Composing with Prototypes: Charting Debussy's *L'Isle joyeuse*

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Imagine two scenarios. The first (S1) involves a short, rather crusty, middle-aged composer. A neighbor has just knocked on his door. The composer sits at his piano and plays a short motive—three eighth-note Gs followed by a half-note E♭. He decides to add a fifth note. He tries an A♭, but it doesn't sound right. Next, he tries a B♭; that note doesn't work either. After testing every possibility, he finally picks F. Over the next few months, the short, rather crusty middle-aged composer uses this same strategy to write an entire symphony. The second scenario (S2) is quite different. A small, rather charismatic, young composer is at his desk. He has just returned from an after-dinner walk and is so inspired by the sound of the wind in the trees that he decides to write a new piece. He sits quietly in his chair until the whole thing takes shape in his mind. He then copies out the complete score from memory in one sitting. The small, rather charismatic, young composer eventually goes to bed; the next morning, he sends it off to his publisher without a single alteration.

Although both scenarios are utterly implausible—they are straw men constructed for argument's sake—it is not hard to put names to them. S1 captures the popular image of Beethoven. From eyewitness reports as well as from the composer's own letters and musical manuscripts, Beethoven is often remembered for the way in which he labored over his scores, meticulously reworking them over many years. But such evidence does not imply that he simply added one note after another. In this respect, S1 doesn't explain why Beethoven knew that F sounded better than A♭ as the fifth note; it reveals nothing about his understanding of larger musical units such as themes, phrases, periods, or formal sections.

Similarly, S2 conveys certain common preconceptions about Mozart's working methods. The image of Mozart creating complete pieces spontaneously stems both from a famous letter and from a general lack of surviving sketch materials. Research has shown, however, that this evidence is extremely suspect; not only is

the letter a forgery, but his working scores have been resurfacing at regular intervals.[1] These latter documents suggest that Mozart took great care in trying to balance local and global concerns and that he frequently changed his mind along the way. Like S1, S2 simply doesn't explain what was actually going on inside Mozart's brain; it uncovers nothing about the kinds of knowledge that he must have needed in order to transform his impressions of the wind in the leaves into a concrete piece of music.

The goal of this paper is to present a third, more plausible, scenario, one that gives our straw man a brain. Part 1 considers the role prototypes play in the compositional process; it suggests that they provide an extremely effective way of optimizing the relationship between local and global concerns, and a powerful tool for explaining how expert composers acquire and cultivate their knowledge of music. In particular, it shows how Schenkerian theory provides a framework for understanding how expert tonal compositions rely on prototypes. Part 2 then draws on Schenkerian prototypes to explain the thematic/tonal structure of one specific work, *L'Isle joyeuse* by Claude Debussy. The piece is a good test case not only because it is hard to classify according to conventional formal schemes, but also because it is built from fairly obvious prototypes. Finally, Part 3 discusses some of the ways in which prototypes help to explain how expert tonal composers actually write their pieces. More specifically, it uses the discussion of prototypes from Part 2 to retrace the steps Debussy took in composing *L'Isle joyeuse*, insofar as they can be reconstructed from extant manuscript workings and from the behavior of earlier pieces. This material gives us a perfect opportunity to peer inside Debussy's head while he was in the act of composing.

1. Prototypes and Expert Tonal Composition

Over the past thirty years, psychologists have focused increasing attention on the ways in which people use prototypes to learn about the world around them.[2] The idea is simple: instead of

[1] Deutsch 1964, 121.

[2] See Smith 1988, 19-49.

formulating complex definitions of things, people frequently learn by recognizing the characteristics or behavior of individual prototypical examples and then by seeing how similar these characteristics or behavior are to different, but related examples.[3] Thus, when children learn about birds, they do not normally begin by selecting a cross section of typical birds from which to generalize about avian anatomy and behavior. Rather, they take a single concrete example, such as Tweety, and generalize that birds are small, feathered animals that fly, sing, and are often chased by hungry cats. Tweety serves as a benchmark against which to determine what counts as a bird. Of course, some birds resemble Tweety more closely than others; penguins cannot fly and are in more danger from sea lions than they are from peckish felines, and the extinct Phorosrhacids were so large and aggressive that they would have devoured any cat foolish enough to take a bite. Furthermore, not all penguins and Phorosrhacids are born equal. Some penguins are small whereas others are large; some Phorosrhacids could fly whereas others could not.

Researchers in human cognition have argued that people rely more and more on prototypes as they gain expertise in specific domains. One such domain is the game of chess. Starting in the 1960s, psychologists found important differences between the behavior of novice players and that of Grand masters: whereas the former focus on individual moves, the latter move in larger patterns. For example, Adrian De Groot, William Chase and Herbert Simon, showed that grand masters can reproduce complex patterns of chess pieces in short periods of time when these patterns belong to games, but not when they are randomly placed on the board.[4] Grand masters apparently do so by comparing the pieces to a library of prototypical games (or portions of games) that they have stored in a highly organized way in their long-term memories.

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[3] As Alvin Goldman explains: "an object is categorized as an instance of a concept if it is sufficiently similar to the prototype, similarity being determined (in part) by the number of properties in the prototype possessed by the instance and by the sum of their weights." Goldman 1993, 128. Of course, perfect examples of a prototype may not actually exist in the world; they may be idealizations that combine features from many different individuals.

[4] De Groot 1965; Chase and Simon 1973, 55-81.

This library allows them to consider strings of moves in one go, thereby streamlining their play considerably. As Michelene Chi and Robert Glaser note, the same can be said of many other tasks from reading circuit diagrams and architectural plans to recalling computer programs. In each case, skill involves developing sophisticated ways of organizing knowledge rather than superior perceptual capacities.[5]

Prototypes have likewise attracted considerable attention from music psychologists.[6] For example, John Sloboda and David Parker have shown that when people memorize idiomatic tonal melodies, they build a simplified mental model of the underlying structure and then fill in structurally marked slots according to general constraints about what is appropriate to the piece or genre. They also suggest that different levels of structure are available to people with different amounts of expertise: "musicians code harmonic relationships that seem less accessible to non-musicians."[7] Meanwhile, Mary Louise Serafine has supported the notion that the capacity to perceive prototypes increases with experience. After a series of experiments involving short, unaccompanied melodies, she has concluded that "simple underlying structures were accessible to subjects at age 8 and above, but examples of the more complicated structures involved in harmony and compound melody yielded equivocal findings."[8]

One music theorist who explored extensively the notion of prototypes is Heinrich Schenker. In his early treatises, *Harmonielehre* (1906) and *Kontrapunkt I-II* (1910, 1922), he explained the behavior of tonal voice leading and harmony by enumerating many global and local laws. These laws were extensions of traditional laws found in counterpoint and harmony treatises going back all the way to Fux and C. P. E. Bach. But in

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[5] For a handy survey of the current state of research in expertise, see Chi, Glaser, and Farr 1988.

[6] Deutsch and Feroe 1981, 503-522; Narmour 1983, 129-199; Sloboda 1985; Swain 1986, 121-148; Serafine, Glassman, and Overbeeke 1986, 397-430; Cuddy and Badertscher 1987, 609-620; Serafine 1988; Gjerdingen 1988; Dibben 1994, 1-25.

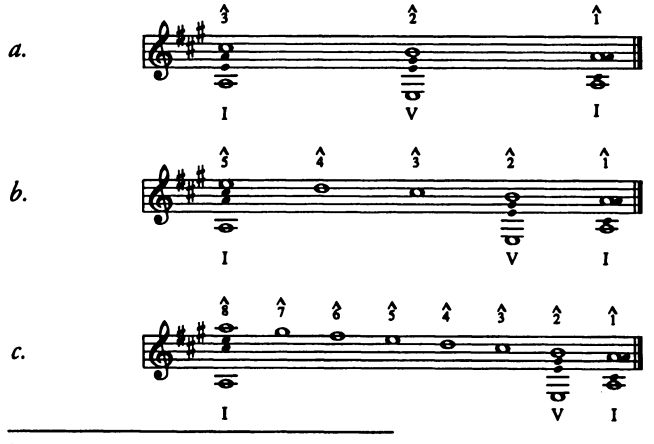
[7] Sloboda and Parker 1985, 160.

[8] Serafine 1988, 222.

late writings, such as *Der freie Satz* (1935), he reached the radical conclusion that expert tonal composers, such as Handel, Bach, Haydn, Mozart, and Beethoven, are able to internalize the various local and global laws in the form of prototypes, or *Ursätze*, and the certain local laws as recursively applying a specific set of transformations, or *Verwandlungen*.

As it happens, Schenker's *Ursätze* satisfy certain main laws of tonal voice leading and harmony in an optimally compact way.[9] Examples 1a-c give Schenker's three *Ursätze* for the key of A major. In terms of their voice leading, each upper line conforms with the local law that melodic lines mainly move by step between harmonic tones and the global law that they end by descending $\hat{2}$-$\hat{1}$. The upper line and bass arpeggiation also satisfy certain local laws of relative motion—they mainly move in contrary or oblique motion and do not produce parallel perfect octaves and fifths between successive harmonic tones. These voices also obey the local law of vertical spacing—they are primarily triadic and all non-harmonic tones arise from step motion between harmonic tones. In terms of tonal harmony, each *Ursatz* satisfies the main laws of harmonic classification, harmonic progression, and chromatic generation: each one articulates the diatonic/triadic progression I-V-I.

Example 1. Schenkerian Ursätze.



[9] The following few paragraphs quote or paraphrase material from Brown 1998 and Brown 2005.

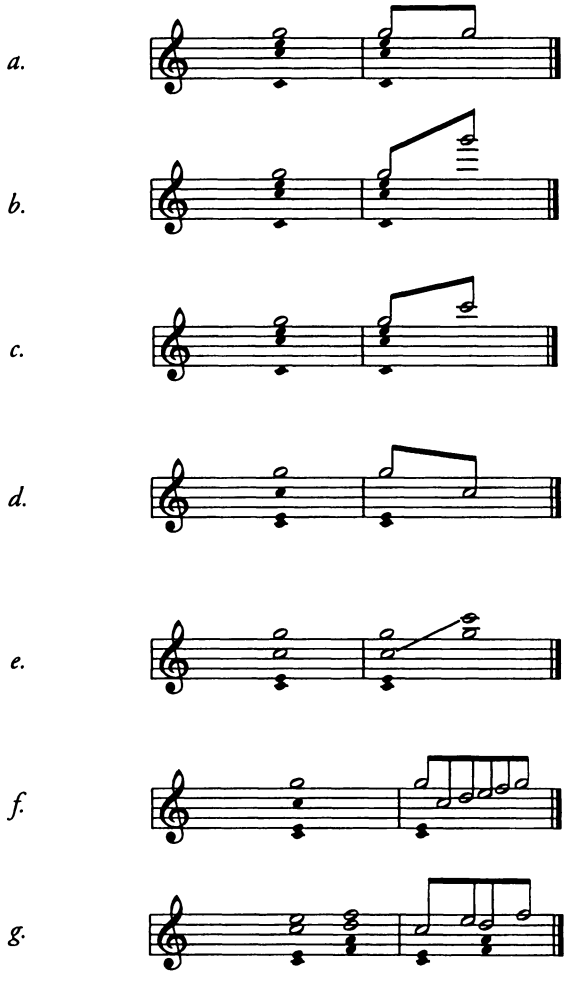
Whereas Schenker's *Ursätze* satisfy some main laws of tonal voice leading and harmony, his transformations conform to a number of subordinate local laws. By repeated application of these transformations, the sparsest of *Ursätze* can generate the most abstruse of tonal surfaces. For example, although tonal melodies mainly move by step between triadic tones, Schenker realized that leaps occur when the melody shifts from one harmonic tone to another or from one polyphonic voice to another. This subordinate law is given in Example 2a. To generate melodic leaps within a given melodic line, Schenker introduced a number of specific transformations: register transfer and arpeggiation create leaps by shifting from one harmonic tone to another (see Examples 2b-c); unfolding, voice exchange, motion from an inner voice, and reaching over produce leaps by switching from one contrapuntal voice to another (see Examples 2d-g). Similarly, to capture the subordinate local law that non-harmonic tones arise from stepwise motion between harmonic tones, Schenker posited several other transformations. As shown in Example 3, neighbor motion fills in repetitions with neighbor tones (Example 3a); linear progression fills in arpeggiations and register transfers with passing tones (Example 3b); motion from an inner voice (Example 3c), motion to an inner voice (Example 3d), and reaching over (Example 3e) fill the space between different polyphonic voices by passing tones. Similarly, to account for the subordinate law that non-diatonic notes arise from mixture and tonicization, Schenker introduced two transformations of the same name.

Besides invoking prototypes and transformations, Schenkerian theory presumes that, whenever a prototype is transformed by recursive application of certain rules, the resulting material always conforms to the same local laws as the prototype itself. Schenker conveyed this idea in his famous motto "*semper idem sed non eodem modo.*"[10] But, as Schenker soon learned, this principle is very hard to achieve. For example, although he insisted that parallel perfect octaves and fifths should never occur between harmonic tones when a particular prototype is transformed, he was forced to

[10] This motto appears at the start of *Der freie Satz.* Prior to this, Schenker also used the same motto in *Der Tonwille* (1921) and each part of *Kontrapunkt II* (1922).

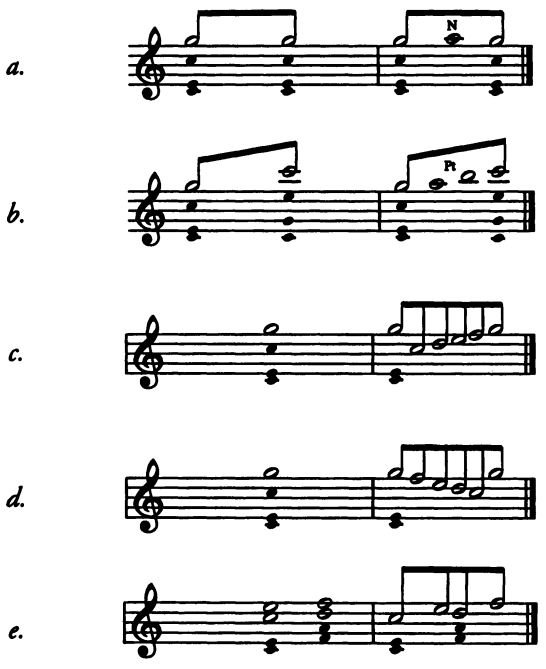
concede that they can sometimes appear at the middleground only to be eliminated at the foreground.[11] Schenker also understood that some of his transformations (i.e., deletion and displacement) cannot be applied recursively, though he did not explain why.

Example 2. Generating melodic leaps.



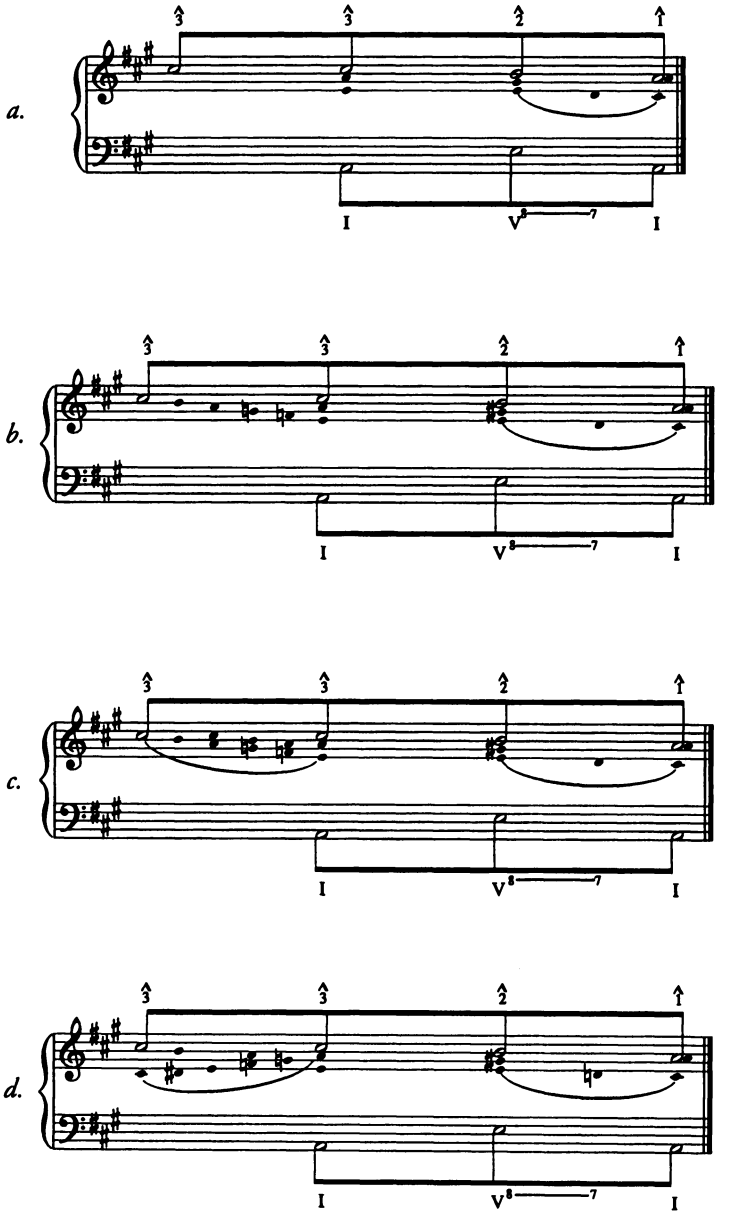
[11] Schenker 1935, 93; Oster 1979, 56.

Example 3. Generating non-harmonic tones.



We can illustrate what Schenker had in mind by elaborating one of the *Ursätze* from Example 1a. Let's begin with the opening tonic *Stufe*. As shown in Example 4a, we might compose out this *Stufe* simply by repeating the soprano tone C♯. Example 4b suggests how we might fill out the space between the new C♯ and the tenor E with passing tones, B-A-G-F. In this case, the chromatic tones G and F are simple mixtures from A minor. The resulting string creates a whole-tone scale. Next, we might imitate these passing tones to create a chain of parallel thirds (see Example 4c). Lastly, Example 4d adds an ascending segment in contrary motion with the one in Example 4b. Significantly, this segment collides with the descending segment on the pitch G.

Example 4. Transforming Ursätze *(1).*



Having transformed the opening tonic *Stufe*, we might then compose out the motion from I to V. Example 5a does this by generating an intervening II_6 sonority. When we add sevenths to create the progression II^6_5 to V_7, the resulting non-harmonic tones all move by step between harmonic tones. A simple variant of this pattern appears in Example 5b; here the $II_6$is connected to the following dominant by chromatic neighbor tones A♯ and F𝄪. In Example 5c, the dominant E is tonicized by an applied chord on B, with the F♯ triad acting as a pivot ($VI_7$of A = II_7 of E). Since the process of transformation is rule preserving, we cannot compose out the progression from I to V with a submediant harmony. That *Stufe* creates parallel perfect fifths between the *Urlinie* and the *Bassbrechung* ($\hat{3}$/VI-$\hat{2}$/V).

Finally, we can transform the final progression V-I. In Example 6a, this progression is spun out by an intervening augmented-sixth sonority, a French-sixth to be precise. Notice how this new sonority has three common-tones with the dominant *Stufe* (i.e., $\hat{5}$, $\hat{7}$, and $\hat{4}$). As it happens, this new chord is interesting on several counts. First, since it contains the dissonant interval of an augmented sixth, it does not serve as an essential harmony; rather, it is a byproduct of the contrapuntal motion between V and I.[12] Second, although Schenker generally avoided elaborate transformations of the "structural dominant," Example 6a is possible because the crucial tendency tones, $\hat{7}$ and $\hat{4}$, both achieve closure according to the general laws of tonal voice leading. Third, since tonal composers usually try to avoid direct chromatic successions, the motion from $\hat{2}$-♭$\hat{2}$ is split between the soprano and the bass. This is a variant of a principle that Schenker referred to as "Reverse Rectification of ♭II."[13] According to him, Chopin used this procedure at the end of his Mazurka Op. 41/2 in E minor, where the chromatic alteration F♯ to F creates the impression of Phrygian mode.

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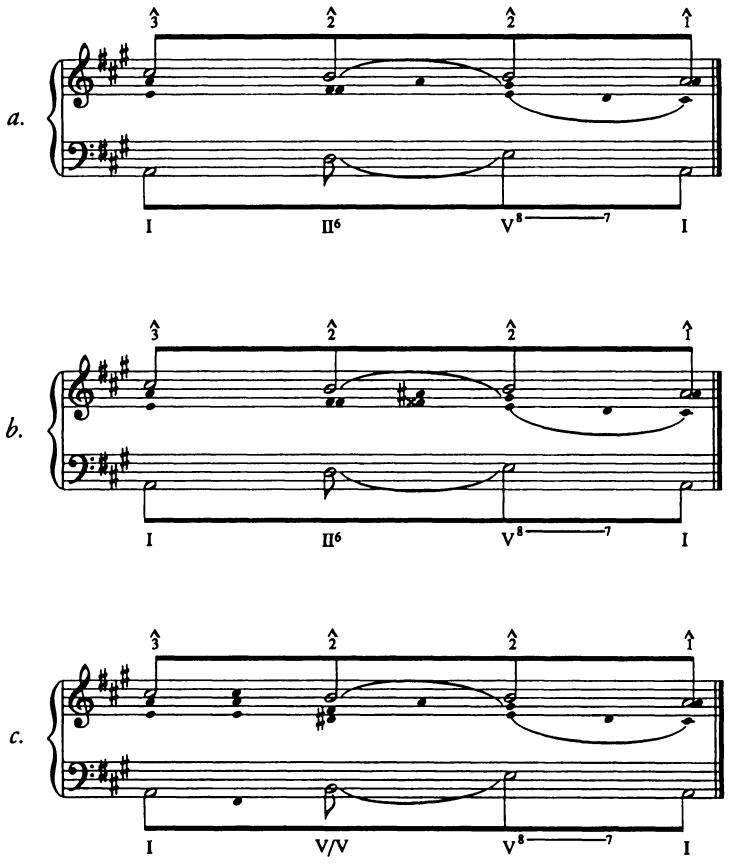
[12] For an important survey of the problems of explaining augmented-sixth chords, see Harrison 1995, 170-195.

[13] Schenker discussed reverse rectification of $\hat{2}$ through ♭$\hat{2}$ in Schenker 1935, 116; Oster 1979, 71.

Example 5. Transforming Ursätze *(2).*



The process of elaboration need not, of course, stop there; the space between the dominant *Stufe* and the augmented-sixth sonority can be filled by more passing tones. In Example 6b, the melodic descent from B to G♯ is filled by a passing tone A and harmonized by a triad on F. In Example 6c, the bass ascends by whole-step through F♯ and G♯ to B♭, while the melody descends by step B-A♯-G♯. And in Example 6d, the bass E descends by whole-step through D and C to B♭, while the alto E ascends through F and G to G♯. The complex passing motions generated in Examples

6d-e once again create whole-tone segments, this time from the scale C-D-E-F♯-G♯-A♯.

Besides claiming to derive all complete, continuous monotonal pieces from *Ursätze* using recursive transformations, Schenkerian theory also invokes prototypes in another sense. Looking through Schenker's own graphs, it is clear that he preferred readings in which the same patterns of recursive transformation appear both within and between levels. He even mentioned that *Ursätze* themselves could be transferred to other levels, a process that he described under the rubric "*Übertragungen der Ursatzformen.*"[14] But Schenker also recognized that other patterns of transformation could recur; he referred to such configurations as hidden repetition, or *Der verborgene Wiederholung.*[15] Schenker took special delight when these recurring patterns follow surface motivic statements. To cite a famous case in point, he proposed that the voice leading structure of the main theme from the first movement of Beethoven's Sixth Symphony serves as a model for the development section.[16] Such patterns can even recur from one piece to another. David Beach has noted, for example, that in several piano sonatas (e.g., K. 280/1 and 3, K. 332/1, and K. 333/1) Mozart prepared the recapitulation not by a typical dominant pedal, but by a large-scale progression V-III♯-I.[17] Charles Burkhart has even found the same pattern in the first movement of Beethoven's Sonata for violin and piano, Op. 24; since we know that Beethoven frequently modeled his pieces on works by Mozart, it is quite possible that he did so in this particular case.[18]

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[14] See Schenker 1935, 142ff; Oster 1979, 88ff.

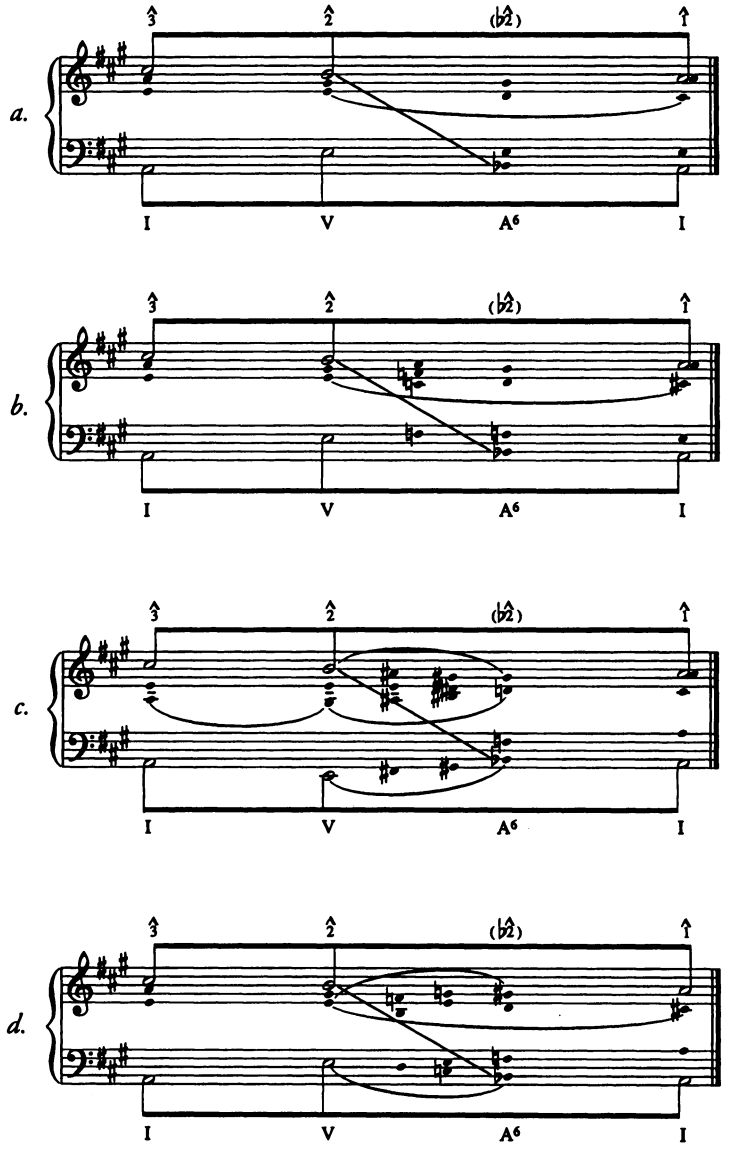
[15] Burkhart 1978, 145-175.

[16] Schenker 1935, Fig. 119.8, 124.7, and 154.5. For an excellent discussion of this analysis and its implications, see Rothgeb 1990, 12-14.

[17] Beach 1983, 1.

[18] Burkhart 1986, 284. For an excellent overview of Beethoven's knowledge of Mozart's music and possible models, see Lockwood 1994, 39-52. It needs to be stressed, however, that Mozart was not the only composer to use this strategy; not only does Heinrich Koch hint at this procedure, but, as Joel Galand points out, Haydn uses it in his Symphony 85, see Galand 1995, 37-39.

Example 6. Transforming Ursätze *(3).*



These examples of modeling are especially significant because it suggests that Schenkerian theory can provide us with a model for understanding how people gain expertise at tonal composition. According to this model, ordinary people normally experience music by absorbing an array of melodies. As they learn more music, they begin to abstract some general laws of tonal voice leading. After more exposure to polyphonic music, nascent composers gradually pick up some knowledge of tonal harmony that can be expressed in the form of general laws. As they learn more about the laws of tonal harmony, so they will surely refine their understanding of tonal voice leading. When they start to write music of their own, tonal composers learn to internalize these various laws of tonal voice leading and harmony by constructing some fairly short tonal prototypes and by devising some effective ways to elaborate them. Such elaboration will involve finding suitable thematic material and appropriate ways to spin it out. They learn these prototypes and transformations by studying successful pieces by other composers and by trying to emulate them. When they become experts, tonal composers are able to internalize the various laws of tonal voice leading and harmony in such a way that they can derive an entire piece from a single prototype using the entire set of tonal transformations. Their pieces have a strong sense of overall unity precisely because they are able to relate the surface to a single prototype. Armed with this information, it is now time to consider the thematic/tonal structure of one particular monotonal composition, *L'Isle joyeuse* by Debussy.

2. Prototypes in Debussy's *L'Isle joyeuse*

Wilfred Mellers may have exaggerated, but he was surely on the right track when he declared that *L'Isle joyeuse* is "the most wonderful piece that Debussy ever wrote."[19] In fact, Debussy completed this masterpiece in the summer of 1904 when his career was at its zenith. He exercised his creative powers to produce a score quite unlike any of his earlier keyboard music; as Frank Dawes has stressed, its broad scope and bold outlines have a quasi-

[19] Dawes 1969, 29.

symphonic quality that is more reminiscent of the orchestral *Nocturnes* or *La Mer* than of the *Arabesques* or *Clair de Lune.*[20] By 1904 Debussy had thoroughly mastered all aspects of Common-Practice Tonality and had begun to extend its boundaries in a number of different directions. *L'Isle joyeuse* demonstrates both of these tendencies; it demonstrates his extraordinary skill at large-scale thematic/tonal composition, as well as his desire to enrich the vocabulary of Common-Practice Tonality with a wide range of novel sounds.[21]

The basic thematic/tonal geography of *L'Isle joyeuse* is shown in Examples 7a-b.

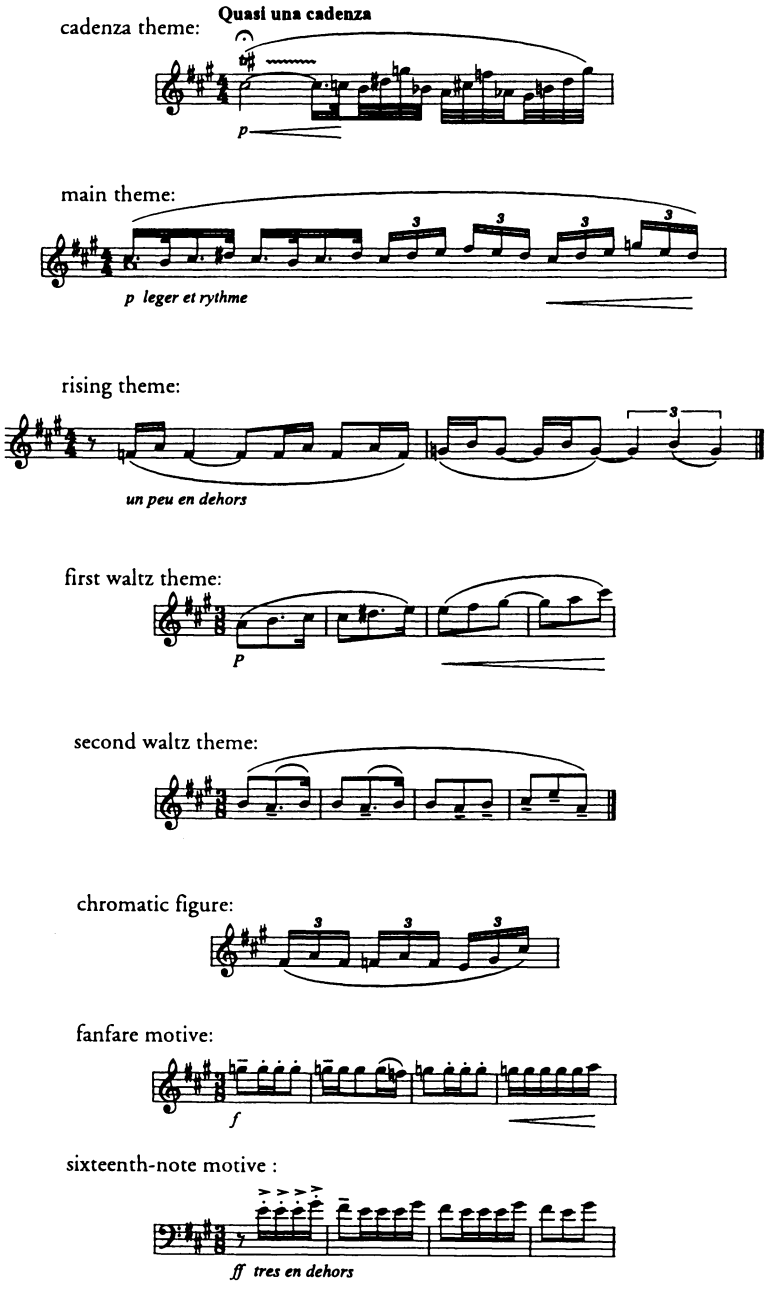
Example 7a. Formal Structure of L'Isle joyeuse.

Measures	Theme	Harmonic Motion
1-6	Cadenza Theme	C#-A
9-15	Main Theme	A
15-28	Main Theme, Rising Theme, Cadenza Theme	A
28-52	New Cadenza Theme	A-C#
52-66	Cadenza Theme, Main Theme (mm. 52-63 = 1-6; 64-65 = 15-16)	C#-A
67-99	Waltz Theme	A-E
99-141	Main Theme, Waltz Theme	E-C
141-160	Main Theme, Rising Theme	C-A
160-186	Main Theme, Rising Theme (mm. 160-82 = 9-10, 19-24)	A
186-220	Main Theme, Rising Theme (mm. 186-219 = ?146-55)	G#-A
220-244	Waltz Theme (mm. 220-28 = ?75-91)	A
244-255	Cadenza Theme	A

[20] Dawes 1969, 28-29.

[21] For perceptive observations about *L'Isle joyeuse*, see Whittall 1975, 261-271, esp. pp. 265-268; Howat 1983, 46-63; Parks 1989, 156-7; Nichols 1973, 55-57; Chew 1983, 48-51.

Example 7b. Basic thematic/tonal geography of L'Isle joyeuse.



Looking through this chart, two things immediately stand out. First, the piece draws on a particularly wide range of thematic material. Four ideas are especially important: a cadenza theme, which opens the piece (mm. 1-6); the main theme proper, which occurs in one form in m. 9ff. and another in m. 15ff.; a rising theme, which appears for the first time in m. 21ff.; and a waltz theme, which consists of an ascending pattern (m. 67ff.) and a neighbor figure (m. 75ff.). As the piece unfolds, these four principle ideas are supplemented with a plethora of subordinate gestures. Among others, we find a neighbor figure F/A-G/B-F/A in m. 3, a chromatic figure F♯-F-E in mm. 12-13, an elaboration of the chromatic figure introduced in m. 25, a fanfare motive in m. 200, and a sixteenth-note motive in m. 220ff. Nevertheless, this diverse array of material is woven together into a tightly knit musical fabric that flows seamlessly from one section to another.

The second thing that jumps out of Example 7a is the fact that *L'Isle joyeuse* is firmly rooted in the key of A major. Except for the important modulations to E (m. 99ff.), C (m. 141ff.), and the transition sections at mm. 28-52 and 182-220, the main sections are all centered on A major. And yet, this tonic is articulated in some very distinctive ways. To begin with, the piece includes numerous whole-tone inflections, such as those associated with the cadenza theme and the rising motive, not to mention variants of the waltz theme (m. 117ff. and m. 129ff.) and the cascading scales in the reprise (mm. 182-5). The melodic lines display a strong penchant for $\sharp\hat{4}$. Example 7b shows that the main theme and the waltz theme both include the prominent half step ($\sharp\hat{4}$-$\hat{5}$). This motion is encapsulated in the glorious final cadence in which the notes D♯-E are reiterated in a tremolo. Equally pronounced are the subtonic ($\flat\hat{7}$) and the Phrygian II ($\flat\hat{2}$). The former appears in m. 9 of the main theme, where G replaces G♯. This chromaticism gives the theme a luminous modal sheen; there is no hint that the piece is in D major because the theme includes D♯ rather than D. Similarly, the motion from $\flat\hat{2}$-$\hat{1}$ features prominently in the return of the main theme in m. 14 and the cadenza theme in m. 243ff.; both passages tonicize A with the German sixth B♭-D-F-G♯. The descent B♭-A also joins the main theme to the waltz theme (mm. 66-67) and sets up the reprise (m. 160); in the first case, this succession appears over a tonic pedal, and in the second case, it

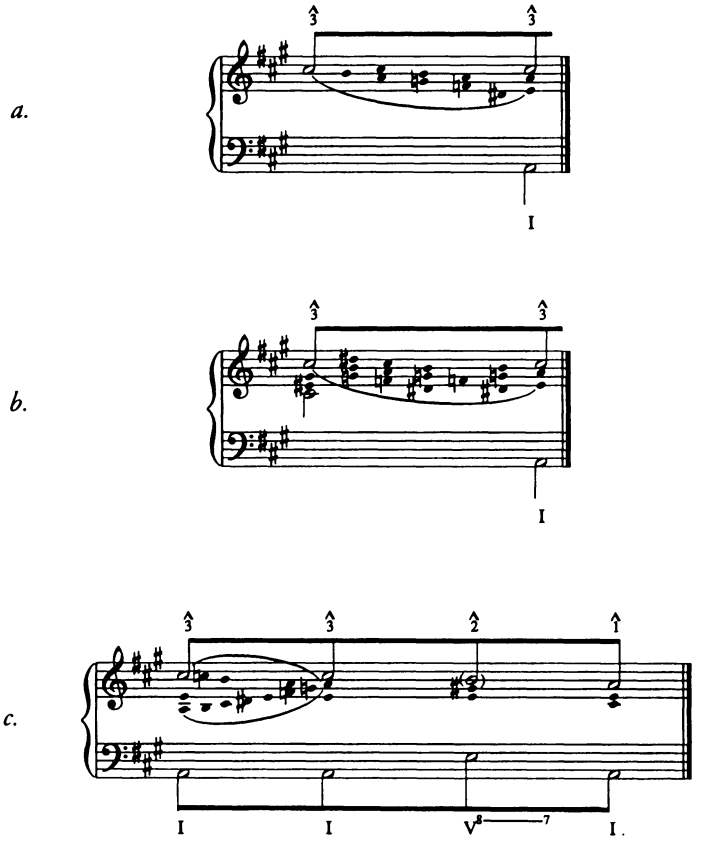
occurs within a progression from an altered dominant (E-B♭-D-G♯) to the tonic.

To understand the significance of these observations, it is important to realize that the myriad themes and motives are all inter-related. Example 7b shows that there are strong similarities between the cadenza theme and the main theme; each gesture begins on C♯ and, through a series of complex elaborations, moves to G. We can see even stronger parallels between the cadenza theme and the rising theme: both examples contain prominent chains of parallel thirds, with the former descending from C♯ to F♯/A and the latter following the reverse course from F/A to C♯/E♯. Meanwhile, the main theme also resembles the first component of the waltz theme; the former rises in a series of waves from C♯ through D♯, E, and F♯ to G, whereas the latter ascends by step from A and B through C♯-D♯-E and F♯ to G♯ and A. Other parallels can be found between the downward trajectory of the cadenza theme and the second half of the main theme, as well as between the upward sweep of the main theme, the rising theme, and the first component of the waltz theme. In much the same vein, we can find significant connections between the four main themes and the various subordinate gestures. For example, the neighbor figure in m. 3 anticipates the contour of the main theme, the second element of the waltz theme, the fanfare figure from m. 200ff., and the sixteenth-note figure in m. 220ff. The chromatic figure in m. 12ff. also permeates the entire score; it is foreshadowed by the opening chromatic descent C♯-C-B of the cadenza theme and is expanded as the chromatic figure from m. 25. We catch a last glimpse of this idea in the final cadence where F♯-E appear in the sixteenth-note flourish to the final chord.

Just as we find strong inter-relationships between the various thematic shapes, so we find consistent patterns in the tonal structure; with a little effort, we can, in fact, uncover several examples of the procedures surveyed in Examples 4-6. Example 4c demonstrated how the tonic chord in A major can be elaborated by repeating the C♯ and by joining this repeated tone to the tonic chord by passing tones. We find this strategy used to harmonize the cadenza theme (see Examples 8a-b); in both cases, the pattern prepares a statement of the main theme. Meanwhile, we find the procedure from Example 4d used for the last presentation of the

cadenza theme (see Example 8c); the ascending line in the tenor voice appears as a whole-tone version of the waltz theme, like the ones heard in m. 118ff. and m. 129ff.

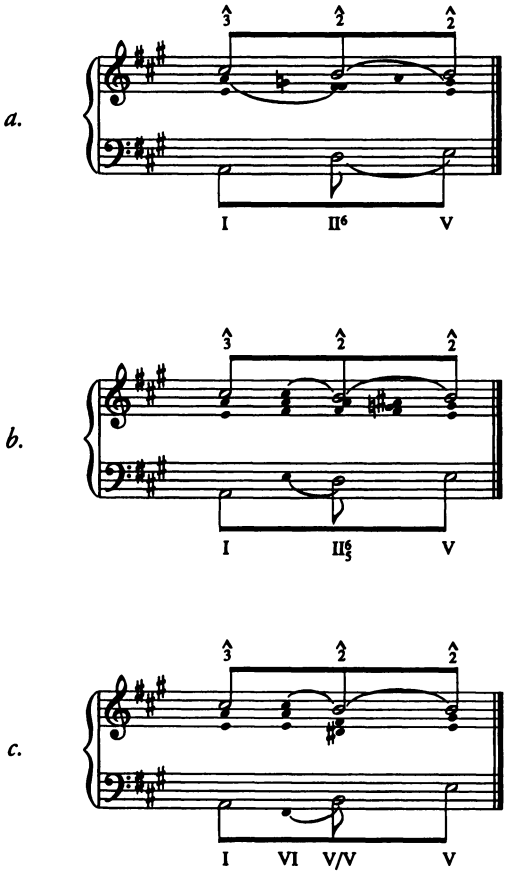
Example 8. The cadenza theme.



We also encounter the patterns shown in Examples 5a-b at various points in *L'Isle joyeuse*. Example 9a shows how the second statement of the main theme (mm. 15-28) adapts the plan from Example 5a; here the II_6 sets up the cadence in the tonic in m. 28. Example 9b then suggests that the final presentation of the waltz

theme (mm. 220-227 and 228-235) follows the same scheme as the one shown in Example 5b. Similarly, the first statement of the waltz theme (mm. 67-99) reworks the pattern from Example 5c; Example 9c shows that the V/V chord now initiates the modulation to E in m. 99.

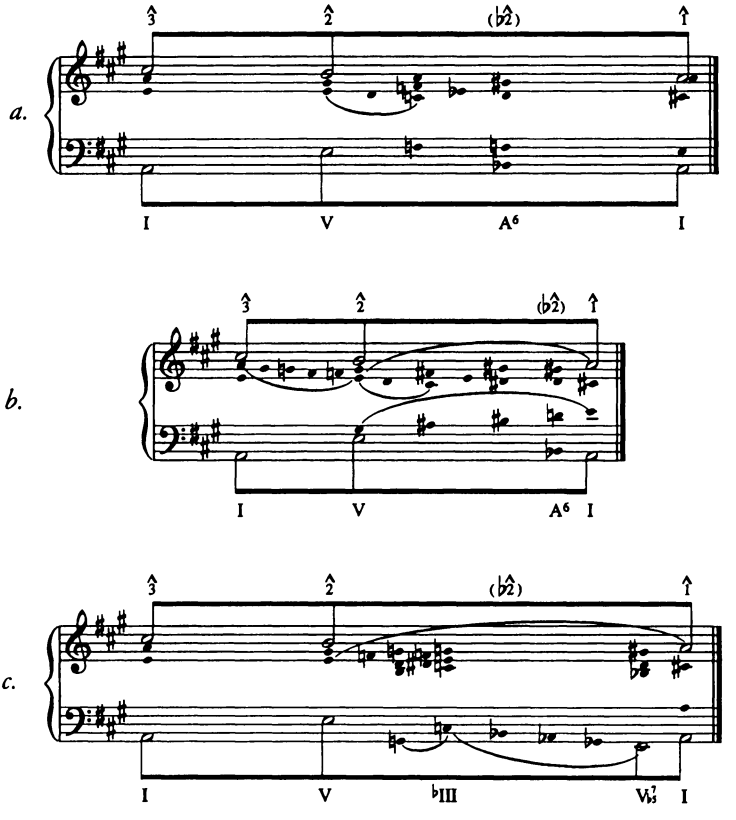
Example 9. The main theme (mm. 15-28), and the waltz theme (mm. 220-227, 228-235, and 67-99).



Even more significantly, *L'Isle joyeuse* exploits the chromatic procedures cataloged in Example 6. These involve composing out

the progression from V to I by an augmented-sixth sonority and intermediate passing tones. Example 10a shows how the return of the waltz theme (mm. 220-244) uses the same model as Example 6b; here the motion from B to G♯ is filled with a diatonic passing tone A and a supporting triad on F. The main difference between

Example 10. The waltz theme (mm. 220-224).



the two cases is that the latter adds a passing seventh in the tenor voice. Example 10b then suggests that the opening statement of the main theme (mm. 9-14) is an adaptation of the model from Example 6c; the descent B-G♯ is filled by a chromatic passing tone A♯ and a string of parallel tenths—E/G♯, F♯/A♯, G♯/B♯. Besides

elaborating this voice-leading pattern with passing sevenths and accented dissonances, the passage doubles the alto line E-F♯-G♯-A♯, thereby creating a string of parallel chords. Since these parallels do not occur between essential lines or essential harmonies, they fall within the rubric of permissible parallels outlined by Schenker in his edition of Brahms's *Oktaven und Quinten* and in *Der freie Satz*.[22] Finally, Example 10c indicates how the central portion of *L'Isle joyeuse* (mm. 99-160) follows the plan from Example 6d; just like the model, the dominant is composed out by a rising line E-F-G-G♯, though Debussy modified the bass line in order to modulate to C in m. 141.

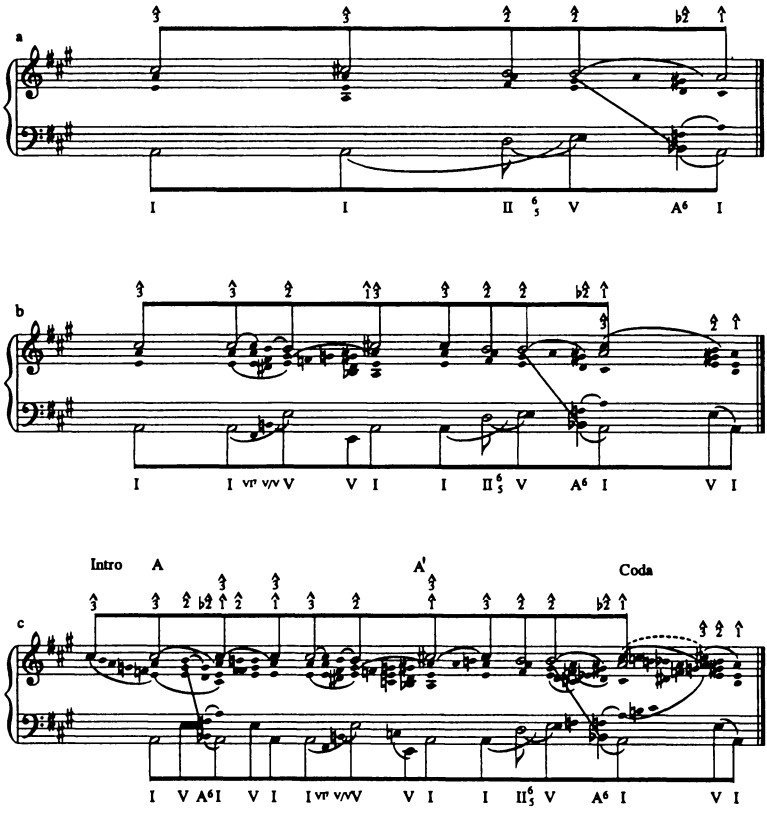
Although the preceding discussion deals with almost all of *L'Isle joyeuse*, we have yet to account for two passages, namely mm. 28-52 and 182-220. For the record, both of these passages serve as transitions from one prototype to another. In the first case, mm. 28-52 consist of a large-scale passing motion from A (mm. 28-35) to C♯ (m. 52); this line moves up from A through B♭ and C to C♯. Thematically, the passage develops the chromatic figure from m. 25. In the second case, mm. 182-220 rework material from mm. 145-155. Tonally, it projects a long passing motion from the G♯ sonority in m. 186 to the D minor sonority in m. 216ff.; this line ascends over two octaves from the B in m. 186 to the A-B-C♯ of the waltz theme in m. 220ff. This motion is elaborated with statements of the main theme (m. 188ff., 204ff., and 212ff.), the rising theme (mm. 204ff. and 212ff.), and the neighbor figure (mm. 200ff. and 212ff.).

Putting all of these points together, we can now demonstrate how *L'Isle joyeuse* might be derived from a single Schenkerian *Ursatz* (see Example 11). Example 11a suggests that the final descent of the *Ursatz* occurs across the reprise of the waltz theme (mm. 220-244). This deep-middleground prototype amalgamates strategies from Examples 5b/9b with those from 6b/10a. The reprise of the cadenza theme prolongs the final tonic and is therefore treated as a coda. According to Example 11b, mm. 1-160 present a nested middleground version of the prototype: mm. 1-99 follow the scheme given in Examples 5c/9c and mm. 99-160 draw on the one listed in Examples 6d/10c. Finally, Example 11c

[22] Schenker 1933; Mast 1980, 166 and Schenker 1935, 98; Oster 1979, 59.

supposes that the tonic is prolonged between mm. 1-67 by several local motions onto I (e.g., m. 28 and 64), as well as by nested transformations of the *Ursatz* across the first two statements of the main theme (mm. 7-15 and 15-28). These surface projections of the *Ursatz* compose out the patterns given in Examples 5a/9a and 6c/10b. The opening statement of the cadenza theme (mm. 1-6) can be regarded as some sort of introduction.

Example 11. Overall structure of L'Isle joyeuse.



Besides generating *L'Isle joyeuse* from a single 3̂-line *Ursatz* in A major, Example 11 also underscores some other important points.

On the one hand, this analysis confirms Schenker's point that modal and whole-tone inflections do not arise from independent systems, but rather from the process of transformation within the tonal system. For example, at the start of *Kontrapunkt I*, he declared:

> Skillful artists, still, have always successfully limited the problem of musical exoticism in practice.... They expressed the foreign character in our major and minor—such superiority in our art, such flexibility in our systems![23]

In the case of *L'Isle joyeuse*, we can explain the various modal and whole-tone inflections as mixtures and tonicizations within otherwise quite traditional prolongations. On the other hand, thematic connections may play an important role in *L'Isle joyeuse*, but Debussy primarily used them as tags to highlight each transference of the prototypes. They arise from the processes of generation; the task of composing is one of adapting them to an underlying tonal framework.

3. Prototypes in Debussy's Compositional Process

So far, we have seen how prototypes can help us understand the thematic/tonal structure of *L'Isle joyeuse*. They let us explain the complex ways in which the piece balances line and chord both locally and globally or, to paraphrase our opening statement, why it proceeds in some ways and not in others. In particular, we have seen the significance of hidden repetitions to the structure of *L'Isle joyeuse*; Example 11 demonstrated that the same patterns of transformation do indeed occur within and between levels. Yet, as mentioned at the outset, prototypes have important cognitive implications as well; they play an essential role in the development of expertise in many domains. It seems appropriate for us now to consider how prototypes might shed light on the actual decisions Debussy made in composing this score.

Fortunately, John Sloboda has provided us with a convenient psychological model with which to proceed.[24] In fact, he has

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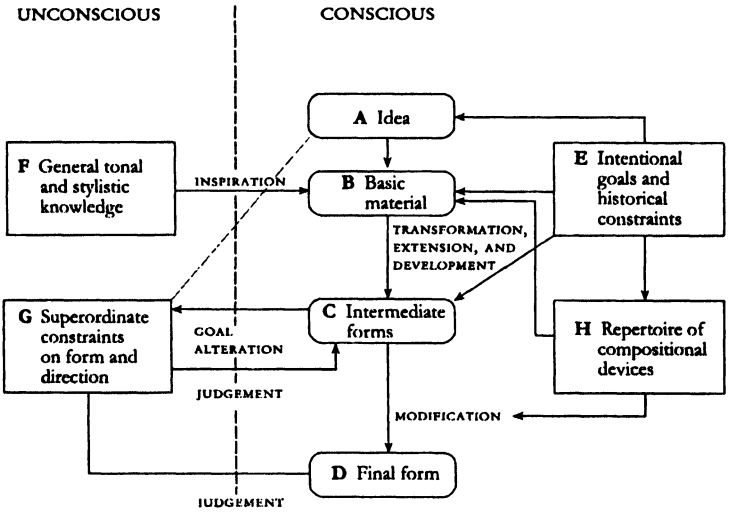
[23] Schenker 1910, 43-44; Rothgeb and Thym 2001, 28.

devised a general model of tonal composition in which prototypes occupy a prominent place. A modified version of this model is given in Example 12, with the prototypes included in Box G.

Example 12. Diagram of typical compositional resources and processes (after Sloboda 1985, 118).



Example 12 captures Sloboda's intuition that "the art of composition lies, in part, in choosing extensions of initial thematic ideas that honour super-ordinate constraints."[25] Such constraints allow us to explain how expert tonal composers are able to produce large quantities of music very fast, how they are able to work on several pieces at the same time, and how they are able to compose them out of order. Sloboda supports such claims with evidence from composers' workings, from their personal testimonies, from verbal protocols by living composers at work, and from systematic studies of musicians in the act of improvising. He does not claim, however, that composers begin with a fixed image of what these

[24] Sloboda 1985, 116.

[25] Sloboda 1985, 116.

constraints may be; on the contrary, he suggests that "they can...be changed in light of the way a particular passage 'turns out.'"[26]

Using Example 12 as a guide, we can summarize the genesis of *L'Isle joyeuse*. In terms of the square boxes, Box E suggests that one of Debussy's main goals in composing *L'Isle joyeuse* was to exploit the full range of the piano. Debussy made this point perfectly clear in a letter to his publisher Durand, dated September 1904. As he put it: "Heavens! how difficult it is to play....This piece seems to embrace every possible manner of treating the piano, combining as it does strength and grace...if I may presume to say so."[27] In terms of Debussy's background knowledge, Box F highlights the fact Debussy was perfectly fluent in all aspects of nineteenth-century tonal composition; he obviously acquired this knowledge over many years of performing, composing, and listening to tonal music.[28] As we will see in a moment, Roy Howat and Paul Roberts have found direct connections between *L'Isle joyeuse* and several works by Chopin and Liszt. Box G then indicates that Debussy borrowed the tonal prototypes listed in Examples 4-6 from a number of earlier pieces; in particular, he exploited the strategy from Example 6 in works dating as far back as the 1880s. Lastly, Box H proposes that he was familiar with the techniques of thematic development and transformation; he apparently learned these techniques from the music of Liszt, Wagner, Franck, and so on.[29]

With regard to the oval boxes, Box A repeats the traditional view that *L'Isle joyeuse* was inspired by Watteau's painting "Embarquement pour Cythere," Basnard's canvas "L'Isle heureuse," and Debussy's elopement to Jersey with Emma Bardac in 1904.[30] In fact, Debussy inscribed one of his drafts to his future wife, claiming poetically that she "dictated" certain measures to him one Tuesday in June 1904.[31] It is unclear precisely when Debussy came

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[26] Sloboda 1985, 116.

[27] Durand 1927, 21, cited by Vallas 1933, 163.

[28] For a general account of Debussy's training, see Clevenger 1995, 3-35.

[29] Debussy's close friend, Maurice Emanuel, discussed the composer's approach to thematic development in Emanuel 1926, 214ff.

[30] Dietschy 1990, 133-134.

[31] Dietschy 1990, 133-134.

up with his main themes (Box B), but we do know that he started to compose *L'Isle joyeuse* before the summer of 1903; in June of that year he apparently played Ricardo Viñes "two of the three pieces of his *Suite bergamasque*," one of which was entitled "L'Ile [sic] joyeuse."[32] On 2 January 1904, Viñes reported that the piece was "en train de terminer." Viñes eventually premiered the completed piece at the *Société nationale de la musique* on 18 February 1905.[33] Besides taking a long time to complete *L'Isle joyeuse*, Debussy also changed the score extensively; Box C includes three important pages of intermediate workings, D-B N. Mus. ms. 136, F-Pn Ms. 17729, and F-Lemoine, though other materials have surely been lost.[34] Finally, Box D lists four versions of the finished score: the autograph (August 1904, F-Pn Ms. 977); the first edition (Durand, September 1904); a corrected plate (January 1910); and Bernardino Molinari's orchestration (1917, published by Durand in 1923).[35] Although the piece was published on its own, Roy Howat has suggested that *L'Isle joyeuse* actually forms a triptych with *Masques* and *D'un cahier d'esquisses*.[36]

One of the main lessons we learned in Part 2 was that Debussy's themes are all closely inter-related. There may be no clear evidence that Debussy was conscious of these connections, but similar procedures are common enough in his earlier works, especially his orchestral scores. We know, for example, that he experimented with cyclic themes and thematic transformation in early works, including the *Fantasie* for piano and orchestra and the String Quartet. Such experiments came to fruition in *Pelleas et Melisande*, *La Mer*, *Ibéria*, and the three late sonatas. Although Debussy was not fond of explaining his compositional goals, he did

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[32] Gubisch 1980, 226-228. Several advertisements from Fromont confirm that the piece was to be part of *Suite bergamasque*, along with *Masques* and a "*2e Sarabande*," see Howat 1995, 38.

[33] Lesure 1977, 111.

[34] Howat 1989, 170 and 178-179.

[35] Howat 1989, 153.

[36] Although Debussy published *L'Isle joyeuse* separately in September 1904 and used different pieces for the *Suite bergamasque* ("Prélude," "Menuet," "Clair de lune," "Passepied"), Howat has suggested that the piece may still form a triptych with *Masques* and *D'un cahier d'esquisses*, see Howat 1995, 37-52.

leave us tantalizing signs that the desire for intricate thematic connections was uppermost in his mind. On p. 93 of the Images Sketchbook (US-pm, Lehman deposit), for example, he wrote out a main theme from *Rondes de printemps* along with the instruction that it was to be "varied and developed."

Having said this, some of the specific themes from *L'Isle joyeuse* sound a lot like themes from other pieces. The cadenza theme, for instance, bears a striking similarity to the opening flute theme from the *Prélude à 'L'Après-midi d'un faune.*'[37] As shown in Examples 13a-b, the two gestures both start with a sustained C♯ and then weave their way down chromatically to G. Meanwhile, the main theme is strongly reminiscent of crucial motives from "Sirènes" (*Nocturnes*) and "Jeux de vagues" (*La Mer*, II); as shown in Examples 13c-e, these motives all outline the interval of the tritone. Significantly, the accompanimental figure from m. 7ff. also seems very close to one from Liszt's virtuoso piano piece, "Les jeux d'eau à la Villa d'Este" (*Années de pèlerinage Sér.* 3, no. 4); these two figures are given in Examples 13f-g.[38] As for the waltz theme, Linda Cummins has argued that it resembles a subordinate gesture from *D'un cahier d'esquisses*; Examples 13h-i show that both gestures ascend by step, and both include a dotted note at the end of each measure leading to a repeated note.[39] Similarly, Howat has noted that the sixteenth-note figure from m. 220ff. of *L'Isle joyeuse* is like another motive from *D'un cahier d'esquisses* (see Example 13j-k). The fact that *D'un cahier d'equisses* recycles so many motives from other pieces, such as "Reflets dans l'eau," *La Mer*, and *Masques*, suggests that we should take its title at face value. This large number of thematic cross-references also indicates that Debussy liked to work on pieces in groups: he would constantly shift his attention from one piece to the other in order to find the optimum place for a given idea.

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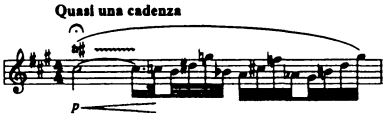
[37] Nichols 1973, 55. For a general account of the ways in which Debussy started pieces, see Hepokoski 1984, 44-59.

[38] Roberts 1996, 195-196. Roy Howat has seen connections between *L'Isle joyeuse* and several pieces by Chopin. See Howat 1992, 258.

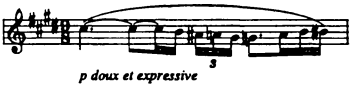
[39] Cummins 1997. Debussy used waltz themes in several other works, such as *Valse Romantique* (1890), "Jeux de vagues" (mm. 171ff.), *La plus que lent* (1910), and, perhaps most significantly of all, his ballet *Jeux* (1912-1913).

Example 13. Thematic connections between L'Isle joyeuse *and other pieces.*

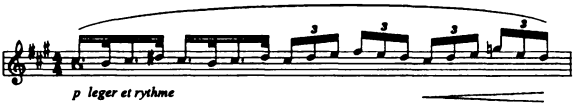
a., cadenza theme, mm. 1-6.



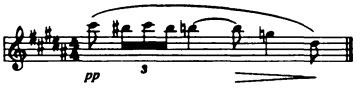
b., Prélude à 'L'Après-midi d'un faune.'



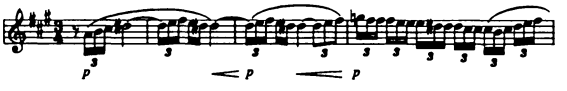
c., main theme, mm. 9-15.



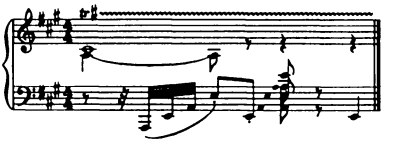
d., "Sirènes" (Nocturnes).



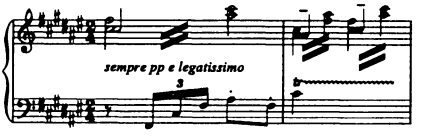
e., "Jeux de vagues" (La Mer, *II*).



f., accompanimental figure, mm. 7ff.

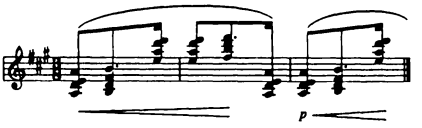


g., "Les jeux d'eau a la Villa d'Este (Années de pèlerinage Sér. 3, no. 4).



Example 13, continued. Thematic connections between L'Isle joyeuse *and other pieces.*

h., waltz theme, mm. 89ff.



i., D'un cahier d'esquisses.

j., sixteenth-note figure, mm. 220ff.

k., D'un cahier d'esquisses.

As for Debussy's transformation of tonal prototypes, there is considerable evidence to show that he learned the above-mentioned strategies over many years.[40] Perhaps the most interesting of these is the one involving reverse rectification of $\hat{2}$-$\flat\hat{2}$. Examples 10 and 11 showed that Debussy used it both locally and globally in *L'Isle*

[40] For a discussion of Debussy's use of prototypes (or tonal models) in *Prélude à 'L'Après-midi d'un faune'*, see Brown 1993, 127-143 and 1993-4, 94-113.

joyeuse. But the piece is neither the only nor the first piece by Debussy to exploit a progression of just this sort. For example, he used a variant of this strategy in the song "L'Ombres des arbres" (*Ariettes oubliées,* III), a work he completed in 1885 but republished with changes in 1903.[41] The first strophe of the song articulates a large-scale arpeggiation of the tonic C♯. To connect the minor dominant in m. 8 to the tonic in m. 11, Debussy added an intervening augmented-sixth chord (D-F♯-A-B♯) in m. 10; he not only split the succession $\hat{2}$-♭$\hat{2}$ between the soprano and the bass, but he also filled out the upper voice motion $\hat{2}$-$\hat{7}$ with passing tones, just like those given in Examples 6b-c. This passage then served as a model for the first statement of the B theme in *Prélude à 'L'Après-midi d'un faune'* (mm. 55-62).[42] Even more remarkably, Debussy used the same general strategy in "Jeux de vagues," a work from the same time as *L'Isle joyeuse.* He set up the arrival in A in m. 92 with a progression from an altered dominant sonority (E-G♯-B♭-D) in m. 88 to an augmented-sixth sonority (B♭-D-F-G♯) in m. 90.[43] Significantly, the arrival on A is marked by the theme shown in Examples 13d-e. It is worth noting, however, that "L'Ombre des arbres" and "Jeux de vagues" use the procedure from Example 6 on a local level; they do not project it globally in the manner found in *L'Isle joyeuse.*

In terms of Debussy's working methods, the three sources in Box C of Example 14 contain several telltale signs that prototypes and transformations did indeed play a decisive role in Debussy's compositional thinking. For example, the first page (D-B N Mus. ms. 136) contains some rather sketchy workings for the opening of the piece. Although these jottings are hard to decipher exactly, they indicate that Debussy had already decided that the passage would follow the scheme given in Example 4c. Like the finished piece, the sketch opens with the cadenza theme and ends with a statement of the main theme. Unlike the finished piece, however, the jotting does not include the neighbor figure from m. 3; instead, it contains some elaborate extensions of the cadenza theme. Having sketched two versions of mm. 7-8, Debussy wrote out a

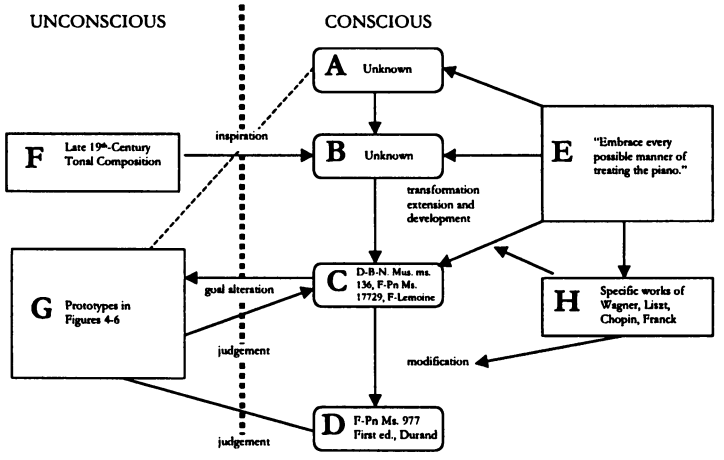
[41] For details, see Rolf 1988-89, 29-47.

[42] For a voice-leading sketch of this passage, see Brown 1993, 139.

[43] For a sketch of mm. 82-126 of "Jeux de vagues," Brown 2003, 126-27.

preliminary version of the main theme. Although this gesture includes the triplet figuration from the end of m. 9, it lacks the neighbor motion from the first and second beats.

Example 14, Debussy's revisions for the second statement of the main theme (m. 15ff.).



D-B N Mus. ms. 136 also contains a continuity draft for mm. 9-45 and, though this draft is quite close to the finished score, it too contains some interesting revisions. The main theme (mm. 9-14) was originally longer and Debussy then changed his mind, trimming the phrase back to six bars and adding the progression from Example 6c. This simple alteration confirms Sloboda's point that composers may recognize the significance of a prototype while they are working. Meanwhile, Debussy's draft for the second statement of the main theme (m. 15ff.) shows clear signs that the prototype was in place before the surface figuration (see Example 14). The tune was initially seven bars long and consisted of an advanced version of mm. 15-16, a preliminary version of mm. 17-18, followed by an advanced version of mm. 25-28 (Version 1, D-B N Mus. ms. 136, staves 17-21). He immediately revised mm. 17-18 (Version 2, D-B N Mus. ms. 136, stave 18). Debussy then

decided to expand the phrase by introducing the rising motive. He did this in two stages: first, he copied out mm. 19-22 several systems above the original version (Version 3, D-B N Mus. ms. 136, staves 9-10) and second, he added mm. 23-24 a couple of lines above mm. 19-22 (Version 4: D-B N Mus. ms. 136, stave 7). The fact that Debussy inserted material within a phrase, rather than by adding each note in turn, is strong indication that he was thinking in terms of prototypes like the one from Example 5a.

Although F-Pn Ms. 17729 does not display any significant signs of prototypes—it contains a fairly advanced continuity draft for mm. 117-144—F-Lemoine does; these appear most prominently in the context of a continuity draft of mm. 186-255. When Debussy copied this page, he undoubtedly had a clear image of how the piece would end: having recalled the main theme in the tonic, he decided that the piece would include a transition section built from the main theme, the fanfare motive, the rising theme, a reprise of the waltz theme in A in counterpoint with the sixteenth-note motive, and a reprise of the cadenza theme also in the tonic A. In the draft, however, this material is considerably compressed; as Debussy continued to work, he expanded the section by inserting several important segments of music. To begin with, Debussy started the transition section with the music from m. 192; sometime afterwards, he inserted mm. 186-191. Similarly, he originally ended the transition with the statement of the fanfare from mm. 208-211; Debussy did not include the statement of the rising theme (mm. 212-219) until considerably later. When he initially brought back the waltz theme in m. 220, he simply stated it once in A major and once up a half step; it was only later that he thought of repeating both statements. But Debussy did not fundamentally change the tonal motion in the draft; the reprise of the waltz theme is clearly supported by the pattern from Example 6b, and the reprise of the cadenza theme follows the scheme from Example 4d.

The types of working transcribed above suggest that, when Debussy put pen to paper, he had a much clearer idea about a passage's overall tonal structure than he necessarily had about its precise motivic content or its specific harmonic color; he often expanded sections by inserting important thematic statements and by refining the surface lines and chords. In the case of the

opening, Debussy excised unnecessary elaborations of the cadenza theme and eventually added the neighbor figure in m. 3. In the case of m. 15ff., he enlarged the second statement of the main theme so as to include two versions of the rising motive, thereby giving the passage a distinct whole-tone flavor. And, in the case of the ending, Debussy composed out his prototype by adding extra statements of the rising theme, the waltz theme, and the sixteenth-note motive. Such revisions support the claim that Debussy used his main themes as surface tags to identify the location of particular prototypes. They also suggest that the process of tonal composition is one of searching for an optimum way of adapting particular thematic shapes to some underlying tonal prototype. This search is largely conducted by trial and error; composers try out one solution, then another, until, like Goldilocks, they find one that is "just right." In the case of *L'Isle joyeuse*, this solution is the one shown analytically in Example 11. Experts, however, streamline these searches by drawing on a large reservoir of learned prototypes and transformations; they know in advance that some strategies are unlikely to be fruitful and that others are almost guaranteed to be successful. Again, for *L'Isle joyeuse*, Debussy had already learned a crucial search strategy in "L'Ombre des arbres" and "Jeux de vagues," albeit on a purely local level.

The goal of this paper has been to show how prototypes help us understand the nature of tonal composition. They allow us to explain how individual pieces balance line and chord at both a local and a global level. This provides us not only with a comprehensive account of the behavior of tonal music, but also with a powerful tool for choosing one analysis over another. Prototypes let us account for possible inter-connections between different pieces; the same patterns of transformation can occur recursively both in pieces by one composer and in those by other composers. This point allows us to group pieces into families and trace possible lines of influence. And prototypes provide us with a useful way to explain how people acquire expertise at tonal composition. This account fits in with the general idea that one gains expertise by building up a larger and larger repertory of prototypes and by learning to transform them in ever more ingenious and comprehensive ways. The pedagogical implications of this last

claim could be enormous; the real value of Schenkerian theory may not be for analysis per se, but rather to teach aspiring tonal composers how to bring their ideas to life.

But this paper has had another, more far-reaching, goal: to show how and why music historians, music theorists, and music psychologists should work together to unravel the mysteries of tonal composition. The fact is that each group can contribute to this enterprise in different but complementary ways. No group can afford to go it alone. Music historians can help us understand the many social and personal factors that motivate and shape an individual composer's thinking. They can also provide detailed information about the precise chronology and context from manuscript studies and other archival research. But without grounding their ideas in suitable theories of musical structure and music cognition, their observations about the compositional process will lack explanatory force. Similarly, music theorists can provide appropriate concepts, laws, and procedures to explain how individual pieces actually hang together. They can explain why particular notes behave the way they do and why particular pieces proceed in some ways but not in others. But without adequate historical and psychological grounding, these concepts, laws, and procedures can easily become elaborate fictions with little or nothing to do with the real world. In other words, we have to give our straw men a brain. Meanwhile, music psychologists can tell us something about what actually goes on inside the heads of people when they engage pieces of music. They can tell us about the ways in which people perceive and remember music. But without considering high-level cognitive processes, especially those displayed by expert performers and composers, such research will be of little interest to music historians and music theorists. The time has come for each group to stop living in the Land of Oz; we should start pooling our resources and knowledge so as to provide a coherent picture of why composers work out their material in some ways, but not in others.

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