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Confident Chromaticism in Satie's *Nocturnes* as Determined by Hindemith's Harmonic Fluctuation

ABSTRACT

To accommodate the elaborations of harmony and tonality that characterized many twentieth-century musical styles, Paul Hindemith (1895-1963) stated that it is not the scalar context of chord roots that initiate tonality, but rather the juxtaposition of the chords' constituent intervals. As part of his compositional practice, he devised a system of measuring dissonance and tonal force in harmonies, classifying them by intervallic content into six groups of graduating dissonance while discounting the scalar context of the chords' roots. He coined the term *harmonic fluctuation* for varying levels of dissonance between adjacent harmonies. Recent analyses employing harmonic fluctuation show that it can be an important component, if not the main component in the analysis of many post-tonal styles, being applicable to many musical contexts. Intervals also played a key role in Erik Satie's composition of his *Nocturnes* (1919) for solo piano. For the *Nocturnes*, Satie departed from his practice of parodying earlier styles and shifted to a more serious compositional style by largely abandoning functional harmony and systematically using intervals as the basis for his harmonic language, and this is evident in the works' sketches. Taking into account the emphasis on intervals in both Hindemith's and Satie's construction methods, this study will trace the evolution of Satie's use of chromaticism and obscured tonality in his *Nocturnes* by utilizing harmonic fluctuation.

1. INTRODUCTION

In his set of *cinq Nocturnes* for solo piano, composed in late 1919, Erik Satie uses a harmonic language that frequently alludes to tonality but seldom confirms it. This is because Satie bases the works' harmonic language on diatonic intervals instead of preexisting chords. Throughout the *Nocturnes*, he deliberately favors the use of dissonant fourths, seconds, and sevenths, and this emerges as a harmonic language that obscures tonality at the surface in a unique manner while keeping large-scale tonality intact. His use of chromaticism evolves from restrained in the first three *Nocturnes* to frequent and deliberate in the fifth and this evolution emerges in a noticeably higher amount of dissonant harmonies in the later *Nocturnes.*

During the same era, Paul Hindemith similarly shifted the common theoretical focus from chords to their constituent intervals in an effort to make sense of the changes in harmonic practice that characterized post-tonal music. His focus on intervals culminates in his system of measuring dissonance of harmonies based on intervallic content. This study will trace the evolution of Satie's use of chromaticism and its effects on tonality in his *cinq Nocturnes* by employing Hindemith's system of measuring dissonance as a primary component.

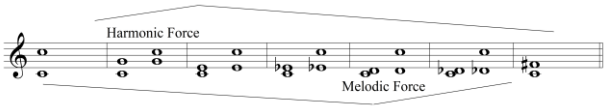
Satie is usually remembered for his ballets and piano miniatures along with the very descriptive titles of some of his works, such as *Trois Morceaux en forme de poire* (1903), *Pièces froides* (1907), and *Embryons desséchés* (1913). The works of his mature style often parody styles of earlier composers, including Chopin as in the second movement of *Embryons desséchés* and Clementi with his parody of the sonatina, *Sonatine bureaucratique* (1917). For his *Nocturnes* two years later, Satie shifted towards a more systematic and original style of composition. The death of Satie's friend and critic, Claude Debussy, in 1918, is partly responsible this shift, according to Robert Orledge. Orledge underscores this idea by stating that the effect of Debussy's passing on Satie is analogous to that of Schoenberg's passing on Stravinsky in 1951, when Stravinsky freely turned towards serialism (Orledge 1990, 65–66). Alan Gillmor points out that the consistent ternary form, nearly constant 12/8 meter, as well as the return of bar lines and key signatures in the manuscripts bind the *cinq Nocturnes* together as he puts it, 'one piece viewed from slightly different angles'. For this reason, Satie's shift to a systematic method of composition can also be seen as a return to his earlier practices because of some of the same consistent features that link the well-known *Gymnopedies* together as a set (Gillmor 1988, 42 and 229).

2. HARMONIC THEORY OF PAUL HINDEMITH

Hindemith (1895–1963) composed and taught during an era of musical nationalism and the dissolution of tonality, which seemingly resulted in an infinite variety of compositional styles. In spite of the abandonment of tonality by some of his contemporaries, Hindemith's compositions and theories retain a fondness for tonality while still accommodating the elaborations of it. This fondness is evident in his three-volume treatise, *Unterweisung im Tonsatz*, published in 1937. Here, Hindemith states that it is not the chords with their scalar context that give rise to the sense of key, but rather the combining of naturally-occurring intervals to form such chords (Hindemith 1942, 106–107). In a later article, he further postulates the centrality of intervals to tonality by arguing that Rameau's derivation of notes of the scale by juxtaposing the subdominant, tonic and dominant harmonies in his *Génération harmonique* (1737) undermines the role of the scale as a basis for melody and harmony (1944, 25). Going further, he states that in the theory of the fundamental bass, Rameau unwittingly tells us that the coherent arrangement of chord roots in a bass line is not done so in a scalar context but rather in terms of the intervallic relationships between the bass notes themselves (1944, 27).

Hindemith classifies the intervals according to what he describes as harmonic and melodic force in his diagram, known as *Series 2* (1942, 87). This intervallic hierarchy is based his earlier *Series 1* which states a fundamental pitch and its increasingly distant relationships that successive overtones have with the pitch in question, analogous to the relationship between the sun and the progressively distant planets in a solar system. In *Series 2*, intervals formed by close relations to the

parent tone have more harmonic force (i.e. the third partial that gives us the high harmonic force of the perfect fifth), while those intervals with more distant relationships (i.e. the ninth partial for the whole tone) have more melodic force, as seen in Example 1. Note that the tritone is at the end and lacking in both harmonic and melodic force.



Ex. 1. Hindemith's *Series 2*.

Hindemith's desire to preserve tonality manifests itself in his system of harmonic analysis. He states that triadic harmonies form both a point of departure and later, a point of arrival in harmonic motion from chords with various determined levels of dissonance or harmonic tension (1942, 22). His system for measuring a chord's harmonic tension focuses on intervallic content and consists of six groups of graduating tension levels, labeled with Roman numerals I through VI, with the first group having the least tension (1942, 106–108). The presence or absence of a tritone in a sonority is an important factor in Hindemith's grouping of chords, with 'A' groups lacking the interval and 'B' groups containing at least one tritone. The higher-numbered groups are more dissonant because of their content of intervals of lower relative harmonic force, according to *Series 2*.

Group I consists of the most stable chords, such as major and minor triads. The presence of thirds, fourths and fifths, intervals with high harmonic value solidifies this group's role as both a point of departure and later return. Group II, with the highest number of subgroups, marks the second level in this hierarchy of tension, and adds tritones, major seconds, and minor sevenths. Group II includes some of the most unstable and dissonant chords in conventional harmony, such as dominant sevenths (II/a) and French augmented sixths (II♭/3), and one can speculate that Hindemith probably wanted to have the highly inclusive group II serve as a sort of boundary of chords commonly used in tonal works while distinguishing them from those used in post-tonal works. In Hindemith's own analysis of Bach's *Invention in F Minor*, for example, only rarely does a chord outside of group I or II occur (1942, 107).

Group III removes the tritones of group II while increasing tension through the addition of both major and minor variants of seconds and sevenths. The group contains chords that could be non-dominant diatonic seventh chords or open fifths with non-harmonic tones, leaving the analyst to resort to context to determine their implied function in tonal allusions within post-tonal works. Group IV increases tension further through the reinsertion of tritones. A dominant minor ninth in tonal harmony would fit neatly in this group, but the intervals are making the chords of group IV increasingly complex and dissonant, some of which can hardly be called tertian.

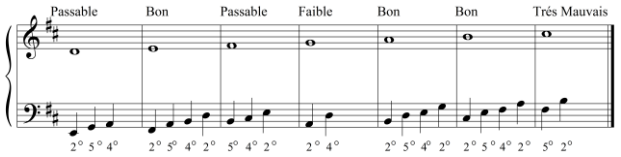
Groups V and VI encompass equidistant chords whose relative dissonance cannot easily be determined, and thus are labeled as 'indeterminate'. To Hindemith, their higher numbers do not necessarily signify greater dissonance than the lower-numbered groups, but rather a sense of unsteadiness because of the inability of the listener to accurately determine their relative dissonance (1942, 119). Such indeterminacy allows chords of group V and VI to blend in with their context and not necessarily result in an abrupt rise in dissonance (1942, 209).

To put his system of chord labeling into practice, Hindemith devised the term *harmonic fluctuation* in which chord-by-chord tension either increases or decreases by moving to higher and lower numbered groups, respectively. To him, the ideal musical passage begins with little or no tension, such as a chord from group I, then gradually progresses to a high level of tension, such as group IV for example, and gradually returns to stability. Seemingly in praise of this concept, he offers many examples of progressions in *Unterweisung im Tonsatz* that do and do not follow this ideal, both as abstract chord progressions and in analyses of various works. David Neumeyer's (1986) and Daniel Harrison's recent analyses employing harmonic fluctuation show that it can be an important component of the analysis of many post-tonal styles, being adaptable to many contexts (Harrison 2016, 46).

Hindemith's idea of harmonic fluctuation has faced criticism, particularly from David Neumeyer. Neumeyer does so on the grounds that Hindemith did not consistently differentiate non-chord tones that embellish otherwise stable triads from actual chord tones that deliberately make the chord in question more dissonant (Neumeyer 1986, 60). For this reason, Neumeyer relegates harmonic fluctuation to a mere additional analytical parameter as part of his Schenkerian structural readings of Hindemith's works including his well-known opera, *Mathis der Maler*, his song cycle *Das Marienleben*, and the vocal/orchestral requiem, *When Lilacs Last in the Dooryard Bloom'd*. Allen Forte praises Hindemith's notion of harmonic fluctuation stating that it adds a cognitive dimension to analysis in contrast to the purely structural aspect of the analysis (Forte 1998, 12). This study attempts to strike a balance between the two views of the analytical technique, taking into account Hindemith's procedures for identifying and classifying non-chord tones.

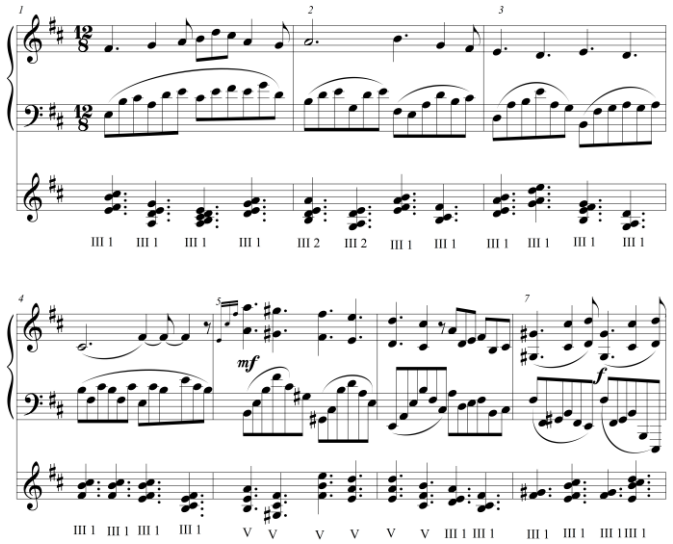
3. SATIE'S USE OF INTERVALS IN THE *NOCTURNES*

Satie documented his coherent method of using diatonic intervals in a musical diagram he sketched immediately before he began the draft of the second *Nocturne* (Orledge 1984, 175). Here, Satie presented the possibilities for harmonizing all seven degrees of the D major scale by having them sound simultaneously with one other degree at a time. Satie stated that major seconds (minor sevenths were inverted and received this label), perfect fourths, and perfect fifths are best, and that they can sometimes be diminished or augmented, but that minor seconds, major sevenths, thirds, sixths, and octaves are forbidden. The result is that each of the seven scale degrees can sound against one of a group of two to four other scale degrees that form the acceptable interval below that scale degree. More accompanying notes that form the acceptable intervals below a specific degree improve that particular degree's status. Those degrees that can be accompanied by as many as four notes that fit the condition are labeled 'good', while those with only two, such as 4 and 7 are labeled 'weak', as seen in Example 2.



Ex. 2. Transcription of Satie's sketch immediately before the draft of his second *Nocturne* (Orledge 1984, 175).

Satie's intervallic preferences bring his harmonic language to life in the first phrase of his second *Nocturne*. With two exceptions, he followed his principles of avoiding thirds and sixths in the phrase. Ultimately, his preference for dissonant fourths, seconds, and sevenths, resulted in the moderately dissonant chords of Hindemith's group III being the most common, and forming the base level of dissonance in the work, as I pointed out in an earlier essay (Amato 2010). Chromatic pitches to D major are rare, and Satie retained his intervallic preferences to accompany these foreign notes, as seen in measures 5 and 7 in Example 3.

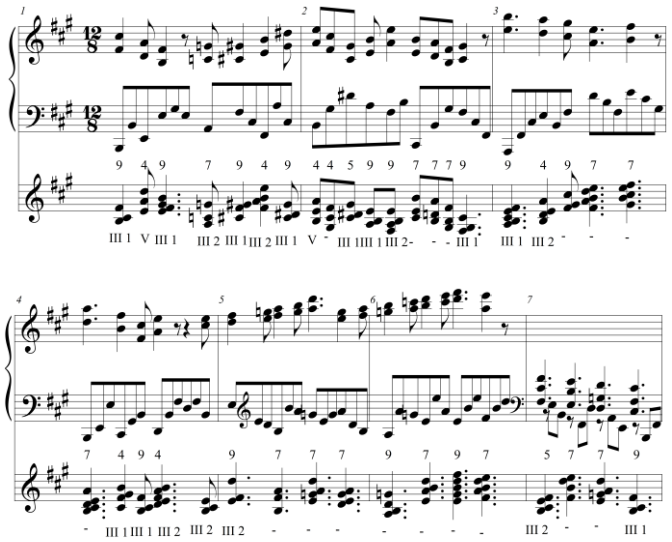


Ex. 3. Satie, 2e *Nocturne*, mm. 1–7. Dominance of group III sonorities.

This phrase implies D major tonality. A 5-line descent in D major is in the foreground, although the dissonant intervals cause a misalignment between the notes of the descent and the typical harmonizations.

As he progressed toward the fourth *Nocturne*, Satie's focus on intervals evolved into devising a group of pentatonic sets, still consisting of notes of the D-major scale. Courtney Adams argues that Satie's intervallic preferences mostly remain intact from the earlier *Nocturnes*, with the addition of thirds, noting that Satie mostly uses the same intervals between outer-voice tones as he had done in the sketched system for using intervals the second *Nocturne* (Adams 1995, 464).

Chords of Group III are the normal level of harmonic tension in the fourth *Nocturne*, despite the slightly more frequent chromaticism than before. In the outer voices, it is the rare perfect fourths that provide the timbral contrasts with the less harmonic sevenths and ninths in the work's opening 'A' section, as seen in Example 4. I underscore this contrast by classifying the chords whose outer-voice intervals form perfect fourths as indeterminate, quartal harmonies of Group V. This contrast in timbre is especially evident in that Satie harmonizes a high point of the melodic line (the E_5 on the downbeat of measure 2) with a chord from group V.



Ex. 4. 4e *Nocturne*, mm. 1–7.

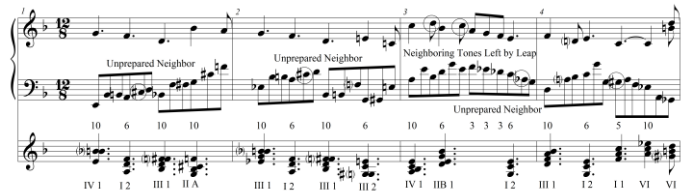
The uncertain tonality of the fourth *Nocturne* stands out among the five in the set, despite its restrained use of chromaticism compared to that in the fifth *Nocturne*. Satie places relatively higher melodic emphasis on B_2 in both the A section and the transitional B section by featuring them as goal tones of bass-voice descents and with occasional metric accent. He obscures this focus on B by accompanying it with dissonant chords, such as Group III in m. 7, as also seen in Example 4. Satie does occasionally hint at dominant-tonic motions through root movements that descend by perfect fifths but each one is obscured by the moderate dissonance level of groups III and IV.

The modality of the fourth Nocturne is also uncertain. Using B as a focal point, the G♯ of the three-sharp key signature hints at the Dorian mode, and the occasional, foreign D♯–E resolution suggests an A–Mixolydian mode. Ultimately, the lack of a distinguishing major or minor third in the group III sonorities rooted on B leaves the work's modality shrouded in mystery, but Satie's otherwise clear vision of the work's harmonic language in the sketch suggests that the unclear modality was deliberate.

Satie's freer and more deliberate use of chromaticism emerges in the predominantly higher level of tension in many passages of the fifth *Nocturne* when compared to the mostly steady level of dissonance in the earlier *Nocturnes*. Generally, the dissonance level in the fifth *Nocturne*'s first phrase (mm. 1–4) has a positive correlation; a sort of harmonic crescendo towards the end of the phrase, with the group VI chord at the end of m. 4, which occupies the pickup to the B section, as seen in Example 5. The few group I chords that allude to functional harmonic progressions in F major, as the key signature dictates, are all placed on weak beats, deemphasizing their tonal confirmation ability. Satie moves from the second-inversion D minor chord of group I to B-flat major on beat 3 of both m. 1 and m. 2. This would ordinarily suggest a submediant to subdominant harmonic motion, but the higher dissonance level of group III (so classified by the minor second between F and F♯) in both of the B-flat chords obscures the motion. In m. 3, beat 4, he emphasizes the group I sonority C

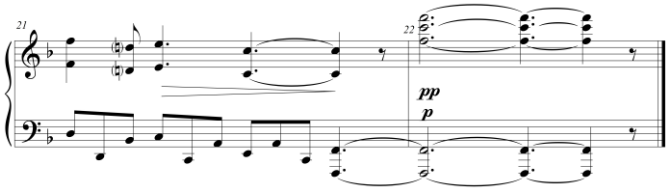
major in second inversion, which can function as a dominant that sets up the expectation of an F-major tonic. The D minor chord of group III that follows on m. 4, beat 1 obscures F-major tonality because it is both a deceptive resolution and another increase in dissonance. The phrase concludes with a V-I cadence on beats 2 and 3, respectively, but this cadence is obscured by the passing G♯ in the left-hand part along with the register shift in the melodic 5-line descent to the tonic pitch. Only in the final cadence does Satie confirm F-major tonality with an authentic cadence, with both the dominant and tonic sounding as consonant, tonality-defining chords (Hindemith 1942, 132) of group I.

Throughout this opening phrase, the obscured tonal progressions, increased chromaticism, and the resulting gravitation towards higher harmonic tension are offset by the exclusive use of consonant intervals between the outer voices, which are most often parallel tenths, but there are several alternations with sixths and one perfect fifth. Such consonant intervals mark a definite contrast with the harmonic language of the fourth *Nocturne* and its nearly exclusive dissonance between outer-voice tones.



Ex. 5. 5e *Nocturne*, mm. 1–4. Non-harmonic tones are identified and classified according to Hindemith's specifications. See Hindemith (1942, 164–174).

Despite the more frequent chromaticism of the fifth *Nocturne*, the work's tonality is clearer than that of the fourth *Nocturne*. Although Satie waits until the final two measures to confirm F-major tonality, he makes a relatively strong reference to the key, with an audible tonic-dominant motion, highlighted by the C–F motion in the bass at the end of m. 21, during a slowing of the tempo, seen in Example 6. In a general sense, this overt if belated tonal confirmation can serve as a definitive example of Hindemith's notion of ideal harmonic fluctuation: a return to the major triad from the instability of more dissonant chords.



Ex. 6. 5e *Nocturne*, mm. 21-22.

4. CONCLUSION

I have employed Hindemith's little-used analytical technique, harmonic fluctuation, in an attempt to underscore its practicality. Although Neumeyer (1986) and Harrison (2016), among others criticize it, they still employ it as a significant component in their analyses, if not a main component. The increased variety and importance of chord quality in post-tonal styles is mainly responsible for the practicality of harmonic fluctuation as an analytic parameter according to Harrison (2016, 46). With use of harmonic fluctuation, I provide insight into Satie's apparent increased confidence in the use of chromaticism as he progressed through the composition of *cinq Nocturnes*, which itself was a venture into a systematic style of composition. It was the direct attention to the effects of various intervals on post-tonal harmonic language that Satie and Hindemith had in common and Hindemith's systematic classification of sonorities by their intervallic content makes the link between the two composers apparent, despite their vastly different milieus.

KEYWORDS

Analytical Theory, Chromaticism, Instrumental Music, Post-Tonal Music.

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