

Post-Tonal Design Coherence in the *Supervillain Etudes* of Vincent Ho

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In his now-classic 1987 article “The Problem of Prolongation in Post-Tonal Music,” Joseph Straus decisively demonstrates that prolongation is not the mechanism by which post-tonal music achieves design coherence. Design coherence is a term proposed by the United States theorist Kevin Clifton (2023, personal correspondence) for the presence of foregrounding, middlegrounding, and backgrounding in music (especially post-tonal music). Straus (1987) proposes four conditions that must be met by any music to achieve true prolongation: a consonance-dissonance condition, a scale degree condition, an embellishment condition, and a harmony/voice-leading condition. Straus’s essential point is that post-tonal music rarely achieves all four conditions at once, and so true prolongation never occurs.

However, it is important to emphasize that Straus never says that *design coherence itself* is impossible in post-tonal music; he merely claims that prolongation is not the mechanism by which it is achieved. The present article maintains that the design coherence in post-tonal must be possible somehow; otherwise, post-tonal music would be nothing more than a music of surface only, and superficial. This strikes one as an unacceptable premise. This paper aims to demonstrate that design coherence indeed exists in post-tonal music.

This article explores one possible mechanism by which post-tonal design coherence is achieved: the creation of pitch-fields at foreground, middleground, or background levels, and the reinforcement of derivatives of those pitch fields at all other levels. Movements from the *Supervillain Etudes* by the Canadian composer Vincent Ho will be used here to explore this idea.

Of course, the search for design coherence in post-tonal music is not new. Many have proposed the existence of forms of prolongation in post-tonal music. Travis (1970), for instance,

attempts to find a $\#4-3-2-1$ *Urlinie* at work in the first movement of Bartók's Fourth String Quartet. This is not so bad—after all, this is the cell that Antokoletz (1984) dubs the “y-cell,” one of three all-important cells at play in the movement. However, this attempt does not really hold up in view of Straus's must-meet conditions for achieving true prolongation.

Meanwhile in the same year, Lester (1970) proposes what he calls a “proximity principle” for determining post-tonal consonance and dissonance. Lester maintains that if one can do this (i.e., determine a post-tonal distinction between consonance and dissonance), then one can find post-tonal prolongation. The “proximity principle” (which maintains that ic1 steps have the capacity for strong ornamentation and ic2 steps have the capacity for weak ornamentation) is accompanied by what Lester calls a “division tone,” a tone that divides an interval into equal or nearly equal parts, which may be used as a quasi-passing tone. Seemingly, this would pass muster with two of Straus's conditions (the consonance-dissonance condition and the embellishment condition), but it still fails to suffice to achieve the other two conditions.

In 1976, Morgan proposes that dissonances under certain circumstances can be prolonged, and cites examples in Schenker to show it. He extends this principle to post-functional (but still tonal) pieces by Liszt, Wagner, and Scriabin, and finds dissonant prolongations therein. However, Morgan stops short of analyzing non-tertian post-tonal works.

Wilson in 1984 applies Forte's set-theoretic constructions to multiple layers in his analysis of Bartók. That idea influences the present article very much, but Wilson argues that nesting (recursive structures of sets at various hierarchical levels) suffices to achieve prolongation per se. Nesting is not among Straus's four conditions for prolongation to exist. Furthermore, Wilson's analysis seems not survive a possible accusation of cherry-picking to find

the structures he wants as to demonstrate nesting. There appear to be no segmentation principles overtly stated in his analysis.

In 1989, following the publication of Straus's "The Problem," Lerdahl offers his own approach to "atonal prolongational structure." Lerdahl adapts the theory outlined in *A Generative Theory of Tonal Music* to post-tonal music. Therein, salience conditions create a series of binary evaluations such that tree-like pathways take the analyst further and further into the background of the work. As a means of post-tonal design coherence, this is fine, but again falls short of achieving prolongation per se, as the salience conditions themselves do not comport to all four of Straus's conditions for the existence of prolongation.

Morrison (1991, 179) declares the debate over post-tonal prolongation to be "far from over," four years after Straus (1987). In the final movement of Bartók's Fourth String Quartet, Morrison identifies tendency tones. If one has tendency tones, then one has a consonance-dissonance condition, because tendency tones are inherently dissonant and must resolve. From this, Morrison derives a kind of prolongational schema. However, Morrison does not address the other three conditions beyond acknowledging that Straus asserted them four years prior.

In the same year, Pearsall (1991) argues that post-tonal pieces are inherently idiostructural, and find their own rules for prolongation. He writes:

Thus each atonal composition may be understood to generate its own structural foundation. Structurally prominent aggregate subsets are frequently identified in post-tonal compositions. These sets are extracted from local contexts where there is a uniqueness of interval content among adjacent pitches. Harmonic units as well as a structural hierarchy of pitches may therefore be identified by narrowing the scope of analysis to aggregate subsets. (Pearsall 1991, 348)

This too has influence on the present article. Still, Pearsall is describing design coherence, not prolongation. For instance, Straus's scale-degree condition is not met by Pearsall's idiostructures at all.

Väisälä (1999) attempts to locate all four of Straus's conditions in Schoenberg's Op. 19, No. 2. He locates consonance/dissonance and embellishment through proximity principles (similarly to Lester) and through the parameter of register. The harmony/voice-leading condition is met by the distinction between horizontal dissonances which the ear tolerates more readily than dissonant simultaneities, which the ear tolerates less well due to these falling within the critical band, an acoustic reality for human hearing in which proximate tone frequencies generate an immutable and non-contextual sense of dissonance. Finally, a transpositional relationship to a reference set for Väisälä constitutes a kind of post-tonal scale degree. Väisälä is successful in demonstrating these four conditions in the Schoenberg, but I am skeptical that a wider corpus of post-tonal works can be demonstrated to comport to Straus's four principles even with these more-liberal definitions (i.e., post-tonal transposition as a kind of scale degree) in play.

In somewhat more recent entries, Silberman (2006) develops a set of principles for the determination of neighbor notes in a neo-tonal context; Losada (2009) finds that chromatic saturation and gap-fill principles can determine the structurality of post-tonal passages; Newton (2014) demonstrates that harmony can be functional even in the absence of tonality; and Buchler (2019) articulates principles for determining ornamentation in general in post-tonal music. All these ideas promote the existence of design coherence in post-tonal music.

It is important and necessary to emphasize that design coherence does not necessarily equate with strict unidirectional hierarchy. The terms background, middleground, and foreground are loaded by Schenkerian analysis with the assumption that the background is

superior, the middleground is less superior, and the foreground is inferior. Furthermore, the term “hierarchy” itself is loaded and entails unfortunate overtones of ideas of social order, especially in conjunction with some of the more odious contentions of Heinrich Schenker. In the schema proposed by this article, the backgrounds, middlegrounds, and foregrounds of post-tonal music are thought to be multi-lateral and mutually reinforcing. Foreground phenomena may influence background events *and vice versa*. Post-tonal music is too fluid and multivalent to be constituted strictly as the unidirectional unfolding of some kind of orthodox background. United States composer Aaron Bielish likens this phenomenon instead to that of armature in the visual arts (2023, personal correspondence): the foreground, middleground, and background simultaneously coexist and reinforce each other. This is in direct opposition to Schenker’s unidirectional claim that “musical coherence can be achieved only through the fundamental structure in the background and its transformations in the middleground and foreground” (Schenker 1935/1979, 6, cited in Ewell 2023, 109).

However, one might object with the contention that layering in and of itself does not constitute design coherence *per se*. What is the case for multi-tiered design coherence in post-tonal music at all? What if we really do hear post-tonal music as a succession of one-note-after-another-in-a-stream? How do we know structural moments in post-tonal music when we hear them? The late United States theorist Thomas Clifton in *Music as Heard* (1983) approaches music phenomenologically, and believes that multiple levels exist regardless of the harmonic landscape:

It is important to remember here that while discussion of dimensional thickness implies a foreground-middleground relationship, it does not necessarily follow that such relationships lie only within Schenker’s theory of structural levels. On the contrary, the latter resides within the general notions of spatial level and dimension, *which transcend any contingent compositional style* [emphasis added]. (Clifton 1983, 24)

Clifton (hereafter all references to Clifton are to Thomas Clifton) goes on to find “middleground consonance” in both Mahler’s *Das Lied von de Erde* and Carter’s Piano Concerto. “Here [in Carter’s concerto], the strings present a thick, opaque band or wall of sound which offers a different instance of spatial homogeneity. Dissonance is experienced as the confrontation of this wall with the piano sounds which seem to bounce off it” (Clifton 1983, 24). In other words, a middleground principle of consonance and dissonance obtains; therefore, we can infer the legitimacy of the middleground structural level in Carter’s concerto.

Clifton also conceives of phenomena that have resonances with the idea of structural levels in post-tonal music: he calls these *undifferentiated surfaces*, *surfaces with low relief*, *surfaces with middle relief*, and *surfaces with high relief*. Undifferentiated surface is a tripartite absence of any movement, contrast in dynamics, and timbral complexity. A low-relief texture is a texture that entails the any combination of the following characteristics: line, and line “adheres to the surface rather than detaching itself and going its own way” (156); slight amplitude modulations of prolonged pitches; changes of timbre only when other parameters are held constant; time “in the guise of rhythmic pulses” (157). Middle-relief surfaces entail changes of both contour and timbre. An example of this Clifton cites are “crowded” surfaces giving way to more “open” surfaces (157). Silence too emerges as a determinant of the sense of relief at the middle-relief surface level (163). At this level it is possible to hear that

...the music of our time has succeeded in achieving a kind of texture in which musical atoms (pitches and intervals) and dualisms (melody and harmony, dissonance and consonance, diatonic and chromatic) become absorbed in an overall background, so that what one hears in a great deal of contemporary music *is* background brought up close [emphasis original], with projections consisting of fragments, or bits and parts—one might even say memories—of individuals. (Clifton 1983, 166-168)

A surface with high relief is a “stable ground” (172) upon which is projected a figure of “doubtless individuality” (172) that still exhibits some relationship to the ground. This kind of surface necessitates a certain amount of what Clifton refers to as depth. Depth is a matter of distance between musical artifacts (182); penetration of musical artifacts into musical space (p. 186), especially by silence (189); and multidimensional linear forms (p. 194). There is not enough space here to do justice to Clifton’s deft and complex formalizations of these concepts. The important point is that in Clifton’s phenomenological world, different strata of hierarchical events obtain. Surfaces with high relief involve musical artifacts that can be said to incorporate multivalent dimensions of sonic apprehension, particularly multidimensional linear forms. In the case of the latter, clearly Clifton posits that adjacent notes nevertheless carry different weights that make some of the notes in the adjacency more important than others (e.g., see 200).

Another scholar who finds multivalent design coherence in post-tonal time streams is Canadian composer-theorist Arlan Schultz, who maintains:

Now, within the substance of this differential time, there exist meaningful hierarchical levels on which temporal perception may be manifested. These levels of time projection within the materiality of the music are what interact in varying degrees of presence with the external perceptions of clock/observed time to stratify and enrich the experience of time in music. (Schultz forthcoming, 2-3)

Schultz identifies four phenomena that differentiate designs in musical time: *formal succession*, *gesture*, *figure*, and *processual gesture*. Formal succession is the widest span upon which time is projected; Schultz deploys the seven movements of Beethoven’s Op. 131 string quartet as the quintessential example. Each movement is underpinned by a key scheme that resembles a viable large-scale functionally tonal progression (i-bII-iv to V/VI-VI-III-v to V-i) (5). Gesture features “timbre, pitch, contour, dynamic level, etc.; each working together to reinforce a span of experience which is sufficiently constant and suggestive and succeeds in

defining its functionality with a reasonable degree of credibility” (5). A figure is “the most elemental level on which temporal perception is manifest” (6), and furthermore, “represent[s] the material substance of musical discourse (shape, contour, articulative constellation, etc.)” (7). Finally, processual gesture is the “unfolding” of music and a process of “becoming” that is in operation “when multiple processes are in operation simultaneously or when a multiplicity of expressive information is present on the surface of the music. However, *background processes may transpierce the density of the simultaneously presented vectors of expressive information of the surface carapace such that momentary conjunctions of meaning clarify the processual vector as it unfolds* [emphasis added]” (8). In other words, we may perceive background processes and foreground processes at once in the same gesture, which again is an admission of the idea of multiple perceptible layers in time.

It has long been proposed that in the absence of functional tonality, non-pitch parameters are promoted to become determinants of form and structure. As United States theorist Patricia Howland (2015, 71) notes, “In works of the postwar period, parametric functions often replace traditional thematic processes as the structural elements of musical form.” Elsewhere she writes (2015, 74), “Parametric analysis has been widely used to determine large-scale form in post-tonal music.”

Howland (2015) proposes the *integrated parametric structure* or IPS. Howland identifies five IPS types, each of which are capable of inscribing swaths of music of various sizes and durations. The five IPS types Howland identifies are *tension/release*, *departure/return*, *symmetry*, *directionality*, and *steady-state*. The tension-release IPS relies particularly on parametric information. She writes:

The creation and manipulation of tension is, of course, the fundamental basis of tonal phrases; in post-tonal IPSs, this effect relies on parametric rather than tonally directed

processes. Musical tension is generated by high or increasing magnitudes in one or more parameters and is released by a reduction of magnitudes. In most cases, the parameters involved are spatial and temporal density, register, and dynamics. (Howland 2015, 75)

The segments she identifies as tension-release IPSs are fairly wide (e.g., see her Example 2, 2015, 76). The second IPS, departure/return, also relies on “parametric” rather than “harmonic” contrast (2015, 78). The example she provides of Stockhausen’s *Kontra-Punkte* is more modest in length, but this is presumably done because of the limited journal space allotted to graphic examples. One supposes that departures and returns can traverse expanses of music of arbitrary lengths, provided that the parametric signifiers that mark the return are exceedingly clear in their referential packing.

About symmetry, she writes:

Symmetry may occur in the familiar form of a pitch structure (that is, a pitch segment is then presented in reverse order), but it also may occur in other parameters such as register or dynamics, where it takes on the characteristics of a contour in that parameter. The perception of a forward-then-backward process within a given parameter provides the means of coherence. When it occurs in a non-pitch parameter with a contour of <increase, decrease>, symmetry is closely related to tension/release. (Howland 2015, 78)

Here too is an IPS that can presumably traverse passages of music of arbitrary length. One imagines totalities of pieces that are simple retrogrades in some parametric dimension (e.g., a piece that builds up as one large *crescendo*, and then tapers off dynamically to the end as a large-scale *diminuendo*).

She defines directionality as an overall “unidirectional series of parametric changes, that is, a process of either increasing or decreasing values in one or more parameters” (2015, 71). Again, a directional IPS as Howland suggests the term could traverse totalities of pieces (one thinks of the simple, unidirectional dynamic profile of Ravel’s *Bolero* for instance). Her Example 7 shows considerably wide sections of music marked with directionality in Carter’s

String Quartet No. 2 (2015, 83-84).

Finally, steady-states also traverse wide swaths of music. A steady-state is “a condition of relative stasis” (2015, 86). Her Example 10, again drawn from Carter’s second quartet, shows a lengthy steady-state in the domains of dynamics, temporal density and register working in consortium (2015, 88).

That we can find these parametric structures governing expanses of music of variable length speaks to the degree to which we must admit that multi-tiered hierarchies exist. While Ravel’s *Bolero* builds from very soft to very loud over the course of the piece, the instruments still play their individual passages with local-level attention to dynamics, articulation and phrasing. So the parameter of *volume* is attended to at least at a foreground and background level at once. A post-tonal analogue might be Schoenberg’s *Farben*, whose dynamics are subtler than the Ravel, certainly, but which trades almost entirely on the parameters of tone color and dynamic across the totality of the piece. In *Farben* there is an incredibly subtle build-up of dynamic, texture, and tension, which then dissipates, accounting for the long arc of the movement. Meanwhile, also-subtle local-level gradations of dynamic permeate Schoenberg’s score. Here too, then, we see at least a foreground and background concept of dynamic in play.

Proposed Analytical Method

This method proposes analysis in four dimensions: the Clifton phenomenological approach, the Schultz time-frame approach, the Howland IPS approach, and traditional Forte set theory. First, the four broad categories Clifton identifies (undifferentiated states, surfaces with low relief, surfaces with middle relief, and surfaces with high relief) can be cross-pollinated with the four categories Schultz identifies (formal succession, gesture, figure, and processual gesture) as to create sixteen discrete categories of identifiable partitioning phenomena.

Category 1. Undifferentiated Surfaces x Formal Succession: an absence of any movement, contrast in dynamics, and timbral complexity that spans the widest possible swath of music. The deepest singularity that survives to the background of a movement or piece would qualify as a Category 1 phenomenon.

Category 2. Surfaces with Low Relief x Formal Succession: The deepest background entails a few, but not very many, musical elements. Each element therefore would qualify as a Category 2 phenomenon.

Category 3. Surfaces with Middle Relief x Formal Succession: The deepest background entails many musical elements. Each element constitutes a Category 3 phenomenon.

Category 4. Surfaces with High Relief x Formal Succession: The deepest background entails an abundance of elements. Despite this, no further backgrounding is possible. Each element constitutes a Category 4 phenomenon.

Category 5. Undifferentiated Surfaces x Gesture: This is “timbre, pitch, contour, dynamic level, etc.; each working together to reinforce” a particularly broad span “which is sufficiently constant and suggestive and succeeds in defining its functionality with a reasonable degree of credibility.” Because this entails a broad span, but not the entirety of the piece, this category describes a singularity or collection of notes, unified by some parameter, that survives to a deep middleground span.

Category 6. Surfaces with Low Relief x Gesture: This is “timbre, pitch, contour, dynamic level, etc.; each working together to reinforce a” wide but not completely broad span “which is sufficiently constant and suggestive and succeeds in defining its functionality with a reasonable degree of credibility.” This describes a singularity or collection of notes, unified by some parameter, that survives to a deep middleground span, but not as deep a middleground span as

Category 5.

Category 7. Surfaces with Middle Relief x Gesture: This is “timbre, pitch, contour, dynamic level, etc.; each working together to reinforce a” moderate span “which is sufficiently constant and suggestive and succeeds in defining its functionality with a reasonable degree of credibility.” This describes a singularity or collection of notes, unified by some parameter, that survives to a shallow middleground span.

Category 8. Surfaces with High Relief x Gesture: This is “timbre, pitch, contour, dynamic level, etc.; each working together to reinforce a” small span “which is sufficiently constant and suggestive and succeeds in defining its functionality with a reasonable degree of credibility.” This describes a singularity or collection of notes, unified by some parameter, that survives to a shallow middleground span, even more shallow than Category 7.

Category 9. Undifferentiated Surfaces x Figure: This is an elemental level which entails very few musical events in the foreground, unified by shape, contour, or articulative constellation.

Category 10. Surfaces with Low Relief x Figure: This is an elemental level which entails a few musical events in the foreground, unified by shape, contour, or articulative constellation.

Category 11. Surfaces with Middle Relief x Figure: This is an elemental level which entails a goodly number of musical events in the foreground, unified by shape, contour, or articulative constellation.

Category 12. Surfaces with High Relief x Figure: This is an elemental level which entails an abundance of musical events in the foreground, unified by shape, contour, or articulative constellation.

Category 13. Undifferentiated Surfaces x Processual Gesture: This occurs “when

multiple processes are in operation simultaneously or when a multiplicity of expressive information is present on the surface of the music” but which simultaneously entails background importance, and very few musical events. The amalgam in total appears on the surface but survives to the background of the work by virtue of the multiple processes in operation, and is therefore ultimately a background event.

Category 14. Surfaces with Low Relief x Processual Gesture: This occurs “when multiple processes are in operation simultaneously or when a multiplicity of expressive information is present on the surface of the music” but which simultaneously entails background importance, and a few musical events. The events appear on the surface but survive to the background of the work by virtue of the multiple processes in operation, and are therefore ultimately background events.

Category 15. Surfaces with Middle Relief x Processual Gesture: This occurs “when multiple processes are in operation simultaneously or when a multiplicity of expressive information is present on the surface of the music” but which simultaneously entails background importance, and a fair number musical events. The events appear on the surface but survive to the background of the work by virtue of the multiple processes in operation, and are therefore ultimately background events.

Category 16. Surfaces with High Relief x Processual Gesture: This occurs “when multiple processes are in operation simultaneously or when a multiplicity of expressive information is present on the surface of the music” but which simultaneously entails background importance, and a goodly number musical events. The events appear on the surface but survives to the background of the work by virtue of the multiple processes in operation, and are therefore ultimately background events.

Example 1 gives a chart that summarizes the sixteen categories.

Example 1

	Formal Succession	Gesture	Figure	Processural Gesture
Undifferentiated States	Background Category 1	Deep Middleground Category 5	Foreground Category 9	Background Category 13
Surfaces with Low Relief	Background Category 2	Deep Middleground Category 6	Foreground Category 10	Background Category 14
Surfaces with Middle Relief	Background Category 3	Shallow Middleground Category 7	Foreground Category 11	Background Category 15
Surfaces with High Relief	Background Category 4	Shallow Middleground Category 8	Foreground Category 12	Background Category 16

Chart Summarizing Sixteen Categories

Next, I propose deploying the sixteen categories above as modifiers of the phenomena inscribed by Howland’s IPSs. Thus, one can speak of a “Category 11 Directionality,” for instance. Example 2 (Howland’s Example 6, 2015, 82) shows a Category 11 Directionality in Milton Babbitt’s *Composition for Four Instruments*. The directionality entails the registral expanse upward of some extracted notes coinciding with the downward expanse of other notes. The directionality is labeled Category 11 by me because it is a foreground phenomenon (lacking multiple parametric operators to promote the event to the background) and entails a fair number of musical events. Furthermore, there is a directionality identified by Howland in that the leaps become wider as the passage goes on.

Example 2 (Howland's Example 6)

(a)

Segment: $\langle +3 \rangle$ $\langle -3 \rangle$ Three equal durations

(b)

(c)

3 16 10 13 17 3 10 18 26 3 19 23 26

Mm. 5-9 from Milton Babbitt's *Composition for Four Instruments*

Finally, to address the pitch dimension, this method proposes to deploy traditional Forteana set theory with the Clifton/Schultz/Howland strictures applied. My own mild criticism of Forteana set theory, as constituted originally in 1973 with the publication of the classic *The Structure of Atonal Music*, is that it does not adequately address the issue of layering or stratification in post-tonal music. Now with the Clifton/Schultz/Howland approach, stratification in post-tonal music vis-à-vis set theory can be approached logically and not arbitrarily.

Vincent Ho

This paper will employ the aforementioned method to analyze two *Supervillain Etudes* by the Canadian composer Vincent Ho.

Vincent Ho is a multi-award winning composer of orchestral, chamber, vocal, and theatre music. His works have been described as “brilliant and compelling” by The New York Times and hailed for their profound expressiveness and textural beauty, leaving audiences talking about them with great enthusiasm. His many awards and recognitions have included three Juno Award nominations, Harvard University's Fromm Music Commission, The Canada Council for the Arts' “Robert Fleming Prize”, ASCAP's “Morton Gould Young Composer Award”, four SOCAN Young Composers Awards, and CBC Radio's Audience Choice Award (2009 Young Composers' Competition).

During the period of 2007-2014, Dr. Ho has served as the Winnipeg Symphony Orchestra's composer-in-residence and had presented a number of large-scale works that have generated much excitement and critical praise. His *Arctic Symphony* has been described "as a beautiful work that evokes the Far North in a very special way" (John Corigliano), and "a mature and atmospheric work that firmly establishes Ho among North American composers of note" (Winnipeg Free Press). His percussion concerto, titled *The Shaman*, composed for Dame Evelyn Glennie was hailed as a triumph, receiving unanimous acclaim and declared by critics as "Spectacular" (The New York Classical Review), "A powerhouse work" (The Winnipeg Free Press), and "Rocking/mesmerizing...downright gorgeous" (The Pittsburgh Gazette). His second concerto for Glennie titled *From Darkness To Light*, Ho's musical response to the cancer illness, was lauded as "a lasting masterpiece of sensitivity and perception" (Winnipeg Free Press). His cello concerto, *City Suite*, composed for Canadian cellist Shauna Rolston, has received similar praise with critics calling it "Thrilling" (Windsor Star) and "Overflowing with striking ideas...The most successful piece heard at this year's Festival" (Classical Voice America).

Born in Ottawa, Ontario in 1975, Vincent Ho began his musical training through Canada's Royal Conservatory of Music where he earned his Associate Diploma in Piano Performance. He gained his Bachelor of Music from the University of Calgary, his Master of Music from the University of Toronto, and his Doctor of Musical Arts from the University of Southern California. His mentors have included Allan Bell, David Eagle, Christos Hatzis, Walter Buczynski, and Stephen Hartke. In 1997, he was awarded a scholarship to attend the Schola Cantorum Summer Composition Program in Paris, where he received further training in analysis, composition, counterpoint, and harmony, supervised by David Diamond, Philip Lasser, and Narcis Bonet. (Ho 2023, para. 1-3)

A Word About the Graphic Approach to Follow

It is unfortunate that any graphic approach to layering in music will inevitably conjure the specter of that graphic progenitor and ardent racist Heinrich Schenker. I want to in no uncertain terms distance myself from the idea that the layering my graphs show are in any way linked to the hierarchical ideas of Schenker. As Philip Ewell decisively demonstrates in his book *On Music Theory*, Schenker's ideas of human hierarchy and musical hierarchy are inextricably linked. However, I point out that layering is not unique to Schenker, or even to music. Layering, and the concepts of mutually reinforcing foregrounds, middlegrounds, and backgrounds, also

exist in the visual arts. It is to them that my ideas about layering and stratification in music owe, more than to the anthropomorphically racist musical hierarchies of Schenker.

C4twoman

Straight away, here is a background graph of Vincent Ho's lurid, villainous movement for left-hand-alone piano, *C4twoman*, from his *Supervillain Etudes*. In this graph, pitch fields are presented in linear fashion for better legibility (Example 3). These pitch fields are chosen on the basis of being a Category 3 directionality in the dimension of voice-leading. (Remember, Category 3 indicates that the deepest background entails many musical elements.). Slurs (solid and dotted) indicate stepwise motion, with solid slurs indicating literal stepwise motion and dotted slurs indicating stepwise motion with octave displacement. Backgrounded pitch material entails clear noteheads and thick beams; middlegrounded pitch material entails filled-in noteheads with thick beams; backgrounded pitch material entails filled-in noteheads with thin beams. Also, full pc-sets are listed to the observer can see subset relationships at once (e.g., that the [0167] set is readily observable as a subset of [012678]); the background set that is the "parent set" of a given subset is always identified in parenthesis, e.g., "016 (2)" if Background Set 2 is [0167]. Because foreground, middleground, and background are multi-lateral, the analysis can proceed with identifying background first.

Example 3

The image displays a musical score for Example 3, consisting of two systems of music. The first system features a treble clef staff at the top with measure numbers 3, 14, and 21. Below it is a bass clef staff with musical notation and guitar fingering diagrams. The diagrams show fret numbers 013478 (circled 1), 012458 (circled 2), and 013478 (circled 1). The second system features a treble clef staff with measure numbers 23, 26, and 32. Below it is a bass clef staff with musical notation and guitar fingering diagrams. The diagrams show fret numbers 0148 (circled 3), 0148 (circled 4), and 0148 (circled 5). Dashed lines connect the diagrams between systems, indicating a sequence of fret changes.

Background Graph of Ho, *C4twoman*

Example 3 (cont.)

Musical score for Example 3 (cont.) showing two staves. The top staff is in treble clef and the bottom staff is in bass clef. The top staff has notes with accidentals and a slur over measures 41, 42-43, and 57. The bottom staff has notes with accidentals and fingerings (6, 7, 8) indicated in circles. The notes in the top staff are: 41: G4, A4, B4, C5; 42-43: G4, A4, B4, C5; 57: G4, A4, B4, C5. The notes in the bottom staff are: 6: G2, A2, B2, C3; 7: G2, A2, B2, C3; 8: G2, A2, B2, C3.

Background Graph of Ho, *C4twoman*

The piece opens with six notes: D2, G#2, D3, F3, F#3, and A3. This gesture is then repeated in the second bar (Example 4).

Example 4

Musical score for Example 4 showing piano accompaniment. The score is for Piano and includes the instruction "Seductive and mysterious" and "p". The tempo is marked "In and out of ♩ = 72". The score shows two bars of music with notes and fingerings (6, 7, 8) indicated in circles. The notes in the top staff are: 6: G4, A4, B4, C5; 7: G4, A4, B4, C5; 8: G4, A4, B4, C5. The notes in the bottom staff are: 6: G2, A2, B2, C3; 7: G2, A2, B2, C3; 8: G2, A2, B2, C3.

Ho, *C4twoman*, Bars 1-2

However, I take this gesture as introductory rather than as structural for one reason: this gesture lacks any presence of an [048] cell, a cell that we will see pervades Ho's movement throughout. It is only when Ho adds the C#4 in the third bar (Example 5) that we can fully ascertain the presence of a [048] subset. The pervasive assertion of [048] throughout the entirety of the piece constitutes a Category 9 Steady-State when foregrounded, and a Category 1 Steady-State when backgrounded.

Example 5

In and out of ♩ = 72

Piano

Seductive and mysterious

p

mp

Ped.

Ho, *C4twoman*, Bars 1-3

The C#4 is marked by a new dynamic, emphasizing its importance relative to the repeated gesture figure. The full collection comprises a [013478] hexachord, of which the important trichord [048] is a subset. Ho plays with this figure throughout the first thirteen bars, and then at bar 13 provides a Bb3 that replaces C#4. The Bb3 enters first in bar 13, and then Ho provides the remaining gesture in bar 14. I take this amalgam as structural due to the agogic accentuation of the Bb3, as well as its relatively loud dynamic (*mf*). The confluence of agogic accentuation and dynamic constitutes a Category 15 Directionality (the *mf* recedes to *p* in the amalgam). This collection is highlighted in Example 6.

Example 6

The image shows a musical score for a piano piece. The score is written on a grand staff with a treble clef on the upper staff and a bass clef on the lower staff. The music consists of several measures. A specific section of the score, starting from the beginning of the second measure and ending at the end of the fourth measure, is enclosed in a rectangular box. This boxed section is labeled "Pitch Field 2" below it. The music in this section features a complex rhythmic pattern with many notes, including triplets and sixteenth notes. Dynamic markings include *pp* (pianissimo) and *mf* (mezzo-forte). The overall style is contemporary and rhythmic.

Ho, *C4twoman*, Pitch Field 2

This collection is a [012458] hexachord. It also entails a [048] trichord, and maintains a common [0148] tetrachord with the first collection. Ho varies the harmonic field to a point, but also retains elements in common. This represents a balance of variety and consistency.

Similarly, C#4 returns, agogically accented, and then reunited with the opening gesture in bars 19-21 (Example 7). Again, due to the presence of an accent and the agogic accentuation of C#4,

I take this moment as structural. It is a return of the first pitch field, and marked accordingly.

This constitutes a Category 15 Departure/Return (as the first pitch field reappears).

Example 7

The image shows a musical score for a piano piece, starting at measure 16. The score is written on a grand staff with a treble clef on the upper staff and a bass clef on the lower staff. The music consists of several measures. A specific section of the score, starting from the beginning of the second measure and ending at the end of the fourth measure, is enclosed in a rectangular box. This boxed section is labeled "Return of Pitch Field 1" below it. The music in this section features a complex rhythmic pattern with many notes, including triplets and sixteenth notes. Dynamic markings include *mf* (mezzo-forte), *p* (piano), and *mp* (mezzo-piano). The overall style is contemporary and rhythmic.

Ho, *C4twoman*, Return of Pitch Field 1

A third pitch field presents itself at bar 23: the freely rhythmic gesture is marked by register, dynamic, and sheer density of notes in a short length of time. This collection is given in Example 8. It is a Category 15 Steady-State.

Example 8

Pitch Field 3

Ho, *C4twoman*, Pitch Field 3

This collection is the all-important tetrachord [0148], which is also a subset of pitch fields 1 and 2. A similar gesture occurs in bar 26, which I take as structural due to the qualities of density, and the traversal of a wide range (Example 9). It is a Category 15 Steady-State.

Example 9

Pitch Field 4

Ho, *C4twoman*, Pitch Field 4

This four-pc collection is another [0148] collection, deploying different pcs than pitch field 3, but still maintaining similarity to all the structural pitch fields that have come before. Yet another similar gesture, pitch-dense and traversing a wide range, occurs at bar 32 (Example 10). I take this gesture as structural as well, constituting another Category 15 Steady-State.

marking, extreme register, accent, and agogic accent (Example 12). This is a Category 14 Directionality (*fff* moving to *sffz*).

Example 12

The image shows a musical score for piano, starting at measure 41. The key signature has one sharp (F#) and the time signature is 4/8. The score consists of two staves: a treble clef staff and a bass clef staff. The treble staff contains several chords with accents (>) and slurs. The bass staff contains a sixteenth-note run with a slur and a '6' below it, followed by a few more notes. A dynamic marking of *fff* is placed below the first chord. A boxed section, labeled 'Pitch Field 7', encompasses the final part of the piece, starting with a dynamic marking of *sffz* and ending with a final chord and a fermata. The boxed section also includes a bass clef staff with a few notes and a dynamic marking of *p*.

Pitch Field 7

Ho, *C4twoman*, Pitch Field 7

This hexachord is a [013458] collection. It entails a [0148] subset, just as pitch fields 1-6 do. The final collection I take as structural is the ending gesture, essentially because of its conclusive force (Example 13). It is a Category 15 Directionality (*p* to *pp*).

Example 13

The image shows a musical score for piano, starting at measure 56. The key signature has one flat (Bb) and the time signature is 4/8. The score consists of two staves: a treble clef staff and a bass clef staff. The treble staff contains a melodic line with a slur and a fermata. The bass staff contains a few notes, including a half note with a fermata. A dynamic marking of *pp* is placed below the first note of the melodic line. A boxed section, labeled 'Pitch Field 8', encompasses the final part of the piece, starting with a dynamic marking of *p* and ending with a final chord and a fermata. The boxed section also includes a bass clef staff with a few notes and a dynamic marking of *p*.

Pitch Field 8

Ho, *C4twoman*, Pitch Field 8

This collection represents a departure: it is a [012578] collection, departing from pitch fields 1-7 in that it does not entail a [0148] subset. It is as though Ho is surprising us at the end, twisting the proverbial knife, reminding us that C4twoman is, after all, a villain and not to be trusted. However, this collection does present an opportunity to forge a tripartite formal design based on background collections:

A:	013478	012458	013478
	pitch field 1	pitch field 2	pitch field 1
B:	0148	0148	0148
	pitch field 3	pitch field 4	pitch field 5
A':	03458	013458	012578
	pitch field 6	pitch field 7	pitch field 8

In this schema, the A section is devoted to larger structures: in this case hexachords. The B section is devoted exclusively to different presentations of a [0148] tetrachord. The A' section returns to larger collections (two hexachords and one pentachord). There are nine sections altogether in a 3 x 3 formal design.

The following graph, then, shows the foreground through the first 21 bars (Example 14). Notice how felicitously subsets of pitch field 1 emerge when pitch field 1 is in effect; then, when pitch field 2 is in effect beginning at bar 14, subsets of pitch field 2 emerge (particularly sets that

Example 14 (cont.)

The musical score consists of two systems, each with a treble and bass staff. The first system covers bars 9, 10, 11, and 12. The second system covers bars 13 and 14. The notation includes various guitar techniques indicated by numbers in parentheses: 013 (1), 048 (1), 026 (1), 01347 (1), and 012458 (2). The bass staff shows a melodic line with a slide in bar 14. The treble staff shows a melodic line with various bends and slides.

9 10 11 12

013 (1) 048 (1) 013 (1) 048 (1)

013 (1) 026 (1)

026 (1) 01347 (1)

13 14

0148 (1)

026 (1)

012458 (2)

Ho, *C4twoman*, Foreground Graph of Bars 1-21

Example 14 (cont.)

15 16 17 18

0145 (2) 016 (2) 026 (2) 013 (2)

0126 (2) 013 (2) 0148 (2) 026 (2)

026 (2)

19 20 21

048 (2) 012 (2) 024 (2)

013 (2) 014 (2)

013478
①

Ho, *C4twoman*, Foreground Graph of Bars 1-21

Following now (Example 15) is a middleground graph of *C4twoman*. Space considerations preclude a blow-by-blow accounting of the choices made in the construction of this graph. Suffice to say, there are myriad Category 5, 6, 7, and 8 Directionalites, Departure>Returns, and Steady-States.

Example 15

Example 15 is a musical score for guitar, presented in two systems. Each system consists of a treble clef staff with standard notation and a bass clef staff with guitar tablature. The score is divided into measures, with specific fret numbers and fingering instructions provided.

System 1:

- Measures 1-3: Bass clef staff has tablature 013478 with a circled 1 below it.
- Measures 4-8: Treble clef staff has notes with a bar over measures 4-6 labeled 0148 (1). Bass clef staff has tablature 01347 (1) with a circled 1 below it.
- Measures 11-13: Treble clef staff has notes with a bar over measures 11-12 labeled 048 (1) and a bar over measure 13 labeled 048 (1). Bass clef staff has tablature 013478 with a circled 1 below it.

System 2:

- Measures 14-21: Bass clef staff has tablature 012458 with a circled 2 below it. Treble clef staff has notes with a bar over measures 16-17 labeled 048 (2), a bar over measure 19 labeled 048 (2), and a bar over measure 20 labeled 014 (2). Bass clef staff has tablature 013478 with a circled 1 below it.
- Measures 23-32: Bass clef staff has tablature 0148 with a circled 3 below it. Treble clef staff has notes with a bar over measures 26-27 labeled 0148 with a circled 4 below it, a bar over measures 29-30 labeled 0148 (4), and a bar over measure 32 labeled 0148 with a circled 5 below it.

The score includes various musical notations such as slurs, ties, and dynamic markings. The tablature uses numbers 0-7 to indicate frets and circled numbers to indicate fingerings.

Ho, *C4*woman, Middleground Graph

Example 15 (cont.)

The musical score consists of two systems. The first system covers measures 33 to 41. The second system covers measures 42 to 57. The score is written for two staves: treble and bass. The bass staff contains several circled numbers: 5, 6, 7, and 8. These numbers are placed below the bass staff, corresponding to specific notes or groups of notes. Dashed lines connect notes across measures, indicating melodic or harmonic relationships.

Ho, *C4twoman*, Middleground Graph

I would propose a two-fold approach to performance practice: *C4twoman*'s character is both thorny and villainous, but she is also romantic and alluring. The chromatic sets that entail $ic1$ (e.g., [012], [013], [014], [0148]) can be approached with a sensibility of thorniness and sharpness (like a cat's claws). The sets that are subsets of the whole-tone collection (e.g., [024], [026], [048], [0248]) can be approached more gingerly, and brought out to represent the more seductive sensibility of the character.

J6ker

Thorny, cackling, and downright evil, these qualities of a certain clown prince of crime are brought to light in Ho's final Supervillain Etude. It is also the longest and arguably most

extensive of the Etudes. In the following foreground graph of the movement (Example 16), I identify no less than twelve distinct background sets that pervade the movement in terms of replications and subsets of those background sets. Space once again precludes a blow-by-blow accounting of every decision that went into the construction of the following graph, but certain observations can be made, which will be discussed following the presentation of the graph itself.

Example 16 (cont.)

38 39 40 41

01234 (4)

01234 (4)

012678

01368

45 46 47 48 49 50

0148 (3)

026 (6)

026 (6)

0148 (3)

01234 (4)

016 (6)

026 (6)

016 (6)

016 (6)

026 (6)

* 01234 (4)

* 01234 (4)

51 52 54 55 56 57

014 (4)

027 (6)

036 (6)

012 (4)

012 (5)

01234 (4)

0246 (2)

0167 (5)

016 (6)

013 (6)

014 (4)

8va-----

Ho, *J6ker*, Foreground Graph

Example 16 (cont.)

The musical score consists of five systems, each with a treble and bass staff. Measure numbers 96, 97, 98, 99, and 100 are indicated above the treble staves.

- Measure 96:** Treble staff has a guitar fretboard diagram with tablature `0123679`. Bass staff is empty.
- Measure 97:** Treble staff has a guitar fretboard diagram with tablature `0124578T`. Bass staff has a whole note chord with tablature `0246 (2)`.
- Measure 98:** Treble staff has a guitar fretboard diagram with tablature `0268 (2)` and `02468 (2) mdgd.`. Bass staff has a whole note chord with tablature `0148 (8) mdgd.` and `01 (1)`.
- Measure 99:** Treble staff has a guitar fretboard diagram with tablature `012346789`. Bass staff has a whole note chord with tablature `026 (2)`.
- Measure 100:** Treble staff has four guitar fretboard diagrams with tablatures `01468`, `01457`, `013569`, and `0167 (5)`. Bass staff has four whole note chords with tablatures `026 (2)`, `024 (2)`, `024 (2)`, and `025 (1)`.

Ho, *J6ker*, Foreground Graph

Example 16 (cont.)

101

0248 (2) 026 (2)

025 (1) 0136 (6) 0247 0268 (2) 013578

102 103 104 105 106 107 109

115 01245 (1) mdgd.

02357

0124578 0235 (1) mdgd. 0235 (10) mdgd.

121 01267 (5) 026 (2) 01234 (4) 122 01267 (5) 0137 0123 (4)

Ho, *J6ker*, Foreground Graph

Example 16 (cont.)

123 124 125

014 (1) 012 (1)

126 127 128

012345 (1) 015 (1) 015 (1) 013 (1) 015 (1) 013 (1)

026 (2) 013 (1) 013 (1) 02357 (10)

129

0347 0134 (1) 0235 (1) 0135 (1) 014 (1)

027 (10) 0125 (1) 01256 01245 (1) 016 (5) 0123 (1)

Example 16 (cont.)

The musical score consists of three systems, each with a treble and bass staff. Measure numbers 130, 131, 132, and 133 are indicated at the start of their respective systems. The notation includes various guitar-specific elements:

- Measure 130:** Treble staff has chords 037 (10) and 037 (10) with a *simile* instruction. Bass staff has chord 0156 (5). A slur connects the end of measure 130 to the start of measure 131.
- Measure 131:** Treble staff has chords 0148 (8), 013 (6), and 016 (6). Bass staff has chords 016 (6), 036 (6), and 0236.
- Measure 132:** Treble staff has chords 0148 (8), 014 (1), 026 (2), 01356, 037 (10), and 037 (10). A *8va* instruction is shown with a dashed line. Bass staff has chord 016 (6).
- Measure 133:** Treble staff has chord 0157 (5) and a *chrom.* instruction. Bass staff has chords 0135 (1), 0147, 016 (6), 0145 (1), 01245 (1), 0235 (1), and 01457.

Ho, *J6ker*, Foreground Graph

Example 16 (cont.)

134 135 0268 (2)

037 (10) 037 (10) simile

01267 (5)

136 138-139 140

037 (10) sim.

015 (1) 036 (6) 0146 012 (1) 012 (1)

012 (1) 012 (1)

141-148 sequences chromatically upward

sequences chromatically downward

146 147 148-156 157

chrom. chrom. chrom.

016 (5) 016 (5) 023679

016 (5) 016 (5)

chrom. chrom.

upper note: chromatic motion upward and downward

lower note: chromatic motion upward and downward

Ho, *J6ker*, Foreground Graph

Example 16 (cont.)

158-171 172 173 0248 (2) 174 012678 (5)

pitch wheels on those same pitch classes

indeterminate pitches

0156 (5)

01268 (5)

175 03458 0167 (9) 0246 (2) 176 012678 (5)

03458

0167 (9)

0246 (2)

012678 (5)

0268 (2)

02468T

048 (2)

177-178 179 0157

048 (8) 048 (8) sequence sequence

048 (8)

048 (8)

0157

sequence

sequence

048 (8)

048 (8)

0167 (5)

Example 16 (cont.)

180 181 182 183

0136 (6) 0167 (9) 027 (11)

Repeat m. 180 Repeat m. 181 Repeat m. 181

0136 (6) 0167 (9) 027 (11)

184-186 187

indeterminate pitches

12
02479

01 (1)

Ho, *J6ker*, Foreground Graph

Though, as said, space considerations preclude an event-by-event accounting of the choices made that go into the making of this graph, some observations nevertheless obtain. First, by far the greatest choices are made on the basis of parsimonious voice-leading. Many examples of (Category 12) Directionality in the voice-leading dimension abound. Rarely does any beamed set stand alone without connecting to some other event by common-tone or stepwise motion (particularly when one considers octave transfers to be equivalent).

Second, the first two background sets establish a contrast straight away: the first is a fully chromatic hexachord, 012345, while the second is a fully whole-tone pentachord, 02468. This reflects on the dual nature of the character of *J6ker*: the whole-tone side reflects the jovial nature of the character, while the much thornier chromatic set reflects the murderous and dangerous aspect of the character. Subsets throughout the piece often harken back to Background Sets 1 or 2.

Third, another favorite set is [0148], which appears as a Background Set twice: as Background Set 3, and as Background Set 8. Still another favorite set is [0167], Background Set 9. Both [0148] and [0167] are featured prominently in both *C4twoman* and *J6ker*. Both sets are interesting in their possible parsing. For instance, [0148] can be thought of as an augmented triad ([048]) with one chromatic inflection somewhere (01). It can also be thought of as two interlocking ic4 ([04]) and ic5 ([18]) intervals. The [0167] set can be thought of as two interlocking tritones ([06] and [17]) or as two interlocking ic5 intervals ([07] and [16]). These examples of parsing speak to the dualities that inhere in those particular tetrachords; as noted, both the *C4twoman* and *J6ker* characters have dual natures that should be brought out in performance practice.

Fourth, fidelity to the background sets in the foreground is a determinant of form for the *J6ker* movement. It follows a strict / freer / strict schema. From mm. 1-94 we see practically every foreground subset hueing as a derivative of some background set. At m. 95, the first non-derivative foreground set appears: [012569]. Thereafter, other non-derivative foreground sets appear as well (e.g., [0123679] at m. 96,][0124578T] at m. 97, [012346789] at m. 99, etc.). This freer tendency continues throughout until m. 136, when thereafter foreground subsets strictly hue

as derivatives of background sets once again. This reflects a ABA' sort of sensibility to the movement; note that at m. 95 there is an accompanying tempo change; likewise at m. 136.

Fifth, notice also how seamlessly the quotations fit into the parsimonious voice-leading and set-derivation schema. *Entrance of the Gladiators* by Julius Fucik and *Chopsticks* by Euphemia Allen emphasize intervallic content that is of a piece with the surrounding original material.

Altogether, the directional parsimonious voice leading, the contrast between chromatic and wholetone sets, the focus on favorite tetrachords which are easily parsed in different ways, the use of set derivation as a determinant of form, and the seamless inclusion of quotations all sum to a highly effective portrait of a devious and dangerous criminal mind. *J6ker* is without a doubt the most extensive of Ho's six Supervillain Etudes and the most far-reaching. Would that there could be more space to discuss the four other Supervillain Etudes (*R1ddler*, *2-Face*, *P3nguIn*, and *Poi5on Ivy*); perhaps a subsequent article can investigate these movements as well.

Conclusion

The purpose of this article has been twofold: first, to demonstrate a new approach to post-tonal design coherence; second, to apply that approach to two of the *Supervillain Etudes* of Vincent Ho. The article proposes that multivalent and mutually reinforcing sets and subsets can inform one another at the foreground, middleground, and background levels, and that these sets can be identified by deploying a hybrid of methodologies suggested by Clifton, Schultz, Howland, and Forte. When this is done, Ho's pieces reveal parsimonious voice-leading, taut relations between foreground, middleground, and background sets, and attention to set-derivation as a determinant of form. It is hoped therefore the approach outlined in this article can prove to be of use to further explorations in post-tonal repertory.

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