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AN IMAGINED DRAMA OF COMPETITIVE OPPOSITION IN
CARTER'S *SCRIVO IN VENTO*, WITH NOTES ON NARRATIVE,
SYMMETRY, QUANTITATIVE FLUX AND HERACLITUS

Elliott Carter's music often poses some struggle of opposition. For instance, his Double Concerto (1961) presents a struggle between contrasting timbres by pitting piano and fluid orchestral sounds on one side of the stage against harpsichord and brittle orchestral sounds on the other. His String Quartet No. 3 (1971) lays out another staged oppositional struggle by opposing a duo of violin and cello (playing *quasi rubato*) against a duo of violin and viola (playing in strict time). The String Quartet No. 5 (1995) sets forth a struggle between four different pulses by having each player move at a different pulse from the other three players throughout all ten movements. These oppositions of general character in Carter's music are well known.¹ Also well known is Carter's preference for the all-interval tetrachords, 4-Z15 [0, 1, 4, 6] and 4-Z29 [0, 1, 3, 7].² From all of these facets in Carter's music, this study will develop a narrative interpretation of his Petrarch sonnet-inspired solo flute piece *Scrivo in Vento* (1991).³ Specifically, it forges a number of narrative paths by imagining the two tetrachords as active agents opposed in competition.

Previous *Scrivo* analyses (Capuzzo 2002; Childs 2006) stress continuity by revealing Q-transforms and common-note voice leading between the tetrachords.⁴ While acknowledging such features, the present analysis emphasises oppositional struggle by tracing the tetrachords as separate entities which cooperate and conflict as they manoeuvre to outdo each other. Their unity is acknowledged, but so is their resistance to it. My approach resonates with and develops the view of *Scrivo* taken by Arnold Whittall (1999), who cites its contrasts and oppositions within a more expansive discussion of interpretative issues. Whittall's self-professed pluralism acknowledges resistance to unity not only in the music, but also, correspondingly, in approaches to its interpretation – 'not aim[ing] to replace unity with diversity, but to balance their competing claims' (p. 98). The plausibility of promoting resistance or alternatives to unity in music interpretation is suggested by Alan Street (1989), who, paraphrasing Dahlhaus, questions the necessity of the 'unity principle' in music analysis and theory:

[T]he principle of unity is itself an engrained element within the ideology of music theory past and present. On the one hand this might occasion praise, since theory could be taken to exhibit a commendable understanding of aesthetic speculation

right from Plato and Aristotle, by way of German Idealism, through to latter-day structuralism and phenomenology. However, on the other hand, it does not follow that aesthetic principles forever arise from anterior philosophical concerns only to float free of them as the analytical context so often assumes. (p. 80)

My analysis finds, in Carter's *Scrivo in Vento*, an ideal context for exploring such interpretative issues by relating the intricacies of analysis to broader philosophical and aesthetic concerns inspired by the particulars of Carter's work. Thus the analysis advances three theses: (1) it guides listening to and reading *Scrivo* in a way that resonates with Carter's concern for the aesthetics of oppositional struggle, his choice of a sonnet as inspiration and his affinity for the all-interval tetrachords; (2) it shows how music-analytical detail can be organised into dramatic narratives by projecting dramatic roles onto categories asserted by a formal theory and treating the formal theory's relations metaphorically as actions performed by each role as the musical work unfolds; and (3) it shows that detailed pitch-class set analysis can support a Heraclitean view of music: a flux of opposing forces seeking and resisting unity.

Theoretical Bases

Literary and narrative analogies to music have a long and varied pedigree, one that includes: Burmeister's mapping of rhetorical figures to counterpoint and melody in the seventeenth century; Riepel's anthropomorphising of notes, chords and progressions in the eighteenth century; and the programmatic symphonic works of Berlioz and Liszt in the nineteenth century. Schoenberg, Schenker and Tovey continued the tradition into the twentieth century with their depictions of pitches, chords and motives as struggling or striving agents. Not surprisingly, interest in the related topics of musical meaning and metaphor has recently surged, for instance in the theories of Robert Hatten (1994), Nicholas Cook (2001), Lawrence Zbikowski (2002) and Michael Spitzer (2004). Such theorising evolves naturally from the predilection for narrative analogy in music analyses in prior decades, for instance in analyses by Edward T. Cone (1977 and 1982), Anthony Newcomb (1987), Marion Guck (1994) and David Lewin (1986 and 1992). Yet, although narrative analogy takes centre stage in these various interpretations, Carolyn Abbate (1989), Jean-Jacques Nattiez (1990) and Lawrence Kramer (1992) have all expressed scepticism about musical narrative, stressing its limitations. For instance, Nattiez worries that reading music as some kind of plot runs the 'serious risk of slipping from narrative *metaphor* to an ontological illusion': the belief that 'since music *suggests* narrative, it could itself *be* narrative' (1990, p. 245). And Abbate contends, as Street colourfully puts it, that 'any attempt to read music as a speaking sequence amounts to nothing more than an act of ventriloquism: a manipulation of the figure of prosopopoeia for the sake of jumping the abysmal gap between word and work' (1994, p. 183).

This scepticism was met head on by Gregory Karl (1997) and Byron Almén (2003), who do not share this worry because they consider it self-evident that

music does not narrate verbally and rarely references external events or causes (causation). But neither does all narrative literary fiction, stage drama or film – Almén cites an Ishiguro short story in which the narrator never interprets or asserts the causal connections between events. Almén explains:

It is the observer that ultimately makes the connection between events A literary narrator may be a useful guide to making connections, but our judgment is still required in determining the reliability of this narrator. The narrator's role in the apprehension of narrative may frequently be supplemented or supplanted by the listener's or reader's role [In literature and in music] *we* must infer connections For the same reason, then, there can be no *one* narrative that fits appropriately with a musical work. There may be more or less convincing narratives, but if connections cannot be causally determined, there can be no [single] preferred narrative. (p. 7)

This does not mean that anything goes. Yet it does loosen the expectations for musical narrativity so as to encompass plausible alternative approaches to it. For one thing, it suggests that a sequence of events that already seems narrative, or suggests narrativity, may nonetheless be re-narrated by the reader or by a mediating third party, who explains or reinterprets the sequence of events.

A related perspective is suggested by Nicholas Reyland (2007a), who – in his quest to unravel the mystery of what Lutosławski means by plot (*akcja*) – confronts some more general issues of narrative. Reyland turns to Wolfgang Iser's reader-response theory: 'Iser ... argues that texts must be conceived in terms of how a reader's (in his terms) "active and creative" participation is invoked. The basic emplotment of a narrative's story takes place, in this view, at a point of interaction between text and perceiver within the latter's imagination' (Reyland 2007b, p. 12). Narrative emerges as the reader narrativises the work by providing his or her own internal narration. Though not mentioned by Reyland, a mediating third party's narrative interpretation can find itself at this interactive juncture of text and perceiver, prompting more active participation from the perceiver, and sparking the imagination too.

For music, Reyland characterises the perceiver-response view pluralistically:

[F]unctional events in a musical plot need to be recognized as being read into a piece's discourse by the perceiver in response to listening conventions within particular listening communities *and* in response to the musical 'facts' of a composition. As part of that response, events are emplotted to reveal a logic of succession and thus a musical plot. That schematic structure forms not a story, in the concrete or literary sense, but rather a story-like structure – a mnemonic or pre-story – open to a multivalency of individual, yet also potentially interconnected, interpretations. (2007b, p. 15)

This perceiver-response view allows for a variety of narratives, though without prescribing any particular strategy for developing them.

Karl's and Almén's solutions involve theorising and presenting analyses based on plot archetypes (also called narrative archetypes). Much that is relevant can be drawn from Karl's and Almén's commentaries. In the interest of brevity, however, a few points will suffice. Karl's analysis of Beethoven's *Appassionata* Sonata asserts the roles of two agents (protagonist and antagonist) and a goal state as corresponding to phrases and thematic units. The agents enact seven functions: enclosure, disruption, subversion, counteraction, withdrawal, interruption and realisation.⁵ Karl also argues: 'For one character to act as a foil to another ... there must be differential features of their character, behaviour, or fortunes ... which the underlying parallels [to real life] set in relief' (1997, p. 17). Almén (2003) sharpens these notions by adapting Northrop Frye's (1957) four narrative categories:

I. Emphasis on Victory		II. Emphasis on Defeat	
A. Comedy	Victory of transgression over established order	A. Tragedy	Defeat of transgression by established order
B. Romance	Victory of establishment over transgression	B. Irony/Satire	Defeat of establishment by transgression

Comedy and romance stress victory; tragedy and irony stress defeat. For instance, victory of a protagonist who transgresses against the established order characterises comedy, whereas victory of that establishment (as protagonist) over some transgressor characterises romance. By contrast, tragedy is the defeat of a protagonist transgressor by established order, and irony (satire) is the defeat, which we view from a detached perspective, of a protagonist establishment by some transgressor. In comedy and tragedy, therefore, the protagonist is the transgressor, whereas in romance and irony (satire), the protagonist is the established order.

Of course, one can poke holes in Frye's model. Nevertheless, it is helpful and makes sense in terms of some familiar examples that fit the model well. For comedy, an obvious example is the servant Figaro, charmingly victorious over the traditional established order of Count Almaviva's household. For romance, consider the eventually successful pairing up of suitable couples (established order) after various mishaps (transgressions) in Shakespeare's *Midsummer Night's Dream*, *Twelfth Night*, *The Tempest* and *Cymbeline*. For tragedy, obvious examples fitting Frye's model are the defeats of Macbeth and Othello, whose murders transgress against established standards of morality. For irony (satire), consider Weill and Brecht's *Threepenny Opera* (based on the seventeenth-century *Beggar's Opera*), in which basic justice and human welfare (established moral order) are defeated by the transgression of crooks such as Macheath ('Mack the Knife'), Peachum and the corrupt chief of police ('Tiger' Brown), who ultimately gain control of a bank 'legally', thus creating a perverse parody of a happy ending.

In music, sometimes dramatic or narrative roles are prompted by instrumentation, text, or both. For instance, Dai Griffiths's (1996) analysis of Webern's Op. 3 No. 1 conjures a fictional dialogue of piano, as psychiatrist, and voice, as patient. (The 'voice' is imagined as lying down on a couch, while the 'piano' seated at the side takes notes, all in an imagined Viennese consulting room circa 1910.) Joseph Kerman (1999) describes Carter's Piano Concerto as driven by 'confrontational energies pit[ting] the concerto agents against each other ... [in] a "battle" between individual and crowd' (p. 119). Carter's *Scrivo in Vento*, a solo instrumental work, involves only one player and does not set a text. Yet it does in its published state have a text, published with the score – what Jonathan Bernard (1996) calls a 'non-verbal text' in his essay about a similar situation: Carter's Concerto for Orchestra, inspired by Saint-John Perse's poem *Vents (Winds)*, which also happens to relate to the same topic as *Scrivo in Vento* (writing on wind).

Petrarch's Sonnet

Consider *Scrivo's* non-verbal text: Petrarch's love sonnet 212, 'Beato in sogno'. It is shown in the original Italian in the third column of Ex. 1, along with two English translations (on the left) and my own annotations (on the right).⁶ As is typical in Italian sonnets, this one has four stanzas in which the rhyme scheme of the last two differs from that of the first two.⁷ The first two show mirror symmetry (*abba*), whereas the last two do not, since they have only three lines each. In this particular sonnet, however, they show balance symmetry (*aba*) because 'amo' chimes with 'anno' and contrasts with 'erco' in between.⁸

The meaning of the sonnet derives much from its context. Petrarch first saw Laura, his muse, in 1327 in the church of Santa Clara at Avignon. Though Petrarch strove to be united with her in love, she, a virtuous married woman, resisted his courteous advances. Her reserve and the forbidden nature of his desires plagued Petrarch deeply.⁹ He documented his paradoxical lifelong obsession with a sustained burst of passionate poetry: *Rime in vita e morte di Madonna*

Ex. 1 Petrarch, 'Beato in sogno'

English translation	Alternative English translation		Rhyme pattern
Blessed with sleep, and content with languor, embracing shadows, and chasing the summer breeze, I swim the sea without floor or shores, plough waves, build on sand, write in air:	Happy in dreams; content in languishing: Shadows I clasp; I swim in shoreless seas; I chase the summer airs with aimless wings: Build on the sand and write upon the breeze.	<i>Beato in sogno et di languir contento dabbracciar l'ombre et seguir l'aura estiva, nuoto per mar che non à fondo o riva; solco onde, e 'n rena fondo, et scrivo in vento</i>	a b <i>Mirror</i> b <i>symmetry</i> a
and I gaze after the sun, until, with its splendour, it extinguishes all my powers of sight, and I hunt a wandering and fugitive deer, on a slow, rickety and infirm ox.	I plough the waves in vain; the sun I woo Till by its withering rays my powers are spent; A swiftly fleeing deer do I pursue With sluggish ox, crippled and maimed and bent:	<i>e 'l sol vagheggio, si ch'elli à già spento col suo splendor la mia virtù visiva, et una cervo errante et fugitiva caccio con un bue zoppo e 'nfermo et lento.</i>	a b <i>Mirror</i> b <i>symmetry</i> a
Weary and blind to all harm except my own that I search after, trembling, day and night, I call to Love, my Lady, and Death alone.	Save to my own harm I am blind to all; That harm I seek with fluttering heart and torn. On Love, my lady, nay on Death I call.	<i>Cieco et stanco ad ogni altro ch'al mio danno il qual di e notte palpitando cerco, sol Amor et Madonna et Morte chiamo.</i>	a b Balance a symmetry
So, for twenty years long and heavy trouble, I'm paid with tears and sighs and grief: under that star I swallowed bait and hook.	And twenty years these torments have I borne. Sell am I filled with sighs and tears and gloom. Yet dearly love the fate that weaves my doom.	<i>Costi venti anni, grave et lungo affanno, pur lagrime et sospiri et dolor merco: in tale stella presi l'esca et l'amo.</i>	a b Balance a symmetry
Translation by A. S. Kline	Translation by William Dudley Foulke		

Laura (or *Canzoniere*), consisting of 366 love sonnets composed over a period of thirty years. Most were written before her death, more in 1346–7 than at any other time; he continued writing and revising them after she died and collated them into two books: reflections on her in life (*in vita*) and in death (*in morte*).

Petrarch's composing of 'Beato in sogno' in 1347 (probably in April) honours the twentieth anniversary of his falling in love with her and marks the start of his plan to collate his love sonnets into a collection for posterity. Six months later, before starting out on his fifth trip to Italy, Petrarch met with Laura for the last time, a meeting described in two other anxious love sonnets;¹⁰ six months after that Laura succumbed to the plague. The news of her death spurred Petrarch to revise and collate the love sonnets, which he continued to compose long after her death.

In content, 'Beato in sogno' is somewhat tragic. The frustrated poet, after journeying to meet his beloved, arrives exhausted, beaten and beaten down by impossible passions, as awesome as the forces of nature. In discussing *Scrivo* and its sonnet, Whittall stresses the 'poet's overwhelming awareness of mortality', noting that

artists attempt to create something permanent ... out of their own sense of impermanence. Perhaps the poem's most powerful encapsulation of that paradox is the image of gazing longingly at the sun, which is seen as a transcendent symbol of light and renewal, despite the knowledge that the sun's cycle is also a potent guarantee of human transience. (1999, pp. 91–2)

Petrarch evokes a struggle of life against death, or a person's struggle against the forces of nature. In fact, the sonnet seems not to differentiate between these two struggles; it blends them together. Indeed, they do coincide in one sense; consider, for instance, depictions by Erwin Schrödinger (1944), Norbert Wiener (1948) and Stephen Hawking (1988) of humans as metabolic heat machines striving to survive in an uphill battle against entropy and thermal equilibrium, that is, death. Such a dismal fate is love, says the poet.

Moods and Sectional Form

An aura of narrative bursts forth in the first ten bars of *Scrivo* as we hear violence interrupting calm and vice versa. Shown in Ex. 2, the first seven bars are relatively quiet and legato; they move at a slow pace within a narrow ambitus in the flute's lowest register; the sole high C# in bar 6 punctures this mood, which restores itself in the next bar. Then suddenly in the next two bars a whole new ambience intrudes: a loud, fast, violent flurry of high-pitched, angular leaps, after which the placid atmosphere suddenly returns. The presence of such extreme contrast, so plainly audible and interrupting the flow so early in the piece, boasts a stubborn 'resistance to unity', to borrow Street's (1989) phrase. It foretells of conflict. A conflict between soft slow music in a narrow ambitus (bars 1–7) and loud, fast music in a wide ambitus (bars 8–9) is possible; but a richer interpretation would view these as contrasting moods in which another conflict plays

Ex. 2 Extreme contrasts: agreeable and combative moods

for Robert Aitken
SCRIVO IN VENTO
for flute alone

Elliott Carter
(1991)

Agreeable mood

- Soft
- Slow
- Narrow ambitus
- Slurred
- *Espressivo*
- *Tranquillo*
- Low register

The musical score consists of five staves of music. The first staff is marked 'p. espressivo tranquillo' and has a tempo of quarter = 84. The second staff has markings 'ff. sub.', 'p. espr.', and 'ff. marcatisimo violento'. The third staff has markings 'f' and 'ff'. The fourth staff has markings 'p. espr., tranquillo' and '3'. The fifth staff has markings 'p. espr.' and 'f. marc.'. There are also markings for 'Flt.' and 'sub.' (sub-octave).

Combative mood

- Loud
- Fast
- Wide ambitus
- Not slurred
- *Marcatisimo*
- *Violento*
- High register

out.¹¹ To suggest interaction as the context, let us call them *agreeable* and *combative* moods.¹² The moods also differ in terms of pulse. The agreeable mood moves at a pulse based on a crotchet tied to a semiquaver (five semiquavers); the combative mood moves by semiquavers.¹³

As *Scrivo* progresses, its moods blur somewhat – as if distrustful rivals are misleading each other with shifty behaviour. The stark contrasts which began the work start to intermingle, for instance at bars 43–55, shown in Ex. 3. Here interlaced strands are segregated by dynamic level.¹⁴ In bars 42–52 one of two strands plays *forte* starting from a high register (usually in the combative mood) and moving gradually to mid-register by bar 51. The other strand (shown on a separate stave below the *forte* strand) starts low and *piano* (both elements of the agreeable mood); it too moves gradually to mid-register by bar 51. As explained in detail below, referential pitch-class sets form both within and between the interlaced strands. The moods diversify and intensify further towards the end of the passage as two new strands, played *mezzo-forte* and *fortissimo*, emerge, at first interlacing with and then gradually replacing the *piano* and *forte* strands. A later passage (bars 63–67) gradually transforms the combative mood into the agreeable, culminating in a sustained flutter-tongue – a sound simultaneously static and dynamic.

Despite these ambiguities of mood, *Scrivo* divides into nineteen sections characterised by changes of mood.¹⁵ The lengths of the sections vary a lot. Ex. 4 shows a durationally proportional form chart: odd sections are agreeable (soft, slow, narrow ambitus); even ones are combative (loud, fast, wide ambitus).

Ex. 3 Strands segregated by dynamic level, bars 43–55

The image displays a musical score for a single instrument, likely a trumpet or trombone, spanning bars 43 to 55. The score is annotated with various dynamic levels and pitch classes to show how different strands are segregated. Key annotations include:

- Dynamic Levels:** *ff* (fortissimo), *f* (forte), *mf* (mezzo-forte), and *p* (piano).
- Pitch Classes and Sets:**
 - $\{04852\} \in 5-26$ (at the beginning of bar 43)
 - $\{02468A\} \in 6-35$ (at the beginning of bar 44)
 - $\{13579B\} \in 6-35$ (at the beginning of bar 45)
- Strands and Transitions:**
 - $T_A(INCU) \in 4-Z15$ (bars 43-44)
 - $T_7(CHALL) \in 4-Z29$ (bars 43-44)
 - $T_6(ARB) \in 6-9$ (bars 44-45)
 - $T_9(ARB) \in 6-9$ (bars 45-46)
 - T_{39}^P (a specific strand in bar 45)
 - T_0 (the overall pitch class set for the entire passage)
- Other Markings:** *ff* (at the end of bar 43), *f* (at the end of bar 44), *mf* (at the end of bar 45), and *p* (at the end of bar 46).

Ex. 4 Nineteen sections, projected by alternation of slow and fast motion (and other coordinated features) interpreted as agreeable and combative moods

Sections (moods): agreeable vs. combative	Bars
1	1-8
2	8-9
3	10-17
4	17-21
5	21-30
6	31
7	32-36
8	37-53
9	54-62
10	62-67
11	67-71
12	72
13	73-81
14	82-85
15	85-87
16	87-88
17	88-97
18	97-104
19	104-111

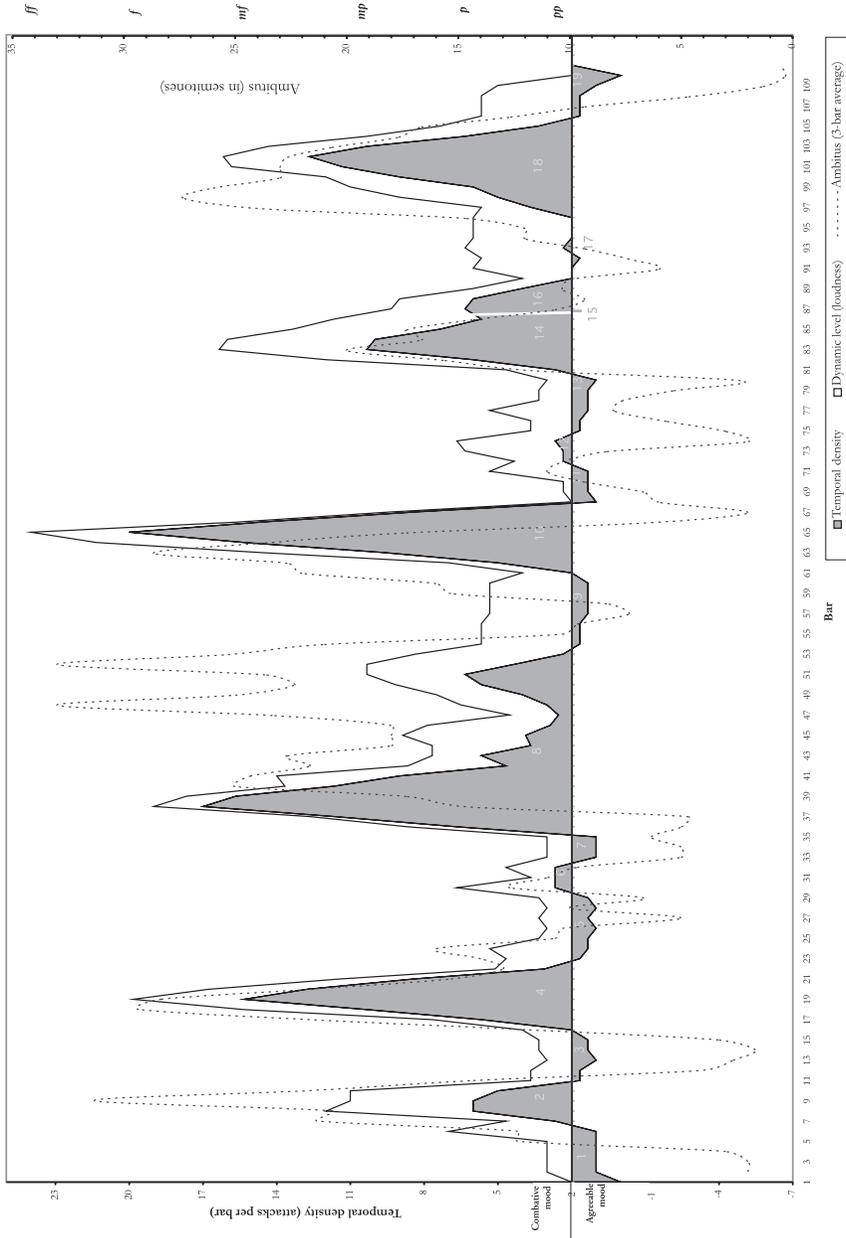
Sections 6 and 12 each last less than a bar, whereas section 8 (the longest) lasts seventeen bars. The long-range rhythm of sectional divisions eludes regularity. One way to demonstrate this parsing into sections is to compute the fluctuating speed of the music, modelled as *temporal density* (number of attacks per bar), and make a cut.¹⁶ I make the cut at two attacks per bar because that is usually the fastest speed for the soft, narrow-range, legato passages.¹⁷ Ex. 5 shows a *temporal dynamic form* graph based on this computation (and the cut). On the graph, the contour of the grey-shaded region (above and below the baseline of the cut) indicates the flux of temporal density (measured on the left axis). The contour of the solid line indicates the flux of loudness (marked on the right axis). The contour of the dotted line (also marked on the right axis) indicates the flux of the pitch ambitus. The graph shows that the flux of loudness (solid line) and ambitus (dotted line) correlate with the flux of temporal density (shaded region). Together, these closely allied contours portray the mercurial trajectory of *Scrivo's* moods.

The oscillation of the temporal density above and below the baseline in Ex. 5 corresponds to the alternation of sections depicted in Ex. 4. The tendency of temporal density, loudness and ambitus (as well as articulation) to vary in tandem with one another makes the disjunctions multifaceted and thus stronger. This is especially so at the start of the work (see again Ex. 2), where the coordination of temporal density, loudness and ambitus is especially tight, for instance in sections 1–4 of Ex. 5. The centre of the graph in Ex. 5 shows how the coordination gradually blurs toward the middle of the piece, but never dissolves. The computational model of mood graphed in Ex. 5 is too coarse to capture all nuances – for instance, tremolo and sustained flutter-tongue (at bars 68, 85–87 and 107–111) are ambiguous with regard to temporal density. Also, the piece ends with a solitary staccato piano pitch in a medium-low register, a combination that blends the opposing mood characteristics established at the start of the work.

The Pitch-Class Sets in Context: The Incumbent, Challenger and Arbiter as Roles

In his earlier Double Concerto Carter already treated the all-interval tetrachords as having opposing roles: he assigned 4–Z29 [0, 1, 3, 7] to the harpsichord and 4–Z15 [0, 1, 4, 6] to the piano.¹⁸ For a narrative relating to the Petrarch sonnet, these map to the conflict between the mortal human organism and the dispassionate forces of the physical world. Just as the physical world pre-dated the emergence of living organisms, so too 4–Z15 [0, 1, 4, 6] begins *Scrivo*, before 4–Z29 [0, 1, 3, 7] enters. Tetrachord type 4–Z15 [0, 1, 4, 6] is then the established order, the *incumbent* (shown in Ex. 6a).¹⁹ Signalling its strength and verve, it immediately inverts itself, imbricating on its tritone {C, F#} in bar 5. By contrast, 4–Z29 [0, 1, 3, 7], as <A, B, G#, D#>, enters afterwards (in the second half of bar 9) within the first combative episode, shown in Ex. 2. It transgresses

Ex. 5 Flux of mood modelled as temporal density, dynamic level (loudness) and ambitus



against the established order, making it the *challenger*²⁰ – its will to immortality challenges the established order of the physical world. Since the challenger is more easily discerned in the agreeable mood, at bars 11–12 as <F, E \flat , F \sharp , B>, consider its referential literal pc-set form to be T₀, shown in Ex. 6b.²¹

The interval-class content of the set classes serves as a metaphor for power and agility. Because 4–Z15 and 4–Z29 have the same all-interval interval-class vector, they are equally matched – which is itself a kind of equilibrium – in creating variety and imbricating with members of other set classes. The rivals of the narrative are defined by set class, rather than other criteria, and therefore remain distinct from one another under the most familiar transformations: transposition and inversion. From another perspective, the two tetrachords seek unity in sharing the same inventory of interval classes; but they resist unity by failing to transform into each other by any transposition or inversion.²² Moreover, since each rival is a set class rather than a specific ordering or pitch set, it is capable of many guises, like a developed character in a literary narrative.

There is also the question of protagonist versus antagonist. The fact that the challenger is a diatonic set may make it more familiar and easier to empathise with. Furthermore, its diatonic status means that it is, in a sense, less entropic, more structured, orderly, or human made, compared to the incumbent, which is not diatonic. (Note that the distinction between diatonic and non-diatonic is not the same as that between tonal and non-tonal.²³) Furthermore, interpreting the challenger as the protagonist resonates with the sonnet's voice.

The third role in the drama is the *arbiter*, represented by hexachord 6–9 [0, 1, 2, 3, 5, 7], an abstract superset of 4–Z15 and 4–Z29. The hexachord's occurrence at bars 32–36 (shown in Ex. 6c) is the first that embeds the two rivals (4–Z15

Ex. 6 First referential appearances of the incumbent (INCU), the challenger (CHALL) and the arbiter (ARB)

(a) T₀(INCU) {0256} ∈ 4–Z15
bb. 1–6 (not too freely) p, espressivo tranquillo
5 T₀(INCU) {0146} ∈ 4–Z15 p, ff sub.

(b) T₀(CHALL) {B356} ∈ 4–Z29
bb. 11–12 p, espr., tranquillo

(c) T₀(ARB) {23479} ∈ 6–9
bb. 32–36 T₀(CHALL) T₀(INCU) mf p T₀(ARB)

Ex. 7 The arbiter's gradual accumulation of pitches through subsets, bars 8–9

b. 8
 Flt.
 3–2 [0, 1, 3] ⊂ 6–9
 <1BA> ⊂ {1A9B83}
ff, marcatissimo violento

bb. 8–9
 3–4 [0, 1, 5] ⊂ 6–9
 <3BAB> ⊂ {1A9B83}

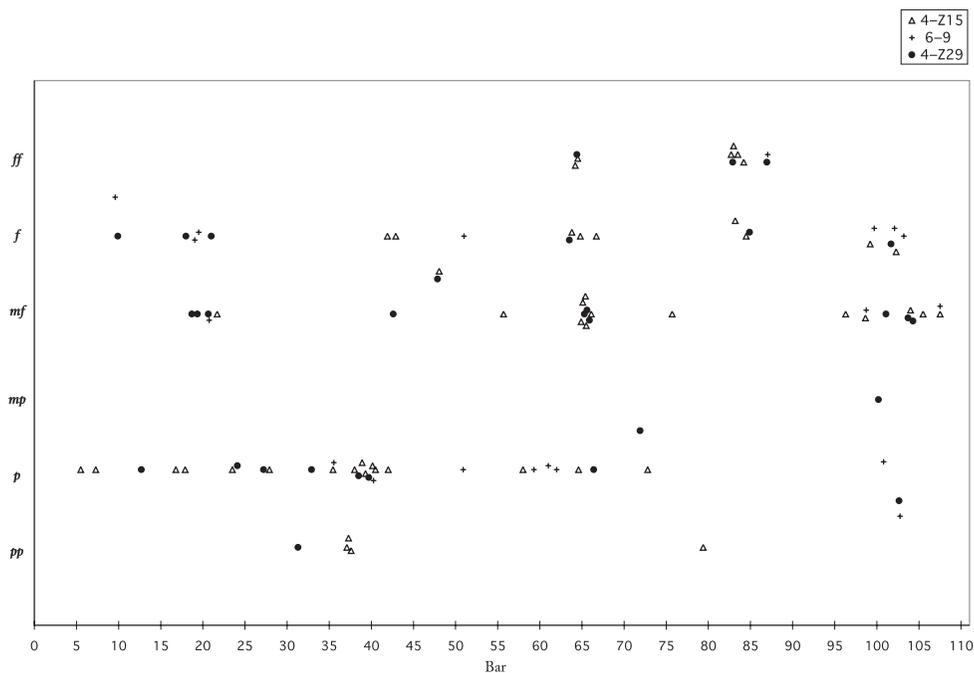
b. 9
 Flt.
 Flt.
 6–9 [0, 1, 2, 3, 5, 7]
 <1A9B8B3A>
 - {1A9B83}

⤿ = new pitch
 | = repeated pitch

and 4–Z29) as contiguous sets; I take this instance of the arbiter (6–9) as its referential form, its T_0 . Narratively or metaphorically, the arbiter may be some spiritual force which connects and negotiates between life and death, soul and nature, mind and matter – that is, between the two rivals, the challenger and the incumbent. (Notice that in this first instance of the arbiter's embedding the rivals as contiguous sets, the rivals do not actually imbricate with each other; they stay separate, each keeping at least one of its two common pitches, A and E $_b$, in its interior.)

Because the arbiter is a larger and therefore more inclusive set, its role is integrative. Reformatting and annotating bars 8–9 from Ex. 2, Ex. 7 shows the arbiter's integrative nature as it forms by accumulating pitches from its subsets. This accumulation process projects to the surface in that the texture gradually fills in, becoming less and less sparse from the start of bar 8 (top) to the end of

Ex. 8 Distribution of 4-Z15 (incumbent), 4-Z29 (challenger) and 6-9 (arbiter) in *Scrivo in Vento*



bar 9 (bottom). When C#, B and A# from bar 8 recur in the flurry of bars 8-9, they do so in their original order. In general, when pitch classes repeat within this brief section, they do so in their original high and wide registral positions, making it easier to hear the three new pitch classes when they enter (mostly) below the original three pitches; these new pitches (marked with crescents) enter in a medium-high-low downward wave: D#5, A6, then G#4. The accumulation process heralds the fluid interaction of pitch-class sets in the piece: in addition to the 4-Z15, 4-Z29 and 6-9, their abstract subsets also play unnamed roles in the drama.²⁴

Contrary to what might be expected, the three main set classes do not separate into different sections, for instance by having a tendency towards one dynamic level or another. The scattergraph in Ex. 8 stratifies the distribution of incumbent, challenger and arbiter entrances by dynamic (loudness) level.²⁵ Each of the three set classes is represented by a different symbol (triangle, cross and circle). The horizontal position of the symbols marks approximately the last pitch of the set, while the vertical position marks approximately its loudness. The graph shows that all three sets are active across the range of dynamic levels and therefore engage in both the agreeable and combative moods. And all three sets occur throughout the work, creating, from a fluctuating storm of opposition, what seems to be a precarious near-equilibrium.

Indeed, segmenting by the rule of adjacency (consecutive notes only), almost all of *Scrivo*'s notes belong to these three set classes; the remainder belong to their subsets.²⁶ Often the sets imbricate and overlap with each other. The advantage of the *adjacency* rule is that, to the extent that identifying sets by ear is a conscious process, adjacency is an easily followed rule.²⁷ Even the quickly played sets can be learned by playing them slowly, outside the time frame of the piece's real-time performance, or they can be heard roughly as diatonic versus non-diatonic.

Goals, Strategies and Tactics

Narrative conflict requires a goal strived for and strategies and tactics implemented in order to meet that goal. For the narrative interpretation of *Scrivo*, the goal, strategies and tactics are inferred. Ex. 9a outlines the goal and the strategies. The goal (to survive, persist or prevail) is deliberately left somewhat vague, partly so that it is compatible with the range of meanings suggested by the ambiguities of Petrarch's sonnet, and partly so that meanings beyond the specific context of Petrarch's sonnet can be developed for Carter's musical work. (The three roles are given generic names for similar reasons.) The strategies (proliferate, flaunt, gain favour and thwart) divide the goal into sub-goals which relate the specific musical actions to the specific dramatic context: dualistic opposition is mediated by a third entity (arbiter).

The manifold tactics are listed in the leftmost column in the table shown in Ex. 9b. The columns on the right side (where the ticks are displayed) indicate the strategies served by each tactic. Many of the tactics serve two or more strategies. For instance, 'holding pitches invariant while transforming' (the second tactic listed) serves two strategies: to assert/proliferate and to flaunt agility. The eighth tactic listed, 'embed in ARB by ic3 extension', serves four strategies, as indicated by the four ticks in that row. Each tactic has a corresponding notational code listed in the second column from the left, where 'X' serves as a placeholder for the name of the role using the tactic. For instance, when the challenger asserts itself by being combative (shown as X-Combative in the sixth-to-last row in the column), it is notated as CHALL-combative; when the incumbent imbricates

Ex. 9a Goals and strategies in the narrative conflict

Goal:	survive, persist, prevail	Strategies:	<ul style="list-style-type: none"> • proliferate, assert self • flaunt agility: variety and coherence of self • gain favour: <ul style="list-style-type: none"> • appeal directly to the arbiter • display cooperation with rival • thwart rival
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Ex. 9b Tactics of strategies striving for the goal of surviving, persisting and prevailing

Tactics	Symbolic notation	Strategies:			
		assert/proliferate	flaunt agility	gain favour: appeal to arbiter	thwart rival display cooperation
General variety and coherence	X-V&C	✓	✓		
Hold pitches invariant when transforming	X-invar	✓	✓		
Imbricate	(X,Y)Imb	✓	✓		
Imbricate with self	X(Imb)	✓	✓		
Embed in ARB	X-Emb->ARB	✓	✓	✓	
Make ARB by repeating pcs of rival	X-usePcs(Y)->ARB	✓	✓	✓	
Imbricate on tritone of rival to make ARB	X-ImbIc6(Y)->ARB	✓	✓	✓	✓
Embed in ARB by ic3 extension (exclude rival)	X+ic3->ARB	✓	✓	✓	✓
Folding: imbricating on trichord of rival	X-FoldImb(Y)	✓	✓		✓
Folding: repeating three pitches of rival	X-FoldCC(Y)	✓	✓		✓
Imbricate with rival on referential ic	X-ImbRefIc(Y)	✓	✓		✓
Imitate rival: start with same ic, use same pcs	X-copy-Y	✓	✓		✓
Assert self combatively	X-Combative	✓			✓
Restore agreeable mood	X-Agreeable	✓			✓
Confuse: combative but agreeable	X-confuse-Y	✓			✓
Initiate combat	X-combat	✓			✓
Assert self combatively	X-Combative	✓			✓
Exclude rival through subset proxy	X-Sub(Y)ByProxy				✓

with itself it is notated as INCU(Imb); when the incumbent imbricates with the challenger on many ics it is written as (INCU, CHALL)Imb#Ics; and so on.

Many of the tactics derive from interval and subset properties of the set classes themselves. For instance, because of its maximally varied interval-class content, each all-interval tetrachord can, on any interval, imbricate or repeat shared pitches with itself (flaunt agility) or with its rival (display cooperation to gain favour).²⁸ In the latter case the tetrachords even flaunt agility while displaying cooperation. This agile cooperating behaviour can be understood by focusing on imbrication in various ways, which reveal how they interact with gradual processes and crisp transformations. Exs. 10, 11 and 12a show such imbrication on dyads of every interval class except ic5.²⁹ (The incumbent imbricates with itself on ic5 <F#, C#> agreeably at bars 10–17, not shown.)

A gradual process of contracting ambitus and smoothing texture occurs in section 10 (bars 62–67), shown in Ex. 10. Here, although the challenger and incumbent begin very combatively, their mood gradually calms down, ultimately to a soft sustained pitch. Loud, violent *marcato* staccato articulation gives way to a softer legato, angular contours transform into smoother waves and large leaps contract as the ambitus telescopes to a narrow band (which is also seen in Ex. 5 as a deep dip in ambitus, shown by the dotted curve, within section 10). The interaction between the sets suggests a calming of mood arrived at processively through some negotiation or diplomacy. Right away (at bar 63 in Ex. 10) the incumbent imbricates on 3–8 [0, 2, 6], a trichord subset of the challenger containing ics 2 and 6, which dominate their discussion through the rest of passage. In bar 64 the incumbent dominates the field; after the challenger imbricates with it on an ic6 dyad, it outdoes the challenger by imbricating with it on a new interval class (ic3), then imbricates with itself on dyads of ic6 and ic2.

Ex. 10 Imbrication between and among the incumbent (4–Z15) and the challenger (4–Z29), via dyads and a trichord, during a gradual process of smoothing of texture: a gradual transition from a combative to an agreeable mood

Overlapping sets:

63 *f* *violento marcato* 3–8[026] *ff* *mf*

Overlapping ics:

65 *mf* *p*

Overlapping ic:

66 *p* *mf* *p* Flt. (no Flt.)

Detailed description of Ex. 10: The example consists of three staves of musical notation. The first staff (bars 63-66) is labeled 'Overlapping sets' and shows two overlapping dyads: 4-Z29 (T7(CHALL)) and 4-Z15 (T6(INCU)). The second staff (bars 65-66) is labeled 'Overlapping ics' and shows two overlapping dyads: 4-Z15 (T3(INCU)) and 4-Z29 (T6(CHALL)). The third staff (bars 66-66) is labeled 'Overlapping ic' and shows two overlapping dyads: 4-Z15 (T3(INCU)) and 4-Z29 (T3(CHALL)). Dynamics include *f*, *ff*, *mf*, and *p*. Performance markings include *violento marcato*, *Flt.*, and *(no Flt.)*. Interval class labels (ic6, ic3, ic2) are placed below the notes.

Similarly, in bars 65–66, to imbricate with each other they use dyads of the same three ics again, but with different pitches – quarrelling over the same issues, perhaps, but in different words.

Earlier in the piece the rivals negotiate by transferring the pivot role, initially played by one pair of pitches, to another pair. In the passage shown in Ex. 11, the incumbent and challenger seem particularly stuck on pcs A and G \sharp at first, for they pivot on shared dyads which include one or both of these pitch classes. (The shared dyads are of every interval class except ic5.) After the sudden ascending burst in bar 41, they transpose their pivotal pitch classes up two semitones to B and A \sharp in bar 42.

Bars 63–66 (Ex. 10) and bars 38–42 (Ex. 11) alike witness the incumbent and challenger relating to each other using a variety of interval classes. In one case (Ex. 10) the pitch emphasis of the imbrication is stable, whereas in the other (Ex. 11) it moves. The left-hand side of Ex. 12a traces the pitch-class content of the imbricating dyads in bars 63–66 (shown in Ex. 10), allowing us to compare it with bars 38–42 (shown in Ex. 11). In bars 63–66 the rivals, instead of reusing two pitches for imbrications (G \sharp and A, then B and A \sharp), tend to reuse only the pitch C (pc [0]). In bar 64 they start using E \flat (pc [3]) as well, although more subtly, since it shifts down an octave in bar 66.

The aggressive sparring which began section 10 (bars 63–66) returns in section 14 (bars 82–85). The right-hand side of Ex. 12a shows how the rivals

Ex. 11 Beginning in bar 37, INCU and CHALL competing, using dyads of every interval class but ic5, each showing off its ability to imbricate on, or repeat, dyads of the other tetrachord, stressing pcs [8] and [9], then [A] and [B]

{98} $\xrightarrow{T_2}$ {AB}

	$T_{B I}$	$T_{8 I}$	T_3	T_2	$T_{A I}$		T_7
INCU:	<956B96>	<862363>	<959358559>	<8272484>	<845A>	...	<57AB>
$\cap =$	ic3	ic2	ic1	ic6	ic4		ic1
CHALL:	<9668292686>		<982682>				<A48B>
	T_3		T_3				T_5

ic3 <96> ic2 <86> ic1 <8 9> <98> ic6 <82> ic4 <84> <AB> ic1 <A B>

The musical score below the diagram shows two staves. The INCU staff (top) and CHALL staff (bottom) are in 3/4 time. Dynamics include *p*, *f*, *mp*, and *mf*. The score illustrates the imbrication of tetrachords and interval classes as described in the diagram above.

extend the argument. In bar 82 they imbricate on an ic1 dyad (not used for imbrication in Ex. 10) this time spanning a major seventh <E6, D#7> instead of a semitone (occurring in Ex. 11). In bar 84 (Ex. 12a) it happens again, now on <G^b, F>. Thus, as happened at bar 42 in section 8 (Ex. 11), so too at bar 84 in section 14 (Ex. 12a) the rivals transpose their pivotal pitch classes up two semitones. Perhaps after imbricating with the incumbent in bar 82, the challenger recognises the incumbent's ic1 dyad <G^b, F> as a T_2 transposition of its last imbricated dyad <E, D#> and thus takes its opportunity to show its cleverness.

The rivals' interaction takes on a buoyant but stately character in section 5 (bars 21–30). In this section, shown in Ex. 12b, a wide pitch ambitus acts to expand an otherwise calm mood. It serves the display of symmetry the rivals achieve in their separate presentations. Here the rivals best each other in their use of ic4 as a headmotive while reusing each other's pitches. Such pitch repetition might be considered either cooperating or conflicting, depending on how the mood is interpreted. As it happens, the mood here is tentative as the rivals lithely leap, acrobatically but slowly and quietly. The stateliness of the passage emerges from the mirror-symmetrical (*abba*) chronology of the ic4-headed occurrences of the rivals: the incumbent, then the challenger twice, then the incumbent again. The registral spacing of the ic4 dyads (that of the incumbent a major third, the challenger's a major tenth) aurally reinforces the mirror-symmetrical presentation – a facet of the music which relates even more deeply to Petrarch's sonnet, as will be explored further below.

Trichord subsets also influence the tactics of the rivals. The rivals' subsets and supersets differ but not completely. Ex. 13 depicts a diagram of the relationship between the incumbent (4–Z15, on the left) and the challenger (4–Z29, on the right) as they connect to each other through trichord subsets (in the centre) and

Ex. 12a In sections 10 (bars 63–68) and 14 (bars 82–85) INCU and CHALL combatively imbricate with each other (sometimes with themselves) and repeat each other's pitches on a variety of interval classes. The pitches C and later E♭ recur in these imbricating dyads

ic2 <0A0> } b. 63
 ic6 <06> }
 ic6 <71> } b. 64
 ic3 <30> }
 ic2 <0A> }
 ic2 <13> } b. 65
 ic6 <06> }
 ic3 <8B> } b. 66
 ic6 <93> }
 ic4 {95} }

see Ex.10

ic1 <43> in b. 82

ic1 <65> in b. 84

CHALL 4-Z29

INCU 4-Z15

INCU 4-Z15

CHALL 4-Z29

ff. violento, marcato

f

T_2

Ex. 12b INCU and CHALL using ic4 as a headmotive in bars 21–30

b. 21 ic4 ∅ <62> starts <6250> ∈ INCU

bb. 22–24 ic4 ∅ <91> starts <9134> ∈ CHALL

bb. 24–27 ic4 ∅ <B3> starts <B389> ∈ CHALL

bb. 27–30 ic4 ∅ <59> starts <5983> ∈ INCU

Mirror symmetry

ic4 as major 3rd

ic4 as major 10th

ic4 as major 10th

ic4 as major 3rd

INCU 4-Z15

CHALL 4-Z29

CHALL 4-Z29

INCU 4-Z15

*mf*³ (*mf*)

p. espr.

*mf*³

mf

p

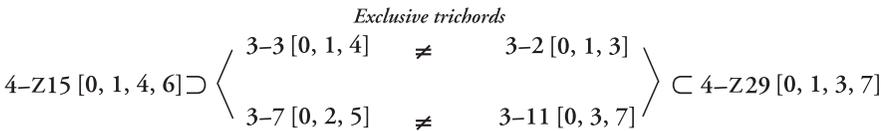
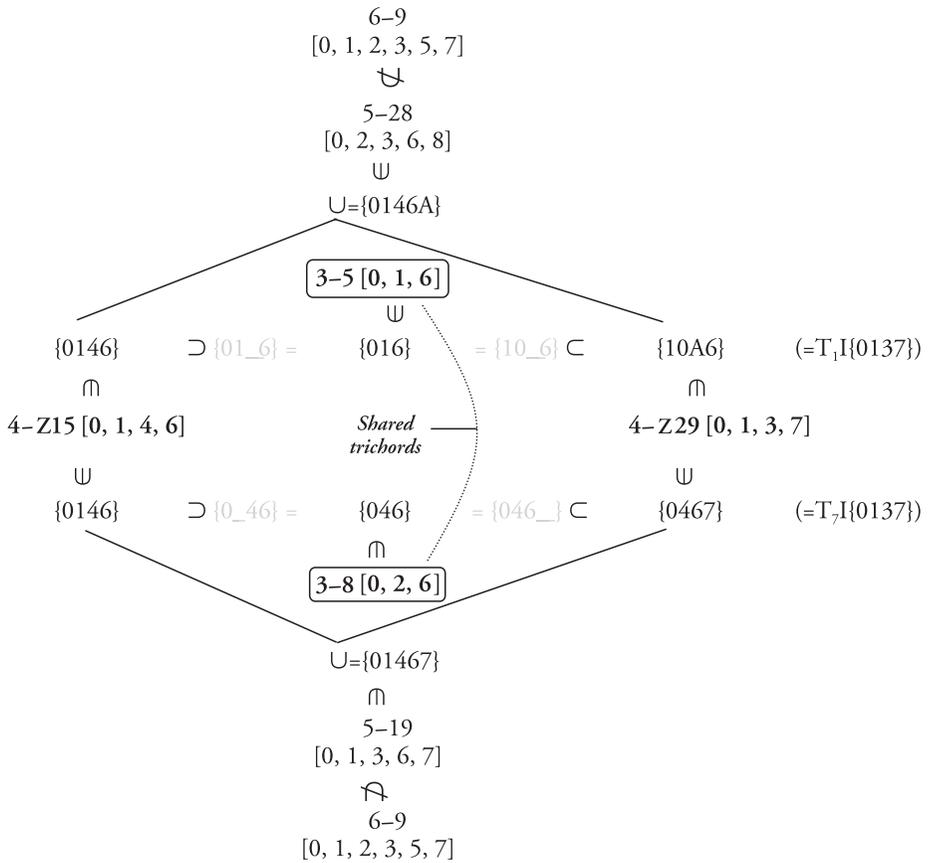
p

p

mf

pentachordal supersets. Although 4-Z29 and 4-Z15 share two trichordal subsets (3–5 [0, 1, 6] and 3–8 [0, 2, 6], shown in the centre), each of them has two trichord subsets unique to itself (shown at the bottom). Trichords 3–3 [0, 1, 4] and 3–7 [0, 2, 5] (bottom left) are unique to 4-Z15, while 3–2 [0, 1, 3] and 3–11 [0, 3, 7] (bottom right) are unique to 4-Z29. Yet, imbricating on their shared trichords prevents them from forming the arbiter (6–9), because when they imbricate on 3–5 [0, 1, 6] or 3–8 [0, 2, 6] they make pentachords 5–28 [0, 2, 3, 6, 8] and 5–19 [0, 1, 3, 6, 7], which are not subsets of 6–9. Treating these

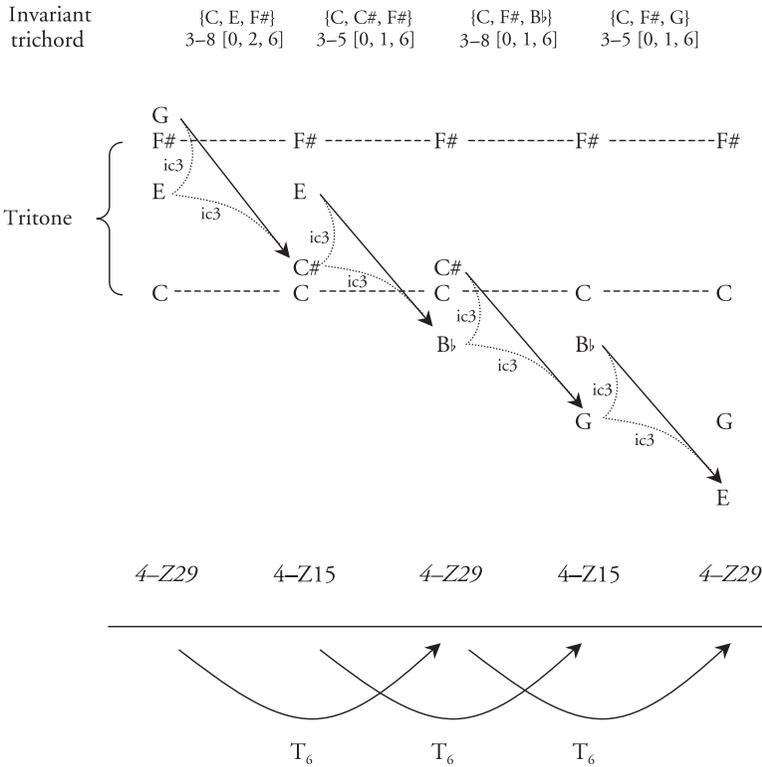
Ex. 13 Subset and superset relations between the incumbent (4–Z15), challenger (4–Z29) and arbiter (6–9). Shared and exclusive trichord subsets of 4–Z15 and 4–Z29



combinational capabilities metaphorically, we can view them as constraining and influencing the rivals’ actions within the dramatic narrative.

Ex. 14 shows one example of how this can work. By pivoting with 3–5 [0, 1, 6] and 3–8 [0, 2, 6] as common-note trichords in alternation, a looping chain of alternating 4–Z15 and 4–Z29 forms wherein either of the pitches not part of the tritone is inverted around the other pitch not part of the tritone.³⁰ (It is a rule-determined application of something like Bernard’s ‘folding’ operations and derives from the fact that the tetrachords form what Robert Morris calls a

Ex. 14 A chain of all-interval tetrachords transforming into one another by folding. One of the non-tritone pitches inverts around the other non-tritone pitch, which is an ic3 away. The tritone and alternating trichords (3–8 [0, 2, 6] and 3–5 [0, 1, 6]) which include it are held invariant



Through the complement union property (CUP) pair [0369][06], folding makes octatonic subset 6–30 [0, 1, 3, 6, 7, 9]

‘complement union pair’ [1990, p. 194].³¹⁾ For instance, starting from the challenger (4–Z29) on the left: G is a pitch not part of its tritone and is the distance of ic3 away from E; when G is inverted around E to C#, it produces an instance of the incumbent (4–Z15) and holds trichord {C, E, F#} ∈ 3–8 [0, 2, 6] invariant. Flipping C# around E would do the reverse, bringing back the same instance of the challenger from which we started; but flipping instead E around C# produces a new instance of the challenger, now holding {C, C#, F#} ∈ 3–5 [0, 1, 6] invariant. Other details are shown in the example.

An instance of this trichordal folding (enhanced by two invariant dyads) occurs in bar 84 (see again Ex. 12a). By recasting bar 84 in a different format, Ex. 15a shows the incumbent flaunting its agility by inverting while holding the ic1 dyad <Gb, F> invariant. Not to be outdone, the challenger bests the incum-

Ex. 15a The incumbent inverting and holding a dyad invariant in bar 84; the challenger besting it by using three pitches, deriving its fourth pitch and affixing the fourth of the incumbent's pitches

Diagram illustrating the musical analysis of Ex. 15a, showing three staves of music and their relationships:

- Top staff (Bar 84): $\langle 6502 \rangle \in 4-Z15$
- Middle staff: $\langle 965B9 \rangle \in 4-Z15$
- Bottom staff: $\langle 6580 \rangle \in 4-Z29$
- Left side (Incumbent): $\cap = \langle 650 \rangle \in 3-5 [0, 1, 6]$
- Bottom left (Challenger): $\cap = \langle 65 \rangle \in ic1$
- Transformation arrows: $T_B I$ (top to middle), $T_8 I$ (middle to bottom), and $T_8 I$ (bottom to middle).

bent by reusing not only that dyad, but also the 3–5 [0, 1, 6] trichord $\{G^b, F, C\}$ it shares with it (through folding) and generates its only remaining pitch, A^b , from C , by the same inversion operator $T_8 I$ which relates the pitches $\{B, A\}$ of the incumbent that it omits. Then, as if to thumb its nose, the challenger even adds the only remaining pitch, D , of the first incumbent on the page. For the moment, the challenger seems to dominate over the incumbent's best efforts. Listening for flux in this passage, we can hear how, while some pitches are repeated, there is a gradual transition from a non-diatonic to a diatonic sound.

Ex. 15b Using its exclusive trichords, the challenger by proxy thwarts the incumbent in bar 88

To thwart its rival by proxy, either tetrachord can send one of its exclusive trichords (shown at the bottom of Ex. 13) to imbricate with the rival's trichords, thus preventing the rival from fully forming. For instance, Ex. 15b shows, at bar 88, the challenger using its exclusive 3–2 [0, 1, 3] and 3–11 [0, 3, 7] trichords to block its rival from forming. In other words, the 3–3 [0, 1, 4] set <F, G#, A> suggests the incumbent is trying to form, but the challenger's exclusive 3–2 [0, 1, 3] set <G#, A, F#> stops the formation. (If the shared 3–5 [0, 1, 6] set <F, G#, D#> had imbricated instead, then the incumbent would have formed.) The subsequent 3–11 [0, 3, 7] and 3–2 [0, 1, 3] subsets of the challenger also preclude the immediate formation of the incumbent since they are exclusively subsets of the challenger, not the incumbent.

To gain favour with the arbiter, either tetrachord can embed within it. And when both embed in the arbiter, they share a tritone dyad but have distinct ic3 dyads. Ex. 16a dissects the arbiter hexachord 6–9, showing the two ways to do this. Any 4–Z29 and 4–Z15 embedded in 6–9 share a tritone dyad (in this case, pcs [1] and [7]), whereas what each holds exclusively is an ic3 dyad (in this case, pcs [0] and [3] in the 4–Z29 set and pcs [2] and [5] in the 4–Z15 set).³² Either tetrachord can form 6–9 by extending itself appropriately with an ic3 dyad, namely with the particular ic3 dyad which interlocks with the ic3 dyad the set already has but which does not intersect with its tritone dyad. For instance, the 4–Z15 set {1, 2, 5, 7} can be extended by the ic3 dyad {0, 3} because {0, 3} interlocks with its ic3 dyad {2, 5} and doesn't intersect with its tritone dyad {1, 7}. Ex. 16b shows examples of such ic3 extension. In bars 56–58 the incumbent, as {1, 2, 5, 7}, appends the dyad {0, 3} to create the arbiter; in the flutter descent of bars 85–86, the challenger, as {1, 5, 7, 8}, creates the arbiter by extending itself retroactively in following directly on the heels of the ic3 dyad {3, 6}.

Another possibility for embedding (or forming) the arbiter is for the tetrachord to exploit the shared tritone dyad by imbricating on it or by reusing, thus echoing, its pitches (symbolised as X-ImbIc6(Y) → ARB). In Ex. 16c, the challenger cooperatively ends with its tritone {G#, D}, inviting the incumbent to imbricate with it to produce 6–9. By contrast, in Ex. 16b each tetrachord's tritone is not adjacent to its ic3 dyad extension. Therefore it gains favour with the arbiter but thwarts its rival.³³ Even such thwarting can be overcome by repeating the pitches of the tritone they share, as happens in Ex. 6c, where the incumbent <E♭, G, A, E> repeats pitches E♭ and A of the challenger's <F, E♭, A, D>. Clearly,

Ex. 16a The arbiter partitioned into ic3 dyads and a tritone intersection which intersect with the challenger and the incumbent

4-Z29 { 01 3 7 } ^{ic3} ic3 dyad excluded from other tetrachord: {03}

6-9 { 012357 } ^{ic3} ic3 dyad added to create 6-9: {25}

tritone Intersection of tetrachords: tritone {17}

6-9 { 012357 } ^{ic3} ic3 dyad added to create 6-9: {03}

4-Z15 ≅ { 12 57 } ^{ic3} ic3 dyad excluded from other tetrachord: {25}

Dyadic literal *compositional space* of all-interval tetrachords, varied from that presented by Morris (1995)

Ex. 16b The incumbent and the challenger each use an ic3 extension to create the arbiter

bb. 56-58

bb. 85-86

whether either tetrachord embeds in the arbiter obstructively (so that its rival is not formed by contiguous pitches unless it repeats pitches) or cooperatively (so that its rival is formed by contiguous pitches, without repeating any pitches) depends on its own internal ordering (where its tritone pitches are placed). Nevertheless, the general formula for uniting the rivals to produce the arbiter (given in terms of the referential T_0 forms of all three sets) can be stated thus:

$$T_n(\text{INC}) \cup T_{n+1}(\text{CHALL}) = T_{n-3}(\text{ARB})$$

$$T_n I(\text{INC}) \cup T_{n-1} I(\text{CHALL}) = T_{n+3}(\text{ARB})$$

Other tactics besides those already mentioned include filling a chromatic gap left by the rival, transposing by intervals of a referential set, initiating a change of mood, confusing the rival by mixing moods, using extended playing techniques

Ex. 16c The incumbent imbricates on the challenger's tritone to create the arbiter in bars 39–40

The musical score for Ex. 16c is a single melodic line in treble clef with a key signature of one sharp (F#). It consists of 10 measures. The first measure has a dynamic marking of *f* and a triplet of eighth notes. The second measure has a dynamic marking of *p* and a triplet of eighth notes. The third measure has a dynamic marking of *f* and a triplet of eighth notes. The fourth measure has a dynamic marking of *p* and a triplet of eighth notes. The fifth measure has a dynamic marking of *p* and a triplet of eighth notes. The sixth measure has a dynamic marking of *p* and a triplet of eighth notes. The seventh measure has a dynamic marking of *p* and a triplet of eighth notes. The eighth measure has a dynamic marking of *p* and a triplet of eighth notes. The ninth measure has a dynamic marking of *mp* and a triplet of eighth notes. The tenth measure has a dynamic marking of *p* and a triplet of eighth notes. Annotations include $T_3(\text{CHALL})$ above the first measure, $T_2(\text{INCU})$ above the second measure, and $T_B I(\text{ARB})$ above a bracketed section from the third to the sixth measure. Below the staff, there are annotations for $4-Z_{29}$ and $4-Z_{15}$, and a bracket labeled $6-9$. A label 'overlapping tritone' points to a specific interval in the music.

such as flutter-tongue and others involving proliferation or symmetry (as will be discussed below). That the rivals present themselves in myriad orderings and spacings should not be overlooked. Also, the arbiter plays its own role by manoeuvring to influence the behaviour of the rivals. Depending on taste, one might develop the narrative possibilities further by assigning metaphoric labels for the tactics, such as outwit, foil, undercut, trump, stab, kick, blackmail, extort, tarnish, outrun, disarm, bruise, chafe, parch, starve, scorch or blind. Moreover, the competition could be scored, with points granted each time a tactic is successfully executed.

The Narrative: Manoeuvres of the Incumbent, Challenger and Arbiter in *Scrivo*

I will not narrate all actions of the piece. The reader can view their chronology as listed in Ex. 17. Here is a brief account of how the drama unfolds, referencing Exs. 6, 12b, 11, 3, 10 and 15, in that order: Agreeably $T_0(\text{INCU})$ flaunts its agility by imbricating with its own $T_6 I$ (bars 1–8, Ex. 6a); in a combative mood $T_2 I(\text{CHALL})$ enters (bar 9) as $\langle A, B, A, G\#, B, D\# \rangle$ with a wide ambitus in a piercingly high register; it then tempers its former mood using a narrow ambitus (bars 11–12, Ex. 6b); $T_6 I(\text{INCU})$ fills the chromatic gap from B3 to F#4, with $\langle C4, E4, C\#4, C4, F\#4, C\#4 \rangle$ – a sort of Bartókian gap-fill routine (D4, preceding CHALL in bar 10, elaborates the 3–2 [0, 1, 3] trichord $\langle F, E, F\# \rangle$ with an imbricated prefix $\langle D, F, E \rangle$ of the same set class.). In section 4 (bars 17–21), the challenger thwarts its rival while gaining favour by embedding itself in the arbiter multiple times using the ic_3 extension. In section 5 (bars 21–31), $T_0(\text{INCU})$ regains control by initiating an agreeable mood, in which the $T_A(\text{CHALL})$ and $T_2 I(\text{CHALL})$ politely spar with it on the use of ic_4 as a headmotive (Ex. 12b), but $T_3(\text{INCU})$ creates mirror symmetry to gain the upper hand.

Jumping ahead: in section 8 (bars 37–53) the incumbent's $T_9 I$, T_4 , $T_{11} I$ and $T_8 I$ thwart the challenger by confusing it with a narrow ambitus in an otherwise combative mood. In bar 38, $T_3(\text{CHALL})$, $\langle A, F\#, G\#, D \rangle$, joins in to

Ex. 17 Summary of events in the competitive opposition narrative for *Scrivo in Vento*

Section	Bars	Event	Tactic	Symbolic notation	Shown in...
1	1–8	INCU asserts itself twice in narrow ambitus, imbricating on tritone <C, F#>	Imbricate with self	INCU/(mb)	Ex.6a
2	8–9	CHALL, rebellious, asserts itself loud, fast, and wide (combinatively)	Assert self combatively	CHALL-/Combitive	Ex.2, Ex.7
3	10–17	INCU asserts itself twice, mostly in narrow ambitus, imbricating on ic5 dyad <F#, C#>	Imbricate with self	INCU/(mb)	Ex.2
3	10–17	T ₀ (CHALL) asserts itself agreeably in narrowest ambitus (P5)	Assert self agreeably	CHALL-/Agreeable	Ex.6b
4	10–17	T ₁ (INCU) fills the chromatic gap left by CHALL	General variety and coherence	INCU/V&C	
4	17–21	CHALL, rebellious, asserts itself loud, fast, and wide (combinatively) six times	Assert self combatively	CHALL-/Combitive	
4	17–21	Four times CHALL embeds itself in ARB, by using ic3 extension	Embed in ARB by ic3 extension (exclude rival)	CHALL+/ic3->ARB	
5	21–21	T ₀ (INCU) restores agreeable mood	Restore agreeable mood	INCU-/Agreeable	Ex.12b
5	21–31	INCU and CHALL spar by using ic4 as a headmotive while repeating shared pitches	Imitate rival: start with same ic, use same pcs	INCU-copy-CHALL, CHALL-copy-INCU	Ex.12b
5	29–29	INCU creates mirror symmetry by rhyming with its own and CHALL's previous ic4 presentations	General variety and coherence	INCU-V&C	Ex.12b
6	31–31	T ₁ (CHALL) extends itself with an ic4 dyad, but starts being combative	Initiate combat	CHALL-/combat	
6	31–31	T ₁ (CHALL) extends itself with an ic4 dyad, but starts being combative	General variety and coherence	CHALL-V&C	
7	32–36	Overcoming CHALL's attempt at exclusion, INCU repeats pcs of CHALL to make ARB	Make ARB by repeating pcs of rival	INCU-usePcs(CHALL)->ARB	Ex.6c
8	37–53	INCU begins combat this time, retaliating against CHALL, but feigns cooperation by using narrow ambitus	Confuse: combative and agreeable	INCU-confuse-CHALL	Ex.11
8	37–53	INCU and CHALL spar by imbricating with each on every interval class except ic5	Imbricate with rival on various ics	(INCU,CHALL)mb#ics	Ex.11
8	39–40	INCU imbricates on the last dyad [G#, D] of CHALL to create ARB, thus ingratiating	Imbricate on tritone of rival to make ARB	INCU-(mb)ic6(CHALL)->ARB	Ex.16c
8	42–51	Aggregate wedges: Swapping pitch and time symmetry of 6–9 and 6–8 (also WT hex)	General variety and coherence	INCU-V&C, CHALL-V&C	Ex.3
8	42–53	Strands delineated by dynamic level: ARB, transposed and inverted, makes aggregate, hinting INCU and CHALL should get along	General variety and coherence	INCU-V&C, CHALL-V&C	Ex.3
8	51–55	Two complementary W.T. hexachords (ic 6–35, partitioned as [024] trichords) chime in to support ARB's call for cooperation	ARB		Ex.3
9	54–62	INCU takes the hint from ARB and 6–35 by imbricating with and embedding in ARB	Embed in ARB	INCU-Emb->ARB	
9	56–58	INCU uses ic3 extension to embed in ARB while excluding CHALL	Embed in ARB by ic3 extension (exclude rival)	INCU+/ic3->ARB	Ex.10b
10	62–63	INCU imbricates on the last trichord <A#, C, F#> of CHALL	Folding: imbricating on trichord of rival	INCU-Foldmb(CHALL)	Ex.10
10	62–66	INCU and CHALL spar by imbricating with each other on ics 2,3, and 6	Imbricate with rival on various ics	(INCU,CHALL)mb#ics	Ex.10, Ex.12a
10	62–68	INCU and CHALL imbricate with each other and borrow from each other dyads of various ics	Imbricate with rival on various ics	(INCU,CHALL)mb#ics	Ex.10, Ex.12a
10–13	62–82	ARB leaves INCU and CHALL to themselves	ARB absence		Ex.8
14	82–85	surge of imbrication and embedding	Embed	(INCU,CHALL)Embed	
14	82–85	surge of imbrication and embedding	Imbricate	(INCU,CHALL)mb	Ex.12a
14	84–84	INCU inverts itself, holding a dyad <G#, F#> invariant	Hold pitches invariant when transforming	INCU-invar	Ex.15a
14	84–84	CHALL retorts by using three common tones, se 3–5[0, 1, 6], which is done by folding	Folding: use three common notes with rival	CHALL-FoldCC(?)	Ex.14
15	85–87	ARB's only appearance in sections 10–17	ARB infrequent		Ex.10b
15	85–87	ARB returns dramatically with a flutter-tongued descent; CHALL embeds via ic3 extension	Embed in ARB by ic3 extension (exclude rival)	CHALL+/ic3->ARB	Ex.10b
17	87–96	ARB absent	ARB absence		Ex.8
17	88–88	By proxy, CHALL thwarts INCU; CHALL's exclusive subsets stop INCU from forming	Exclusion by subset proxy	CHALL-Sub(INCU)ByProxy	Ex.15b
18	97–103	INCU uses ic3 extension three times to embed in ARB three times: bb,98, 98–99, 102–103	Embed in ARB by ic3 extension (exclude rival)	INCU+/ic3->ARB	
18	97–104	INCU makes unprecedented six appearances	ARB activity		Ex.21
18	97–104	Wave-like aspergations			
18	101–101	CHALL tries to enlist help from W.T. hexachord 6–35 by transposing by its subset [024] (T ₈ , T ₁ , T ₆)	General variety and coherence	CHALL-V&C	Ex.21
18	101–102	T ₈ (INCU)->B93-> imbricates on ic4 dyad <D,B> at the end of CHALL's T8	Imbricate with rival on referential ic	INCU-ImbRefc(CHALL)	
19	104–111	T ₃ (INCU) and T ₀ (INCU) imbricate with and embed in ARB	Imbricate with ARB	INCU-Imb->ARB	
19	104–111	T ₃ (INCU) and T ₀ (INCU) imbricate with and embed in ARB	Embed in ARB	INCU-Emb->ARB	
19	104–111	T ₁ (INCU) and T ₀ (INCU) imbricate with and embed in ARB	Imbricate with self	INCU/(mb)	

initiate a duel of imbrications with the incumbent (Ex. 11). In bars 43–55, the pivotal blurred mood passage mentioned above in Ex. 3, the arbiter tries to promote cooperation by creating wedged aggregates with interlaced strands of different dynamic levels.³⁴ To make its point, the arbiter even enlists the help of the 6–8 hexachord and four non-intersecting 3–6 [0, 2, 4] trichords of the whole-tone hexachord 6–35. In section 10 (bar 63), to gain favour, T₀I(INCU) displays cooperation, using folding to imbricate on the last trichord <A[♯], C, F[♯]> of T₇(CHALL) (see again Ex. 10). A volley of dyadic imbrication follows immediately and resurges in section 14 (bars 82–85), during which (bar 84 in Ex. 15a) the challenger bests the incumbent using folding (on {F, G^b, C}), T₈I (to generate A^b), followed by a suffix pitch D. Meanwhile, during sections 10–14, the arbiter stays out of the fray, reappearing (bars 85–87) dramatically in flutter-tongued slow descent – a great moment for T₂(CHALL), as <G, F, D^b, A^b>, since it gains favour and thwarts the incumbent by embedding in the arbiter through an ic₃ extension prefix. In section 17 (bars 88–97 in Ex. 15b), the challenger by proxy thwarts the incumbent with its exclusive trichord subsets. To quell the flames, the arbiter enters an unprecedented six times in section 18 (bars 97–104), during which time the incumbent gains favour and thwarts its rival by using an ic₃ extension on three occasions to embed in the arbiter. At bar 100, T₈(CHALL), as <G, C[♯], D, B>, tries to enlist the help of the arbiter's comrade, the whole-tone hexachord 6–35, by transposing itself up and down by whole steps (T_A(CHALL) as <A, C[♯], D[♯], E> and T₆(CHALL) as <B, A, F, C> at bars 103 and 104). It's too late for the challenger, though, because across rests in bars 101–102 T₈(INCU), as <D, B, A, D[♯]>, had already used this chance to flaunt its agility by imbricating on the final dyad <D, B> of T₈(CHALL). In bar 104, T₃I(INCU) ascends to seal the deal, outdoing itself: by initiating an agreeable mood, imbricating with its inversion T₀(INCU) on a multiphonic {B, C[♯]} and using its own <A[♯], C[♯]> as an ic₃ extension so as to embed itself in the arbiter, heard as <A[♯], {C[♯], B}, F[♯], G[♯], C, A^b, B>, and thereby ending the piece.

In summary: the incumbent starts the piece; the challenger wrangles with it for 100-odd bars; then, by the end of the piece, the incumbent defeats the challenger. From the perspective of the challenger, whom I take to represent the poet (the protagonist transgressor), it is a tale of defeat, and in that sense, a tragedy.

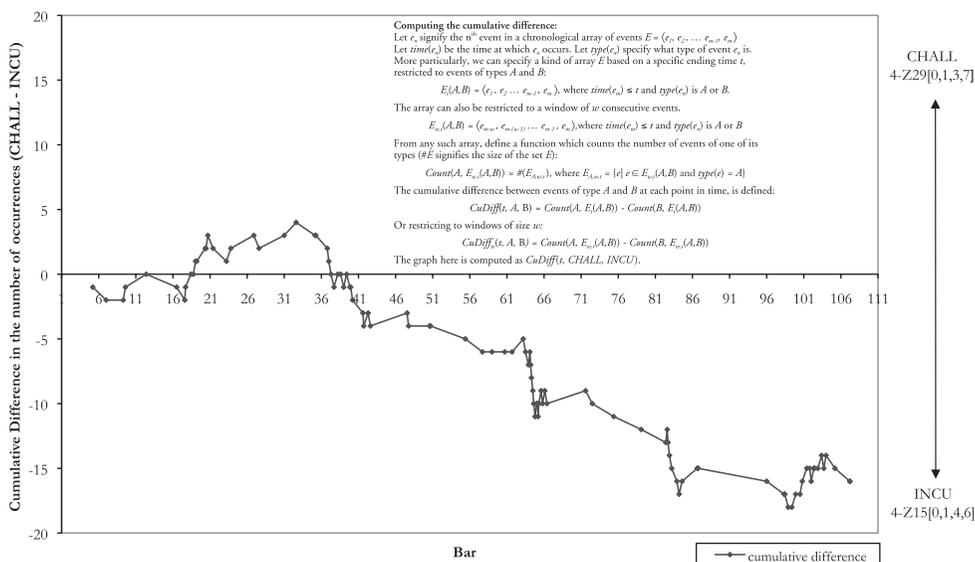
Veiled Dynamic Form: Flux of Incumbent versus Challenger; Relative Assertion and Exertion

The drama's long-range trajectory is seen best by viewing the fluctuating assertiveness of the rivals through a new lens. A veiled dynamic form emerges. To model this flux, we may computationally track the cumulative difference between the preponderance of each set. To perform this CuDiff tracking, we (1) mark every appearance of the incumbent or challenger as an event; (2) at the time of

each event, compute the difference between the number of challenger events up to that time and the number of incumbent events up to that time – producing a cumulative difference in the number of challenger assertions with respect to incumbent assertions computed at each point in time; and (3) graph the series of computations as a contour, shown as a temporal dynamic form graph in Ex. 18. (The computational model for cumulative difference is shown in larger type in Appendix 1.)

The dynamic form graph in Ex. 18 tells us, at each point in time, how much of a say the challenger has had so far, in comparison to how much of a say the incumbent has had. The challenger starts with a disadvantage but surpasses the abundance of the incumbent at bars 17–39, where there is an arch-like wave above the baseline (approximately sections 4–7). Then, as if exhausted by the effort, the challenger's abundance declines in comparison to the incumbent's, although on three occasions it makes a good effort to save itself – shown on the graph in the four places after bar 39 where there is a slight increase (bars 42–47, 65–70, 84–85 and 98–104). The challenger's final surge (in bars 98–104) is made more noticeable because four of its occurrences (three of which are the same pitch-class set: {G#, A, B, D#}) seem to have similar pitch content: they happen to fit in the same tonal key signature (E major: four sharps), and the key signatures of the other two occurrences are not far off (fitting in D major and C major). When listening to the whole piece, we can keep in mind and attend to the fact that initially the incumbent is more prevalent and thus has the upper hand;

Ex. 18 Temporal dynamic form arising from flux of the cumulative difference (CuDiff) of assertions of CHALL versus INCU in oppositional struggle

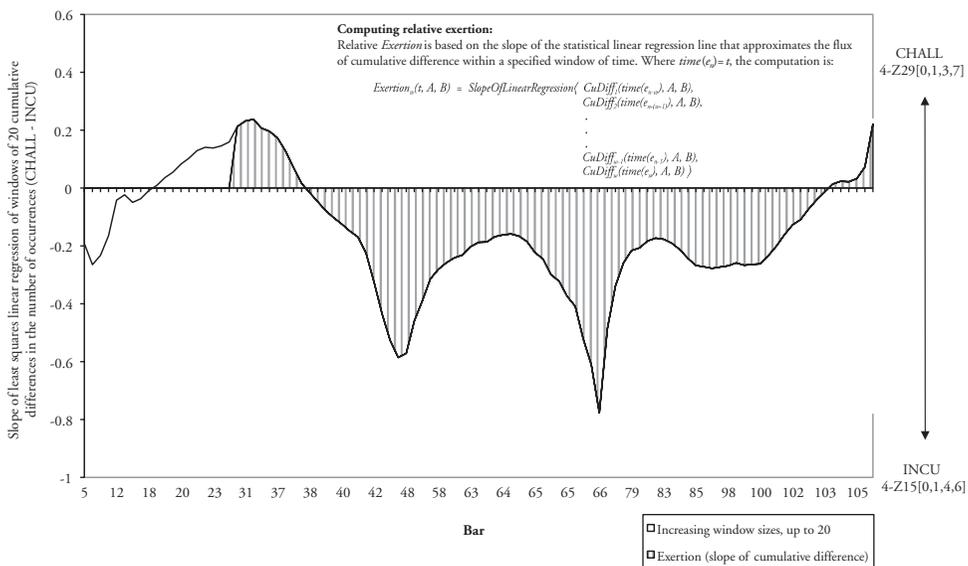


at bars 17–39 (sections 4–7) the prevalence of the challenger surges above the incumbent, after which the incumbent regains and maintains prominence over the challenger.

Ex. 19 follows the travails of the challenger from a slightly different perspective, although it is derived from the computation graphed in Ex. 18. The flux in Ex. 19 reflects the recent relative amount of exertion of the challenger in comparison to the incumbent's. It does this by essentially computing the slope of the change graphed in Ex. 18.³⁵ (The computational model for relative exertion is shown in larger type in Appendix 2.) The value computed is positive (above the baseline) whenever the challenger has been asserting itself more than the incumbent has; conversely, the value is negative (below the baseline) whenever the challenger has been asserting itself less than the incumbent. In this graph the overall amount of assertion of one tetrachord relative to the other corresponds to the area within the curve.³⁶ The graph shows that for most spans of time in *Scrivo*, the incumbent asserts itself more than the challenger at an increasing rate, except at the very end, when the challenger's rate of assertion surpasses the incumbent's, but only after it's too late to catch up (too late to achieve greater area over the baseline than under). The graphs in Exs. 18 and 19 portray the underdog status of the challenger. Yet they also give the challenger's actions a temporal dimension, since they portray exactly how the status of the challenger shifts dynamically as *Scrivo* unfolds in time.

Also unfolding in time is the way in which the dynamism of this challenger-incumbent opposition interacts with the dynamism of mood. Much can be learned

Ex. 19 Temporal dynamic form arising from the flux of relative exertion of CHALL versus INCU in oppositional struggle



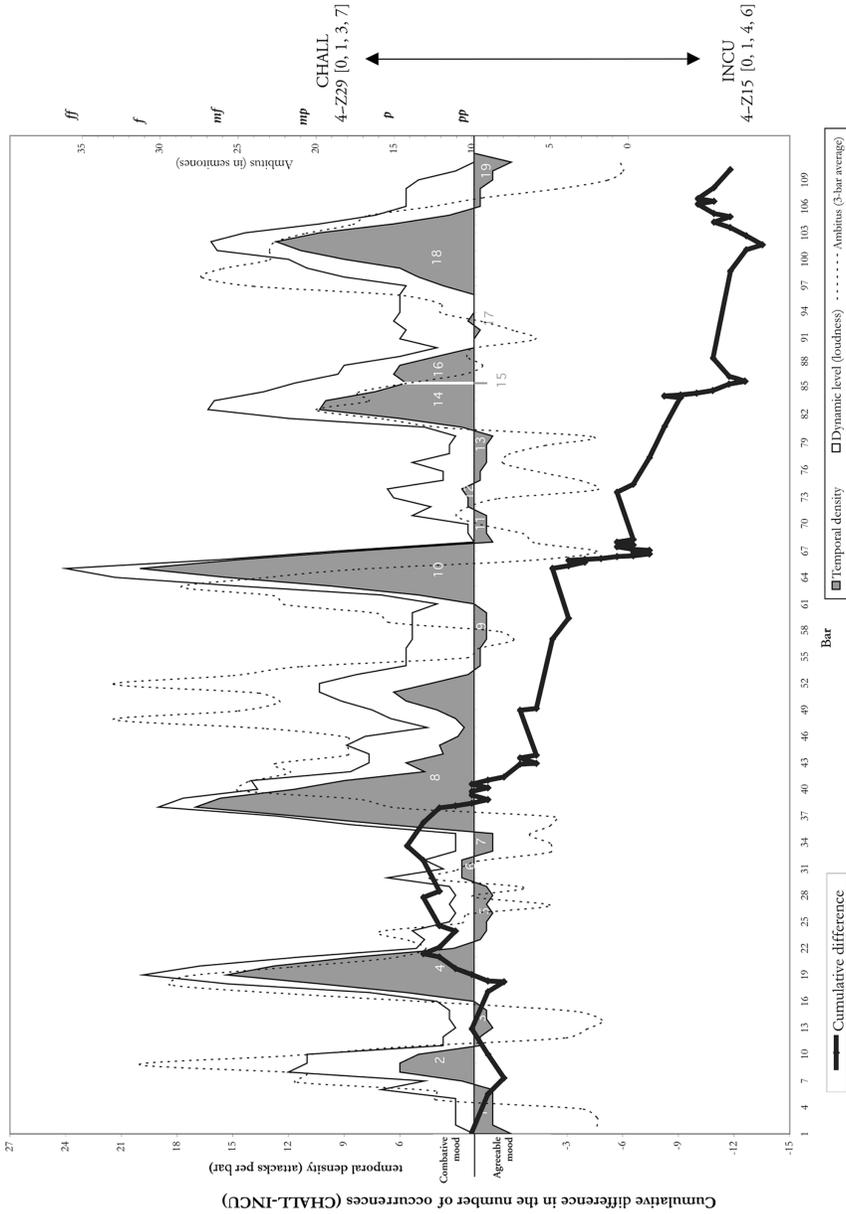
from comparing these contours by aligning them visually on the same page. (The alignment also allows the mood flux, which is more easily heard, to provide cues for the listener to attend to the surging of one set class versus the other.) Accordingly, in Ex. 20, Ex. 19 is superimposed over Ex. 5, allowing us to trace the evolving relation between these different kinds of flux. Further aspects of form and narrative emerge from this evolution. The first surge of the challenger coincides with the first surge of combativeness, suggesting some causal connection. The next surge of combativeness (section 4, bars 17–21) sparks another surge of the challenger. The oscillating struggle between the challenger and the incumbent in sections 5–7 (bars 21–36) creates instability of mood, especially in ambitus, loudness and speed (shown by the oscillating flux of these in Ex. 20 over sections 5–7): the spacious, buoyant calm of section 5 (Ex. 12b) is briefly interrupted by a quiet, nervous flurry in bar 31 (section 6). As Ex. 6c showed, when the mood calms down at bar 32 the incumbent extends its already wide ambitus to create the arbiter. This leads to compressed nervous irritation in section 8 (Ex. 11). In Ex. 20 this is seen as the start of the challenger's long decline, coinciding with the longest combative span in the piece: bars 37–53 (in fact the longest section of all, and the one containing the segregation of strands by dynamic level shown in Ex. 3). The steepest dive for the challenger occurs in section 10 (bars 62–67 in Ex. 10), when the incumbent asserts itself ten times very quickly, creating the highest peak of temporal density in the piece (Ex. 20), which gradually narrows and smoothes out to a sustained flutter-tongue. Almost replaying the events of section 10 (again ending with a sustained flutter-tongue), the challenger suffers another sudden setback in section 14 (bars 82–85, shown in part in Exs. 12a and 15a). The sudden descent is apparent in Ex. 20 within section 14. Lastly, it is also apparent from the far-right area of Ex. 20 that the challenger's final surge brings the final combative episode (section 18) to a close, after which point it wanes in its defeat by the incumbent in the final calm episode (section 19).

Long-Range Symmetry of Transpositions and Inversions

Having considered the long-range trajectory of the rivals' raw abundance and how it interacts with mood, consider how each rival flaunts its agility by creating long-range symmetries shown in Ex. 21. This chart traces each instance of the incumbent, challenger and arbiter on a separate row, labelling each instance according to its relationship with the referential T_0 forms of the tetrachords and hexachord (see again Ex. 6). The symmetries labelled by the rectangular bubbles are of a recursive nature: they indicate a parallelism between activity on the note-to-note level (inside the incumbent, challenger and arbiter) and the higher-level transpositional activity of the incumbent, challenger and arbiter themselves. This recursive symmetry can be described in terms of transpositional combination (Cohn 1988).

To see this recursive symmetry, follow the rectangular bubbles connected to each row in the chart. (Thicker outlines on the bubbles indicate transpositional

Ex. 20 Interaction between flux of mood and competitive opposition of tetrachord rivals



combination of a tetrachord projected by a tetrachord, whereas thinner outlines indicate transpositional combination of a dyad or trichord projected by a tetrachord.) Seen in the leftmost bubble, in sections 4–7, the challenger, with its T_7I , T_2I , T_4I and T_8I forms, projects itself in the transposition pattern (T_7, T_2, T_4) that creates the incumbent 4–Z15. (For instance, the pitches of the incumbent at bar 21 <C, G, A, C#> in the score follow this exact pattern.) Thus the challenger achieves a long-range transpositional combination: TC [0, 1, 3, 7] * [0, 1, 4, 6]. Yet across sections 9 and 14 the incumbent does the inverse (now TC [0, 1, 4, 6] * [0, 1, 3, 7]), projecting itself by the transposition pattern ($T_5I, T_9I, T_{11}I$) that creates the challenger. (For instance, <C, E, G, F#> at bars 20–21 in the score follows the pattern T_4 – T_3 – T_{11} , which creates the challenger.) But furthermore the incumbent, overlapping and interlaced with this manoeuvre, surpasses the challenger by using transpositional combination twice to project itself in the transposition patterns of itself, thus by TC [0, 1, 4, 6] * [0, 1, 4, 6] (seen in the two thick-outlined bubbles in section 10) – an instance of hierarchy recursion (self-similarity, like fractals). And on two other occasions the incumbent projects its tritones by its own transposition pattern (TC [0, 6] * [0, 1, 4, 6]), by combining its transposed and inverted forms (thin-outlined bubbles).

The other symmetry in the drama arises from repetition patterns of transpositions and inversions. These are diagrammed with dotted curves in Ex. 21: for visual clarity, on each row, pairs of instances which are identical in pitch-class content and occur over a short period of time (spanning about 25 bars or fewer) are connected by these dotted curves. To appreciate these symmetries, we have to imagine the incumbent and challenger climbing outside and looking upon Petrarch's poetic depiction of them in the sonnet, specifically its rhyme scheme. Across sections 4 and 8 the challenger creates balance symmetry (*aba*) twice, with its T_3 appearances flanking its other forms (first T_7I , then a series of other forms in sections 5–7). It creates such balance symmetry three more times in sections 11–18, using its $T_{11}I$ and T_2I forms ($T_{11}I$ flanking T_9I and then T_2 , and T_2I flanking T_8). Yet the incumbent does the same with its T_{10} form across sections 8 and 10, and then in an interlaced fashion in sections 17–18, with its $T_{11}I$ and T_8 forms. But the incumbent really flaunts its agility by emulating the sonnet's other rhyme pattern: mirror symmetry (*abba*), which is seen as a dotted curve nested inside another dotted curve. Since it involves two matching pairs in the nested arrangement, such mirror-symmetrical rhyming is, in a sense, even more orderly than the balance-symmetrical rhyming, which involves just one matching pair. The incumbent creates such mirror symmetry three times: in sections 1–5 as < T_0, T_6I, T_6I, T_0 >, in sections 5–8 as < T_7, T_3, T_3, T_7 > and in section 10 as < $T_0I, T_{10}I, T_{10}I, T_0I$ >. Since the incumbent creates balance-symmetrical rhymes and mirror-symmetrical rhymes, which are more orderly, it trumps the challenger's attempt to prevail in emulating the sonnet.

Issues of Narrative

Some of the relationships discussed in this analysis are easily heard surface features, while others are rather abstract, not the sort typically discussed in a narrative interpretation of a piece of music. For this reason and others, the analysis above might fluster or frustrate proponents, practitioners or theorists of musical narrative. Put simply, what kind of narrative is this? And what do I mean by it?

The problem, it seems, is the impression that some musical works are more narrative than others. There is a concern that if works that don't suggest any specific narrative or teleology are treated narratively (by being narrated), the floodgates will be opened, and the ability to discern how some works seem particularly narrative in character will be lost or submerged beneath a sea of over-enthusiastic ontological illusion. So care should be taken to maintain the distinction between bona fide narrative and mere narration (narrativisation). Yet, what seems more narrative in kind depends a lot on convention and context. Interactions with music that tend to be relatively passive and musical phenomena that tend to be conventional or transparent in casual encounters seem more narrative because of their similarity to another relatively passive activity: hearing someone verbally narrate a conventional story.

Conventionally, the words 'drama' and 'dramatic narrative' deal with events of epic proportion, events on a grand scale, riding high above the detailed minutiae of daily existence. But we need only turn to Joyce's *Ulysses* (1922) to see the folly of this convention; there miniature events writ large take on epic significance.³⁷ The view in the modern world, which fascinates Carter, attributes significance to a variety of scales of magnitude. Carter, in his programme note to the Variations for Orchestra (1955), explains that he 'was interested in adopting a more dynamic and changeable approach ... [which] tries to give musical expression to ... unexpected types of changes and relationship of character uncovered in the human sphere by psychologists and novelists, in the life cycle of insects and certain marine animals by biologists'.³⁸ Seen through the proper lens, a story of miniature events, a micro-narrative, may be just as dramatic as any other, and just as real. For many musical situations – especially music as unconventional as Carter's – the unconventional practice of micro-narrative writ large (exemplified in the analysis above) may be more apt than the typically assumed narration of epic-sized events.

The more unconventional a musical work is, however, the more it demands that narration be actively supplied, either by its perceiver or by a mediating third party. Either way, narration is mediation; so it seems indirect in regard to that most typical, familiar and conventional interaction with the musical work, which is the least mediated: the typical concertgoer, perhaps a layperson, somewhat passively hearing a work for the first time.³⁹ To the extent the work being heard on such an occasion is unconventional, analysis trying to depict the experience really is just a rickety infirm ox chasing a fleeing deer – futile discourse trying to gather up the wind.

The verbal nature of narration means we face the potential 'abysmal gap between word and work'. That gap closes, however, if mediation through discourse is not banished to a sort of ghetto, but is embraced as a valid interaction with music – which it is – and one that influences other interactions with music which are not mediated by discourse.⁴⁰

I do not suggest that the concertgoer attending the premiere of *Scrivo* would be stricken with suspense over the fate of the challenger, as depicted, or even that the casual listener would spontaneously sense a narrative just like the one developed above – as if *Scrivo* narrated itself. Nor do I mean that Carter mapped out a specific narrative which I have somehow uncovered. Rather, I expect that *Scrivo* can be experienced narratively through informative mediating discourse (verbal and visual), and that informed mediation will enhance other mediated and non-mediated interactions with it.

One of the attractive facets of Carter's music – although not unique to it – is that however much it stimulates the narrative impulse, very little of it implies or even suggests any specific narrative or even teleology, at least not any which is immediately perceived in the spontaneous mode of hearing or based on convention. This is why and how *Scrivo* prompts us to contemplate it through a kind of narrative discourse developed not on the basis of conventions – such as those of eighteenth-century topoi or nineteenth-century program music – but rather on the basis of its own particularity.

Carter, Petrarch, Heraclitus and *Scrivo*'s Self-Reference

Besides the fact that *Scrivo* generically suggests dramatic narrative based on opposition, it also suggests a larger theme about how it might be approached interpretatively, suggesting unorthodox avenues of analysis (narrative and other). It suggests these not just through the arrangement of the pitches on the page, Carter's linking these to the Petrarch sonnet and the physical means by which the flute produces its sound, but also in how it stimulates discourse which links these facets to each other in the ear, in the mind and in memory. Thus *Scrivo* serves as a self-referential philosophico-aesthetic assertion, a credo, which has implications for interpreting other music too. This larger theme is suggested not discursively but artistically, through meteorological-naturalistic images of transience and adversity.

Obviously Petrarch's portrayal of transience through meteorological-naturalistic imagery (wind, water, sand and sun) is part of a tradition, which includes, for instance, Keats's epitaph, 'Here lies one whose name was writ in water', and Shelley's 'time's printless torrent' (1892, vol. 4, p. 84).⁴¹ In poetic terms, these echo Heraclitus's philosophical doctrine of flux and the famous imagery he used to express it:⁴² 'On those who enter the same rivers, ever different waters flow'.⁴³ Robert Cogan (1995) and Daniel Harrison (2002) explore some ways Heraclitus's river slogan speaks to our attitudes towards music; other aspects are explored in my own work (2010).⁴⁴

One aspect of flux is the contextuality implied by the fact that every moment has a unique history. Heraclitus wrote in aphoristic riddles, not arguments, and thus did not make the case for flux on the basis of unique histories. The argument follows logically, however, from Bertrand Russell's remark about the impossibility of changeless durations: 'when we suppose that such persistence [a changeless duration] is possible, we are imagining ourselves as spectators watching the unusual immobility with continually increasing astonishment; and in this case, our own feelings, at least, are in a state of change' (1915, p. 231).

Thus the doctrine of flux relates to the analysis of *Scrivo in Vento* above in at least two ways. First, although the musical work *Scrivo in Vento* remains ever the same, each encounter with it differs from all previous ones – for instance, on account of its having a different history of previous encounters in the perceiver's memory. Each perceiver's relationship to the work is not stable but rather is in flux, ever more so insofar as the perceiver's relationship to the work is continually mediated by a stream of discourse. Second, although each moment of *Scrivo in Vento* is part of one whole piece, each moment (no matter what it shares with previous moments) is also contextually unique, owing to the fact that it has a unique history of previous moments having already elapsed. Tracing gradual processes of contracting ambitus and smoothing texture is one aspect of attending to such flux because, for instance, each moment in a gradual process has more processive history behind it than do previous moments in the same process. Another aspect of attending to the flux is the tracking, computing and graphing of the cumulative difference in the preponderance of one kind of event (challenger) versus another (incumbent).

Once the effect of transience and flux on the circumstances of living creatures is considered – for instance by associating the passing of time with the approach of death – it emerges that the same meteorological-naturalistic images associated with transience and flux also indirectly link to Heraclitus's doctrine of oppositions: opposed forces, or strife (*agon*), as the overwhelming and necessary state of affairs of the world. Relevant to this is the fact that for 'Beato in sogno', Petrarch draws on the twelfth-century troubadour Arnaut Daniel's boastful signature line: 'I am Arnaut who gathers up the wind and chases the hare with the ox and swims against the torrent'. Petrarch transforms Arnaut's pugnaciously playful images into poignant paradoxes: 'Gathering up the wind' becomes 'writing on the wind'; 'chasing the hare with the ox' becomes 'a rickety infirm ox chasing a deer'; 'swimming against the torrent' becomes 'swimming an ocean without floor or shore'. These transformed images, together with two more ('being blinded by the sun' and 'building on sand'), stress the adversity which living organisms confront as a result of the flux of nature's forces and elements – like the 'winds and persecutions of the sky' confronting King Lear.⁴⁵ Thus Petrarch's peculiar exaggeration of the disharmony between man and nature cleverly exploits this link between flux and strife, which also typifies Carter's music.

Conflict in Carter's music, however, is typically imagined (by him and others) as occurring between two or more people. The conceit in the narrative analysis

above is to personify nature (making it an agent, the incumbent) to create an opponent for the poet. The conceit owes a debt to the Heraclitean doctrine of opposition, which relates opposition (or opposed forces) to strife. If taken too literally this creates a comical disconnect⁴⁶ – like Don Quixote tilting at windmills. When applied to the relationship between humans and nature, this Heraclitean analogy is clearly an anthropocentric bias, but precisely the right one to shift our focus, deliberately, from ho-hum static equilibrium to the dramatic dynamic instability in the music.

The presence of symmetry in Carter's *Scrivo* (and in Petrarch's 'Beato') might seem paradoxical in this context, but it need not be. It is actually compatible with the Heraclitean philosophico-aesthetic theme in its anthropocentric, humanist guise. Symmetry must be understood as a kind of order or coherence. Given the tendency towards Aristotelian, Platonic and Pythagorean notions of structural harmony and organic unity in current orthodoxies of music discourse, most composers today would probably be too humbly embarrassed to associate their music with poetic images of intricate vegetative growth, wondrous rock formations, star constellations or crystals.⁴⁷ So the opposite imagery in the poetry Carter chooses cannot be read as an anarchic rejection of the positive value of order and coherence. What can be read into it, however, is that order and coherence in his music do not just imitate, or arise from, nature (plants, crystals or stellar patterns) – as they do for Webern, Schillinger and Hindemith, taking after Goethe, Aristotle and Kepler. Rather, order and coherence in Carter's music serve some function in the struggle of oppositions suggested by *Scrivo*'s larger Heraclitean philosophico-aesthetic theme. To see this, consider now how Petrarch's conflation of the struggles of poet versus nature and life versus death (mentioned above) relates to the opposition of order versus disorder. In *What Is Life?* (1944), Schrödinger argues that whereas matter in general tends towards entropy (disorder, equilibrium), the characteristic feature of living matter, or life, by contrast, is that it 'evades the decay to equilibrium'. Rather than operating purely on the basis of the second law of thermodynamics – a principle of order-to-disorder – living organisms strive to survive based on a principle of order-to-order, fighting entropy by creating or preserving negative entropy (negentropy). As Schrödinger writes:

It is by avoiding the rapid decay into the inert state of 'equilibrium' that an organism appears so enigmatic; so much so, that from the earliest times of human thought some special non-physical or supernatural force (*vis viva*, entelechy) was claimed to be operative in the organism, and in some quarters is still claimed. How does the living organism avoid decay? The obvious answer is: By eating, drinking, breathing and (in the case of plants) assimilating. The technical term is metabolism Every process, event, happening – call it what you will; in a word, everything that is going on in Nature means an increase of the entropy on the part of the world where it is going on. Thus a living organism continually increases its entropy – or, as you may say, produces positive entropy – and thus tends to

approach the dangerous state of maximum entropy, which is death. It can only keep aloof from it, i.e. alive, by continually drawing from its environment negative entropy – which is something very positive What an organism feeds upon is negative entropy. Or, to put it less paradoxically, the essential thing in metabolism is that the organism succeeds in freeing itself from all the entropy it cannot help producing while alive. (pp. 70–1)

In this context, the artist's creation of symmetry – such as rhymes or recursion – serves an assertive function that is enigmatically human. Against a disorderly, adversarial world, it is a poetic act of defiance. It arises as a super-metabolic overflow from the anti-entropic struggle against the threat of annihilation. This is why symmetry, infused with such a sense of vitality, is so much more interesting in music such as Carter's, whose complexity of surface evokes the turbulence of the real world.

Carter's *Scrivo in Vento* embodies transience and flux in some very obvious ways: like most of Carter's music it is not thematic in a traditional sense; it is devoid of any obvious repetition or reprise; and its sounds are produced through a constant flow of air. The drastic contrasts in the opening bars also signal the importance of opposition. Through its association with the dynamism of Petrarch's meteorological-naturalistic imagery, *Scrivo* links to the Heraclitean doctrines of flux and opposition, by which *Scrivo* then invites its perceiver (whether reader, listener, player, critic or analyst) to focus ever more intensely on its fluctuations, its processes, its cumulative differences, its contrasts and conflicts, and to appreciate its symmetries in the context of such dynamism.

Despite its anthropocentrism, the larger philosophico-aesthetic theme of *Scrivo* recognises a number of views on the drama of the challenger and incumbent. From a humanist view, *Scrivo*'s drama is tragedy: the transgressor – the lovelorn and travel-weary voice of Petrarch, with whom we identify – is defeated by the established order – the awesome forces of nature, self-perpetuating and indifferent to the mere speck of time which is the living organism's life span. Yet from a naturalist view – that is, insofar as we revere, respect or even revel in nature – *Scrivo*'s drama is a kind of romance: the assured victory of nature over any individual self that may crop up and try to disrupt its course.⁴⁸ Whichever you choose, this struggle itself is natural, perhaps inevitable, from our human perspective, reflected in Heraclitus's portrayal: unity depends on a balance of reactions between opposed forces; the balance of the cosmos arises from the unending flux of strife (*agon*) between interrelated opposites. The flux, the strife, the drama of Carter's *Scrivo in Vento* and its Petrarch sonnet prompt us to ask: insofar as Heraclitus's view portrays our whole cosmos, how could we be over-reaching if we espouse it for portraying our music?

Appendix I: Computing the Cumulative Difference

Let e_n signify the n^{th} event in a chronological array of events $E = \langle e_1, e_2, \dots, e_{m-1}, e_m \rangle$

Let $time(e_n)$ be the time when e_n occurs. Let $type(e_n)$ be the type of event e_n .

More particularly, we can specify a kind of array E based on a specific ending time t , restricted to events of types A and B :

$$E_t(A, B) = \langle e_1, e_2 \dots e_{m-1}, e_m \rangle, \text{ where } time(e_m) \leq t \text{ and } type(e_n) \text{ is } A \text{ or } B$$

The array can also be restricted to a window of w consecutive events:

$$E_{w,t}(A, B) = \langle e_{m-w}, e_{m-(w-1)} \dots e_{m-1}, e_m \rangle, \\ \text{where } time(e_m) \leq t \text{ and } type(e_n) \text{ is } A \text{ or } B$$

From any such array, define a function which counts the number of events of one of its types ($\#E$ signifies the size of the set E):

$$Count(A, E_{w,t}(A, B)) = \#(E_{A,w,t}), \\ \text{where } E_{A,w,t} = \{e | e \in E_{w,t}(A, B) \text{ and } type(e) = A\}$$

The cumulative difference between events of type A and B at each point in time is defined:

$$CuDiff(t, A, B) = Count(A, E_t(A, B)) - Count(B, E_t(A, B))$$

Or restricting to windows of size w :

$$CuDiff_w(t, A, B) = Count(A, E_{w,t}(A, B)) - Count(B, E_{w,t}(A, B))$$

The graph in Ex. 18 (and Ex. 20) is computed as $CuDiff_w(t, CHALL, INCU)$

Appendix 2: Computing Relative Exertion

Relative exertion is based on the slope of the statistical linear regression line that approximates the flux of cumulative difference within a specified window of time.

Where $time(e_n) = t$, the computation is defined as follows:

$$Exertion_w(t, A, B) = SlopeOfLinearRegression \langle CuDiff_1(time(e_{n-w}), A, B), \\ CuDiff_2(time(e_{n-(w-1)}), A, B), \\ \vdots \\ CuDiff_{w-1}(time(e_{n-1}), A, B), \\ CuDiff_w(time(e_n), A, B) \rangle$$

NOTES

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1. On Carter's Piano Concerto, Schiff (1998), pp. 259–60, writes of 'a drama of entrances', 'a sharp contention between orchestra and concertino [yielding] a drama of ironic non-cooperation', 'a drama of exits, indeed a drama of annihilation' and an 'opposition between the soloist's freedom and the orchestra's tyranny'.
2. See Schiff (1998) and Bernard (1993). Although Carter (2002) has his own convention for naming set classes, this essay uses Forte's (1973) convention because it is more standard.
3. Carter's *Scrivo in Vento* was composed for a festival in Avignon, France, where Petrarch lived most of his life and where he met his beloved Laura. The premiere fell on Petrarch's 687th birthday.
4. Capuzzo (1999) also analyses various aspects of Carter's pitch-class practice, especially in *Gra*, in terms of the complement union property (CUP) developed by Morris (1990, 1994 and 2001). Capuzzo (2004) explores these aspects further. For more recent work on CUP in Carter's music, see Roeder (2009). Another possibility for *Scrivo* would be, since the two all-interval tetrachords are M-related (circle-of-fifths transformation), to relate them as Peck (2004–5) relates diatonic and chromatic sets in Stravinsky's *Rite of Spring*.
5. The tendency to anthropomorphise events or thematic units is suggested also by Newcomb (1987) and Maus (1988).
6. Two English translations are provided to show that my interpretative points do not depend on the specifics of any particular translation.
7. In the Italian sonnet, the first eight lines (the octave) follow the rhyme scheme *abba abba*, while the next six lines (the sestet) are treated flexibly, with various possible rhyme schemes. See Hollander (1981), pp. 19–20.
8. By 'symmetry' I mean invariance under some transformation, in this case reflection of chronological-order position about the midpoint and thus a reversal of chronological order – in other words, a palindrome. In mathematical or geometrical terms, both balance symmetry and mirror symmetry qualify as types of reflective symmetry; therefore, the distinction I make depends solely on whether there is an odd or even number of order positions; if there is an even number of positions (mirror symmetry), the symmetry involves an invariant exchange of the contents of all order positions. By contrast, if there is an odd number of positions (balance symmetry), the centre position is not involved; it merely serves as a point of balance between the exchanged positions on either side. For other aspects and varieties of symmetry in music see Hanninen (1995) and Morgan (1998). There are three ways in which Petrarch creates balance symmetry in the third and fourth stanzas of his sonnets. One is by using a literal *aba aba* pattern in the last two stanzas, as in sonnet 5, and few if any others. Another is through a binary

alternating pattern which cuts across the stanza boundaries (*aba bab*), such as in Sonnets 8, 12, 180, 193, 201, 219, 227, 233, 236, 238, 243, 275, and others. Yet another is the use of similar (chiming) endings for the first and last lines of the last two stanzas (*aba' aba'*), such as we find in Sonnet 212, 'Beato in sogno', as well as Sonnets 217, 224, 225, 244, and others, including the one Petrarch placed first in the collection (Sonnet 1).

9. Petrarch's conflict between reason and desire caused him to worry that his love for Laura would lead to his ultimate damnation. See Bernardo (1974), p. 28, and Foster (1984), p. 72.
10. At this point Petrarch was planning to make Italy his permanent home; see Campbell (2007), p. 54. The foreboding Sonnet 249 ('Qual paura ho quando mi torna a mente') was written just after Petrarch's last meeting with Laura. Shortly afterward, according to Foulke, 'this foreboding [took] definite shape in a dream in which Laura tells him that this parting is their final one', as depicted in Sonnet 250 ('Solea lontana in sonno consolarme'; see Petrarch 1915).
11. Interpreting contrasts as changes of mood in a musical drama has a precedent in Carter's remarks about his Piano Concerto, quoted by Schiff (1998), p. 254: 'Carter set out to discover a new dramatic meaning for the concerto form. He chose to portray a conflict "between an individual of many changing moods and thoughts and an orchestra treated more or less monolithically – massed effects pitted against protean figures and expressions." The soloist is not a hero but an anti-hero in an alien world'.
12. In his analysis of Carter's flute and cello duet *Enchanted Preludes*, Roeder (2006) describes the instruments as sometimes engaging in 'cooperative behaviour' (p. 399) and also contrasts this with their 'react[ing] positively' (p. 386) versus 'negatively' (p. 412) towards each other. See also Roeder (in press).
13. Carter's rhythmic practice is discussed by Bernard (1988). Carter's use of long-range polyrhythms in particular is examined by Link (1994).
14. Chronological and pitch-height ordering symmetries of this passage are analysed by Capuzzo (2000).
15. Capuzzo (2000), p. 308, parses the piece into two sections divided by the flutter-tongue in bar 67, which is at the end of what I call section 10.
16. The concept of temporal density (or, simply, density) is discussed at length by Tenney (1988) and Berry (1987 [1976]). Yet neither Tenney nor Berry defines it or implements it in any precise or formal way. Because the barring cuts across the change of mood at bars 85 and 87, this method is not sensitive enough to indicate section 15, so it is marked differently in the graph.
17. A more sensitive but computationally more intensive method, which determines the cut all on its own, is to code the base 2 logarithm of the note values' reciprocals (for instance, for crotchets code $\log_2(4) = 2$, for quavers $\log_2(8) = 3$, and so forth) and compute the changing average for each bar or half bar. This method would account for the perceived rapidity of passages made up of semiquavers separated by short rests, such as in bar 8.
18. See Schiff (1998).

19. In Ex. 6, the inclusion symbol \in indicates that the bracketed pitches form a pitch-class set belonging to the labelled set class (the class of pitch-class sets equivalent to it under transposition or inversion). Note that Almén (2003), p. 21, also views chronological precedence as signifying established order when he presents an analogous interpretation of the first bar of Chopin's Prelude in C minor: in other words, established order pre-dates the transgression which emerges in bars 2–4.
20. Angled brackets, $\langle \rangle$, indicate an ordered series; braces, $\{ \}$, indicate an unordered set; and square brackets, $[]$, indicate the prime form of a set class. Individual pitch classes are also indicated in square brackets which in these cases do not indicate prime forms.
21. D4, preceding the challenger in bar 10, serves as a parallelism alluding to the sustained D4 at the start of the piece, which introduced the other main character: the incumbent. The D4 in bar 10 also elaborates the 3–2 [0, 1, 3] trichord $\langle F, E, F\sharp \rangle$ with an imbricated prefix $\langle D, F, E \rangle$ of the same set class, which is a subset of the challenger but not of the incumbent. Thus, in that it is a challenger-exclusive trichord, it intensifies the challenger's identity.
22. The two all-interval tetrachords do relate under the M (circle-of-fifths, or multiply-by-five) transformation. They may also relate under the expanded definitions of transposition asserted by Lewin (1987).
23. The distinction between diatonic and non-diatonic crisply partitions all pitch-class sets into two categories, whereas the distinction between tonal and non-tonal is a more nuanced and contextual one. Much tonal music uses non-diatonic 4–Z15 [0, 1, 4, 6], typically functioning as a dominant seventh #9 chord, for instance in Miles Davis's 'Blue in Green' and Jerome Kern's 'All the Things You Are'; and obviously much atonal music – *Scrivo*, for instance – uses the diatonic 4–Z29 [0, 1, 3, 7]. So there is no distinction to be made between tonal and non-tonal for these (or any other) two tetrachord types. The interpretation used in this analysis suggests merely that the very simple and audible distinction between diatonic and non-diatonic is a useful way to aurally differentiate these particular tetrachord types; it should not be equated with a distinction between tonal and non-tonal.
24. The pentachordal subsets of 6–9 are 5–2, 5–5, 5–9, 5–14, 5–23 and 5–24.
25. For a different, but in some ways more thoroughgoing, approach to mapping the global distribution of set classes across a whole musical work, see Huovinen and Tenkanen (2007).
26. At bars 47–51, to accommodate the aggregate partitioned by dynamics, the adjacency rule is suspended, so that two interlaced instances of the arbiter are recognised.
27. Tenney and Polansky (1980), Hasty (1981), Hanninen (1996 and 2001), and others have presented approaches to choosing sets which are more context sensitive and therefore typically preferred.
28. Such imbrications are modelled as common-note voice leading by Childs (2006).
29. In the examples, for visual clarity, the letter 'A' is used to indicate pc [10] and transposition and inversion at index 10. Likewise, the letter 'B' stands for 11.
30. Childs (2006) explains this in a different way: as a split transposition $3T_3$, which transposes the tetrachord's ic3 dyad by T_3 , resulting in three common notes. This

feature relates indirectly to the fact that the tetrachord [0369] has a complement union property (CUP) relationship with the dyad [06]; together any two trichord-linked pairs of 4–Z15 and 4–Z29 form hexachord 6–30 [0, 1, 3, 6, 7, 9], and the entire chain forms the octatonic collection.

31. Bernard's (1987) unfolding and folding-in – generalised as foldings ('flips') in Morris (1995) – are pitch-space operations, whereas the folding operation here (applied by the non-tritone rule) is a pitch-class operation. A complement union pair (CUP²) is a pair of set classes, a member of one of which is formed whenever a member of a certain designated set class is united with a non-intersecting member of another designated set class. In this case, the union of any non-intersecting ic3 and ic6 forms one or the other of the all-interval tetrachords. This can also be understood differently as dual inversion, as explored by Soderberg (1995).
32. A side effect – or at least another perspective – of this, discussed by Childs (2006), is that either tetrachord can be transformed into the other by the split transposition 3T3, which transposes the tetrachord's ic3 dyad by T₃, resulting in three common notes.
33. By placing its tritone pitches elsewhere but adjacent to its ic3 extensions, each tetrachord thwarts its rival by preventing the rival from imbricating with it to form 6–9.
34. Capuzzo (1999) shows that at bars 48–50 two T₆ related instances of hexachord 6–8 [0, 2, 3, 4, 5, 7] are chronologically contiguous segments combining both strands: <D, C#, F, Bb, C, Eb> and <E, B, F#, A, G, G#>; together they form an aggregate.
35. Specifically, the computation graphed in Ex. 19 takes each series of twenty consecutive cumulative difference values (the ones graphed in Ex. 18) and computes the slope of their least-squares linear regression trend line (the line which best fits a series of data points, a common statistical modelling technique), thereby providing a 'slope' of recent flux leading up to each event. (In order not to omit the first nineteen events of the piece, for these events the least-squares linear regression trend line was computed for incrementally increasing series, from a length of two up to a length of nineteen. Also, because occurrences of the arbiter are also eventful, I have chosen to include, in each series of twenty consecutive difference values for which slope is computed, any intervening arbiter events, even though these don't move the cumulative difference value up or down.) The least-squares linear regression, including its slope, can be computed in any statistical software package. Here it is done using the 'SLOPE' function in Microsoft Excel.
36. Because the values graphed in Ex. 19 are the slopes of the curve in Ex. 18, the values in the graph of Ex. 18 correspond to areas in the graph of Ex. 19 owing basically to the first and second fundamental theorems of calculus, which state the inverse relationship between integration and differentiation.
37. See Bernard (1996) for a discussion of Joyce's influence on Carter.
38. An interesting example is the film *Microcosmos* (1996), which projects comedy, romance, irony and tragedy onto documentary footage of insects by contextualising their trials, tribulations and triumphs with a classical music soundtrack. These are the dramas of the many little organisms fighting to survive and thrive, typically ignored, but they are every bit the stuff which spawns that initial grander impression of reality as 'one great blooming, buzzing confusion', as James (1890, vol. 1, p. 488) famously put it.

39. Much musicological writing seems to assume that such casual one-off hearing is the only valid kind of interaction with music. Yet, as Morris explains, 'A piece of music is ... something we not only compose, play and listen to (in social and cultural settings) but also something we contemplate in (musical) memory' (2000–1), p. 41. For a discussion of the nineteenth-century practice of 'silent retracing' and cultural-historical changes in the type and depth of people's interactions with music, see Botstein (1992–3). Expectations about the perception of music should vary greatly according to what kinds and depths of interaction are embraced as valid, as I explain in relation to Lewin's and Ockelford's attitudes towards music perception in my review (Mailman 2007) of the latter. Lewin's attitude towards perception emanates from a pluralistic view of musical experience. Quoting Roeder (1988), Morris (1997) explains: 'But beyond sheer listening, we also experience music when it is not being performed or sounded. John Roeder states in one of his articles [1988]: "Music is an object for contemplation, not simply immediate experience". Indeed, the study of music out-of-time is vitally important to our understanding of and pleasure in its performance in so-called real time. We not only remember our in-time experiences of a piece of music as such, but we also remember and consider our expectations, discoveries, and other observations from previous auditions. We get the score and study it, both while listening and between listenings, which sharpens our discrimination and understanding. We sit down at the piano and play passages in our own time. We attempt to imagine and remember the sound of the music and consider many different ways of hearing the relations of its parts of the whole, and the whole and parts in various contexts. So when we listen again, what we have learned through musical study and engagement affects our in-time experience. To the degree we can eventually (re)play or recall the piece "in our heads," we actually can unite our in- and out-of-time music experiences into an interpretation or analysis' (p. 14).
40. For a relevant discussion of issues of music being mediated by discourse as opposed to being autonomous, see Whittall (1999), especially pp. 73–6.
41. Evidently, Keats remembered the lines 'All your better deeds / Shall be in water writ' from Francis Beaumont and John Fletcher's play *Philaster, or Love Lies a-Bleeding* (1611).
42. Although not strictly Heraclitean, the relatively recent philosophers who emphasise flux include Henri Bergson and William James as well as Alfred North Whitehead, whose lectures Carter attended at Harvard in the late 1920s as Whitehead was completing his *Process and Reality* (Whitehead 1979 [1929]). In that book he proposes a metaphysics of dynamic change, including a theory of 'organic time' – our sense of time deriving from our status as organisms. For a discussion of how Whitehead, Joyce, Proust, Koechlin, and others influenced Carter's thinking about time, see Bernard (1995). For an extensive discussion of Whitehead's 'organic time', see Ushenko (1929).
43. This particular wording is from Barnes (1987), p. 116. There are actually three versions of Heraclitus's river slogan, from different extant fragments (Fr. 12, Fr. 49a and Fr. 91). Fr. 12 is thought to best express Heraclitus's meaning. As Kirk (1962), p. 377, explains it: 'what Heraclitus meant to illustrate in the river-statement was the coincidence between stability (of the whole river) and change (of the waters flowing past a fixed point), rather than continuity of change'. Thus the slogan stresses the dynamism experienced from the point of view of an observer (fixed point) within

the cosmos (whole river). Kirk and Raven (1957) and Kirk (1962) translate, authenticate and paraphrase extant fragments conveying Heraclitus's thought. Kirk (1962) in particular provides extensive commentary on Heraclitus's doctrines of flux and opposition.

44. Among the recent musical compositions inspired by Heraclitean themes are the series *Heraclitus 1–6* (2007), part of *Music Literature*, by the Fluxus composer Philip Corner (published by Frog Peak Music), and my own computer music piece *Heraclitean Dreams* (2008) (accessible at www.joshuabanksmailman.com).
45. See Shakespeare (1994), Act II, Scene 3. In music too, the sounds of howling, whistling wind and the blustery gusts of shakuhachi in Toru Takemitsu's soundtrack for *Ran* (1985), Akira Kurosawa's film adaptation of *King Lear*, seem to depict such adversity. These sounds sting even more at the end of the film, when a blinded victim playing a bamboo flute is abandoned helpless on a precipice of rubble.
46. I thank Joseph Dubiel for suggesting this particular interpretation.
47. Compare with Webern, who associates his music with Goethe's organicist aesthetic. On organic unity in music discourse in relation to aesthetic and philosophical traditions, see Street (1989).
48. Such a naturalist romance is found, for instance, in Schoenberg's *Gurrelieder*, when, after the tragedy of King Waldamar and his beloved Tove, nature ultimately triumphs as the sun rises once again on the bustling activity of animals and plants, as narrated in an excited *Sprechgesang* which culminates in a repose of romantically sweeping waves of orchestral music. This celebration of nature lessens the tragedy of Tove's death by focusing our attention on the continuity of nature. A similar theme is suggested in Janáček's opera *The Cunning Little Vixen*.

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ABSTRACT

Carter's music poses struggles of opposition, for instance in timbre (Double Concerto), space (String Quartet No. 3) or pulse (String Quartet No. 5). His preference for the all-interval tetrachords, 4-Z15 [0, 1, 4, 6] and 4-Z29 [0, 1, 3, 7], is also well known. From these facets of Carter's music, I develop a narrative interpretation of his Petrarch sonnet-inspired solo flute piece, *Scrivo in Vento* (1991). Specifically, I forge narrative pathways by imagining the two tetrachords as active agents opposed in competition. Previous *Scrivo* analyses (Capuzzo 2002; Childs 2006) stress continuity by revealing Q-transforms and common-note voice leading between the tetrachords. While acknowledging such features, my analysis emphasises oppositional struggle by tracing the tetrachords as separate entities which cooperate and conflict as they manoeuvre to outdo each other.

The analysis advances three theses: (1) it guides listening to and reading *Scrivo* in a way which resonates with Carter's concern for the aesthetics of oppositional struggle, his choice of a sonnet as inspiration and his affinity for all-interval tetrachords; (2) it shows that music-analytical detail can be organised into dramatic narratives by (a) projecting dramatic roles onto categories asserted by a formal theory and (b) treating the formal theory's relations metaphorically as actions performed by each role as the musical work unfolds; and (3) it shows how detailed pc-set analysis can support a Heraclitean view of music: a flux of opposing forces seeking and resisting unity.