, for the sake of the argument, more than a third of its barlines are "erased" from the score. The now resulting larger measures contain various collections in which specific notes and intervals are given roles that may vary per section. Next, the analysis of ... *La Cathédrale engloutie* seems to suggest that for its construction Debussy made use of the numbers 3, 6 and 7 in order to organize both pitch and time (but not rhythm). In order to accept this as a possibility, we must assume that the composer regarded the scales, of whatever design, as unordered collections in which a certain pitch was selected so as to play the role of local tonic. The composition as a whole may to some extent be interpreted as serialist *avant-la-lettre*.

In ... *Voiles* Debussy uses two pitch collections: the six notes of the whole-tone scale on b-flat and the five black keys of the piano. Since the low b-flat works as a dominant pedal throughout the composition, a functional analysis yields the comparison with a traditional cadence $V^7 I_4^6 V^7$ in e-flat minor.⁶ In this comparison, the whole-tone scale may be heard as a dominant none chord b-flat - d - f-flat - a-flat - c or b-flat - d - f-sharp - a-flat - c. The pentatonic passage suggests either G-flat major or e-flat minor, although the low b-flat favors the latter. I imagine that, when heard through the ears of Debussy's contemporaries, the piece sounded static and open-ended because this large scale cadence is not concluded by a chord on the first degree. However, the notation of accidentals is not always in accordance with this interpretation. The f-flat is written as an e and both a-flat and g-sharp are used as if to contradict the function of e-flat as a tonic. The reason was probably just down to earth and

practical, but this "inconsistency" does herald the typically twentieth-century problem of an increasing divergence between a musical technique based upon the equivalence of all twelve notes and a system of notation based upon functional harmony. For, if we give an "a posteriori" analysis and regard the two scales of this piece as unordered collections, then it does not really matter how the accidentals are written, just as it does not necessarily matter in serial music. Within the five- and six-note collections, the various intervals are given specific roles. In the first theme (mm. 1-22), the major thirds are used for the chords, while the melodies consist largely of major seconds. In the second subject (mm. 23-32), the thirds, too, are employed for the melodies and in the second half of the closing section (mm. 54-61), reversely, major seconds and minor sevenths are added to the thirds of the harmonies. The tritone does not seem to play a significant role in either melody or harmony except for a short time as an accompaniment to the second subject where d - c - f-sharp is played in the middle register (mm. 23-28). In the pentatonic passage, the e-flat works as a tonic and the remaining notes a-flat, d-flat and g-flat may be interpreted as they traditionally are in the e-flat minor scale. Fourths and fifths appear abundantly next to the minor third b-flat - d-flat which is played in the highest register as a nice alternative and a contrast to the major thirds of the whole-tone scale.

So far, no news. This short piece has been analyzed in class many times by most of us, not in the last place because it is such a convenient example of whole-tone and pentatonic devices in "contemporary" music. As so often, Debussy combines old and new techniques in a happy French synthesis. However, to my knowledge, the question of why the composer wrote two passing notes g and d-flat in measure 31 has never been answered. They contradict the strict organization and no apparent "musical" reason can be found. I propose that the reason may be found in the position of this measure in the construction of the composition as a whole and that, in order to reveal the construction, a large amount of barlines of the piece must be "erased" so that a combination of 2/2- and 3/2-measures results. The following example gives the rhythm of the low b-flat as it may be rewritten in this new schedule.

6 Actually, the precise cadence is: E-flat major - e-flat minor - E-flat major.

"old"

"new"

Example 1

Rhythm ...Voiles

The partitioning as given in the example is the most logical one if the b-flats are taken as the main determinant of metre. This is not incongruent with the b-flat's role as a dominant drone. The whole piece is, as it were, built on this note and that goes for the organization of both pitch and time. The example reveals that ten $2/2$ -measures are followed by four $3/2$ -, three $2/2$ - and three $3/2$ -measures. Another eight $2/2$ -measures now conclude the piece. The very last measure (m. 64) is neither $2/2$ nor $3/2$ and is therefore not part of the scene.⁷ The first $3/2$ -section (mm. 21-32) introduces a second theme with major thirds and the middle ground pedal on d - c - f-sharp. After this in measure 33, the first subject returns at the precise moment when the metre changes back to $2/2$. If we do indeed rewrite the metre in the proposed manner, it appears that the twenty-one $2/2$ -measures contain a first subject with the main harmonic and melodic forms while the seven $3/2$ -measures have contrasting materials, up and including the pentatonic apogee because the last two $3/2$ -measures (mm. 42-47) contain the passage on the black keys. The $2/2$ -measures have the function of a harmonically static background while together, the seven $3/2$ -measures lead up to this climax. A total of twenty-one larger $2/2$ -measures is intersected by seven $3/2$ -measures.⁸ This is a simple and yet attractive and stimulating formal idea. Why the com-

poser concealed his little architecture by writing in $2/4$ is not clear. A very practical reason may have been that the many fast notes are easier to read in short $2/4$ -measures than in unwieldy $2/2$ - and $3/2$ -units, but we may not exclude the possibility that the composer simply enjoyed covering his tracks.

Meanwhile, in order to emphasize this background organization, Debussy took the middle "beat" of the fourth and middle of the seven $3/2$ -measures (m. 31), projected a secondary climax, and inserted g's and d-flats as a subtle allusion to the organization of the whole. The passing notes connect this group of measures with the pentatonic section and with the larger organization of time.

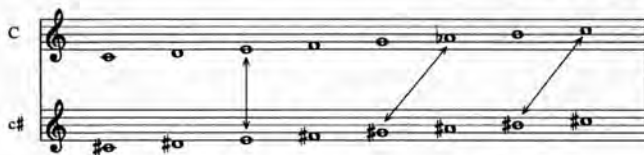
Another interesting fact is that the middle of the seven $3/2$ -measures (mm. 30-32) and the middle of the twenty-one $2/2$ -measures (mm. 33-34) are positioned around the middle of the 63 $2/4$ -measures of the piece which is exactly between measures 32 and 33. In fact, this may be the reason why the larger measures occur in irregular groups of 10+3+8 $2/2$ - and 4+3 $3/2$ -measures. Now, the 28 larger measures are logically divided into 14+14. The first half consists of ten $2/2$ - plus four $3/2$ -measures (10+4=14), the second half of three $2/2$ -, three $3/2$ - and eight $2/2$ -measures (3+3+8=14). The location of the pentatonic climax, too, is better understood. Projected in the "new" measure 19 (mm. 42-44), it divides the 28

7 Harmonically speaking, the piece does not really have a conclusion because, as noted, it ends at $\text{f}^{\#}$ in E-flat without a closing $\text{f}^{\#}$. The added measure 64 may be a translation of this fact. However, that may remain speculation. Not containing a new entrance, some may regard m. 64 a mere extension of the fermate on the closing interval c-e.

8 $21:7 = 3:1$. Because $21 = 42 \times 2/4$ and $7 = 21 \times 2/4$, the $2/4$ -measures comprising the larger measures have a ratio $42:21 = 2:1$.

"new" measures in two sections with a ratio 18:(1):9 = 2:1. If we do temporarily erase some of the barlines, a quite clear-cut scene emerges.

In her formal analysis of the piece, Maria Porten suggests that its title refers to the fact that the transitions are purposely veiled (1974:94-5): "Debussy hat sich wahrscheinlich in bezug auf die 'Bedeutung' bewusst nicht festgelegt und es wäre müßig, wenn wir es versuchen wollten." After which she gives a formal scheme based upon the various motifs, which is perfectly in concordance with the one given in the example.⁹ However, I claim that there can be no question of any "veiling" on the composer's part of his intentions concerning the structure. Debussy's opinion about the way ... *Voiles* must be played is in accord with this. According to Marguerite Long, the composer criticized certain interpretations as being too colorful: "It is not a photograph of the beach, or a postcard for 15th August!"¹⁰



Example 2
C major/c-sharp minor

In ...*La Cathédrale engloutie* Debussy posed himself a different formal problem not unrelated to the one attacked in ...*Voiles*. The piece has two passages that may strike an unprepared listener as strange and for which we as teachers with experience may not have found a reason. Firstly, there is the sequence of parallel dominant seventh chords right after the climax in measures 62-67. While the whole piece is permeated with fifths, fourths, major seconds and minor thirds, all given in strictly diatonic if not hexachordal and even pentatonic scales, this highly chromatic passage stands out as inconsistent. For pianists this is a notoriously difficult passage, since it is not easy to let it flow naturally from the preceding diatonic and modal measures. Secondly, the location right after the introduction of the twelve measures in which the chords or keys of b, e-flat and g are given is, to say the least, remarkable. Together, these may be considered a dominant field to the main key C major. In a piece where traditional functional relations between chords hardly play a formative role, this dominant field

would traditionally have been placed right before the reappearance of the first theme in measure 72. As stated, that is the place where we now find the parallel seventh chords.

The following description tries to arrive at an interpretation of these two ideosyncrasies. What follows is not a chronological account of the composer's creative process but, rather, a methodological account that may make it easier to understand the hierarchy among the various parameters such as pitch and time as proposed in this analysis. The basic idea of the composition is that any major key has three notes in common with a minor key that lies a minor second above it. The scales of C major and c-sharp minor used in the piece have in common: e (the third of both keys), a-flat/g-sharp (lowered sixth in C major and fifth in c-sharp minor) and c/b-sharp (tonic in C major and leading note in c-sharp minor). These common pitches lie major thirds apart and divide the chromatic total into three equal parts (example 2).

After having decided that this characteristic might be the technical subject of a composition in which e, a-flat/g-sharp and c/b-sharp could function as pivot notes and as a tool to modulate back and forth between the two keys, Debussy designed a ground-plan as given in the next example. This scheme was put together according to very simple ratios in which the number 3, multiplied by 6 and 7, dominates. The upper half of the following example gives the numbers of measures in which C major and c-sharp minor are the tonics, as well as seven measures ("transitions") that may be part of both or neither keys. The lower half gives the numbers of measures of an extra three keys used in the piece (example 2). Debussy made use of very simple numbers and ratios. In this plan, C major was to be played in a total of (6+18+18=) 42 measures and c-sharp minor in (7+21=) 28 measures. Their durations yield the ratio 42:28 = (3:2) x 14, while the ratios 6:18:18 (C major) and 7:21 (c-sharp minor) may be rewritten as (1:3:3) x 6 and (1:3) x 7. A climax was projected in measure 61,

9 Maria Porten, *Zum Problem der "Form" bei Debussy. Untersuchungen am Beispiel der Klavierwerke*, München 1974, p. 94/95.

10 Marguerite Long, *At the piano with Debussy*, translated by Olive Senior-Ellis, London 1972, p. 63.

Numbers of measures per tonal platform

Numbers of measures per tonal platform					Total
C major	6		18	18	42
transitions		2	1	4	7
c-sharp minor	7			21 (as 14+7)	28
B major		3			
E-flat major			3		12
G Mixol.			6		
N.B.:					
C major:	6:18:18	= (1:3:3)	x 6		
c-sharp minor:	7:21	= (1:3)	x 7		
C : c-sharp:	42:28	= (3:2)	x 14		

Example 3

dividing the second c-sharp minor passage into 14+7, and the whole piece into 60+29 measures. Lying at 2/3 of this section as well as of the whole piece, this apogee was to suggest a division of section and piece into three equal parts. No plan could exhibit the two keys and the numbers 3, 6 and 7 better than this.

The musical examples in example 4 show the three transitions or modulations.

The (2+1+4=) seven measures that function as "transition" are characterized by tonal ambiguity and by a change of accidentals. They harbor the modulations between the various functionally static tonal platforms.¹¹ Generally, tonal ambiguity, when it occurs anywhere else as it does, is caused by a shifting of emphasis from one pitch to the next, with the result that the relations between the pitches within a given collection change. For example, in measures 1-6, the tonics are G major and e-minor respectively. Some would hear measures 3/4 in F major. That kind of ambiguity is not counted here, important as it is in this piece. In contrast, in the transitions, tonal ambiguity is caused by the fact that these tiny sections may be interpreted in two or more keys.

A formal problem was provided by the fact that in order to arrive at these ratios, an extra twelve measures had to be put in between the first and second C- and c-sharp-passages. Debussy solved this by inserting a twelve-measure segment (mm. 16-27)

with three different keys at, again, major thirds distances (B, E-flat and G). The modulations between these three keys are constructed with the help of common notes (b, d-sharp/e-flat and g respectively), echoing the method of the other three modulations. In fact, the twelve measures give a nice miniature image of the composition as a whole, on a dominant degree. However, all of this may be a bit confusing to those who are not thoroughly acquainted with the composition. In order to provide the reader with a general overview, the following paragraph gives a detailed account of the piece from the beginning to the end.

The first 27 measures may be seen as an introduction in which no less than five different keys give the listener a "turn-of-the-century" feeling of floating tonality. The piece opens with six measures in C major (mm. 1-6) followed by seven (mm. 7-13) in c-sharp minor. The two keys are connected by a pivot note e. After the two transitional measures (14/15) that may be heard in e minor, B major or still in c-sharp minor, a sequence of three apparently unrelated keys is given with three measures of B major (mm. 16-18), another three of E-flat major (mm. 19-21) and six measures of G mixolydian (mm. 22-27). Also lying major thirds apart, together, the three keys function as a dominant for the main key C major. The next eighteen-bar section (mm. 28-45) returns to the first degree of C major which here

¹¹ In measures 14/15, a traditional pivot between c-sharp minor and B major is played. The low C must be read as a b-sharp in c-sharp minor and as a c in the ensuing B major. Moreover, if heard as VIth degree in the e minor of the opening measures, the passage is even more ambivalent. Since various interpretations of this particular place are possible, it must be seen as a transition and, as such, as unique in the composition where the other modulations are achieved by the most obvious enharmonic changes.

Example 4

...La Cathédrale engloutie, mm. 14/15, m. 46, mm. 68-71

alternates with its subdominant F. In the four measures concluding this section the c in the bass walks, via the b-flat, to a low a-flat. Measure 46, in which this pivot note a-flat is changed to g-sharp, must be regarded as functionally ambiguous and as a transition. In the following 21-measure c-sharp minor passage (mm. 47-67), an apogee is projected where the parallel dominant seventh chords are played fortissimo. After this, measure 68 gives the chord f-sharp - g-sharp - c, to which the d is added in measures 70/71. In c-sharp minor, the c should have been b-sharp, and this change indicates that Debussy wanted the next four measures to be harmonically ambiguous and to function as a transition to the last eighteen-measure section which confirms the key C major conclusively as a tonic.

Meanwhile note that, just as in mid-twentieth century serial technique, visual elements play a remarkably portentous role in the expression of the underlying numbers. In this piece, the notation of accidentals indicates that there are seven (as $2+1+4$) transitional or modulating measures: this would seem irrefutably to establishing the validity of the depicted ground-

plan. The only objection one might have against this interpretation is measure 13 which may be part of the preceding c-sharp minor section or of the following transitional section. I have taken the liberty of counting it as part of the preceding fragment because I happen to hear its main chord e-b as a conclusion rather than as an opening.

Next, the composer decided to make a consistent use of (five-,) six- and seven-note scales. Example 5 gives the same partitioning of the 89 measures as example 4 but now with the numbers of employed notes written next to it. The second c-sharp minor passage (mm. 47-67) is divided into three subsections in order to indicate a slight shift between six- and seven-note scales within the section.

The example reveals a rigorous organization indeed. After having diminished and augmented very slightly the number of pitches used per tonal platform, at the climax of the piece, Debussy takes all twelve notes¹⁴ in a rare moment of chromaticism. Therefore, there are groups of six and seven notes¹⁵ and there are groups of six and seven measures. The twelve notes of the climax correspond with the twelve 'B - E-flat - G' -

Measures

Numbers of notes per key:

	5	6	7	12
1-6: C major			x	
7-13: c-sharp minor		x		
14-15: c-sharp minor → B major		x		
16-18: B major	x			
19-21: Eb major		x		
22-27: G major			x	
28-45: C major			x ²	
46: C major → c-sharp minor ¹³				
47-54: c-sharp minor		x		
55-61: c-sharp minor			x	
62-67: c-sharp minor				x
68-71: c-sharp minor → C major				
72-89: C major			x	

Example 5

measures (mm. 16-27). The number 3 is found in all ratios given above. In her discussion of rhythm in Debussy, Maria Porten says: "So kann man sagen, dass auch die Rhythmik für sich genommen formbildend, d.h. grossräumig und kleinräumig aufbauend und gliedernd ist. Hierbei bereitet Debussy spätere serielle Techniken vor, indem er Gruppen von rhythmischen Zuständen bildet und diese über ein virtuelles rhythmisches Schema aufeinander bezieht."¹⁶ Both ...*Voiles* and ...*La Cathédrale engloutie* are beautiful illustrations of this procedure. However, I would argue that the method is applied not just to rhythm but to harmony as well.

It may be interesting to quote at this point the interpretation of the construction of the piece as given by Roy Howat in his book *Debussy in Proportion* in which he defends the thesis that many of Debussy's constructions adhere to proportions based upon the Fibonacci series. He justifies his analysis of ...*La Cathédrale engloutie* by referring to a 1913 performance by Debussy himself, recorded on a

piano roll, on which measure 7-12 and 22-83 are reportedly played at exactly double the speed of the remainder. This observation seems to be confirmed by a photocopied section of the handwritten sketches of measures 69-73 on which indeed the left hand accompaniment (c-d-c-g-c-g etc.) is written in sixteenth notes (now eighths) and the first theme of measures 72/73 is notated in quarters (now halves). If all 68 measures played at double speed are written twice as fast, then we must deduct 34 measures from the 89 measures that the piece now has. The result is a total of 55 measures of which 34 (7-12 and 22-83) are in a fast tempo, while the remaining 21 (1-6, 13-21 and 84-89) are played slowly. It looks as if this was Debussy's first idea which he then changed before sending it to the publisher. The result is two different formal schemes of the whole piece: one in a slow tempo and one in a fast tempo. Howat's conclusion is that the first scheme does not make any consistent proportional tendencies visible, while analysis of the second scheme reveals that not only the construction

12 Two seven-note scales are used here: a-b-c-d-e-f-g (mm. 28-32) and a-b-flat-c-d-e-f-g (mm. 33-43).

13 The example does not provide the numbers of notes of the transitions in mm. 46 and 68-71 because these numbers do not seem to be part of the organization. In m. 46, just one note is given (a-flat/g-sharp) and in mm. 68-71, just the four-part chord f-sharp - g-sharp - c - d is played.

14 Strictly speaking, this is not correct because note number 12 (d) is only played in the ensuing transition towards C (m. 70/71). I propose that in terms of pitch, the chromatic and transitional sections (mm. 62-71, fig. 5) must be seen as one while in terms of "tonal platforms" versus modulations, in other words, in terms of expression (fig. 3), the two sections are to be separated. In fact, the omission of the d from the chromatic passage is an indirect confirmation of my hypothesis that Debussy did indeed want to give all twelve notes at that locus. By doing so, he created a moment of tension that was to be resolved by the entrance of the d.

15 The three-measure section in which but five notes of B are played (mm. 16-18) refer to the opening measures (mm. 1/2). I consider this exception to the "rule" of six and seven notes per segment too short to contradict the argument.

16 Maria Porten, *Zum Problem der "Form" bei Debussy. Untersuchungen am Beispiel der Klavierwerke*, München 1974, p. 55.

as a whole but all other sections do, indeed, adhere to the same Fibonacci numbers 21, 34 and 55 and others.¹⁷

However, whatever Debussy may or may not have played on the roll, he did leave us the score as we know it. This means that at one point or another he changed the sketches to arrive at the tempi he wrote and at the measure construction as described above. The first book of preludes was published on 14 April 1910 by Durand. Perhaps, in 1913 Debussy played the piece in the manner he "heard" it when he first conceived of it. For this he may have had a reason that we can not know. He may have changed the tempi in a later edition of the book after having changed his mind, say, in 1914, or he may have considered both interpretations acceptable. We simply have no way of knowing that and, honestly, I do not think it is relevant. All we have is the written score. It is not right to change it back in order to let it fit our analytical purposes as Howat does.

A second and even more convincing argument for rejecting Howat's analysis is that on the same photocopied sketch, measures 67-69 are written in the slow tempo that we know, with dotted whole notes, while they are reportedly part of the fast section and, thus, are played by Debussy as if they were dotted halves. Therefore, a re-writing of rhythm in the proposed manner becomes rather a dangerous enterprise. Only if it somehow would be proven that the version as we know it is corrupt, and that the other one was desired by Debussy, are we in the position to take Howat's claim seriously.

To come back to the analysis, we observe that if the large-scale organization or infrastructure of ...*La Cathédrale engloutie* is based on major thirds (e - a-flat - c and b - e-flat - g) and on a minor second or augmented prime (c - c-sharp), the chords and melodies making up the superstructure use pentatonic minor thirds and major seconds. This, of course, is a generalization. We do also find fifths and fourths in both ground-plan¹⁸ and texture¹⁹ and in the course of the piece melodies and chords, with the help of more than these two intervals, become fuller and richer until right after the climax (mm. 61-67). We must not forget that Debussy was still working in a diatonic language and in tonic-related scales. It would take

composers another one to three decades to think in terms of notes and intervals that are *not* related to a tonic. However, if we want to arrive at an understanding of Debussy's stature with regard to the development of composition technique and musical thinking in the course of history, we must take both the past and the future of his position into consideration. His past was functional and fundamentally diatonic, his future was to be intervallic. His output must be regarded a combination of the two. A "division of labor" may be discerned between major third and augmented prime on the one hand (infrastructure) and minor third and major second, on the other (superstructure). By making this distinction Debussy prepares the ear for an abandonment of functional technique at the favor of a thinking in terms of independent intervals and it is hard to deny that he does so in an attractive and personal manner.

As it is, the idiosyncracies of ...*La Cathédrale engloutie* can only be fully understood if we assume two things. Firstly, the composer regarded the diatonic scales of which he makes use as an unordered collection of six or seven notes rather than as a scale where every pitch has a different function (dominant, subdominant, leading note, etc.) vis-à-vis a tonic. These functions, then, were dictated by the conventions of the time in European music. It has often been asserted that some of his scales are inspired by Renaissance church modes. Nineteenth-century research into music of the past gave European musicians access to, among other matters, these old scales. Debussy was but one of many composers to use them in his own work. They, actually, never did really entirely disappear from our music. However, to regard them as basically the white keys of the piano from which a tonal center might more or less randomly be chosen seems to me a charming misinterpretation of musical technique of the past. Ample evidence of this can be found in nineteenth and twentieth century books on counterpoint.²⁰ If I understand Renaissance musical thinking at all, I would argue that an e in a lydian mode was felt as something quite different from an e in phrygian or aeolian. The interpretation of Debussy and his contemporaries originated from their own well-tempered upbringing, based as it was on the piano. The development of harmony and musical thought in the

17 Roy Howat, *Debussy in Proportion. A musical analysis*, Cambridge 1983, p. 159-62.

18 In both c-sharp minor sections, c-sharp minor alternates with its dominant g-sharp minor. In the second C major passage (mm. 28-45), C alternates with its subdominant F.

19 In fact, the major seconds of many of the chords are given as the sum of two fifths. For example, in mm. 14/15, the major ninths g-a spanning the two fifths g-d and d-a prepare the ear for the major seconds in the chords of the next measures.

20 See, among many examples, Marcel Dupré, *Cours de Contrepoint*, Paris 1938, p. 5 ff., in which the dorian, phrygian, lydian and mixolydian modes are named "échelle de Ré, de Mi, de Fa et de Sol" respectively. Rather than defining the modes in terms of hexachords, key notes and jumps as we do now, they are defined in terms of unordered collections of white keys in which one note prevailed.

eighteenth and nineteenth centuries would have been unthinkable without the standardization that the well-tempered compromise provided us with.

Rather, Debussy's use of church- and other modes heralds a modern musical thinking, namely, one in which all notes within a given pitch collection may theoretically have all functions. This philosophy is quite akin to that of Schoenberg and his "Zwölf nur auf einander bezogene Töne", which is a clear reference to a technique based upon intervals, and his concept of equivalence.²¹ This accounts for the fact that for instance in the six introductory measures of ...*La Cathédrale engloutie*, within the same collection of the white keys of the piano, we arguably hear g and e as respective tone centers. You take any collection of five, six or seven notes and determine a hierarchy among them. This collection may be diatonic, pentatonic, octotonic, dodecahonic or whatever else you like and you write your piece. If you want to be understood, you take care that one note is more important than the others.²²

We must listen again to ...*Voiles* and ...*La Cathédrale engloutie* and realize that these pieces are precursors to a completely new and modern way of thinking about the relations between pitch and time. A first sample of this is the "collection" as opposed to the "scale" as illustrated. This method may be partially explained by the concurrent interpretation of Renaissance music. A second sample is provided by the constructivist analysis of ...*La Cathédrale engloutie* and the consequences Debussy appears to draw from an inchoate separation of the main parameters which half a century later would lead to serialist procedures. The odd location of the B - E-flat - G section (mm. 16-27) and the use of parallel dominant seventh chords (mm. 62-67) can only be fully appreciated if we understand that the composer used the digits 3, 6 and 7 for the organization of both pitch and time. To build a construction according to certain ratios is nothing new. Rather, the method connects Debussy's work with that of very many preceding and following generations of composers in the West and probably

elsewhere. However, the method of using the same numbers for pitch and form was, as far as I am aware, quite novel at the time when he used it and must be considered an early example of serial techniques in which numbers are used for the organization of both pitch and time. We may find it difficult to accept that this proto-serial thinking is not in conflict with diatonic techniques. However, this may be because our interpretation of historical events is also colored by the music and musical techniques of our own days.

21 From his very early twelve-tone music onwards, Schoenberg employs sets that are equivalent with their transpositions and transformations that have the same notes per hexachord albeit in a different order. For an explanation, see for example: Milton Babbitt: "Some Aspects of Twelve-tone Composition" in: *The Score* (1955), 12, p. 53-61; Milton Babbitt: "Twelve-tone Invariants as Compositional Determinants" in: *Musical Quarterly* (1956), p. 246-59; and: Allen Forte: "Context and Continuity in an Atonal Work" in: *Perspectives of New Music*, Vol 1/2 (1962), p. 72-82.

22 A perfect example of this is provided by Arthur Wenk in his excellent analysis of the song *L'échelonnement des haies*, written in 1890 on a poem by Baudelaire. Next to the augmented and major triads, he finds four different pentatonic scales, three dorian ones, a lydian, an aeolian, a major, a whole-tone and an overtone scale. In each, he discerns one or two tonal centers: "Debussy's remarkable setting of 'L'échelonnement des haies' experiments with musical procedures which he develops more fully in the first book of piano preludes more than two decades later". Arthur B. Wenk, *Claude Debussy and the Poets*, Berkeley, Los Angeles, London 1976, p. 126/127.