## Université de Montréal

# Formal function and phrase structure in contemporary music: Pierre Boulez's late solo works and Sean Clarke's Lucretia Overture and 4 Impromptus 

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## Résumé

Cette thèse présente une théorie de la fonction formelle et de la structure des phrases dans la musique contemporaine, théorie qui peut être utilisée aussi bien comme outil analytique que pour créer de nouvelles œuvres. Deux concepts théoriques actuels aident à clarifier la structure des phrases: les projections temporelles de Christopher Hasty et la théorie des fonctions formelles de William Caplin, qui inclut le concept de l'organisation formelle soudée versus lâche (tight-knit vs. loose). Les projections temporelles sont perceptibles grâce à l'accent mis sur les paramètres secondaires, comme le style du jeu, l'articulation et le timbre. Des sections avec une organisation formelle soudée ont des projections temporelles claires, qui sont créées par la juxtaposition des motifs distincts, généralement sous la forme d'une idée de base en deux parties. Ces projections organisent la musique en phrases de présentation, en phrases de continuité et finalement, à des moments formels charnières, en phrases cadentielles. Les sections pourvues d'une organisation plus lâche tendent à présenter des projections et mouvements harmoniques moins clairs et moins d'uniformité motivique.

La structure des phrases de trois pièces tardives pour instrument soliste de Pierre Boulez est analysée : Anthèmes I pour violon (1991-1992) et deux pièces pour piano, Incises (2001) et une page d'éphéméride (2005). Les idées proposées dans le présent document font suite à une analyse de ces œuvres et ont eu une forte influence sur mes propres compositions, en particulier Lucretia Overture pour orchestre et 4 Impromptus pour flûte, saxophone soprano et piano, qui sont également analysés en détail.

Plusieurs techniques de composition supplémentaires peuvent être discernés dans ces deux œuvres, y compris l'utilisation de séquence mélodiques pour contrôler le rythme harmonique; des passages composés de plusieurs couches musicales chacun avec un structure de phrase distinct; et le relâchement de l'organisation formelle de matériels récurrents. Enfin, la composition de plusieurs autres travaux antérieurs a donné lieu à des techniques utilisées dans ces deux œuvres et ils sont brièvement abordés dans la section finale.

Mots clés: les fonctions formelles, la structure des phrases, les projections temporelles, l'organisation formelle soudée versus lâche, Pierre Boulez, les idées de base.


#### Abstract

This thesis will outline a theory of formal function and phrase structure in contemporary music, which can be used as both an analytical tool and applied to create new works. The theory builds on the work of two contemporary theorists: Christopher Hasty's concept of durational projections and William Caplin's theories of formal function and tight-knit vs. loose formal organization. Durational projections are made perceptible through an emphasis on secondary parameters such as playing style, articulation, and timbre. Tight-knit sections feature clear projections that are created by regularly switching between contrasting motives, usually in the form of a two-part basic idea. These projections help shape entire sections into presentation, continuation and cadential phrases,


giving them a sense of coherence and structure independent of traditional formal types. Sections with looser organization lack the clear projections, motivic uniformity and cogent harmonic motion that more tight-knit passages display.

The phrase structure of three late solo works by Pierre Boulez are analyzed: Anthèmes I for violin (1991-1992) and two piano works, Incises (2001) and une page d'éphéméride (2005). The ideas put forth in this paper arose out of an analysis of these works and consequently had a strong influence on my own compositions, particularly Lucretia Overture for orchestra and 4 Impromptus for flute, soprano saxophone and piano, which are also analyzed in detail. Several additional compositional techniques can be discerned in these two works, including the use of melodic threads to control the harmonic rhythm; sections with multiple musical layers, each with a distinct phrase structure; and loosening the formal organization of recurring material. Finally, the composition of several other earlier works gave rise to the techniques used in these two works and are succinctly discussed in the final section.

Keywords: formal function, phrase structure, durational projections, tight-knit vs. loose formal organization, Pierre Boulez, basic ideas.

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## 1. Introduction

This thesis will outline a theory of formal function and phrase structure in late $20^{\text {th }}-$ Century and early $21^{\text {stt }}$-Century post-tonal music, which can be used as both an analytical tool and applied to create new works. The theory builds on the work of two contemporary theorists: Christopher Hasty's concept of durational projections and William Caplin's theory of formal function. After a brief overview of these ideas the phrase structure of three late solo works by Pierre Boulez are analyzed: Anthèmes I for violin (1991-1992) and two piano works, Incises (2001) and une page d'éphéméride (2005). The ideas put forth in this paper arose out of an analysis of these works and consequently had a strong influence on my own compositions, particularly Lucretia Overture for orchestra and 4 Impromptus for flute, soprano saxophone and piano.

Several additional compositional techniques can be discerned in these two works, including the use of what I will call melodic threads to control the harmonic rhythm; superimposed musical layers with distinct phrase structures; and loosening the formal organization of recurring material. Finally, the composition of several earlier works gave rise to the techniques used in these two works and are succinctly discussed in the final section.

I had initially proposed a large song cycle on texts by John Donne for my doctoral project. My burgeoning interest in phrase structure, Boulez's late work and Caplin's theory of formal function led me to change my project in order to focus on formal issues without the aid of a text: one work for large ensemble and another for chamber ensemble. This also allowed me to take advantage of the university's extensive composer-in-residence
program, which offered myriad instrumental ensembles to work with but fewer opportunities with solo vocalists.

During my previous degrees I found it difficult to arrange live performances of my works, so this was a top priority for me during my doctoral studies. I did not want to miss out on any more opportunities to learn from live performances, during which unsuccessful experiments in instrumental effects, pacing and formal design immediately become painfully (and very usefully) clear. Live performances fast track the learning process if one is willing to honestly compare the desired effect with the actual acoustic result.

I chose to focus on Boulez's late works for several reasons. During my first year at the University of Montréal I became aware of the school's tradition of Boulez scholarship, established by Jean-Jacques Nattiez and continued by Jonathan Goldman. I began reading Dr. Goldman's book The Musical Language of Pierre Boulez and listening to Boulez's post-1975 pieces. ${ }^{1}$

The combination of a clear and flexible phrase structure, motivic economy, and perpetual variation in Boulez's later works greatly appealed to me as a composer. I had focused heavily on harmony during my master's degree and was now trying to better control harmonic rhythm, as well as give individual sections clear, distinct characters. I was also striving to improve the phrase structure of my compositions and to create clear differences between structurally stable and instable sections. This is what drew me to Boulez, where I found a fascinating example of sophisticated phrase structure in a posttonal language.

[^0]Concurrently, I also began studying William Caplin's Classical Form and trying to apply some of his formal concepts to my own compositions, particularly the idea of tightknit vs. loose formal organization. ${ }^{2}$ As I studied Boulez's Anthèmes I, I began to intuit that the phrase structure shared common ground with some of Caplin's theories. I decided to change my research project to instrumental music and investigate phrase structure in contemporary music more carefully.

Phrase structure is a multifaceted concept that incorporates motivic content, phrase length, harmony, and the way in which phrases relate to each other to build a coherent form. William Rothstein offers a concise definition of phrase structure that also helpfully distinguishes it from hypermeter.

At levels larger than the single measure, musical rhythm comprises two analogous but distinct components: hypermeter and phrase structure. Hypermeter refers to the combination of measures on a metrical basis...including both the recurrence of equal-sized measure groups and a definite pattern of alternation between strong and weak measures. Phrase structure refers to the coherence of musical passages on the basis of their total musical content - melodic, harmonic, and rhythmic. ${ }^{3}$

There are echoes here of Lerdahl and Jackendoff's distinction between grouping (the perception-based segmentation of a sequence of events into discrete "chunks") and meter (a recurring pattern of weak and strong beats). ${ }^{4}$ Due to the lack of metric regularity and repetition in much contemporary music, hypermeter is far less relevant than in tonal music. This paper will therefore focus exclusively on phrase structure as a means of clarifying form.

[^1]Section 2 briefly outlines the concepts of durational projections and formal functions, which are then applied to the phrase structure of Boulez's later solo works in Section 3. This section serves to clarify my approach to phrase structure in contemporary music, which greatly affected my compositional process. It therefore serves two purposes: to outline my analyses of Boulez's solo works and to shed light on concepts that I adopted into my own musical language.

I outline characteristics of Boulezian basic ideas; how durational projections are created; examples of tight-knit and loose formal organization; the effects of durational projections in Boulez's musical language; process as phrase structure; and the blurring of rhythmic regularity and its effect on projections and harmony.

In Section 4 I apply this theory of phrase structure to my own works, in which I employ basic and contrasting ideas; create durational projections; manipulate multiple levels of phrase structure; blur the phrase structure with imitative entries; control harmonic rhythm by using what I term melodic threads; and loosen the formal organization of repeated material. A brief overview of similar techniques in my other portfolio works follows in Section 5, along with the conclusion.

## 2. Background

### 2.1 Overview

Several authors have noted that starting in the 1970s Boulez began to concern himself with the perceptual challenges posed by modern music. ${ }^{5}$ Boulez's new compositional approach is not a straightforward matter of a simplified musical language, but rather the use of a wider range of musical complexity, from the simplest of textures in which every detail is easily perceivable, to extremely complex textures in which it is impossible to absorb every musical event. A quote from Boulez's 1975 conversations with Célestin Deliège is particularly illuminating.

I also like to create a contrast between structures that are extremely clear and those that are so overloaded that they cannot possibly be assimilated. In a passage that is obvious, simple and clear, you assimilate a hundred percent of what is said because all the articulations can be easily distinguished - the direction of the music, its general form, and so on. On the other hand, in an extremely complex passage the superimpositions are sometimes so dense that they cancel each other out, and ultimately give only an overall impression. This contrast between really total perception and an overall perception where details are lost is one of the things that mean the most to me. ${ }^{6}$

Though this passage is principally concerned with textural contrast, a similar emphasis on clarity vs. complexity also extends to matters of harmony, duration and motivic unity in Boulez's late solo works. The quote also serves as an eloquent description

[^2]of tight-knit vs. loose formal organization, an intriguing formal concept used by William Caplin that I explore in the next section of this paper. ${ }^{7}$

Abandoning a heavy reliance on purely serial techniques to bring coherence to a work, Boulez began employing several compositional strategies to aid in the perception of musical form: signals, ${ }^{8}$ thematicism, and techniques inspired by electroacoustic music. ${ }^{9}$ In addition to these techniques, phrase structure plays a pivotal role in shaping Boulez's later works.

Since Anthèmes I, Incises and une page d'éphéméride all use phrase structure to confront the challenges that modern music poses for perception, they are in many ways the antithesis of what Stockhausen called "moment time" music. ${ }^{10}$ Jonathan Kramer describes moment time as a type of music that "avoid(s) functional implications between moments;" ${ }^{11}$ where "a starting gesture is not very different from a stopping gesture;" ${ }^{12}$ and he quotes Stockhausen who states that "a given moment is not merely regarded as the consequence of the previous one and the prelude to the coming one, but as something individual, independent, and centered in itself, capable of existing on its own." ${ }^{13}$ While Boulez's early pieces are not necessarily moment time works, they do share many of the characteristics listed above.

[^3]Indeed, Christopher Hasty singles out Boulez's Le Marteau sans maître (1953/1955) as a shining example of non-metrical or barely metrical music that presents still further challenges to perception by avoiding clear phrase articulations or groupings. He states that along with "a suppression of meter... it is the suppression of the 'segmented' phrase that seems to be the decisive factor in concentrating our attention on what Stockhausen called the 'consecrated moment'.."14

Fred Lerdahl also uses Le Marteau as a representative example of a work in which there is no clear relationship between the "compositional grammar" (in this case serial procedures), and the "listening grammar" (a mental representation of the work). ${ }^{15}$ Lerdahl argues that even though Boulez made intuitive choices with the serial material based on his inner listening, these choices have no effect on the compositional grammar itself but instead help shape the sequence of events in the finished work.

The fact that one can argue in favour of phrase structure as a perceptual aid in Boulez's later works at all is a testament to the radical stylistic transformations his music has undergone. The later solo works are better described as linear, which Kramer defines as "the determination of some characteristic(s) of music in accordance with implications that arise from earlier events of the piece., ${ }^{16}$

As examples in Chapter 3 will show, the three works analyzed present functional implications between moments and entire phrases; they often contain distinct starting and stopping gestures that clarify the phrase structure; and a given moment can be heard as the

[^4]consequence of the previous one and has a distinct effect, metrically and rhythmically, on the music that follows.

I do not try to uncover Boulez's intentions, nor do I insist that what I find in the music was consciously put there during the act of creation (what Jean-Jacques Nattiez calls the poietic dimension of a work). My analysis rests entirely on the published scores (the trace) and does not take into account any sketches or early drafts. Normally this would constitute an analysis of the neutral level, which takes into account neither the poietic dimension nor the esthesic dimension (the potential meaning that a listener might ascribe to the work). ${ }^{17}$ I am, however, acutely interested in the esthesic dimension and employ two theoretical concepts that explicitly examine music's effect on the listener: the durational projections of Christopher Hasty ${ }^{18}$ and William Caplin's concept of formal function. ${ }^{19}$

Durational projections occur on several hierarchical levels, from individual motives to entire phrases, and have a marked effect on how music is perceived in real time. Hasty himself applies this theory to a wide range of musical styles ranging from the music of Monteverdi to Babbitt. Caplin's theory of formal function, meanwhile, is based on the instrumental repertoire of the Classical period but can be successfully adapted to post-tonal works, particularly the concept of tight-knit versus loose formal organization. After exploring how these two theories apply to Boulez's music, I present a third concept that seeks to explain sections that do not rely on either projections or formal functions. Instead, large-scale formal processes govern the phrase structure of these passages.

[^5]
### 2.2 William Caplin's Formal Functions

Caplin's theory of formal functions grows out of the Formenlehre tradition, which emphasizes the temporality of musical form rather than static groupings based largely on thematic content. Musical form is a dynamic process that unfolds in time, and music can be organized in such as way as to give the impression that "something is beginning, that we are in the middle of something, and that something has ended. ${ }^{22}$ These temporal functions can operate on several hierarchical levels simultaneously; for example, we can speak of the beginning of a coda, or the end of an opening section.

While much of Caplin's work is style-specific, the idea of musical form as a dynamic temporal process is not. Furthermore, this approach to form emphasizes issues of perception similar to those Boulez has engaged with in his works and writings since the 1970s. Among the most pertinent concepts are phrase functions and tight-knit vs. loose formal organization.

On the local level, three phrase functions correspond to the temporal feelings of beginning, middle and end: presentation, continuation and cadential function, respectively. Presentation function "create[s] a solid structural beginning for the theme by establishing its melodic-motivic content in a stable harmonic-tonal environment." ${ }^{24}$ Phrases with presentation function often begin with what Caplin calls a basic idea, a unit which "is small enough to group with other ideas into phrases and themes but large enough to be broken down (fragmented) in order to develop its constituent motives" ${ }^{25}$

[^6]Continuation function "destabilizes the prevailing phrase-structural, rhythmic, and harmonic context (as defined by the presentation)". ${ }^{26}$ Continuation phrases are therefore in dialogue with a preceding presentation phrase. Finally, cadential function "brings closure to the theme and is characterized by tonal confirmation...and the conversion of characteristic motives into conventional ones (liquidation)". ${ }^{27}$

A distinction must be made between phrase functions and phrase types. In Caplin's theory, a "presentation phrase" refers to a phrase type, which is distinct from the formal function of a phrase. I will dispense with this distinction and always refer to phrase function, since conventional phrase types do not occur in the works discussed in this paper. A presentation phrase will therefore refer to a phrase with presentation function.

Another illuminating concept developed by Caplin (following Schoenberg and his pupil Erwin Ratz) is the aforementioned idea of tight-knit vs. loose formal organization. ${ }^{28}$ A number of musical parameters are used, sometimes in tandem, sometimes in opposition, to vary the degree of tight-knit vs. loose organization. They include tonality, cadential weight, harmonic stability, grouping structure, functional efficiency, motivic uniformity and formal conventionality. ${ }^{29}$ The parameters that prove most useful in the post-tonal context of Boulez's later solo works are cadential weight, harmonic stability (and the closely related issue of the clarity of harmonic progressions), grouping structure, functional efficiency, and motivic uniformity.

[^7]Cadential weight refers to the relative amount of closure present at the end of a phrase or section. For instance, a passage finishing with a perfect authentic cadence will be more tightly-knit than a similar unit that ends with a half cadence or evades cadential closure.

Harmonic stability in a tonal context favours progressions that prolong the tonic over those that prolong the dominant or are sequential. A symmetrical grouping structure creates a more tightly-knit section than an asymmetrical grouping structure. Caplin defines functional efficiency as follows: "formal units that express their component functionality in an efficient manner are more tightly-knit than are those whose functions obtain a degree of redundancy through repetitions, extensions, expansions, and interpolations. An ambiguity of formal function, of course, also gives rise to a looser organization. ${ }^{30}$ Finally, motivic uniformity refers to the amount of motivic diversity in a passage.

To these parameters I add the relative clarity of harmonic progressions and durational projections. Clear durational projections, as defined in Section 2.3, create a more tight-knit formal organization than a section where such projections are ambiguous. The same is true regarding the relative clarity of harmonic progressions or voice leading.

The concept of tight-knit versus loose organization is therefore dependent on several interrelated factors and serves as a kind of rough spectrum onto which one can place and compare different sections of a work. For instance, the main theme of a classical work will most likely be much more tightly-knit than much of the development section, since the former will tend to be harmonically stable, begin and end in the home key, feature a high degree of motivic uniformity, and possess a symmetrical grouping structure.

[^8]It is also important to note that what constitutes tight-knit or loose formal organization varies not just by historical period but also from work to work by the same composer, particularly in contemporary music. It can be rewarding to find and define both the most tight-knit section and the loosest passage of a particular work in order to define the spectrum of formal organization particular to that work. On a more detailed level, it can also be helpful to identify the most tight-knit and loose version of a specific motive or basic idea. This allows the analyst to see at a glance how far the musical idea is transformed with respect to its formal organization.

### 2.3 Christopher Hasty's Durational Projections

Hasty's approach to meter and rhythm stresses the fluid and incomplete nature of experienced music. He holds that music is in a constant state of becoming, and it is all too easy to treat rhythm as an atemporal set of measurements. Even meter is treated as rhythm, flexible and expressive, rather than as a fixed, rigid periodic system. ${ }^{31}$ In contemporary music with frequently changing time signatures, the inherent expressivity of meter is perhaps more apparent than in traditional music where it is a constant, yet even then Hasty stresses "the uniqueness of each rhythmic experience, which necessarily includes meter, which he refers to as its durational and metrical particularity.,32

This description comes from Justin London, a proponent of a competing theory that sees meter as "a musically particular form of entrainment or attunement, a synchronization of some aspect of our biological activity with regularly recurring events in the

[^9]environment. ${ }^{, 33}$ London's theory differs most markedly from Hasty's in its insistence on temporal invariants on different time scales, rather than on a continuous durational unfolding that incorporates both rhythm and meter. London states: "once we have established a pattern of temporal attending we maintain it in the face of surprises, noncongruent events, or even contradictory invariants. Music often depends on our making an effort to project and maintain an established meter in passages that involve things like syncopation and hemiola. ${ }^{, 34}$ For Hasty, both the meter and the rhythmic events, whether congruent with the established meter or not, are dynamic processes that create specific durational expectations for the listener.

In Hasty's view, then, the length of a musical unit is not a neutral, abstracted proportion, but creates durational projections as the music unfolds: "the second event is, from its beginning and throughout the entire process of becoming, a reproduction of the duration of the first event." ${ }^{\text {"36 }}$

If the duration of the first event is replicated in the second, then the projection is realized and the two events sound balanced. If the second event ends sooner than expected, the projection has been denied and there is a sense of contraction. If the second event lasts longer than the first event, the projection is deferred and there is a feeling of expansion.

In Example 1, $Q^{I}$ represents the projected value of the quarter note $(\mathrm{Q})$, which would be fulfilled by an event beginning at *. $\mathrm{R}^{\mathrm{I}}$ represents a larger projection, which takes the second quarter note not as a denial of its durational projection but simply as a

[^10]continuation of the projection. In this way there can be simultaneous projections of different lengths (complex projections). ${ }^{37}$


Example 1: Complex projection, from Christopher Hasty's Meter as Rhythm, Example 9.3.

A further example demonstrates how the denial or deferral of durational projections can affect how we perceive a musical passage (Ex. 2). ${ }^{38}$ In Example 2a, the second dotted quarter note seems to come too late in relation to the rhythmic content established in the first bar. Example 2 b shows a similar situation where the second dotted quarter note now occurs sooner than expected based on the rhythmic content of the first bar.

[^11]

Example 2: Perceptual consequences of denied and deferred projections, from Christopher Hasty's Meter as Rhythm, Example 10.1a and 10.1b.

One last example shows how one set of projections can quickly be denied and replaced with another set of durational values (Ex. 3). ${ }^{39}$ Projection $\mathrm{P}^{\mathrm{I}}$ is denied because projection R is established by the pair of dotted eighth notes. These dotted eighths cannot be easily reconciled with the previous projection, so they replace it. The way the listener perceives the second measure depends in large part on hearing the first, which projects specific durational values onto the second. Hasty describes the situation as follows:

Contrast arises from departure, but there is no departure apart from reproduction. If there is divergence, it is divergence only with respect to reproduction or correspondence. If the second measure comes to differ greatly from the first and does not develop projective correspondences with the first, the first measure, as measure, can lose relevance for what the second is now becoming. Since the two measures ... are immediately successive, the first will necessarily have some relevance for the second, but if the divergence of projections is too great, as in [Ex. 3], the metrical or projective organization of the first measure will not be corroborated and the projection will be denied. In [Ex. 3], although the second measure is "objectively" equal in duration to the first, it will not, I think, be easily heard as ... a realization of the first measure's projective potential. ${ }^{40}$

[^12]

Example 3: Competing durational projections, from Christopher Hasty's Meter as Rhythm, Example 10.1d.

Hasty's approach to rhythm and meter emphasizes the way we actually experience music, flowing through time, as opposed to an abstracted view that looks at sections or entire pieces "as a whole". As a phrase unfolds, it creates particular durational, metric and rhythmic expectations for what might come next. These expectations are continually refined and re-examined as the music continues; that is, as they are fulfilled, delayed, or denied. Durational projections occur on many levels: those created by small motives, by pairs of contrasting motives, by full phrases, and by groups of phrases. Of course the larger the projective unit, the less precise it will necessarily be. It is far easier to accurately grasp a short durational projection (a quarter note at 90 MM for instance) than a longer one (an entire phrase spanning several bars). As Hasty points out, however, though "our feeling of quantity may be quite imprecise [regarding large spans of time]...we should not discount real feelings of adequacy (of the "about right" sort) that clearly share the character of projections. ${ }^{41}$

There are several other advantages to using durational projections to analyze structure. Firstly, it frees the analyst from having to rely on the notated measure as the

[^13]most convenient and appropriate unit of measurement for phrase lengths. Often, especially in contemporary music where the metre is constantly changing, notated bars are a misleading and clumsy unit of measurement. Furthermore, music of all styles frequently consists of phrases that do not precisely correspond with notated measures. Hasty explains that "although the bar is often a favourable environment for projection, projection itself is not limited to the bar and does not require a homogenous train of pulses., ${ }^{42}$

Secondly, the theory emphasizes the importance of both meter and the rhythmic content of the meter in projecting precise durational values onto subsequent measures. Both sets of durations work in tandem: "the rhythmic particularity of a bar will be inseparable from its metrical particularity. ${ }^{, 43}$ The expectations created by these projections are crucial not just because they affect a phrase's formal function, but also because they act as an important expressive tool. Following Leonard Meyer, ${ }^{44}$ David Huron has argued persuasively that the manipulation of musical expectations is one of the most powerful ways in which music is capable of being expressive. ${ }^{45}$

Huron identifies three types of expectations: schematic expectations "that arise from general knowledge of how events typically unfold - such as a familiarity with the "language" of jazz"; ${ }^{46}$ veridical expectations "that arise from past knowledge of a familiar sequence of events - such as familiarity with a particular work"; ${ }^{47}$ and dynamic expectations that "arise 'on the fly.' These expectations are shaped by immediate

[^14]experience, as when exposure to a novel work causes a listener to expect similar passages as the work continues. ${ }^{, 48}$

Durational projections are a form of dynamic expectations: a projection is based entirely on the context in which it appears, and the expectations that are created are specific to that particular work, indeed, to that particular passage. Dynamic expectations are especially important in works where schematic expectations do not play an important role, such as the works considered here. In these pieces expectations based on traditional phrase structure conventions have been jettisoned. For example, after a four-bar antecedent phrase in a Classical minuet we might reasonably expect a consequent phrase of equal duration for two reasons: first, because of the durational projection of the antecedent phrase itself, and second, because of learned conventions about this style of music that have taught us to expect balanced phrases at the beginning of dance movements. In much contemporary music all bets are off, and we must rely almost wholly on dynamic expectations, many of which are created by durational projections.

Leonard Meyer identifies a similar concept that he terms intraopus norms. Distinctive timbres, patterns of duration and pitch, or pitches in a specific register can acquire formal importance within an individual work if they are repeated or made especially prominent. Meyer states: "once established, intraopus elements function as indigenous patterns or as "sonic centers" from which other elements deviate or depart and to which they tend to return., ${ }^{, 49}$ These intraopus norms do not need to originate from a common musical language or established compositional system, but instead "arise from the

[^15]interaction between a temporary sonic "imprinting" and the kinds of continuing cognitive proclivities investigated by Gestalt psychology., ${ }^{50}$ While Meyer focuses on atemporal musical elements such as motives and distinctive timbres and harmonies, the concept of intraopus norms could easily be expanded to included temporal events such as durational projections. Individual pieces create both temporal and atemporal expectations unique to the work itself, including expectations based on the duration of future events.

[^16]
## 3 Analysis - Phrase structure in Boulez's late solo works <br> 3.1 Boulezian Basic Ideas

Several tight-knit sections in Anthèmes I, Incises and Une page d'éphéméride begin with something comparable to Caplin's definition of a basic idea. ${ }^{51}$ In the works studied here, Boulezian basic ideas are invariably made up of two short, distinctive motives. Each motive is differentiated by a unique melodic contour, articulation, dynamic level, playing style, and/or tempo. These parameters combine to create what Boulez calls an enveloppe. ${ }^{52}$ Often both motives have the same rhythm, though their grouping structure normally differs. Importantly, one motive is usually more harmonically stable than the other. Finally, the initial presentation of a basic idea is almost always relatively tight-knit, featuring a balanced phrase structure and presented with a high degree of functional efficiency.

Sections with more than two distinct motives tend to have a looser formal organization since the order of the motives is constantly varied and unpredictable, and the level of motivic uniformity is lower; there are therefore no instances of three- or four-part basic ideas. There is also no predictable pattern to when a tight-knit section with two-part basic ideas will appear in a work; the formal organization of each work is distinct.

[^17]

Example 4: Basic idea of the final section of Anthèmes $I$ (mm. 144 - 145).

Example 4 is taken from Anthèmes $I$. The two contrasting motives are balanced in length and possess numerous characteristics that easily distinguish them (despite having similar rhythms and levels of harmonic stability): a distinct playing style, articulation type, internal grouping structure, dynamic level, and melodic contour.

Example 5 shows a similarly balanced basic idea from Incises; each motive again has a characteristic articulation type, internal grouping structure, dynamics and melodic contour. Furthermore, Motive A emphasizes E-natural and is more harmonically stable than Motive B.


Example 5: Basic idea of Section 6 of Incises (p. 14).

An example from Une page d'éphéméride (Ex. 6) relies on the sostenuto pedal to differentiate the timbre of the two motives. When the breath mark is taken into account the two motives are essentially of equal length.


Example 6: Basic idea of section 2 of Une page d'éphéméride (p. 4).

The phrase structure of the basic idea in Example 7 is unbalanced: motive A is six eighth-notes long while motive $B$ is only three. However, the basic idea is then repeated with the proportions reversed to create a balanced pair.


Example 7: Basic idea of section 3 of Une page d'éphéméride (p. 6).

## Initiating and Concluding Motives:

Two further types of motives create a sense of opening and closure on the local level: initiating motives and concluding motives. A motive only acquires a specific formal function when it is consistently used to initiate or conclude a clear formal unit throughout a given work or section. Such a motive cannot appear at other points of a piece in a nonfunctional manner or its role as a formal marker will be diluted. Furthermore, an initiating or concluding motive always has a unique melodic profile that distinguishes it from the basic idea of a given section.

For example, initiating and concluding motives frame each of the fast sections in the second half of Incises (Ex. 8).


Example 8: Initiating and concluding motives of section 4 of Incises (pp. 11-12).

### 3.2 Creating Durational Projections

The structure of Boulez's basic ideas helps to create clear durational projections. Since each motive has a unique profile, a change from one motive to another creates a clear beginning, which defines the duration of the preceding event and projects that duration into the future. For instance, projection $R^{1}$ in m. 145 of Example 9 is created when the start of motive B signals a definite change of character and creates a new beginning. The duration R in m .144 is thus clearly established and projected onto the
following passage as $R^{1}$. By building phrases out of pairs of contrasting motives (that is, out of basic ideas), Boulez is able to create clear durational projections by continually creating new beginnings.


Second concluding gesture
Example 9: Durational projections in the presentation phrase of the final section of Anthèmes (mm. 144-147).

### 3.3 Tight-knit formal organization

The most tight-knit sections in Boulez's late solo works feature clear durational projections which help give phrases equally clear presentation, continuation, or cadential formal functions. We will consider these one by one, using the end of Anthèmes $I$ as a model. Figure 1 shows the phrase structure of the last section while Example 10 shows the annotated score.

## Presentation Phrase

The presentation phrase ( mm . 144-147) lays out the main material of the section in an efficient, balanced manner, beginning with a basic idea featuring symmetrical motive lengths. Each motive is given a specific harmonic function: Motive A creates harmonic
stability by emphasizing the central pitch of the work, D-natural; Motive B creates harmonic motion by shifting away from the central pitch. Two emphatic concluding gestures end the phrase and create a closed formal unit.

## Continuation Phrases

The continuation phrases destabilize the phrase structure and harmonic rhythm as established by the presentation phrase. Asymmetric motive lengths predominate, which create a multitude of denied and deferred projections.

- Destabilizing the phrase structure:

In the first continuation phrase (mm. 148-150) the basic idea begins to contract, with motive B decreasing in length. The following phrase (mm. 151-152) features a fragmented A motive and a greatly expanded B motive.

In the third continuation phrase (mm. 153-154) both motives are fragmented, while the fourth continuation phrase features durational contractions and expansions. This complex fourth phrase is in three parts: two fragmented basic ideas preceded, surprisingly, by initiating motives, followed by a longer basic idea that echoes the opening presentation phrase in its length and by ending with a concluding motive (though its basic idea is still asymmetrical).

## - Destabilizing the harmonic rhythm:

The first continuation phrase maintains the harmonic functions set out in the presentation phrase, while in the second phrase these harmonic functions are reversed: motive A now provides harmonic variety and motive B emphasizes D-natural.

The third continuation phrase creates a kind of harmonic arc: it begins on D , moves away to C and D-flat then returns to D. A similar but larger-scale arc is found in the fourth continuation phrase as the harmonic focus shifts from D to F-sharp/G to E and back down to $D$. The harmonic function of each motive, and of the basic idea as a whole, is established in the presentation phrase before being developed and destabilized in the continuation phrases.

## Cadential Phrases

A process of motivic and harmonic liquidation gives the final phrase (mm. 161-165 of Ex. 10) a clear cadential function that brings closure to both the section and the work as a whole. Caplin defines motivic liquidation as "the conversion of characteristic motives into conventional ones,, ${ }^{53}$ while I propose harmonic liquidation to mean the gradual revelation of structural, anchor-like pitches, with more ornamental pitches falling away.

The last phrase begins with an initiating gesture and a version of the basic idea. Motive B, however, is greatly expanded and slowly transforms into a simple sustained tone, the very definition of a conventional closing gesture. This process also increasingly emphasizes the central pitch D-natural as other pitches melt away.

In some respects the entire final section features elements of motivic liquidation. Motives A and B share the same rhythmic values and are therefore more "conventional" than the highly diverse, "characteristic" motives R, S, T and U of the second-to-last section, analyzed below in part 3.4: Loose Formal Organization.

[^18]Within this overall tight-knit section the presentation phrase is the most tight-knit on the local level: the basic idea has a symmetrical grouping structure that is laid out with maximum functional efficiency, and clear harmonic functions are established. The continuation phrases, on the other hand, feature irregular phrase structures due to fragmented and expanded basic ideas, which destabilize and develop the harmonic functions of each motive. These differences give the presentation phrase and continuation phrases a very different feel, with the former sounding more stable than the latter.

Presentation Phrase
(Basic idea (motives $A$ and $B$ ) $t$


Example 10: Final section of Anthèmes I (mm. 144-160).


Figure 1: Phrase structure of the last section of Anthèmes $I$ (mm. 144-165).

Figure 1 also shows the durational projections created within each basic idea. Further projections are of course also created, both between entire basic ideas as well as between Motive B of one basic idea and Motive A of the next. However, the projections shown above are especially prominent since they clarify exactly how each basic idea has been altered. Each phrase derives its distinct character from how the basic ideas within it have been transformed.

For instance, the basic ideas in the second continuation phrase (mm. 151-152) create a sense of significant expansion because each Motive A projects a short, one- to two-beat duration onto the following passage. These small projections are easily denied and eclipsed by the much longer B motives, which last seven to eight beats each. This effect is distinct from that of the third continuation phrase (mm. 153-154), where a small sense of expansion is followed by a balanced basic idea.

The second continuation phrase (mm. 151-152) therefore has a different temporal feel than the third continuation phrase (mm. 153-154); the former features two projections that are definitively and dramatically denied, while the latter features one briefly deferred projection and one realized projection.

### 3.4 Loose formal organization

In contrast to the final section of Anthèmes $I$, the second-to-last section features much looser formal organization due to several elements: less motivic uniformity (four distinct motives vs. two); unpredictable motive order; ambiguous large-scale harmonic motion; and shifting tempi and frequent rests that frustrate the creation of clear projections and disrupt any sense of continuity (Ex. 11 \& 12). Clear presentation, continuation and cadential phrases are absent. On a higher hierarchical level the entire section could be considered to have continuation function due to its structural instability compared to more tight-knit passages.

Each motive has a harmonic and formal function: Motive $U$ creates a sense of closure through its melodic and dynamic contour, expressive markings (calme, régulier), and the repetition of the central pitch, D-natural. Motive R emphasizes and prolongs specific pitches, while Motive S pivots from one prominent pitch to another. For example, Figure 2 shows how Motive $R$ emphasizes first $G$ then A-flat, with Motive $S$ functioning as a harmonic pivot: it reiterates the most prominent pitch from the preceding passage and introduces the next focal pitch. Figure 3 shows a further reduction of the voice leading. Finally, Motive T provides a sense of harmonic stability by consistently highlighting Dnatural. (In Figures $2-5$, the pitch that appears most often within a given motive is represented by a white diamond note-head, while the next most common pitches are represented by black note-heads. Pitches that occur only once, and are therefore the most ornamental in nature, are excluded.)

Now if the section as a whole consisted of only Motives R and S, without any other motives, rests or tempo changes separating them, this passage would have a very tight-knit formal organization. Figure 5 shows the clear voice leading between these two motives. A pitch is prolonged in Motive R and then Motive S pivots towards the next pitch. In reality, however, Motives U and T constantly and unexpectedly interrupt this clear harmonic process, obsessively bringing the focus back to D-natural. The rests and tempo changes further disjoint the passage. Furthermore, the harmonic motion between motives $R$ and $S$ begins to be interrupted by phrase boundaries. Figure 4 shows the resulting phrase structure.

This penultimate section lacks the motivic uniformity, rhythmic continuity, clear projections and lucid harmonic motion of the tight-knit final section we examined earlier. The function of this loosely organized section is precisely to be unstable, unpredictable, and formally complex.

Boulez writes that "the complexity and simplicity of the context is just as important as the part played by duration and for the same reason: sharpness of perception., ${ }^{54}$ The degree of tight-knit vs. loose formal organization has a dramatic effect on how simple or complex a section appears to the listener.

[^19]

Example 11: mm. 113-117 of Anthèmes $I$.


Figure 2: Phrase structure of mm. 113-117 of Anthèmes $I$.


Figure 3: Harmonic reduction of mm. 113-117 of Anthèmes I.


Example 12: mm. 113-143 of Anthèmes $I$.


Figure 4: Phrase structure of mm. 113-143 of Anthèmes $I$.


Figure 5: Harmonic reduction of mm. 113-143 of Anthèmes I.

### 3.5 Effects of durational projections

A simple tight-knit passage from Une page d'éphéméride has a similar structure as the last section of Anthèmes $I$, with a presentation phrase followed by several continuation phrases. Example 13 shows the annotated score, Figure 6 the phrase structure. Following the balanced presentation phrase, the first continuation phrase destabilizes the basic idea and the second continuation phrase greatly expands motive N . The third continuation phrase shrinks slightly, while the final phrase breaks the established pattern of expansion completely with an expanded M motive and a fragmented N motive.

Figure 7 shows the effects of the durational projections in this passage. Whenever a new event occurs earlier than expected, the previous projection is denied and there is a sense of durational contraction. A projection that is deferred creates a sense of expansion. I have added three loose qualifiers to these effects: slight, moderate and extensive. A slight expansion adds less than half of the initial duration; a moderate expansion adds
approximately half of the initial duration; and an extensive expansion adds more than half the initial duration.

Two hierarchical levels are depicted in Figure 7: the effects of projections between phrases (how one phrase influences the next), and the effects of projections within each basic idea (the effect of motive M on motive N ). An even lower hierarchical level is shown in Figure 8: that of projections within motive N.

These durational expansions and contractions shape the listener's experience of the passage. For example, the first continuation phrase projects a sense of broadening on two levels: the overall phrase in comparison to the presentation phrase ( 16 vs. 10 beats), and motive N in comparison to motive $\mathrm{M}(9 \mathrm{vs} .7$ beats). By contrast, the final phrase projects a sense of contraction on both levels: the entire phrase is slightly contracted compared to the third continuation phrase ( 22 vs. 16 beats), and motive N is extensively contracted compared to motive M (3 vs. 13 beats).

On the lowest hierarchical level there are also projections within motive N , which is made up of numerous gestures (Fig. 8). A feeling of contraction and broadening in the first continuation phrase is developed in the second continuation phrase, with a contraction followed by three broadening motives. The third continuation phrase reverses this pattern, with two broadening figures followed by a contraction. The final phrase's single gesture is followed by a fermata that creates a sense of closure by creating a durational hiatus.

Durational projections therefore create feelings of balance, expansion and contraction on three hierarchical levels: between entire phrases; between both motives of
the basic idea; and within motive N . The way in which these projections interact gives the section its distinct temporal feel.

It should be noted that the larger the duration, the less exact the projection will be. Therefore the durational projections created within motive N are quite precise, whereas the sense that the second continuation phrase is longer than the first will be more approximate.

Furthermore, the projections shown in Figures 7 and 8 do not constitute all possible heard projections. Motive N, for instance, necessarily casts a projection onto Motive M of the next phrase. For clarity's sake, however, only the most obvious projections are included in the diagrams.


UE 33662
Example 13: Phrase structure of section 2, Une page d'éphéméride (p. 4-5).


UE 33662

Example 13 continued.

## Presentation Phrase (p. 4, system 1)

| Motive: | $\mathrm{M} \quad \mathrm{N}(2$ gestures) |
| :--- | :---: | :---: |
| Duration $\left(8^{\text {ths }}\right)^{*}:$ | $5 \quad 5$ |
|  | (basic idea) |

$1^{\text {st }}$ Continuation Phrase (p. 4, system 2)
Motive: M N (3 gestures) - Becoming less balanced, slight Duration: 7 expansion.
$\underline{2^{\text {nd }} \text { Continuation Phrase (p. } 4, \text { system } 3-\text { p. } 5 \text { system 1) }}$
Motive: $\quad \mathrm{M}$ (5 gestures) - Motive $N$ greatly expanded and Duration: 519 developed. $3{ }^{\text {rd }}$ Continuation Phrase (p. 5, systems 1-2)
Motive: M N (4 gestures) - upsets large-scale pattern of
Duration: 715 expansion by contracting slightly.
$4^{\text {th }}$ Continuation Phrase/Closing Phrase (p. 5, system 3)
Motive: $\quad \mathrm{M} \quad \mathrm{N}$ (1 gesture) -motive $M$ is dramatically expanded
Duration: 133 while $N$ is fragmented. Greatly upsets established pattern, which along with the extremely long $M$ motive and solitary $N$ gesture gives the phrase a closing quality.

* An extra eighth note of duration has been added to each M motive in order to take into account the short pause that ends the gesture.

Figure 6: Phrase structure of section 2 of Une page d'éphéméride (p. 4-5).


Figure 7: Effects of durational projections between phrases and between motives. Section 2 of Une page d'éphéméride (p. 4-5).
Presentation Phrase (p. 4, system 1)

$1^{\text {st }}$ Continuation Phrase (p. 4, system 2)

$2^{\text {nd }}$ Continuation Phrase (p. 4, system $3-$ p. 5 system 1)

$3^{\text {rd }}$ Continuation Phrase (p. 5, systems 1-2)
Motive N :
(4 gestures)

$4^{\text {th }}$ Continuation Phrase/Closing Phrase (p. 5, system 3)

| Motive $\mathrm{N}:$ | 3 | Fermata |
| :--- | :--- | :--- |
| (1 gesture) |  | Hiatus |

* Durations are in $8^{\text {ths }}$.

Figure 8: Effects of durational projections within motive N. Section 2 of Une page d'éphéméride (p. 4-5).

### 3.6 Interpolated Episodes and Process as Phrase Structure

Certain sections incorporate large-scale processes into the phrase structure, as Jonathan Goldman demonstrates in his analysis of the carefully controlled harmonic rhythm of Dérive $I .{ }^{55}$ The harmonic rhythm systematically slows, then quickens again, before coming to a standstill in the extensive coda.

An example from Incises features tight-knit formal organization and also involves what Caplin calls an interpolated episode: "a passage of strikingly new, unrelated material...standing apart from the regular succession of formal functions". ${ }^{56}$

The sixth section of Incises (Ex. 14 and Fig. 9) begins with a presentation phrase consisting of three statements of the basic idea, the last of which is unexpectedly expanded. A concluding gesture closes off the phrase.

The first continuation phrase is torn off after two fragmented versions of the basic idea and an entirely new section begins: the interpolated episode. This material, labeled E, is motivically distinct from the rest of the section and is built around two large-scale processes: each phrase consists of a crescendo up and a diminuendo back down to $p p$, each swelling up to a higher dynamic level. Each phrase is also seven $16^{\text {th }}$ notes longer than the one before.

Yet the section is far from predictable. Boulez combines the last two units (35 and 42 beats, respectively) to create a single expansive phrase in which the crescendo alone lasts 35 beats, followed by a climactic 4-beat wedge motive and a long 42 beat

[^20]dénouement. Also working against the regularity of the phrase expansion are the insistently irregular sub-phrase groupings.

As soon as the interpolated episode ends, the preceding continuation section starts back up as if it had never been interrupted. A greatly expanded form of the basic idea is followed by a fragmented C motive and a concluding gesture that brings the entire section to a close.


Example 14: Section 6 of Incises (p. 14-15).


Example 14 continued.


2nd Continuation Phrase (p. 15, systems 2-3)


- Durations, shown under each motive, are measured in sixteenth notes.

Figure 9: Phrase structure of section 6 of Incises (p. 14-15).

Interpolated passages sometimes also occur on a larger-scale, as Jonathan Goldman notes about the pizzicato section of Anthèmes $I^{57}$ and rehearsal nos. 20-2 of Mémoriale, ${ }^{58}$ both of which deploy rhythmic canons and are thematically and structurally distinct from their surrounding musical environments.

### 3.7 Process as Phrase Structure in a Cadential Phrase

In the last section of Une page d'éphéméride the characteristic motives of the basic idea (Ex. 15a) are gradually fragmented into conventional motives through a process of motivic liquidation (Ex. 15b). The anchor pitches A and A-flat also become more and more prominent as other tones fall away in an example of harmonic liquidation. The result is a passage with clear cadential function.

This section is also an example of how large-scale processes can be used to organize the phrase structure. Several processes are at work (Fig. 10): each motive is systematically fragmented; the dynamic levels of each motive either gradually increase or decrease; and the grace notes and arpeggiated chords in motive $G$ are played in an increasingly brusque, rapid manner.

Interestingly, however, the fragmentation process is slightly disrupted, giving the passage a sense of fluidity and spontaneity. Instead of having motive $G$ shrink by one chord each time (resulting in a steady progression from six chords to one), Boulez places the five-chord version in the "wrong" place. The resulting progression of G motives still projects an overall feeling of diminishing length, but without falling into a predictable pattern. Six chords in section $G^{1}$ shrinks to four chords in $G^{2}$, then three in $G^{3}$, while the $G^{4}$

[^21]section provides a refreshing and surprising sense of breadth before the motive continues to shrink to a single grace note gesture in $G^{6}$. In this way the improvisatory feel of the work is maintained even while spinning out a clear, large-scale formal process.


Example 15a: Basic idea of section 4 of Une page d'éphéméride (p. 9-10).


Example 15b: Liquidated version of the basic idea of section 4 of Une page d'éphéméride (p. 11).

$$
\begin{array}{ll}
\text { Motive }- \text { Duration }- \text { Dynamic } & \\
{\cline { 1 - 1 }}{ }^{1}-8 \text { triplet } 16^{\text {ths }}-f f f / f } & \\
\mathrm{~F}^{2}-6 \text { triplet } 16^{\text {ths }}-6 \text { chords }-3 \text { gr. } 3 \text { arp. }-p / p p p \\
\mathrm{~F}^{3}-4 \text { triplet } 16^{\text {ths }}-f / m & \mathrm{G}^{2}-4 \text { chords }-2 \text { gr. } 2 \text { arp. }-p / m p \\
\mathrm{~F}^{4}-2 \text { triplet } 16^{\text {ths }}-m f>< & \mathrm{G}^{3}-3 \text { chords }-1 \text { gr. } 2 \text { arp. }-m p / m f \\
\mathrm{~F}^{5}-1 \text { triplet } 16^{\text {ths }}-p> & * \mathrm{G}^{4}-5 \text { chords }-2 \text { gr. } 3 \text { arp. }-m f / f^{*} \\
\mathrm{~F}^{6}-\text { single note }(\mathrm{Ab})-p p p & \mathrm{G}^{5}-2 \text { chords }-1 \text { gr. } 1 \text { arp. }-f / f f \\
\left.\mathrm{G}^{6}-1 \text { chords }-1 \text { gr. (Ab down to } \mathrm{A}\right)-f f f
\end{array}
$$

Note: gr. $=$ grace notes; arp. $=$ arpeggiated chords.
Figure 10: Phrase structure of final section of Une page d'éphéméride (last system of p. 9-p. 11).

### 3.8 Blurred Regularity in Projections and Harmony

A further type of tight-knit formal organization occurs in Incises. Steady chains of eighth notes run through the slow sections of the second half of Incises (the first of which is shown in Example 16). The rhythmic regularity of these passages, however, while clear to the eye appear considerably blurred to the ear. This is because the grace notes are consistently marked louder than the eighth notes they precede. The listener is therefore likely to hear the initial grace note as a new beginning, instead of as a true grace note that comes before the beat. And since the number of grace notes is constantly changing each eighth note gesture is a slightly different length. This results in each projection being subtly denied by the next event.

This subtle system of thwarted projections is founded on a staggeringly simple musical fact: in order to ensure that the eighth notes always arrive where they should within a steady tempo, the performer must begin a group of two grace notes slightly sooner than she would begin a single grace note figure. But because the first grace note of each
group is heard as a new beginning (due to its louder dynamic level), each projection is ever so slightly longer or shorter than the one that precedes it. ${ }^{59}$

For example, duration A , which includes two grace notes (Ex. 16), will be perceived as being slightly longer than duration $B$, which includes only one grace note. Projection $\mathrm{A}^{1}$ will therefore be denied when the third eighth-note figure begins (which will seem to enter slightly earlier than expected due to the slightly shorter length of duration B). Projection $B^{1}$ will similarly be denied when the fourth eighth-note figure, preceded by four grace notes, enters much earlier than expected.

At the same time, this passage does not create the impression of a chain of vastly different rhythmic values. A certain regularity still shines through since the grace notes are very rapid and therefore only slightly alter the duration of each figure at so slow a tempo. The exact timing of each new chord therefore comes as a tantalizing, subtle surprise: sometimes a fraction of a second earlier than expected, sometimes a fraction later. It is an ingenious solution to the problem of how to create a slow, fairly regular section while maintaining the feeling of improvisation and spontaneity that is present throughout the rest of the work. This technique is similar to Gérard Grisey's concept of fuzzy periodicity (périodicité floue), whereby musical events deviate slightly from a steady pulse. ${ }^{60}$

[^22]

Example 16: Section 3 of Incises (p. 11).

Complimenting the blurred regularity of the durational projections is the static harmonic motion, the stability of which is also slightly masked. The first sonority of each passage is sustained with the sostenuto pedal. The result is that the following grace note gestures are split into two types of pitches: ones which are part of the initial chord and are sustained by the sostenuto pedal, and ornamental pitches which disappear as soon as the keys are lifted. It is therefore not evident from the notated score which pitches are heard most clearly throughout a given passage. Figure 11 shows a reduction of the passage
showing only the reinforced pitches of the initial chord, while Figure 12 displays these same pitches rated by the number of times they occur in the passage. Not only is the initial chord constantly buttressed by the tones sustained by the sostenuto pedal, certain pitches come to the fore simply by being reinforced more often than others. C\# remains central through this first passage with the other pitches of the first chord diminishing in importance: E and D followed by F\#, F-natural and B. Most fleeting are the ornamental pitches that are not sustained at all. The static nature of the harmony is therefore blurred and made more subtle by placing the pitches on a sliding scale of importance, from the persistent, central $\mathrm{C} \#$ to the short, purely ornamental tones.


Figure 11: Structural, sustained pitches in Section 3 of Incises (p. 11).


Figure 12: Sustained pitches arranged by number of occurrences in Section 3 of Incises (p. 11).

### 3.9 Summary

In summary, tight-knit sections feature clear projections that are created by regularly switching between contrasting motives, usually in the form of a two-part basic idea. These projections help shape entire sections into presentation, continuation and cadential phrases, giving them a sense of coherence and structure independent of traditional formal types. Sections with looser organization lack the clear projections, motivic uniformity and cogent harmonic motion that more tight-knit passages display (Fig. 13). More generally, the patterns of durational expansions and contractions (or the lack of any clear projections at all) give each section its distinct temporal quality. Finally, some sections use processes to organize the phrase structure, to which small changes are introduced to keep the sections from becoming too regular and predictable.

One writer notes "having revolutionized the musical language in the 1950s and 1960s, Boulez has set about honing its syntax. ${ }^{, 61}$ Phrase structure is an integral part of the syntax of the late solo works, and plays a decisive role in shaping how the pieces are perceived.

[^23]
## Formal Organization



Figure 13: Tight-knit vs. loose formal organization in Boulez's late solo works.

## 4. Applications - Lucretia Overture and 4 Impromptus

### 4.1 Introduction

I have applied many of the concepts outlined in the above analysis to my own compositions. These new works also rely heavily on Hasty's theory of durational projections and Caplin's concepts of formal function and formal organization. Creating a clear and supple phrase structure that incorporates harmonic rhythm, surface rhythm, motivic content and durational proportions was a primary concern during the composition of all of these works.

The following analysis focuses on Lucretia Overture for orchestra and 4 Impromptus for a variety of reasons: I wanted to display my ability to write instrumental music for a wide variety of forces; each piece poses distinct formal challenges (onemovement form vs. a series of miniatures, respectively); and I also feel these are the most representative pieces in my portfolio. I worked out many of the compositional techniques described below in earlier pieces, which represent intermediary steps in my compositional development. Lucretia Overture and 4 Impromptus display these techniques in their fullest form to date.

Lucretia Overture was written for l'Orchestre de l’Université de Montréal and Jean-François Rivest. This work takes the form of an overture meant to precede an opera or play, and in writing it I was inspired by works such as Beethoven's Coriolanus Overture and Rossini's La Gazza Ladra Overture, in which certain elements of an extra-musical text are suggested without the music depicting an actual program. In this case the work serves as an introduction to Shakespeare's Rape of Lucretia. Formally, I focused on creating a
highly dramatic one-movement work in which sections return with varied, expanded, and more complex phrase structures.

4 Impromptus began as a work for flute, clarinet, violin, cello and piano. I later condensed three of the movements into the current version for flute, soprano saxophone and piano, taking out doublings and refining the remaining lines. I also replaced the first movement, taking a newly composed solo flute piece and expanding it to a trio. The entire work is therefore the result of extensive revisions, a process I had not previously used but which now seems promising; a further influence of Boulez, who habitually returns to and expands earlier compositions.

All of my portfolio works are related in that they deal with similar compositional challenges: giving each section a distinct motivic, harmonic, timbral and rhythmic profile; and varying the phrase structure to create clear differences between tight-knit and loose formal organization, which involves controlling the harmonic rhythm and the length and clarity of durational projections. Furthermore, I wanted to challenge myself to write for a wide variety of ensembles and performers. Each project pushed me in new creative directions and allowed me to experiment with different musical languages and compositional techniques that I would otherwise not have explored.

This is particularly true regarding Antiphon for gamelan (with its unmeasured score and restricted pitch material), Galloping Through the Prairies for beginner saxophone and piano (with its dramatically simplified melodic line), Ring out, wild bells for solo percussion (with its wide range of available timbres paired with the logistical challenges of
a single performer), Stile Antico for piano trio (with its more traditional style), and Rondo for saxophone duo (with its use of multiphonics and quarter-tones).

My goal was to create pieces that engaged the issues of formal function and phrase structure in their own idiosyncratic way. While there are some similarities between the new pieces and the three Boulez works analysed earlier, my hope is that these works are not derivative but engage similar topics within a different musical style. Indeed, it is the fact that formal function and phrase structure are not tied to any one style that makes them such useful analytical and compositional tools.

### 4.2 Basic ideas and secondary ideas

The opening section of Lucretia Overture consists of a small ternary form, the first section of which superimposes a two-part basic idea over a more expansive secondary idea (which I define as a distinct musical idea in counterpoint with the basic idea) (Ex. 17 and 18). The basic idea is made up of two parts, Motives A and B. In contrast to a Boulezian basic idea, it is never presented with a balanced phrase structure. Rather, Motive A is repeated to create an overall quarter-note grouping of $(2.5+1.5)+2$. Each time the basic idea appears these proportions are altered, similar to the Boulez examples.

Harmonically, the basic idea composes out a simple rising semi-tone, A-flat to Anatural. Each motive also has a distinct harmonic profile (Ex. 18): Motive A is underpinned by a chord made up of stacked tri-tones and perfect fourths, while the melodic tones of Motive B become the vertical harmony (Fig. 14). Motives A and B also have complementary melodic contours: Motive A begins with a scalar figure that ascends to Aflat, while Motive B starts on a high A-natural and leaps downward. Rhythmically, Motive

A has two defining characteristics: a rapid scale leading to a held tone. Each note of Motive B has the same rhythmic value, whether quintuplet eighth notes as in Example 17 or sixteenths in later versions. Finally, Motive A employs slurs and legato markings while Motive B is always accented and détaché.


Example 17: Basic idea of opening section, Lucretia Overture (mm. 1-2).


Figure 14: Harmonic profiles of opening basic idea, mm. 1-2, Lucretia Overture.

The secondary idea is an inverted and rhythmically augmented version of the basic idea's Motive A (Ex. 18). Both musical ideas consist of a scale followed by a tri-tone leap, though the secondary idea also has a final scalar tag. While the basic idea is made up of two distinct motives, the secondary idea consists of one single, drawn-out line that is not easily parsed into smaller units. This allows it to act as a foil to the modular two-part basic idea.


Example 18: Secondary idea of opening section, Lucretia Overture (mm. 1-2).

Another feature of both musical ideas is the slight blurring effect caused by some notes being sustained by an inner voice as the main melodic line moves on to new pitches. This is done most extensively with Motive B of the basic idea (Ex. 19). In the first measure the horns provide the harmonic background to Motive A: stacked tri-tones and perfect fourths. Motive B follows in m. 2, played in full by Horn 2 with the other players lagging behind, creating a vertical sonority out of the melodic line. This is a condensed version of a technique I call melodic threads, which will be discussed in further detail below.


Example 19: Horns, mm. 1-2 of Lucretia Overture.

The middle section of the opening small ternary form is also built around a twopart basic idea (Ex. 20). A melodic link taken from Motive A in m. 5 underlines the close relationship between Motives A and C, with the latter growing out of the former. Motive D grows out of the augmented version of Motive C in m. 6, taking over the quintuplet rhythm in m .7 when it first appears. A further similarity with the opening is the ascending semitone voice leading: here B-flat pushes through B-natural to C.


Example 20: Three versions of the second section's basic idea, Lucretia Overture (mm. 58).

Harmonically, Motive C features two chords that mirror the ascending semi-tone motion of the main pitches, B-flat and B-natural. Motive D, like Motive B of the previous section, is supported by a chord made up of its melodic tones (Fig. 15).


Figure 15: Harmonic profile of the second section's basic idea (mm. 5-8).

The second movement of 4 Impromptus is saturated by a single basic idea made up of Motives K and M (Ex. 21). Every figure in all three voices is either a version of the twopart idea or derived directly from one of its motives. This movement's dense texture results from the superimposition of several versions of the basic idea, each with a different overall length, internal proportion and rhythmic value.


Example 21: Basic idea of $2^{\text {nd }}$ Impromptu, mm. 1-2.

Impromptu III features a freer, more elastic version of a basic idea (Ex. 22a). After a drone is set up in mm. 1-2, the piano plays Motive S, which consists of two broken chords, the second of which is sustained throughout Motive T, a fluid melodic line. Each appearance of these motives is different, though the overall quality of each gesture is maintained: two freely arpeggiated chords followed by a lyrical, improvisatory-like melody. Example 22 b shows the second version of the basic idea for comparison.


Example 22a: Basic idea of Impromptu III (mm. 1-4).


Example 22b: Second version of the basic idea of Impromptu III (mm. 5-7).

The fourth and last Impromptu features a basic idea similar to the opening of Lucretia Overture (Ex. 23). This short movement was in fact written first and served as a model for the opening section of the orchestral work. The first motive, P , is repeated before Motive Q appears. Again, the length of each motive is flexible and continually altered. Throughout the work, the triplet sixteenths of Motive P serve as an opening signal, after which the four pitches are repeated in an improvisatory manner until the motive is either repeated or Motive Q begins. In general, Motive Q serves to end phrases, functioning both as the second part of the basic idea and a kind of concluding gesture.


Example 23: Basic idea of Impromptu IV (mm. 1-3).

### 4.3 Creating Durational Projections

Each motive of a basic idea has a distinct melodic contour, rhythmic profile, articulation type and harmonic profile. This ensures that when a motive is either repeated or a new motive enters, a clear beginning is created. The duration of the previous motive is defined and projected onto the following passage. Durational expectations are created and either realized, denied or deferred. Example 24 shows the opening basic idea from the start of Lucretia Overture and some of the durational projections created by the repeated A motives and Motive B.

In general, the changing meter reflects prominent durational projections within a phrase. However, if there is a way of barring the music that is more idiomatic for the players, I alter the meter. For instance, Example 26a should be barred as either $4 / 8+2 / 8+$ $1 / 8$ or $3 / 4+1 / 8$ in order to reflect the surprisingly short last eight-note beat. The written meter of $4 / 8+3 / 8$, however, is easier to read and perform since the last eight-note is now subsumed within a larger metric unit.


Example 24: Basic idea of opening section, Lucretia Overture (mm. 1-2).

Even when one parameter of a motive is developed or transformed, the other parameters stay constant, ensuring that the motive retains its ability to create new durational beginnings and remain distinct in the listener's mind. For example, Motives A goes through several transformations as the piece progresses (Ex. 25a-d).


Example 25a: Original version of Motive A, m. 1.


Example 25b: Varied version of Motive A, m. 10.


Example 25c: Rhythmically augmented version of Motive A, m. 11.


Example 25d: Compressed and varied version of Motive A, m. 12.

The original version of Motive A is shown in Ex. 25a and with varied rhythm and articulation in Ex. 25b. An augmented version is shown in Ex. 25c, with the first three pitches broadened, a grace note added to the scale and a quintuplet figuration coming after the sustained pitch. The version in Ex. 25d is further varied, keeping the quintuplet sixteenths but compressing the ascending scale. Despite these differences, each motive is supported by the same harmony (see Fig. 14); emphasizes the same overall voice leading (A-flat leading to A-natural in the following B motive); and has the same basic melodic contour (ascending line leading to a sustained pitch). The added details amount to rhythmic
ornamentations that do not distort the basic character of the motive. This allows the start of each motive to be clearly heard and recognized, creating a new durational beginning.

The same holds true for the basic idea of Impromptu II, which is transformed even more radically throughout the movement. Both motives K and L have a distinct melodic contour and rhythmic profile that remains recognizable even when subjected to rhythmic augmentation or diminution (Ex. 26a-c).


Example 26a: Original version of the basic idea, Impromptu II (mm. 1-2, flute).


Example 26b: Condensed version of the basic idea, Impromptu II (m. 8, flute).


Example 26c: Expanded version of the basic idea, Impromptu II (mm. 14-16, flute).

The original version of the basic idea is already highly imbalanced and unstable (Ex. 26a). The quarter-note projections set up by Motive K are upset by either the entry of Motive L halfway through the beat (if this is heard as a new beginning) or by the fact that Motive L ends sooner than expected, creating a 3/8 measure and causing the next bar to begin earlier than expected.

A condensed version of the basic idea squeezes the entire figure into a single $3 / 8$ measure (Ex. 26b). Both motives retain their characteristic features. This is followed by a second L motive, rhythmically augmented and transposed up a major sixth. The leap in register and repetition of the same melodic contour allows both $L$ motives to create new durational beginnings and sound like distinct events. Therefore the eighth-note projection of the first L motive is denied by the longer second version.

In the final bars, the flute plays an expanded version of the basic idea (Ex. 26c). As in the other versions, an initial grace note flourish signals the beginning of Motive K , followed by several dotted note figures (written as grace notes in order to simplify the notated rhythm). A rhythmically augmented version of Motive L is tagged on to the end, as in Example 26b.

Throughout this movement, the basic idea is also fragmented into its constituent motives, which are used independently to create larger formal units. In mm. 7-9, the left hand of the piano continuously hammers out Motive K , while the right hand plays versions of Motive L at varying speeds; instead of Motive L following Motive K, the two appear simultaneously (Ex. 27).


Example 27: Lucretia Overture (mm. 7-9).

A more extreme example appears in mm. 10-12, where Motive $L$ takes over the entire texture. The flute and soprano saxophone lines in m .10 together create a single line of repeated L motives, while in m .11 the motive appears in every voice to create a larger climactic descending line (Ex. 28). This saturation of the texture with a single motive disrupts the sense of balance between the two motives established in the first half of the movement. After a grand pause at the end of m .12 , this sense of balance is restored in mm . 13-14 where Motive K is heavily emphasized.


Example 28: Textures made up entirely of Motive L and K, Lucretia Overture (mm. 1014).

### 4.4 Multiple levels of phrase structure

In solo works, particularly for monophonic instruments, there is normally only one level of phrase structure. In multiphonic works, however, the way in which different musical layers interact has a strong impact on the perceived overall phrase structure. The phrase structure of individual layers can often be out of phase with one another, and it can be enlightening to look at how these conflicting layers interact on both the local level (within a phrase) and at a higher formal level (larger formal articulations).

### 4.4.1 Case study - Lucretia Overture

The basic and secondary ideas at the beginning of Lucretia Overture each have distinct phrase structures. In addition to each layer's distinct instrumentation, melodic contour and register, their independent phrase structures help make them easily distinguishable from one another. We will examine the phrase structure of the basic idea alone first (Fig. 16).

Motive A is played twice followed by Motive B, which lasts two quarter-note beats. The following two versions of the basic idea are fragmented; Motive A now only appears once per basic idea, and Motive B is compressed into one beat. The result is that the first version of the basic idea lasts for six entire beats while the next two versions are squeezed into only seven beats. On the local level the first version could be labeled presentational in function while the others are continuational: they vary and develop the phrase structure of the first version through fragmentation.
mm. 1-4


Figure 16: Phrase structure of the basic idea, Lucretia Overture, mm. 1-4.

Let us now turn to how the phrase structure of the opening basic idea and secondary idea in Lucretia Overture interact (Ex. 29). The secondary idea is less modular and longer than the two-part basic idea. When the two layers line up, a significant formal articulation is created. This helps organize the music into several hierarchical formal levels: short projections are created by individual motives; larger projections are formed by two-part basic ideas; and phrase-length units are created when both musical layers line up, which create large-scale projections of their own.

In between the moments when both layers line up, the phrase structure of each layer is often disjointed and out of phase with the other. One line creates new beginnings that are ignored and passed over by the other line. In other words, the phrase structure of one musical layer is in counterpoint with the other. Such sections have a looser formal organization than those with only a single level of phrase structure, such as solo passages.

In the second half of Example 29, two basic ideas (Motives $\mathrm{A}+\mathrm{B}$ ) are played over top of the secondary idea. The drawn-out secondary idea pushes through the formal articulation created when the second basic idea begins, as well as the more local articulations caused by the move from Motive A to B within each basic idea. The
secondary idea helps organize the music into larger formal units while also giving the passage a sense of continuity.

The way in which both layers of the phrase structure interact also has an effect on how tight-knit or loose the formal organization appears. For example, the first phrase is fairly tight-knit while the second phrase loosens slightly due to the misalignment between the two layers (Ex. 29). The basic and secondary ideas line up in the first phrase, whereas a basic idea begins in the middle of the secondary idea in the second phrase. The structure of the two layers conflict with each other and creates a looser formal organization.

Section A: mm. 1-4


Example 29: Phrase structure of the basic idea and secondary idea, Lucretia Overture, mm. 1-4.

The fluctuations in tight-knit versus loose formal organization helps to shape the opening section as a whole (Fig. 17). The passage is in ternary form, with a small coda based on the opening material: A B A A ${ }^{1}$. As discussed above, the opening section (mm. 14) is fairly tight-knit but loosens slightly in the second phrase. In the middle B section (mm. 5-8), both layers fail to line up at all and are in constant conflict with one another,
creating a much looser formal organization. When the A section returns (mm. 9-12), the secondary idea is fragmented, causing it to chafe with the basic idea played above it. The section ends, however, in a very tight-knit manner with both layers twice lining up. This sets the stage for the $A^{1}$ section (mm. 13-17), which begins fairly tight-knit, becomes muddled and looser in m .14 before ending with both layers completely in sync.

Overall, the formal organization of the phrase structure mirrors and reinforces the ternary form of the section. The outer A sections are fairly tight-knit, while the contrasting inner B section is much looser. Furthermore, the first A section loosens slightly as it approaches the B section, and the second A section begins slightly looser before tightening up. The $\mathrm{A}^{1}$ coda is the most tight-knit, giving the section a sense of formal closure even as it becomes less harmonically stable (Fig. 18).

In terms of formal function, the first $A$ section creates the sense of a beginning that opens up into the loose B section, which in turn projects a sense of formal middle not just by occurring between two A sections but by virtue of its much looser formal organization. The second A section gives the impression of closing off due to its tightening formal organization, while the $A^{1}$ section is more tight-knit still, allowing it to function as a closing unit to the entire ternary section.

Section A: mm. 1-4


Section B: mm. 5-8


Section A: mm. 9-12


Figure 17: Phrase structure of the opening section of Lucretia Overture (mm. 1-17).
$\frac{\mathbf{A}(\mathrm{mm} .1-4)}{\frac{1}{}_{\text {st }}^{\text {phrase: fairly tight-knit }}}$
$2^{\text {nd }}$ phrase: loosens slightly
$\underline{\mathbf{B}(\mathrm{mm} .5-8)}$

Loose formal organization throughout

A (mm. 9-12)<br>$1^{\text {st }}$ phrase: looser than parallel section (mm. 1-2)<br>$2^{\text {nd }}$ phrase: fairly tight-knit<br>$\mathbf{A}^{1}$ (mm. 13-17)<br>$1^{\text {st }}$ phrase: begins tight-knit, becomes looser in m. 14.<br>$2^{\text {nd }}$ phrase: very tight-knit

Figure 18: Summary of formal organization of the opening section (mm. 1-17).

### 4.4.2 Case study - Impromptu II:

Overall, the second prelude has a fairly regular, balanced phrase structure. This regularity is created by new beginnings that cut through all three parts, either by having the phrase structure of each instrument align, or by having some voices drop out. These largescale formal articulations happen at regular intervals in the first half of the movement, creating a normative phrase length of seven eighth-notes that is then manipulated for dramatic effect in the rest of the piece (Fig. 19). The regularity of the first half gives structure to the highly kinetic, wild nature of the melodic material, and to the chaotic textures created by the conflicting local phrase structures of each line. The result is a dense, complex texture that is nonetheless broken into clearly defined phrases that help shape the overall form.

After the first four phrases set up a normative seven-beat phrase length, the following longer or shorter phrases are experienced as atypical, causing them stand out to the listener. These atypical phrases are used to create tension, uncertainty and drama. Specifically, the two longer phrases (numbers five and seven) lead to climactic passages, while the final shorter phrase cuts off earlier than expected, causing the end of the piece to come as somewhat of a surprise.

| Phrase | Length Measure \# |  | Notes |
| :--- | :--- | :--- | :--- |
| Phrase 1: | 7 | $(\mathrm{~m} .1-2)$ |  |
| Phrase 2: | 7 | $(\mathrm{~m} .3-4)$ |  |
| Phrase 3: | 7 | $(\mathrm{~m} .5-6)$ |  |
| Phrase 4: | 7 | $(\mathrm{~m} .7-8)$ |  |
| Phrase 5: | 10 | $(\mathrm{~m} .9-10)$ | - expanded phrase; leads to the climactic <br> sixth phrase. |
| Phrase 6: | 7 | $(\mathrm{~m} .11-12)$- change in texture (unison descending <br> phrase contour); 'torn-off' ending. |  |
| Phrase 8: | 12 | (m. 13-15/2) - music starts up again; leads to another |  |
| high point. |  |  |  |

* Durations are measured in eighth-notes.

Figure 19: Phrase rhythm of Prélude II.

Example 30 shows the first few phrase divisions. The beginning of the second phrase, in m. 3, is marked by several events: the flute begins a new version of the basic idea; the right hand of the piano re-enters with Motive K after a quarter-note rest in m. 2; the left hand similarly enters after a short rest, though with Motive L which creates a link
with m .2 ; and the soprano saxophone elides phrases one and two by arriving at its final note on the downbeat of m. 3 .

The division between phrases two and three is more decisive: the saxophone drops out entirely; the left hand of the piano changes to a new pitch level that shifts the focus from C-sharp to F-sharp; the flute similarly reinforces a new pitch, G instead of C; and finally, the imitative, delayed entries of the piano, flute and saxophone signal a fugal-like sense of starting anew. All of these details give the impression of a strong formal boundary, joining phrases one and two on a higher hierarchical level while phrases three and four form a separate unit.


Example 30: Phrase divisions, Impromptu II (mm. 1-6).

The final phrase of the piece is both decisive and unstable (Ex. 31). The declamatory unison rhythms convey a sense of formal importance and finality, but the shorter phrase length creates the sense that the music is torn off and comes to a surprising
close. Furthermore, the phrase is thrown even more off-balance by the accented final quintuplet sixteenth note in m .16 and the lack of any arrival on the following beat. All of these details combine to create the effect of a decisive yet unexpected ending to this short movement.


Example 31: Prelude 2 - Phrase 8 (m. 15 - 16).

Within each phrase, the structure of an individual line is often in conflict with the other two. This is largely due to the fact that the basic idea is simultaneously played in different rhythmic proportions by different voices. Motives K and L regularly appear in rhythmic diminution and augmentation, and different versions of each motive are layered
on top of one another. Furthermore, both motives create strong durational projections: the repeated notes of Motive K create a clear pulse, while the rapid notes of Motive L create a distinct unit whose overall duration is projected onto the following passage. When different versions of the basic idea are superimposed, the projections of each layer grate against one another and create an unstable, chaotic texture.

For instance, in m. 5 Motive K in the piano projects eighth-note durations, the flute line projects triplet eighths, and the piano line switches to triplet quarters in m. 6 (Ex. 30). In m. 4 the L motives in the flute and soprano saxophone conflict, as do those in m. 6 . These discordant musical layers create a highly complex texture that relies on the largescale phrase articulations to give the passage form and coherence.

The final phrase, which on a higher structural level seems too short compared to the normative seven-beat phrase length, is surprisingly tight-knit on the local level: the sudden unison rhythms stand in stark contrast to the volatile rhythmic surface of the rest of the movement. This helps create a sense of finality that the larger phrase structure denies.

### 4.5 Blurring the phrase structure - imitative entries

A passage's phrase structure can be made slightly more complex by adding imitative entries to an existing musical layer. These imitative voices signal new beginnings at unexpected moments without creating a completely new musical layer with its own phrase structure. They can jolt the listener's expectations without adding the complexity of another continuous musical line.

The high woodwinds and piano play imitative entries at the beginning of Lucretia Overture (Ex. 32). Imitating the scalar opening of the basic idea's Motive A, these additional entries seem to begin full canonic lines but cut off before becoming completing the basic idea. The strong timbral differences between the main line (violins and trumpets) and the imitative lines (flutes, oboes and high piano) keep the layers distinct and ensure that the imitative motives are not confused with new statements of the full basic idea.


Example 32: Basis idea line (Violin 1) and imitative entries (Piccolo), Lucretia Overture, mm. 1-4.

### 4.6 Melodic Threads

### 4.6.1 Overview

While many sections of Lucretia Overture and 4 Impromptus are organized with basic and secondary ideas, other passages rely instead on melodic threads: short, ordered rows that are deployed melodically and whose pitches are sustained to create harmonic progressions. Furthermore, melodic threads are strings of specific pitches, not abstract pitch classes, so they dictate register and therefore also the voicing of the resultant harmonies.

New pitches are introduced in order, and the music often backtracks to an earlier pitch and goes through the thread again. This backtracking creates a more subtle and complex string of pitches than just going through each thread from start to finish before moving to the next. At the same time this technique maintains harmonic coherence since the repeated material is simply a compressed version of the opening of the thread.

Each note of the melodic thread can be repeated or sustained so that a chord is gradually built out of the melodic pitches. At a certain point the oldest sustained note is dropped when a new pitch enters, resulting in chords that slowly transform as the music moves through the thread. For example, in a six-note melodic thread notes 1-3 can be sustained, then 2-4, 3-5 and finally 4-6. The result is a progression of three-note harmonies that each share two common notes with any adjacent chord.

Melodic threads can be further varied by either expansion (interpolating pitches) or extension (adding pitches on to the end). Obviously these effects can only be perceived if the original version of the thread has already been presented. Interpolated pitches simply expand the progression internally, allowing the thread to reach the same arrival point as the regular, shorter version. Extensions push the thread past its previous melodic and harmonic goal by adding new pitches to the end, leading to new harmonic regions.

In addition to creating harmonic variety, expansions and extensions result in a looser formal organization. The expanded or extended passage is usually longer in duration than the preceding normative section, as well as less harmonically efficient: it either takes a more complicated route to the same harmonic goal (in the case of expansions) or it reaches past the expected goal (extensions). In both cases the harmonic progression is less
efficiently and concisely expressed than the shorter, normative version of the melodic thread.

It is through the use of extensions and expansions that melodic threads differ most dramatically from classical serial practice. As the name suggests, they are fundamentally melodic in nature and subject to melodic variation techniques: expansion, extension, fragmentation, and motivic variation.

Each thread focuses on a relatively small set of melodic intervals, creating a specific melodic character. Of course, depending on the contour of the melody, a wider variety of intervals can result when these pitches are sustained to create a chord. For example, a thread made up of only a major second (interval class 2 ) and tri-tones (i.c. 6) may result in a chord that includes a major third (i.c. 4) between non-adjacent tones, depending on the contour of the melody (Fig. 20).


Figure 20: A short melodic thread followed by a possible resultant harmony.

The harmonic rhythm and phrase structure of a section can be shaped by manipulating a melodic thread in several ways: the rate at which new pitches are introduced; the number of melodic pitches that are sustained at any given moment; deciding when and how far to backtrack to repeat earlier pitches; and when to move on to a new melodic thread.

Finally, the beginning of each thread is made explicit through changes of register and a sudden thinning of texture that emphasizes the lone first pitch of the new thread. In other words, the pitches of one thread do not overlap with those of the next, ensuring that each new melodic thread starts with a single pitch and creates a clear new durational and formal beginning.

### 4.6.2 Case study - March section of Lucretia Overture

The second, march-like section of Lucretia Overture is governed by a succession of four melodic threads. Figure 21 shows the abstract version of the first thread. Throughout mm . 18-24, only these pitches are used, in this order (except for occasional skips backward) and in these registral positions (though octave doublings occur for orchestration purposes).


Figure 21: Abstract first melodic thread of the March section, Lucretia Overture (mm. 1824).

All four melodic threads are shown in Figure 22. Minor and major seconds, tritones and major sevenths are favoured throughout, with perfect fourths becoming more prominent in the third thread. The overall line gradually rises to the start of the third thread before quickly falling back to the low register. The fourth thread is a transposition of the first (up four semitones), while the second thread is also a transposition (up six semitones
to begin on F-sharp) with a tri-tone added on each end: (C) F\# G C\# B A\# (E). A chain of seconds and fourths (perfect and augmented) form the third thread.


Figure 22: Abstract melodic threads of the March section, Lucretia Overture (mm. 18-34).

Figure 23 displays how the threads are deployed in the actual piece. New pitches are slowly introduced, with the interval between the newest note and the preceding pitch often highlighted through repetition. Each thread occasionally backs up and runs through earlier pitches, most prominently near the end of the first thread in mm. 22-24. When the last pitch of a thread is reached, the entire thread is either repeated (as is the case with the second and fourth threads) or the music moves on to the next thread (as the first and third do).

The first thread is spread across seven bars, or 23 quarter-note beats, making it by far the most expansive. The second thread is more compressed (lasting only 9.5 beats in total), is repeated twice in full, and is expanded and extended the second time through. Similarly, the fourth thread is also repeated twice, is quite condensed and ends with an extension. The third thread is an anomaly: there are twelve pitches in contrast to the five to seven notes of the other threads; the descending melodic contour is much simpler; and
perfect fourths are introduced, alternating with the previously ubiquitous tri-tone. Furthermore, the music never doubles-back to the start of the thread, instead backing up just a few pitches in m. 30.


Thread 3
mm. 29-30


Figure 23: The actual melodic threads of the March section, including backtracking, expansions and extensions. Lucretia Overture (mm. 18-34).

Figures $24 \mathrm{a} \& \mathrm{~b}$ show the harmonic motion that results from sustaining or repeating earlier pitches of a thread while new ones are introduced. In the first thread, only the pitch directly preceding a new note is sustained. Therefore in m. 18 when A moves to B-flat, the

A is retained. In m. 21 E is introduced; the B -flat from m. 20 is preserved, though not the A. The result is essentially a harmonic canon, in which the main melodic line is mirrored by a second line that is displaced by one pitch. This effect is most easily seen when the music backtracks to the start of the thread in m. 24: the single pitches A-B-flat - E - D - C\# (Fig. 24a) are transformed into the intervals A - A/B-flat - B-flat/E - E/D - D/C\#. This harmonic progression is therefore derived entirely from the melodic intervals of the thread. A similar process is used in the second and fourth melodic threads.


Figure 24a: Actual first thread. Lucretia Overture (mm. 18-24).

## Thread 1

mm. 18-24


Figure 24b: Resulting harmonies of actual first thread. Lucretia Overture (mm. 18-24).

The third thread is harmonically distinct (Fig. 25a \& b). Each pitch is sustained, creating a dense twelve-note chord (with only ten distinct pitch classes, however, since the C and G are repeated at the end). The resulting saturated texture stands in stark contrast to the rest of the section, and is looser in formal organization because the harmonic motion of the thread is somewhat masked by the build-up of pitches. In threads one, two and four, the
harmonic motion is much clearer since the main melodic line is only blurred by a single sustained pitch.


Figure 25a: Actual third thread. Lucretia Overture (mm. 29-30).

Thread 3
mm. 29-30


Figure 25b: Resulting harmonies of actual third thread. Lucretia Overture (mm. 29-30).

In passages like the third thread in mm. 29-30, it is easy to hear the entire phrase as belonging to the same harmonic block or chord. Since each pitch is sustained, every note stays present in the ear of the listener and new pitches are heard as adding to a single, growing harmony. New pitches of course transform the existing chord and can be heard as new events in themselves on the local level, but on a higher level they are part of the same existing pitch collection. Bars 29-30 consequently have a strong sense of harmonic coherence and the change to the fourth harmonic thread in m. 31 is keenly felt as a new harmonic area.

A similar effect is created in threads one, two and four by backtracking or by repeating the entire thread. Repeating earlier pitches in the same thread reinforces the feeling that the music has not fully moved on harmonically; rather, new pitches are being added to an existing harmonic field or block. Again, new notes transform the existing harmonic environment, but when earlier pitches are consistently reiterated the new pitches sound more like additions instead of the beginning of a new sonority.

This harmonic technique helps organize the entire march-like section (mm. 18-34) into the four sections outlined earlier, each controlled harmonically and melodically by a different thread. The harmony gives each section a sense of coherence on a higher hierarchical level than the rhythmic articulations on the surface of the music. For example, the first thread spans 23 quarter-note beats, which is broken into many smaller units by the surface rhythm. Each new pitch creates a local sense of a new beginning, as does the doubling back to earlier notes. Example 33 shows the beginning of the first thread, which is broken into smaller units as B-flat is introduced: $2+2+2+1+2$. In m. 21 the E is added, which begins a small three-beat unit. Yet in spite of the fragmented nature of the musical surface, mm. 18-24 belong to a single, higher-level formal unit because of the melodic thread that runs through the entire passage. Earlier notes of the thread are repeated and reinforced in mm. 22, 23 and 24 (Fig. 24a). When the second thread begins in m. 25, the texture is reduced back to a single note, C , and the pitches of this new thread are repeated and reinforced. The fragmented local level of the music is organized into larger units by virtue of the clear harmonic fields created by the melodic threads.


Example 33: Rhythmic groupings at the start of the first melodic thread, Lucretia Overture (mm. 18-21, trombones).

In terms of formal function, the first thread could been seen as having a presentation function: it introduces material distinct from the opening of the work, material that is now controlled via melodic threads instead of voice leading between two central chords. Compared to the opening thread, the second and fourth threads are fragmented: they run through their respective pitches twice each within a more condensed length of time. And since the second and fourth threads are very similar in intervallic content and melodic contour to the first, there is a heightened sense of hearing compressed versions of the opening thread.

The third thread is also much shorter than the first, but since it is so distinct in its harmony and contour, it is probably heard more as either a bridge between the similar second and fourth threads, or as a climactic passage. Either way it develops and exaggerates aspects of the first thread: it takes the characteristic minor second to tri-tone
motion and creates a descending chain of seconds and fourths (both perfect and augmented). Furthermore, it takes the technique of blurring the melodic line to an extreme: each note is sustained to create a dense twelve-note sonority.

Finally, the structure of the first thread itself suggests a presentation-continuation function on the local level. The harmonic rhythm is quite slow at the beginning of the passage and then quickens considerably in the second half. This creates a relatively stable harmonic beginning that focuses on the first two pitches, A and B-flat, which is followed by a more dynamic ending with a faster harmonic rhythm that runs through the remaining pitches and also doubles back through the entire thread. The proportion of each set of pitches is shown in Figure 26, measured in quarter-note beats. At first, two pitches at a time are highlighted (A/B-flat; B-flat/E; E/D; D/C\#) followed by two backtracks through all five pitches (A/B-flat/E/D/C\#). This creates a phrase structure with the proportions $9+4+3+2+2+3$.


A/B-flat: 9 Presentation

B-flat/E: 4 Continuation

Figure 26: Proportions of pitch deployment in the first thread of the march-like section, Lucretia Overture (mm. 18-24).

### 4.6.3 Case study - middle section of Lucretia Overture

A section from the middle of Lucretia Overture provides a more extreme example of a single melodic thread controlling the phrase structure of a long passage. The abstract version of the thread is shown in Figure 27: ten pitches are presented, which again focus on major and minor seconds, major sevenths and tri-tones, followed by a closing section (mm. 83-89) that oscillates between E and D\#.

This thread does not double-back on itself; each pitch is only presented a single time before moving on to the next. The placement of each new note is shown in Figure 28.


Figure 27: Abstract melodic thread of central section, Lucretia Overture (mm. 71-89).


Figure 28: Layout of new pitches in melodic thread, central section of Lucretia Overture (mm. 71-89).

Each of the opening four pitches is sustained until a four-note chord is formed in m . 75 (Fig. 29). From that point on, one pitch is dropped each time a new note is introduced, so that four-note chords are maintained throughout most of the passage. Each chord has three pitches in common with adjacent sonorities. Since the thread never doubles-back on itself, the overall harmonic effect is different than that of the earlier march-like section. Rather than continually reinforcing earlier pitches by backtracking, notes do not return once they drop out. We do not get the sense of one overall chord being built up note by note. Rather, a slow, gradual harmonic progression unfolds, each chord changing by only a single pitch, so that it takes until the end of $m .79$ to replace all of the initial four notes.

The rate of harmonic change is unpredictable. After a slow opening, the chords begin to transform more quickly, though with noticeable and unexpected exceptions in $\mathrm{mm} .76,82,84$, and 86 . A sense of closure is created in mm. 83-89 by the insistence on the repeated E and $\mathrm{D} \#$, the reduction to three-note chords in m .85 , and the long final chord.


Figure 29: Resulting harmony of the melodic thread, central section of Lucretia Overture (mm. 71-89).

This passage is also an example of unclear and vague durational projections, which creates a looser formal organization than sections with clear projections that set up precise durational expectations. Several elements contribute to this effect. First, the tempo is slow and the musical events are widely spaced out. The more time that elapses between new beginnings, the less clear the projection. Second, the rhythm clouds any sense of the notated beats. For instance, Example 33 shows the entry of the first four pitches of the melodic thread. The initial F creates a very vague projection due to its length, and when the E-flat ends in m. 75 we only have a general sense of how much shorter it is than the opening F. The D is shorter still but enters on the third triplet eighth of the beat. The aural effect by this point is of a total lack of pulse and three different notes that have no obvious durational relationship to each other, except that of long, slightly shorter and shorter still.


Example 33: Entry of new pitches, melodic thread of the central section, Lucretia Overture (mm. 70-75).

Finally, this passage has an additional musical layer with its own distinct phrase structure: a slow chord progression that underlies the melodic thread (Fig. 30). The harmonic rhythm of this progression is more regular than that of the melodic thread, but far from predictable. In quarter-note beats, the proportions of the nine chords are $8+7+8+7+6+7$ and $8+8+9$. The slow tempo and slight variations between chord lengths combine to create a sense of blurred regularity: each chord is noticeably different in length,
but only slightly; the difference is only vaguely felt. This blurred regularity is in conflict with the melodic thread, which changes both more frequently and has a more erratic harmonic rhythm. These differences in phrase structure, along with distinct instrumentation, help to differentiate the two layers and keep them separate in the listener's mind, ensuring they do not merge into a single sonority.

Intervallically, the chords are very similar and quite simple, allowing them to remain in the background as the more harmonically complex melodic thread unspools in the foreground. The bass consistently descends by whole-tones, with the exception of the final chord of the main section in $\mathrm{mm} .81-82$ and the end of the closing unit in mm. 87-89, where the bass leaps down by four and three semi-tones, respectively. This break in the bass line pattern, along with the novel (016) chord in mm. 81-82, helps signal the end of each phrase. The passage in mm. 73-76, made up of one regular and one inverted (014) chord, is repeated sequentially down four semi-tones in mm. 77-80. Each of the closing section's chords, in mm. 83-89, are simple transpositions of each other, following the whole-tone bass motion.


Figure 30: Underlying chord progression in the central section of Lucretia Overture (mm. 71-89).

### 4.7 Loosening the formal organization in repeated material-Lucretia Overture

The opening of Lucretia Overture provides a good example of how context defines tight-knit vs. loose formal organization. In the opening bars, the first version of the basic idea seems fairly loose compared to the beginning of several tight-knit sections of Boulez's Anthèmes I or Incises. The Lucretia Overture basic idea repeats Motive A before moving on to Motive $B$, resulting in an unbalanced phrase structure. Yet in context, when compared to the other versions of the basic idea that appear throughout the work, these opening measures prove to be the most tight-knit version of the basic idea. In fact, the basic idea becomes progressively looser in its formal organization as the work unfolds.

The reduction of the first version is shown in Figure 31a, where the basic idea appears over the secondary idea. Both musical ideas have the same duration of six quarternote beats, and therefore the two levels of phrase structure do not conflict.


Figure 31a: First version of the basic idea, Lucretia Overture (mm. 1-4).

In Figure 31b, from the second A section of the opening ternary form, the formal organization of the basic idea is slightly looser. Motive A is once again repeated, but the secondary idea is now fragmented into two smaller units, the second of which conflicts with the phrase structure of the basic idea.

Section A: mm. 9-12


Figure 31b: The basic idea in the second A section, Lucretia Overture (mm. 9-12).

After the march-like second section in mm. 18-34, the initial basic idea returns (Fig. 31c), now loosened harmonically and expanded. The initial secondary idea ends with a small extension of new material, while the second occurrence features a more extensive extension which mimics Motive B from the basic idea as it sequences upward from C to $\mathrm{C} \#$. The basic idea repeats both motives A and B , with motive B pushing the main line up to B-flat via a short sequence. In the next two versions of the basic idea, motive B continues to be repeated and sequenced upward, culminating in the last measures where the main melodic line is pushed up from A to B-flat, B-natural and finally $\mathrm{C} \#$. The move to $\mathrm{C} \#$ intensifies the sequential passage by breaking the ascending semi-tone pattern and driving the melodic line higher than expected. All of these durational extensions and harmonic elaborations create a looser formal organization. The extensions and sequences are superfluous to the basic tight-knit structure of both musical ideas as presented at the beginning of the work. Here, the basic and secondary ideas are presented neither efficiently nor succinctly.

Section A: mm. 35-39


Figure 31c: The basic idea in the reprise of the A section, Lucretia Overture (mm. 35-39).

Near the end of the work, the opening passage returns a final time (Fig. 31d). The phrase structure is identical to the beginning with a single addition: a third musical layer, derived directly from the first melodic thread of the march-like section in mm. 18-24, now played by the four trombones. This layer is by far the most expansive, moving at a much slower rate than the basic or secondary ideas. The basic idea is the most fragmented line ( $1-3$ beat units); the secondary idea is slightly more expansive ( 6 and 6.5 beat units); and the march-like melodic thread underlies everything (a single 13 beat unit). The melodic thread is presented in full (A-B-flat $-\mathrm{E}-\mathrm{D}-\mathrm{C} \#$ ) over the course of sixteen bars (mm. 105-121). As with the secondary idea, the phrase structure of the melodic thread lines up with the rest of the musical layers at key formal points. For example, directly after the passage shown in Ex. 31d, the central section of a ternary form begins, which coincides with the addition of a new pitch in the melodic thread, E-natural. The overall texture is therefore even more chaotic than the opening of the work, at least within the phrase
boundaries. Larger phrases are still clearly articulated when all three layers line up and create distinct new beginnings.

Section A: mm. 105-108


Figure 31d: The basic idea in the final A section, Lucretia Overture (mm. 105-108).

The opening basic idea therefore becomes looser in its formal organization as the piece progresses. None of these loosening techniques (fragmentation, conflicting phrase structures, extensions, sequential harmonic motion) obscure larger formal articulations, but instead create more complex phrase structures within large phrase boundaries. This process of developing variation loosens the formal organization of the returning material, making each new section less formally stable than the last. There is no return to the relatively tightknit version of the basic idea presented in the opening measures.

## 5. Overview of other works

The ten works briefly discussed here all use and experiment with the techniques presented in Chapter 4. They helped lay the groundwork for Lucretia Overture and 4 Impromptus while also suggesting directions for further exploration.
5.1 Phrase structure in more traditional contexts - Rondo, Galloping Through the

## Prairies and Stile Antico

Rondo for two alto saxophones was written for Mark Michalak and Holly DeCaigny during their graduate studies in France. The phrase structure is inspired by Haydn's string quartets, and uses classical techniques such as phrase expansions, extensions and contractions. Galloping Through the Prairies for beginner saxophone and piano also borrows elements from Haydn, particularly elements of surprise such as unexpected changes in phrase lengths and sudden silences. It is published in the Royal Conservatory of Music's Level 1 repertoire book for saxophone. ${ }^{62}$ I wrote Stile Antico for piano trio for the composer-in-residence program at the University of Montréal and experimented with a more traditional musical language.

I all three works, I experimented with manipulating the phrase structure while using more traditional musical materials. Stile Antico features several self-imposed restrictions: time signatures of either $6 / 8$ or $9 / 8$, a simplified rhythmic palette, and the use of traditional dance styles such as the waltz. Some tight-knit sections reinforce the notated time signatures and feature balanced phrase structures (Ex. 34), though even here the piano line

[^24]works gently against the normative strong beats of the $6 / 8$ metre with entries on beats $2 \&$ 5 and $3 \& 6$. The melody, split between the violin and cello, it balanced and straightforward with a repeated half bar motive followed by a measure-long continuation.


Example 34: Tight-knit theme, Stile Antico (mm. 35-36).

Other looser passages obscure the time signature by creating conflicting, competing new beginnings (Ex. 35). In mm. 109-111 there are four competing rhythmic lines that serve to obscure the normative strong and weak beats of the time signature. The motivic material is similar to that in the preceding example, though now the texture is saturated with conflicting lines: new events occur on beats $1 \& 4$ (violin), $2.5 \& 5.5$ (cello), $3 \& 5.5$ (piano right hand) and 1.5, $4 \& 4.5$ (piano left hand).

However complex a section becomes, large-scale formal articulations still cut through all the competing lines to organize the music into coherent phrases. For instance, halfway through m. 111 two voices drop out and the remaining two unite to begin a new phrase.


Example 35: Loose formal organization, Stile Antico (mm. 35-36).

Similar effects are explored in Rondo, though the harmonic language, which makes full use of quarter-tones, is less traditional. Galloping Through the Prairies manipulates the phrase structure to create musical surprises within a very restrained musical language. The saxophone part is aimed at young beginners and is therefore as simple as possible. The final passage juxtaposes a very clear, tight-knit phrase structure with two measures of looser, more ambiguous material (Ex. 36). Measures 23-24 clearly articulate beats $1 \& 3$ of
the $4 / 4$ time signature, while $\mathrm{mm} .25-26$ disguise it slightly through rests and fragmentary motives that arrive on beats $2,1 \& 4$. Metrical clarity and a balanced phrase structure return in mm. 27-28 to end the piece.


Example 36: ending of Galloping Through the Prairies (mm. 23-28).

### 5.2 Melodic Threads - Dark was the night, cold was the ground and

## Overture in C

Dark was the night, cold was the ground for 15 players was written for the Nouvel Ensemble Moderne reading session at the University of Montréal and takes its title from the early blues song written and recorded by Willie Johnson. In addition to the use of melodic threads to control the harmonic rhythm, I also tried to use a wider range of timbres in this work. Overture in $C$ for orchestra was written for the Orchestre de l'Université de Montréal reading session and later won first prize in the ensemble's composition competition, resulting in the commission of Lucretia Overture.

Both works use melodic threads to organize the phrase structure of key passages. Overture in C contains a passage similar to the end of Lucretia Overture where an extra musical layer is added on top of returning material; similarly, the added musical line is a melodic thread heard earlier in the work. The phrase structure of the new layer conflicts with the existing phrase structure, except at important formal moments where all of the layers line up to create clear formal articulations.

Dark was the night, cold was the ground features a melodic thread that is used in a slightly different way than in the other compositions discussed so far (Fig. $32 \&$ Ex. 37). Clarinets $1 \& 2$ unspool a melodic thread in the foreground, the second clarinet lagging one pitch behind to create a harmonic canon. This is similar to the harmonic effect shown in Figure 24 from Lucretia Overture. In the background, however, the vibraphone captures and sustains the pitches that the clarinets gradually drop. The clarinets and vibraphone
together sustain six notes of the thread at a time, dropping the oldest pitches as new ones arise.

For example, halfway through m. 34 the clarinets play the newest two pitches of the thread, the upper G\# in clarinet 1 and C in clarinet 2 . The vibraphone sustains the four older pitches: F - E - A-flat - G-flat. In the following bar, clarinet 1 moves to a brand new pitch, B; clarinet 2 takes over the first player's previous note, $\mathrm{G} \#$; and the vibraphone drops the oldest pitch F and adds the second clarinet's previous note, C .

Two versions of the thread are therefore presented simultaneously; a prominent string of intervals in the clarinets and a thicker chord in the background played by the vibraphone. The main melodic line is thickened and accompanied by the discarded pitches of the clarinets, so that the two newest notes of the thread are harmonized by the four pitches that preceded them. If all three lines had the same timbre, this effect would not be noticeable. It is the timbral difference between the lyrical clarinets and the hazy tremolo of the vibraphone that splits the lines into two distinct parts, foreground and background, melody and accompaniment.


Figure 32: Melodic thread, Dark was the night, cold was the ground (mm. 31-38).


Example 37: Melodic thread in clarinets $1 \& 2$ and vibraphone, Dark was the night, cold was the ground (mm. 31-38).

### 5.3 Phrase structure and text-3 Lieds

3 Lieds for baritone and piano sets two poems by e. e. Cummings (christ but they're few and sentinel robins two) and one by Alfred Tennyson (Catch not my breath, O clamorous heart). My aim was to combine my ideas on phrase structure with the unique forms of each poem.

One of the issues this work explores is how phrase structure can amplify the meaning of a text. Phrase structure is particularly important when similar musical material is used to set different parts of a text. In the first song, the voice fills in a descending major seventh when it first enters and again at the climax (Ex. 38a \& b). Several elements give
the first entry a more tight-knit formal organization and loosen the second passage. Measures 15-16 feature clear, precise projections due to the tolling quarter-notes in the right hand of the piano (both excerpts are quite slow: quarter $=50$ in Ex. 38 a and 46 in Ex. 38b). The rhythm of the fluid descending vocal line is set firmly within this steady pulse. In the climactic passage, however, the repeated chords in the piano are transformed into a furious tremolo with a gradual, notated ritardando. Any projections are vague and fleeting; the voice switches to triplet quarter-notes in m .33 , frustrating any sense of a regular pulse, while the piano offers no steady rhythmic units to hold on to and conflicts rhythmically with the vocal line. The formal organization is loosened considerably by this lack of easily perceived durational projections.

The slower rhythm of the vocal line at the climax gives the word "robin" extra emphasis and broadens the proportions of the descending gesture from seven beats ( mm . 15-16) to twelve (mm. 32-35). Furthermore, in mm. 15-16 the rhythm of the vocal line emphasizes the outer pitches of the major seventh, G and A-flat. In mm. 32-35 each note of the melisma is lengthened, making them almost equal in importance to the outer pitches $\mathrm{C} \#$ and D . The entire descending gesture is therefore both heightened dramatically and presented far less efficiently than in mm. 15-16, giving the climactic phrase a looser formal organization. Finally, the later passage is less formally efficient in yet another way: the first phrase presents the entire first line of the poem, "christ but they're few", whereas at the climax the broadened descending gesture only presents a single word, "robin". The word is emphasized at the price of a less tight-knit formal organization.


Example 38a: First entry of the voice, christ but they're few - 3 Lieds (mm. 15-16).


Example 38b: Climax, christ but they're few - 3 Lieds (mm. 32-35).

## Shores

In Memoriam for solo piano was written in memory of Calgary pianist and teacher Janice Waite. Antiphon for flute and gamelan and Ring Out Wild Bells for solo percussion were both written for composer-in-residence programs at the University of Montréal. Antiphon explores the microtonal differences between pairs of gamelan instruments and includes a flute part, which I performed, that adds Western tempered pitches and quartertones to the gamelan scale. Ring Out Wild Bells was written for and with the collaboration of Blair Mackay. Dark Shores for string quartet was composed for the Orford Summer Composition Academy, where I worked closely with the resident student quartet along with supervisors Ana Sokolovic and Jean Lesage.

In these four works a recurring chord progression becomes increasingly complex, both harmonically and in its phrase structure. The first version of the progression is therefore always the most tight-knit, becoming looser as the piece unfolds.

In Memoriam opens with a simple progression that returns twice in increasingly elaborate form. Examples $39 \mathrm{a} \& \mathrm{~b}$ show the first and second versions of this progression. The opening has a fairly balanced phrase structure that loosens slightly in m .5 with the $5 / 4$ bar. Each measure features one sonority, with the pedal blurring them into larger two-bar units (mm. 2-3 and 4-5). The grouping (in quarter-note beats) is straightforward: an introductory pause on $B$ in $m .1$ followed by a $4+4+4+5$ grouping.

The phrase structure of mm. 37-38 is much more complex. The first three beats of m. 37 create clear projections, but the second half of the measure is more florid and
ambiguous. Measure 38 is similar; the ascending gesture that was fairly straightforward in m. 4 ( $\mathrm{D}-\mathrm{F} \#-\mathrm{A} \#$ etc.) now climbs further to the high $G \#$ on the fourth beat, and the rhythm again becomes very fluid. The notated quarter-note beat is lost and the constantly changing rhythms, designed to mimic the sound of expressive rubato, work against any sense of clear durational projections. Overall the phrase structure of mm. 37-38 is balanced: one six-beat bar followed by another. Within each measure, however, the phrase structure is more complex: $(2+4)+(4+2)$.


Example 39a: Beginning of the opening chord progression, In Memoriam (mm. 1-5).


Example 39b: Second version of the opening chord progression, In Memoriam (mm. 3738).

Harmonically, the second version of the progression is also much more complex. Figures $33 \mathrm{a} \& \mathrm{~b}$ outline how the second set of pitches is derived from the first. Most of the original progression is transposed up a perfect fifth, sometimes more than once. The added upper chords act as ornamental pitches to the original progression that continues underneath. These new pitches add to the florid texture of the second progression; they thicken the texture and make the harmonic progression itself more complex. Lacking the rhythmic and harmonic clarity of the opening bars, this second version is considerably looser in its formal organization.


Figure 33a: Reduction of Rumination I (mm. 1-5).


Figure 33b: Reduction of Rumination II (mm. 37-38).

Similar harmonic and phrase structural techniques are employed in Ring Out Wild Bells, Dark Shores, and Antiphon. In this last piece the music is unbarred and the rate of harmonic change is controlled by the flutist who doubles as conductor. The score gives approximate durations for each event which the flutist follows with a degree of freedom, responding to the acoustics of the hall.

## 6. Conclusion

A range of musical parameters can be manipulated to create a more tight-knit or loose formal organization: the clarity of durational progressions, grouping structures, the clarity of harmonic progressions, harmonic rhythm, motivic uniformity and the amount of conflict between the phrase structures of different musical layers. Patterns of tight-knit vs. loose organization help shape the form of a work: they can create phrases with presentation, continuation, and cadential function; they can, in a more general way, create the sense of a formal beginning (opening up), middle, and end (closure); they can create a sense of continuous development and increasing instability when returning material becomes progressively looser as the piece unfolds. These effects are not tied to any specific musical style and are capable of incorporating many musical parameters into an analysis, including harmony, rhythm, grouping structure, timbre and instrumentation.

This paper has tried to show how a close examination of phrase structure and formal function in contemporary music can yield rewarding, informative analyses and serve as a potent compositional tool.

Future areas of investigation include analyzing the phrase structure of late ensemble works by Pierre Boulez to observe how the phrase structure of multiple layers interact, and analyzing the phrase structure of works by other contemporary composers with thematic or motivic post-tonal musical languages. For instance, it would be interesting to look at works such as György Ligeti's late Hamburg Concerto (1998-1999, rev. 2003), Henri Dutilleux's variation-obsessed Sur le même accord for violin and orchestra (2001-2002) and Magnus Lindberg's Feria (1995-1997). The sharp rhythms and
asymmetrical, repetitive patterns of Ligeti's Études for piano also suggest possible applications.

As a compositional tool, the approach outlined in this paper suggests several areas for future experimentation, such as to vary the level of formal organization within sparser textures with simpler harmonies; to shape the form of mixed media and electroacoustic works; to structure transformative passages that morph from one type of material into another; and to shape the form of longer, multi-movement works.

Furthermore, the poems by e. e. cummings and Alfred Tennyson which I set in Trois Lieds were very short; it would be interesting to more deeply explore how musical phrase structure can comment on and amplify the form of longer poetic texts, or of an entire libretto. In a similar vein, this approach could also be used to underline the form of programmatic concert works as well as music for dance, theatre and film.

Finally, my approach to phrase structure has several potential pedagogical applications. It could be used in composition lessons to draw attention to listener expectations; the temporal aspect of musical form; the relationship between overall and sectional form; and the importance of variety in tight-knit vs. loose formal organization.

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## List of original works Scores are digitally annexed

1. Lucretia Overture for orchestra. Commissioned by l'Orchestre de l'Université de Montréal as the winner of the 2012 Composition Competition. Premiered in October 2013 by l'OUM, conducted by Jean-François Rivest.
2. 4 Impromptus for flute, alto saxophone and piano. Written for Sarah Gieck, flute; Holly DeCaigny, alto saxophone; Lana Henchell, piano. Premiered at the Regional Saxophone Conference of the North American Saxophone Alliance, Calgary, February 2015.
3. Dark was the night, cold was the ground for 15 players. Composed for the Nouvel Ensemble Moderne reading session at l'Université de Montréal, conducted by Lorraine Vaillancourt, 2014.
4. Dark Shores for string quartet. Composed for the Orford Academy Création Workshop Quartet, summer 2014.
5. In Memoriam for piano. Composed in memory of Janice Waite. Performed by Brigitte Poulin (excerpt), 2012.
6. Overture in $C$ for orchestra. Written for l'Orchestre de l'Université de Montréal reading session, 2012.
7. Ring out, wild bells for solo percussion. Written for Blair Mackay for the Université de Montréal composer-in-residence program, solo percussion. Premiered in Montréal as part of Blair Mackay's doctoral recital, 2014.
8. Galloping Across the Prairies for beginner saxophone and piano. Published in RCM Saxophone Repertoire, Level 1: Score and CD. Toronto: Frederic Harris, 2014.
9. Rondo for two alto saxophones. Written for Holly DeCaigny and Mark Michalak, premiered at the Conservatoire Nationale de Region de Boulogne-Billancourt in Paris, France, 2012.
10. Antiphon for flute and gamelan. Written for l'Atelier de gamelan de l'Université de Montréal for the composer-in-residence program, atelier de gamelan. Premiered by Sean Clarke, flute, and l'Atelier de gamelan de l'Université de Montréal, directed by I Dewa Made Suparta, April 2013
11. Stile Antico for piano trio. Written as part of the Université de Montréal composer-in-residence position, piano trio, 2013.
12. Trois Lieds for baritone and piano, 2012.
13. Chaconne for string orchestra. Premiered by Ensemble Arkea conducted by Dina Gilbert, Montréal, January 2013.
14. Prélude and Rondo for electronics. Premiered in the Electrobuzz concert series at l'Université de Montréal, April 2012. Recording only.

## List of digitally annexed recordings

1. Lucretia Overture for orchestra: Orchestre de l'Université de Montréal, conducted by Jean-François Rivest.
2. 4 Impromptus for flute, alto saxophone and piano: Sarah Gieck, flute; Holly DeCaigny, alto saxophone; Lana Henchell, piano.
3. Dark was the night, cold was the ground for 15 players: Nouvel Ensemble Moderne, conducted by Lorraine Vaillancourt.
4. Dark Shores for string quartet: Orford Academy Création Workshop Quartet: Grace Takeda, vn; Ayla Boz, vn; Luca Casciato, vla; and Emma Grant-Zypchen, vc.
5. In Memoriam for piano: Brigitte Poulin, piano (excerpt).
6. Overture in $C$ for orchestra: Orchestre de l'Université de Montréal, conducted by Jean-François Rivest.
7. Ring out, wild bells for solo percussion: Blair Mackay, percussion.
8. Antiphon for flute and gamelan: Sean Clarke, flute, with l'Atelier de gamelan de l'Université de Montréal directed by I Dewa Made Suparta.
9. Chaconne for string orchestra: Ensemble Arkea, conducted by Dina Gilbert.
10. Prélude for electronics.
11. Rondo for electronics.

## Ouverture de Lucrèce

Sean Clarke
Instrumentation
1 Piccolo
2 Flûtes
2 Hautbois
2 Clarinettes
2 Bassons
4 Cors en Fa
1 Trompette Piccolo
1 Trompette en Ut
2 Trombones
1 Trombone Basse
1 Tuba
Piano
Percussion (2) : Tambour ténor
Violonse caisse
Violons II
Altos
Violoncelles
Contrebasses
c. 7 minutes

La partition est écrite en sons réels.

## Note de Programme

Cette pièce pourrait servir d'ouverture à un opéra ou une pièce de théâtre sur Le Viol de Lucrèce. En l'écrivant, je me suis inspiré d'œuvres célèbres telles que l'ouverture Coriolan de Beethoven et celle de La Gazza Ladra de Rossini. Selon Shakespeare, la légende raconte que Lucrèce aurait été violée par le fils du roi de Rome parce qu'elle demeurait chaste et fidèle à son mari. Après avoir obtenu la promesse de son mari de venger son honneur, elle se tue, ce qui déclenche un soulèvement du peuple. Le roi tyrannique de Rome est alors chassé du pouvoir et la République de Rome est établie.

Mon œuvre musicale reste abstraite, s'inspirant librement des atmosphères et des émotions évoquées par la légende de Lucrèce. La pièce débute par un thème turbulent et orageux suivi d'un passage plus lent, à caractère militaire, qui met en valeur les trombones. Le matériau orageux revient ensuite et atteint un point culminant violent. Il est suivi d'un interlude calme, composé d'un choral et d'un solo de piano intime. Notre premier thème revient une troisième fois, mais combiné avec la musique militaire mugie par les trombones et le tuba. La musique s'intensifie alors jusqu'à un nouveau point culminant, comprenant du matériau du choral, et se termine par un accord final perçant.

- Les appogiatures accentuées sont jouées sur le temps. Par exemple :

```
\dot{x}}=\boldsymbol{E
```

- Les appogiatures sans accent sont jouées avant le temps.

Commissioned by l'Orchestre de l'Université de Montréal.
World premiere: 5 Oct. 2013 in Montréal, Jean-François Rivest conducting.
Instrumentation
1 Piccolo
2 Flutes
2 Oboes
2 Clarinets
2 Bassoons
4 French Horns
1 Piccolo Trumpet
1 Trumpet in C
2 Trombones
1 Bass Trombone
1 Tuba
Piano
Percussion (2): Tenor Drum
Bass Drum
Violin I
Violin II
Violas
Cellos
Contrabass
Duration
c. 7 minutes

## The score is in C .

## Program Note

This work takes the form of an overture meant to precede an opera or play, and in writing it I was inspired by such works as Beethoven's Coriolanus Overture and Rossini's La Gazza Ladra Overture. In this case the story being introduced is Shakespeare's The Rape of Lucretia which tells the story of the legendary Lucretia who is raped by the son of the king of Rome for being chaste and true to her husband. After securing her husband's promise to exact revenge on her behalf, she kills herself, and in the ensuing conflict the tyrannical king of Rome is driven from power and the Republic of Rome is established.

The piece remains, however, an abstract work and is not meant to literally depict the plot of the story.

The piece begins with a stormy, turbulent passage followed by a slower, militaristic passage that features the trombones. The stormy material returns and builds to a violent climax. This is followed by a quiet interlude made up of a chorale and an intimate piano solo, but the opening material soon returns, now combined with the militaristic music brayed by the low brass. The music builds up to a new climax, now featuring material from the chorale, ending with a piercing final chord.

## Performance Note

- Accented grace notes are to be played on the beat. For example:

- Unaccented grace notes are to be played before the beat.


























Poco meno mosso $\quad$ = $\mathbf{c} .40$












# 4 Impromptus 

for flute, soprano saxophone and piano

## Sean Clarke

## Program Notes

These short pieces are meant to depict condensed, vivid emotional scenes, as if from an invisible film. By turns passionate, militaristic, yearning and seething, they should be played with only a short pause between movements.

Each player should think of herself as an actor playing a multi-faceted dramatic role, one whose different dimensions are revealed only as the piece progresses.

The three characters interact with each other in vastly different ways from movement to movement, while also disclosing new aspects of their own personalities, aspects unforeseen by the audience when the piece first started.

These impromptus are therefore a type of character study: of three personas revealing different sides of themselves as they interact with each other in unexpected ways.

# Instrumentation 

Flute
Soprano Saxophone
Piano

## Duration

Impromptu I: ca. 2'45"
Impromptu II: ca. 40"
Impromptu III: ca. 1'45"
Impromptu IV: ca. 1'00"
Total: ca. 6'15"

The score is in C.

Impromptu I



poco rit.-------- Tempo di poco meno mosso


ca. 2 min .45 s .

## Impromptu II

$$
\begin{aligned}
& \text { Furioso - Severe and } \\
& \text { militaristic. } \nmid=\text { c. } 96-\mathbf{1 0 4} \\
& \delta=\delta d
\end{aligned}
$$

Play all grace notes
before the beat.

S. Sax.




## Impromptu III




c. 1 min .45 s .

Impromptu IV






# Dark Was The Night, Cold Was The Ground 

for 15 players

## Sean Clarke

# Written for the Nouvel Ensemble Moderne. 

Instrumentation
I Flute
I Oboe
2 Clarinets in Bb
i Bassoon
I Horn in F
I Trumpet in C
I Trombone
Piano
Percussion (r player):
Vibraphone
Rute sticks
Bass Drum
2 Violins
I Viola
I Cello
I Contrabass

Duration:
ca. 5 minutes

## Score is in C.

The title is taken from the early blues song of the same name by Blind Willie Johnson.

## Performance Notes:

- All trills are to a semi-tone above the written note.
- Gestures in boxes are to be repeated for the length of time shown by the arrow.
- Winds and brass "sing and play" passages: sing the played note in whichever octave is most comfortable.
- Piano tremolo: all tremolos should be played fairly slowly and freely (except in $\mathrm{m} .74^{-78}$ where the trem. can be fast and violent). When many notes are present the performer can use any pattern to animate the chords (ex: trem. between hands, rolling the chords in each hand, etc.).



$4$



$6$















# Dark Shores 

for string quartet

Sean Clarke

Composed for the 2014 Orford Academy composition workshop. Premiered by the Orford Création Workshop Quartet, July 2014.

## Program Notes

In this work I wanted to create a dramatic narrative through a series of musical scenes, each with its own distinct character, mood and emotional palette.
The four instruments work together to create these different sound worlds through a variety of timbral, rhythmic and harmonic techniques.
I imagine the resulting textures as a single dynamic object, continually morphing from one emotional state to another.

## Instrumentation

2 Violins
Viola
Cello

Duration
ca. 6'30"

## Performance notes

SP - Sul pont.
ST - Sul tasto
ORD - Ordinary playing
---.- Transition between playing styles
$\geq$
Erratic, uneven tremolo
Gradually increase bow pressure
$\mathbf{x}$ - Exaggerated bow pressure
norm. - Normal bow pressure

(C) 2014 Sean Clarke

2
Agitato


Lento

Poco meno mosso


Poco meno mosso
d= ca. 40



Agitato



Poco meno mosso





May - June 2014
Calgary \& Montréal

# In Memoriam <br> for solo piano 

In memory of Janice Waite.

Duration: c. 7.5 minutes

## Performance Notes:

Performers should feel free to use rubato throughout, the better to bring out their personal interpretation of the piece.

## In Memoriam

or 'we entered the wood, and wended homeward.'

$2$



Slightly broader
dec. 72

$4$





# Overture in C 

for orchestra

## Sean Clarke

2011

# Instrumentation <br> 2 Flutes ( $2^{\text {nd }}$ doubling piccolo) <br> 2 Oboes <br> 2 B-flat Clarinets <br> 2 Bassoons <br> 4 Horns in F <br> 2 Trumpets in C <br> 2 Trombones <br> 1 Bass Trombone <br> 1 Tuba <br> Timpani <br> Percussion (2 players: snare and bass drum) <br> Orchestral string section 

## Duration

c. $61 / 2$ minutes

The score is in C.
























$16$







$18$





# Ring out, wild bells 

## for solo percussion

Sean Clarke

Peking and gongs sound one semi-tone higher than written. Crotales sound two octaves higher than written.

## Instrumentation

Crotales
Peking
Vibraphone
Small kendang
Medium kendang
Bass drum
Small triangle
Large triangle
Brake drum

Layout
(Audience)
Crotales
Peking
Vibraphone
Small triangle
Large triangle
Brake drum
Small kendang
Medium Kendang
Bass drum

## Peking setup



## Duration

Mvt. I - ca. 3 min. 45 s.
Mvt. 2 - ca. 5 min. 30 s.
Total: ca. 9 min .30 s.

## In Memoriam

## Alfred Tennyson

## CVI

Ring out, wild bells, to the wild sky,
The flying cloud, the frosty light:
The year is dying in the night;
Ring out, wild bells, and let him die.
Ring out the old, ring in the new,
Ring, happy bells, across the snow:
The year is going, let him go;
Ring out the false, ring in the true.
Ring out the grief that saps the mind, For those that here we see no more;
Ring out the feud of rich and poor, Ring in redress to all mankind.

Ring out a slowly dying cause,
And ancient forms of party strife;
Ring in the nobler modes of life,
With sweeter manners, purer laws.
Ring out the want, the care, the sin,
The faithless coldness of the times;
Ring out, ring out my mournful rhymes,
But ring the fuller minstrel in.
Ring out false pride in place and blood,
The civic slander and the spite;
Ring in the love of truth and right, Ring in the common love of good.

Ring out old shapes of foul disease;
Ring out the narrowing lust of gold;
Ring out the thousand wars of old,
Ring in the thousand years of peace.
Ring in the valiant man and free,
The larger heart, the kindlier hand;
Ring out the darkness of the land,
Ring in the Christ that is to be.

© 2014 Sean Clarke



$4$



6
Strict \& Even

- = ca. 72





Pek.


8

Vib.


Poco piu mosso




Galloping Across the Prairies
With energy

Alto sax.

$2$


sed.


# Duo 

for alto saxophones

## Sean Clarke

2012

# For Holly DeCaigny and Mark Michalak. 

Duration - c. 7 minutes<br>Instrumentation - 2 alto saxophones

Trills - all trills are a semi-tone above the written note, with the sole exception of the whole-tone trill in m .130.

Multiphonics - all multiphonic sounds and fingerings are from Les Sons Multiples du Saxophone by Daniel Kientzy and are numbered accordingly.

Completed in March 2012, Montréal.


© 2012 Sean Clarke
$2$



$4$



Chorale 3

$6$


c. 7 min .

# ANTIPHON for flute and gamelan 

## Sean Clarke

2011/13

Antiphon<br>pour flûte et gamelan

Première: le 20 avril 2013, Montréal. Sean Clarke, flûte; l'Atelier de gamelan de l'Université de Montréal; sous la direction de I Dewa Made Suparta.

## Note de programme

Cette pièce prend la forme d'un rituel, où les sections lentes et méditatives (intégrant la voix) dialoguent avec les sections plus vives et animées, imitant en cela l'alternance des psaumes et des antiennes dans la musique sacrée occidentale. Par ailleurs, l'ensemble des sections lentes et rapides peut être considéré comme une antienne à grande échelle répondant à la mélodie qui débute la pièce (et qui revient vers la fin, intensifiée et stridente). Après le retour de cette mélodie, la pièce se termine avec une texture pure et tranquille, portant de douces et troublantes dissonances à la flûte et aux instruments graves.

Instrumentation<br>Flûte traversière<br>2 Kantilan<br>4 Pemadé<br>2 Ugal<br>2 Jegogan<br>Reyong (2 interprètes)<br>2 Kempli<br>Gentore<br>2 Gong<br>Klentong<br>c. 7 minutes<br>\section*{Performance Notes}

- The short motives that appear in boxes in the score are to be repeated freely, without a set pulse or speed, within the general tempo confines of the section (for example, tempi should be kept generally slow in the Lent sections, and more kinetic in the Rapide sections).
- Players on paired instruments (ex. the two kantilan players) often play at different times in order to bring out their different tunings. All paired instruments have one instrument tuned slightly higher than the other.
- Entrances are cued by the flute player, who should play from the score.
- Notes with 'x' noteheads are to be dampened. Notes with normal noteheads are played undampened.
- Depending on the size of the hall, the flute may have to be amplified.
- The flutist, in conjunction with the ensemble during the rehearsal process, is free to determine the length of each section and therefore the pacing. The tempo differences between the Lent and Rapide sections should, however, remain clear.



$\boldsymbol{m} \boldsymbol{f}$ Very fast; not in synch with Kempli 1.
Tempo should fluctuate freely.








Fade out after


| softly hum notated note. | Fade out after |
| :--- | :--- |
| Gentore gesture. |  |





Ke.1\&G


# Stile Antico 

## for piano trio

Sean Clarke

## Performance Notes

This work consciously plays with different aspects of older classical styles, including the waltz and other dance types; canonic and fugal writing; insistent, recurring motifs; the tradition of the slow introduction; closely interrelated themes; consistent time signatures and the use of hemiolas; simpler rhythmic patterns; a clear distinction between consonance and dissonance; and the concept of continuous variation.

These ideas and styles are filtered through a distorting contemporary lens, so that while elements of the past are clearly evoked, they emerge slightly disfigured, transformed by the modern world in which they now appear.

Instrumentation
Violin
Cello
Piano

Duration
c. 7 min .


7
Moderato






* So.

$4$








73



10











$20$


# Trois lieds pour baryton et piano 

## Sean Clarke

## Trois lieds

1. christ but they're few - e. e. cummings (c. 3' 45)
2. Catch not my breath, O clamorous heart - Alfred Tennyson (c. 1'15) - from Maud: Part 1, XVI - III.
3. sentinel robins two - e. e. cummings (c. 3'00)

Duration: c. 8'00

## Poems

christ but they're few - e. e. cummings
all(beyond win or lose)good true beautiful things
god how he sings
the robin(who
'll be silent in
a moon or two)
Catch not my breath, O clamorous heart - Alfred Tennyson
Catch not my breath, O clamorous heart, Let not my tongue be a thrall to my eye, For I must tell her before we part, I must tell her, or die.
sentinel robins two - e. e. cummings
sentinel robins two
guard me and you
and little house this our
from hate from fear
a which of slim of blue of here will who straight up into the where so safe we are
christ but they're few
Poem by e. e. cummings Music by Sean Clarke

$$
d=c .50
$$



4


7

© 2012 Sean Clarke


$4$




42


## Catch not my breath, O clamorous heart


© 2012 Sean Clarke




$10$






43


# CHACONNE 

## SEAN CLARKE

2012

## INSTRUMENTATION

8 Violins
4 Violas
3 CELLOS
1 CONTRABASS

DURATION
c. $4^{\prime} 30^{\prime \prime}$

## Written for L'Ensemble Arkea.

PREMIERE - 6 FEb. 2013 , DinA Gilbert conducting.


2







3 Semplice


Scherzo
$4 \rho^{\prime}=\boldsymbol{=}(\boldsymbol{d}=$ c. 104 ) accel. poco a poco









[^0]:    ${ }^{1}$ Jonathan Goldman. The Musical Language of Pierre Boulez: Writings and Compositions. Cambridge: Cambridge University Press, 2011.

[^1]:    ${ }^{2}$ William E. Caplin. Classical Form. New York: Oxford University Press, 1998.
    ${ }^{3}$ William Rothstein. Phrase Rhythm in Tonal Music. New York: Schirmer Books, 1989, pp. 12 - 13.
    ${ }^{4}$ Fred Lerdahl and Ray Jackendoff. A Generative Theory of Tonal Music. Cambridge, MA: MIT Press, 1983, pp. 12-13.

[^2]:    ${ }^{5}$ Jean-Jacques Nattiez. 'Boulez à l'âge postmoderne: le temps de Répons', in Le Combat de Chronos et d'Orphée: essais. Paris: Bourgois, 1993 ; Jonathan Goldman. The Musical Language of Pierre Boulez : Writings and Compositions Cambridge : Cambridge University Press, 2011 ; Célestin Deliège. 'Moment de Pierre Boulez, sur l'introduction orchestrale de Répons', InHarmoniques, no. 4 (1988), pp. 181 - 202; republished in Répons-Boulez, Actes Sud-Papiers (Paris, 1988) pp. 45-69.
    ${ }^{6}$ Célestin Deliège. Par volonté et par hazard. Entretiens avec Célestin Deliège. Paris: Éditions du Seuil, 1975; English trans., Pierre Boulez: Conversations with Célestin Deliège, London: Eulenburg, 1976. Quoted in Goldman, The Musical Language of Pierre Boulez, p. 53.

[^3]:    ${ }^{7}$ William E. Caplin. Classical Form. New York: Oxford University Press, 1998.
    ${ }^{8}$ Nattiez. Le Combat de Chronos et d'Orphée: essais, pp. 233-287.
    ${ }^{9}$ Goldman. The Musical Language of Pierre Boulez, pp. 160-64 \& 148-153.
    ${ }^{10}$ Karlheinz Stockhausen. Texte, vol. 1, p. 199, trans. in Seppo Heikinheimo's book The Electronic Music of Karlheinz Stockhausen, trans. Brad Absetz (Helsinki: Suomen Musikkitieteellinen Seura, 1972), pp. 120-21.
    ${ }^{11}$ Jonathan D. Kramer. The Time of Music: New Meanings, New Temporalities, New Listening Strategies. New York: Schirmer Books, 1988, p. 202.
    ${ }^{12}$ Ibid., p. 203.
    ${ }^{13}$ Stockhausen. Texte, pp. 120-21. Quoted in Kramer, Jonathan D. The Time of Music, 1988, p. 201.

[^4]:    ${ }^{14}$ Christopher Hasty. Meter as Rhythm. New York: Oxford University Press, 1997, p. 296.
    ${ }^{15}$ Fred Lerdahl. ‘Cognitive constraints on compositional systems' in Generative Processes in Music: the psychology of performance, improvisation, and composition, ed. John Sloboda. Oxford: Clarendon Press, 1988.
    ${ }^{16}$ Jonathan Kramer. The Time of Music, 1988,, p. 20.

[^5]:    ${ }^{17}$ Jean-Jacques Nattiez. Music and Discourse : Towards a Semiology of Music. Princeton : Princeton University Press, 1990, p. 11-13.
    ${ }^{18}$ Hasty. Meter as Rhythm, 1997.
    ${ }^{19}$ Caplin. Classical Form, 1998.

[^6]:    ${ }^{22}$ William E. Caplin,, James Hepokoski, and James Webster. Musical Form, Forms \& Formenlehre: Three Methodological Reflections. Ed. Pieter Bergé. Leuven: University of Leuven Press, 2009, p. 23.
    ${ }^{24}$ Caplin. Classical Form, 1998. p. 35.
    ${ }^{25}$ Ibid., p. 37.

[^7]:    ${ }^{26}$ Ibid., p. 40.
    ${ }^{27}$ Ibid., pp. 40-41.
    ${ }^{28}$ Ibid., p. $84-85$; Arnold Schoenberg. Fundamentals of Musical Composition, ed. Gerald Strang and Leonard Stein. London: Faber \& Faber, 1967 ; Erwin Ratz. Einführung in die musikalische Formenlehre, 3rd ed., enl. Vienna: Universal, 1973.
    ${ }^{29}$ Caplin. Classical Form, pp. 40-41.

[^8]:    ${ }^{30}$ Ibid., p. 85.

[^9]:    ${ }^{31}$ Hasty. Meter as Rhythm, 1997, pp. 3-5.
    ${ }^{32}$ Justin London. Hearing in Time: psychological aspects of musical meter. New York: Oxford University Press, 2004, p. 8.

[^10]:    ${ }^{33}$ Ibid., p. 4.
    ${ }^{34}$ Ibid., p. 25.
    ${ }^{36}$ Hasty. Meter as Rhythm, 1997, p. 184.

[^11]:    ${ }^{37}$ Ibid.
    ${ }^{38}$ Ibid., p. 150.

[^12]:    ${ }^{39}$ Ibid.
    ${ }^{40}$ Ibid., p. 151.

[^13]:    ${ }^{41}$ Ibid., p. 197.

[^14]:    ${ }^{42}$ Ibid., p. 149.
    ${ }^{43}$ Ibid., p. 149.
    ${ }^{44}$ Leonard B. Meyer. Emotion and Meaning in Music. Chicago: University of Chicago Press, 1956.
    ${ }^{45}$ David Huron. Sweet Anticipation: Music and the Psychology of Expectation. Cambridge (MA): MIT Press, 2007.
    ${ }^{46}$ Ibid., p. 419.
    ${ }^{47}$ Ibid., p. 422.

[^15]:    ${ }^{48}$ Ibid., p. 413.
    ${ }^{49}$ Leonard Meyer. Style and Music: Theory, History and Ideology. Chicago: University of Chicago Press, 1989, p. 342.

[^16]:    ${ }^{50}$ Ibid.

[^17]:    ${ }_{51}^{51}$ Caplin. Classical Form, p. 37.
    ${ }^{52}$ Pierre Boulez. 'Le Système et l'idée' (1986), Points de repère III: Leçons de musique. p. 415.

[^18]:    ${ }^{53}$ Caplin. Classical Form. 1998, pp. 40-41.

[^19]:    ${ }^{54}$ Pierre Boulez. Boulez on Music Today. Trans. Susan Bradshaw and Richard Rodney Bennett. Cambridge, MA: Harvard University Press, 1971. Original edition: Penser la Musique Aujourd'hui. Paris: Gonthier, 1963.

[^20]:    ${ }^{55}$ Goldman. The Musical Language of Pierre Boulez, pp. 119-122.
    ${ }^{56}$ Caplin. Classical Form, p. 255.

[^21]:    ${ }^{57}$ Goldman. The Musical Language of Pierre Boulez. 2011, p. 167-169.
    ${ }^{58}$ Ibid, p. 153-159.

[^22]:    ${ }^{59}$ This is a variation of a technique Boulez often employs to create ambiguity within rhythmically straightforward passages, in which grace notes are played on the beat, therefore disguising the pulse in a flurry of ornamentation. See Goldman's discussion of Dérive I: Goldman. The Musical Language of Pierre Boulez. 2011, pp. 117-119.
    ${ }^{60}$ Gérard Grisey. "Tempus ex Machina: A composer's reflections on musical time." Contemporary Music Review, English trans., 2:1 (1987): 239-275.

[^23]:    ${ }^{61}$ Tom Coult. Pierre Boulez's 'Sur Incises': Refraction, Crystallisation and the Absent Idea(1). Tempo, vol. 67, issue 264, April 2013, pp 2-21.

[^24]:    ${ }^{62}$ Galloping Across the Prairies for beginner saxophone and piano: RCM Saxophone Repertoire, Level 1: Score and CD. Toronto: Frederic Harris, 2014.

