

**TEXTURE IN ELLIOTT CARTER'S
*A MIRROR ON WHICH TO DWELL***

by

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B.Mus., The University of Cape Town, 1983

M.Mus., King's College, London 1985

**A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY**

in

**THE FACULTY OF GRADUATE STUDIES
(School of Music)**

We accept this thesis as conforming
to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA

September 1992

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ABSTRACT

This study proposes a theory of texture for Elliott Carter's song cycle *A Mirror on Which to Dwell*. Texture is an important structural aspect of much recent music, as is exemplified in Carter's music. The first chapter is introductory and discusses other textural theories, and the concept of auditory streams. It also provides background to Elizabeth Bishop and to the poems that Carter selected for the cycle, and introduces the song cycle as a whole.

The second chapter outlines a textural theory based on streaming. Texture is defined as comprising those contextually defined aspects of sound which lead one to perceive music as consisting of distinct streams. Individual streams are defined by properties, behaviours and processes. The ways in which streams are combined, and the changes that occur in the streams during the combinations constitute textural behaviours and processes.

The third chapter presents the ways in which textural behaviours and processes can function. They can have symbolic functions by representing personae and actions in the text. They can also have musical functions and thus can play a role in the delineation of form.

In the fourth chapter each song in the *Mirror* cycle is analyzed. Songs that are texturally clear are analyzed first, followed by those that are more texturally complex. Because of the close relationship between text and music in these songs, each analysis starts with a discussion of the text before turning to the music. The main textural features of each song are presented, and then the analytical discussion focuses on form and text-setting.

In the conclusion an overview of the songs is presented. The songs, although formally diverse, are similar in many respects. In all of them Carter establishes the important streams, some of which have significant symbolic roles, in the opening measures. The songs are characterized by similar textural processes, which help to delineate the form of the songs and to portray musically the meaning of the text. An analysis of these songs using the textural theory presented in this study provides insight into their form and meaning.

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ACKNOWLEDGEMENTS

I would like to acknowledge some of the assistance I have received from various scholars while working on this dissertation. Professor Jonathan Bernard of The University of Washington discussed aspects of Carter's music with me, and the late Professor Wallace Berry of The University of British Columbia shared some of his broad knowledge of the topic of texture with me. Professor James McCalla of Bowdoin College, Maine, kindly sent me a copy of his paper on *A Mirror on Which to Dwell*, and Professor Grove Powell of the English Department at The University of British Columbia read my material on the poems and offered constructive comments. I would also like to thank my dissertation committee for their guidance: Professors William Benjamin, Gregory Butler and Eugene Wilson. In particular I wish to thank my supervisor, Professor John Roeder, whose musical understanding, analytical judgement and intellectual inspiration were generously shared in many hours of discussion.

Permission to quote musical excerpts from Elliott Carter's *A Mirror on Which to Dwell* is gratefully acknowledged.

"A Mirror on Which to Dwell"

By Elliott Carter

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CHAPTER ONE: TEXTURE

INTRODUCTION

In the past three decades theorists have come to realize the prominent role that texture plays in delineating structure in music, particularly in twentieth-century music where conventional rhythmic, harmonic and tonal/thematic schemes are often secondary or irrelevant. Composers in whose music texture is primary range from Webern, Ives and Varèse, composing in the earlier twentieth-century, to more recent composers like Ligeti and Penderecki. Existing concepts of texture and traditional terminology (such as homophony, polyphony etc.) have proved to be inadequate in describing the role of texture in the music of these composers. A few attempts have been made to formulate textural theories, in which new definitions are suggested and new terms are coined, and to apply them analytically. For some repertoires these attempts are unsatisfactory for reasons that will be discussed later. The present study approaches the topic of texture in a different way in order to circumvent the shortcomings of previous theories. The theory is systematically derived from real music; it is thus more closely related to that music, and also provides a methodical framework for analysis. It focuses on the music of Elliott Carter, in whose works texture plays an important structural role. The theory is based on observations of his music, while the analytical section applies the theory rigorously to one of his works.

The first chapter of this dissertation is introductory, its function being to prepare the reader for Chapters Two, Three and Four (the textural theory, symbolic and musical functions, and analytical applications, respectively). A critical discussion of existing theories of texture in music is followed by a brief outline of the major differences between these theories and the textural theory proposed in Chapter Two. A discussion of Carter's music

in general and of his concept of musical texture leads to a survey of theories of textural streaming in music. Finally, the specific piece on which this study is based, theoretically and analytically, is introduced, with the discussion focussing on aspects of the text.

TEXTURAL THEORIES

Let us examine some of the most significant theories of texture. In the past two decades, three noteworthy studies on texture have been made, in which terminology and a method for the analysis of musical texture are developed and used consistently. The three are closely related: Anne Hall wrote her dissertation, "Texture in Violin Concertos of Stravinsky, Berg, Schoenberg, and Bartók",¹ in 1971 under the guidance of Wallace Berry, who in turn offered a broader more extensive discussion of texture in his book *Structural Functions in Music*;² and, in a dissertation of 1986, "Texture and Musical Structure",³ James Mathes acknowledges his indebtedness to both Hall and Berry. Although there are minor differences between the three studies, the similarities between them are fundamental enough to permit them to be discussed collectively. All three share a common concept of texture, they use similar terminology and their methods of analysis are comparable. The discussion that follows will focus on these three studies, and will include references to other textural theories when they are relevant to the current topic.

Berry et al. consider texture to be a product of interlinear relations. Berry divides aspects of texture into those which can be measured, the "quantitative" aspects, and those involving

¹ Anne Hall, "Texture in Violin Concertos of Stravinsky, Berg, Schoenberg, and Bartók" (Ph. D. diss., University of Michigan, 1971).

² Wallace Berry, "Texture," in *Structural Functions in Music* (New York: Dover Publications Inc., 1987).

³ James Mathes, "Texture and Musical Structure" (Ph.D. diss., Florida State University, 1986).

the "interactions among textural components", which are best described in words, the "qualitative" aspects.¹ Hall and Mathes have similar categorical divisions. Textural theories that do not distinguish between measurable and non-measurable aspects run into problems because they are further removed from our way of perceiving music. In an extreme example, James Bersano (in his dissertation "Formalized Aspect Analysis of Sound Texture")² assigns numerical values to all five of his aspects of "sound texture", including register, loudness and timbre. The numbers indicate intensity values, but the abstraction of aspects like timbre prevent him from making very meaningful statements about the ways in which the music proceeds texturally.

In all of these studies, the quantitative aspect of texture is density, which is measured by the number of concurrent lines, or by the number of simultaneous pitches.³ The ease with which registral density is measured numerically can lead to the neglect of meaningful musical interpretation of those numbers, as is the case in Bersano's study where his measurement of density is limited to assigning a number to represent the total number of sounding pitches at any given moment. Berry et al., however, attempt to address this issue by also considering the spatial layout and registral range of the components as well as the density number. Berry graphs curves of "density-numbers" and discusses aspects of "density-compression", such as the distribution of components within a given space, in his accompanying text.⁴ Hall attempts to take into consideration the range and spacing of the

1 Berry, *Structural Functions*, 184-185.

2 James Richard Bersano, "Formalized Aspects of Sound Texture" (Ph. D. diss., Indiana University, 1980).

3 The line is considered to be the simplest textural unit. For Berry the term "component" is interchangeable with line. Hall and Mathes distinguish between a single line, a voice formed by more than one line, and a "textural component" formed by multilinear voices.

4 Berry, *Structural Functions*, 211. He is concerned also with the effect of consonance and dissonance on our perception of density, for example, he writes that "superimposed 2nds make up a 'denser' textural complex than superimposed 5ths" (209). In the other studies, and in this one, the consonance/dissonance issue is not relevant since the music which is being studied is not based on functional tonality.

"constituents" by expressing density as a percentage which is calculated by dividing the number of sounding pitches by the number of pitches potential in the sounding range. Although accurate, the percentage formula does not address the specific spacing and distribution of the pitches. Mathes claims to rectify this omission by describing the spacing between "lines" as "open" if the distance between lines is greater than a perfect 5th, and by describing the spacing between "components" (where a component is comprised of two or more lines) as "wide" if the interval between components is greater than an octave.¹

In some studies the quantitative aspect of texture, density, includes a linear as well as a registral component. For example, Mathes refers to "linear density" -- "the number of attacks or articulations in single line within given time unit",² and Bersano writes about "activity" -- "the rate of attacks".³ Since the music on which both of studies focus is not always organized into clearly perceptible "lines" that behave independently, their approaches are not very effective as analytical tools. Berry does not have an aspect equivalent to attack density in his study of texture; his treatment of rhythm in this chapter is restricted to interlinear comparison, e.g. describing lines as homorhythmic or heterorhythmic.⁴

In the textural studies of Berry, Hall and Mathes, the qualitative aspect of texture refers to the relative independence and interdependence of the lines with respect to horizontal interval, rhythm and contour. These studies make some use of traditional terms indicating functional relationships to describe interlinear relations, such as melody and

1 Mathes, "Texture and Musical Structure," 35.

2 *ibid*, 19.

3 Bersano, "Formalized Aspects," 12.

4 However, in his chapter on rhythm and meter, he refers to tempo-activity, defining it as "the degree of eventfulness" (305). Later, in a footnote, he discusses an "activity-tempo curve" that shows recessive change at a cadence, and suggests that "related actions of other element-changes" should be considered (419n). These related element-changes could include changes in textural aspects.

accompaniment, and imitation. These traditional terms are used in conjunction with new terms, such as homo-, hetero- and contra-intervallic, where the prefixes indicate degrees of independence in a given aspect. Hall, combining rhythmic and intervallic relations, identifies nine classes of melodic relations, from extreme interdependence of homorhythmic doubling to independence of contrarhythmic counterintervallic motion.¹ However, she does not say which of these classes of similarity relations two individual lines must fall into before they are considered a multilinear textural component. Berry, too, is not specific about this analytical issue. Instead he provides an explanatory example in which he describes two lines moving in parallel 3rds as being a "single real textural factor" consisting of two components. He adds that "at any point at which differentiation is established -- in rhythm, in direction of motion, in the distance of motion or in any other sense -- a texture initially consisting of a *single real factor* (of two sounding components) becomes a texture of *two real factors*."² The reader gets a better sense of how to determine Berry's "real factors" when, in his analyses, he combines the quantitative and qualitative aspects of texture in diagrams that summarize the number of "sounding components" and "real factors". These analytical diagrams are presented in the form of numbers representing "sounding components", with horizontal lines separating "real factors". A typical example is $\frac{3}{2}$, where there are two real factors, the first comprising three sounding components and the second comprising two components. In all of Berry's examples the "components" consist of timbrally similar instrumental lines.

Once definitions and terminology have been established, Berry et al. are concerned with the role played by texture in the delineation of structural units and forms. Both the quantitative and the qualitative aspects contribute to processes of textural progression and recession. In

¹ Hall, "Texture in Violin Concertos," 6.

² Berry, *Structural Functions*, 186.

general their studies treat movement towards maximal diversity in interlinear relations as progression, and movement towards homogeneity as recession. These processes of progression and recession help to articulate structural divisions locally, as well as on a larger scale. Once smaller structural units have been identified through these textural processes, the theorists (particularly Mathes and Berry) are concerned with how the structural units function musically in the larger context of the piece, for example, functioning as an introduction or a recapitulation.

In the studies of Berry et al., texture is considered to be just one aspect of sonority. While interlinear relations create texture, there are other aspects, such as timbre, articulation and dynamic intensity, that contribute to overall sonority but not necessarily to texture. As a result of this classification, these studies do not treat timbre as a textural factor. For Mathes, timbre is not even an issue since he analyzes relatively timbrally homogeneous works, namely piano sonatas. Berry admits that "unfortunately, references to functional and expressive events and processes of coloration have had... only tentative exploration in this book." The term "coloration" refers to "timbre, articulation, dynamic intensity, registral coloration, etc.". He goes on to assert that "... of all processive functions of element-structures, those of coloration are probably most accessible to analytical identification..."¹ The reason for his superficial treatment seems to be because he believes that, although aspects of coloration are clearly perceptible to the listener, they require a separate theoretical study: "relative intensity values of timbral differences must be at times the basis for hypothesis of plausible (sometimes seemingly self-evident) but not yet empirically demonstrated function and effect."²

1 *ibid*, 294.

2 *ibid*, 294n.

In contrast to Berry's approach, other contemporary theories emphasize the significance of timbre in texture. A more recent study on musical textures, presented at the 1989 ICMC Conference, like Berry's study, defines texture as having two properties: the number or density of concurrent sonic activities and the diversity of activities.¹ But in this study diversity includes pitch diversity, rhythmic diversity, pitch-movement diversity and timbral diversity. In another example, Richard Delone (et al.) assert that timbre is an important aspect of musical organization in "Timbre and Texture in Twentieth-Century Music" in *Aspects of Twentieth-Century Music*.² Robert Erickson's book, *Sound Structure in Music*, which deals with the role of timbre in music, includes a chapter titled "Timbre in Texture".³ Although he does not define texture, and uses general descriptive terms like "complex", "multilayered", "dense", he does differentiate between textures where the components are timbrally distinct, and timbrally mixed textures, such as the "fused ensemble timbres" of composers like Varèse.⁴ In his discussion about simultaneous layers of texture, Erickson writes that these layers are best distinguished by spatial separation and/or very sharply contrasted timbres.⁵ While his concept of texture is rather broad, his identification of timbre and register (spatial separation) as significant factors in determining textural components, are important for the present textural study.

A different approach to texture is taken by Lansky and Goldstein in the *Dictionary of Contemporary Music*. They divide texture into two types: firstly, harmonic texture resulting from the interaction of pitch and rhythm; and secondly, sound texture, the sonority

¹ David Huron, "Characterizing Musical Textures," in *Proceedings of the 1989 ICMC* (San Francisco: Computer Music Association, 1989), 132.

² Richard Delone et al., "Timbre and Texture in Twentieth-Century Music," in *Aspects of Twentieth-Century Music* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1975).

³ Robert Erickson, *Sound Structure in Music* (Berkeley, CA: University of California Press, 1975).

⁴ Erickson, *Sound Structure*, 165.

⁵ *ibid*, 185.

resulting from all aspects of music other than pitch and rhythm.¹ Contrary to Berry et al., here sonority is one aspect of texture, and texture includes elements like timbre. Although they divide texture into these two types, and discuss them separately, it is clear from the section on "sound texture" that, in fact, pitch and rhythm are important aspects of this type of texture too.² The most convincing textural analyses in the article, in which Goldstein discusses works by Webern, Ives, Schoenberg and Varèse, examine texture in terms of the interaction of register, timbre, and dynamics, as well as pitch and rhythm. The weaknesses of these analyses are that they do not follow a systematic method, they tend to be descriptive, and they do not address larger issues of form (as a result of the necessary brevity of the article).

In order to identify some of the problems inherent in the studies we have mentioned, let us attempt to analyze a passage of Carter's music in the way that theorists like Berry et al. might proceed. The passage we will examine is taken from the fifth song in Elliott Carter's *A Mirror on Which to Dwell*, 'View of the Capitol from the Library of Congress', mm.28-29, shown in **Example 1** overleaf. While some songs are more texturally opaque and could be analyzed relatively successfully using Berry's theory (for example, 'Insomnia'), this passage is typical of Carter's more "complex" textures. Other similar passages include, for example, mm.1-2 of 'Anaphora', mm.31-32 of 'Argument', and any passage from 'O Breath'.

¹ Paul Lansky and Malcolm Goldstein, "Texture," in *Dictionary of Contemporary Music* (New York: E.P. Dutton & Co., Inc., 1974), 741-743.

² This apparent contradiction could result from the fact that the sections have different authors; that on harmonic texture is written by Lansky, while Goldstein is the author of the section on sound texture.

Example 1: 'View of the Capitol' mm.28-29

28

Sop. — and loud, — — — — — but — queer — the

Picc. *mp* *p < mf* *p* *pp* *ppp*

Ob. *pp* *pp < p* *p < mf* *p* *pp* *ppp*

E^b Cl. *pp* *mp* *pp* *p* *p < mf* *p* *pp* *ppp*

Sn. Dr. *pp* *ppp* *pp* *ppp*

Perc. B. Dr. *mp* *pp*

Piano *ppp* *p* *mf*

(una corda sempre)

Vln. *quasi da lontano* *pizz.* *p* *mf* *p* *pp*

Vla. *mp - pp* *5* *mf* *p* *mp*

Vcl. *quasi da lontano* *pizz.* *p* *mf* *p* *pp* *ppp* *arco*

Cb. *pp* *mf* *p*

Immediately a pre-analytical problem arises: Berry does not present a systematic method for analysis, but, rather, he presents a series of independent discussions about various aspects of texture. Even in the relatively complete analyses that conclude his chapter on texture, his procedure for discussing each passage depends on its unique musical characteristics. Hall and Mathes, on the other hand, are more methodical in their approaches, and so our discussion will follow their procedures.

The first step is to identify the textural components. As was mentioned earlier, these theorists do not precisely specify the criteria for assessing the components of texture, which makes this first step difficult. If we are to decide which instrumental lines form a multilinear component (Berry's "real factor") on the basis of similarity of rhythm, interval and contour, then the only lines that meet all three criteria are the cello, bass and the left hand of the piano in mm.28-29. Other lines, such as the violin, would be considered homorhythmic with respect to the cello and bass, but do not exhibit a high degree of similarity in interval and contour. According to Berry, if differentiation occurs in any of the three aspects -- rhythm, interval or contour -- between sounding components, then they are different real factors.¹ Clearly, however, the violin is not an independent real factor and is part of the same textural component as the cello, bass and left hand piano, in part because of its timbral similarity to the *pizzicato* cello and bass lines, as well as its articulation of a triplet eighth-note pulse. So their three criteria for real factors -- similarity of rhythm, interval and contour -- have to be reduced to a single criterion: similarity of rhythm. An even greater problem arises with the wind instruments and right hand of the piano in m.28. Again, these lines are more similar in behaviour to each other than to any other concurrent lines, for example, in the kind of gestures they comprise in terms of rhythmic activity and articulation, and in the registral space that they cover, and we tend to hear them as a single

¹ Berry, *Structural Functions*, 186.

textural component. These lines, however, are not even homorhythmic with respect to each other, let alone equivalent in the other aspects of interval and contour. Without completing our identification of textural components in this passage, we can see that the basic terms of the theory -- "real factors" -- cannot be determined.

Other shortcomings arise when we examine the next measure. Let us assume that we can assert that the violin, cello, bass and left hand piano form a textural component on the basis of rhythmic similarity in m.28. So, we have a real factor comprising four sounding factors. In m.29, however, changes occur as the piano drops out, and the oboe and piccolo start to conform to the same rhythmic patterns. The single real factor now comprises five sounding factors. Berry et al. would describe the density of the real factor as having increased by one, but this description does not address the important timbral changes that have taken place. In summary, by examining just some of the aspects of determining textural components using these theories, we have found ourselves unable to accurately describe some elementary aspects of the texture of the passage from 'View of the Capitol'. It is clear that we need a theory in which instrumental lines are not the primary components of texture.

Our next step in the analysis is to examine the quantitative and qualitative changes that take place, and to see how they create textural processes. Because of the rhythmic complexity of the excerpt, measurement of registral density by counting the number of simultaneous pitches yields a wide variety of numbers. This does not seem to be a meaningful description of the registral density of the passage. Instead, let us consider the number of concurrent instrumental lines (Berry's "sounding factors"). There is an increase in density in m.28 from five lines at the beginning of the measure to ten at the end of the measure (counting the piano right hand and left hand as two instrumental lines), after which the density decreases again in m.29. If we measure Mathes's linear density by counting the

number of attacks within a given unit of, say, a measure, we observe an decrease from 44 attacks in m.28 to 28 in m.29. (Nothing in this passage strongly marks off the measures, so we could choose some other arbitrary unit to measure linear density, perhaps with more significant results.) Nevertheless, these density measurements do show a progression towards increased intensity at the end of m.28, followed by a recessive reduction of density. We can also observe that the process of progression is supported dynamically by *crescendi* in the instruments, and the recessive motion is supported by *decrescendi*. While analysis of the quantitative aspect of texture is relatively fruitful, the same cannot be said for the analysis of the qualitative aspect. We have already seen that there are problems in identifying the textural components on the basis of interlinear relations as defined by Berry et al. We might expect a greater diversity of interlinear relations to support the progressive process in m.28, as is frequently the case in the passages that these theorists analyze, but there are no significant changes. This seems unsatisfactory, and suggests, once again, that defining texture in terms of instrumental lines is not necessarily fruitful, and also that there might be other types of textural processes at work besides progression and recession. As a final analytical step, it is not possible for us to address larger issues such as the structural importance of the textural changes that take place in this passage, because the passage is so brief.

Any attempt to supplement the analytical observations we have made by applying traditional terminology to this passage from 'View of the Capitol', is also unsuccessful. The textural components, to the extent that we have been able to identify them, seem to proceed relatively independently of each other, and do not to conform to any functional relationship. Furthermore, using a term like polyphonic to describe this passage does not provide any further insight into the textural organization. For these reasons, the textural theory that I will propose makes almost no use of traditional terminology. Since most of these terms are

based on the description of functional tonal music, they cannot be used accurately without being redefined, which seems to defeat the purpose of using them in the first place.¹

This partial analysis of 'View of the Capitol' has revealed some of the shortcomings of the textural theories of Berry et al. Other problems in these studies arise from the repertoires that are covered. One problem is that the theories are too general because of the wide selection of pieces to which these theorists wish to apply their theories. In all three of the studies, a relatively large number of works written in various styles are analyzed. Hall and Mathes both analyze a variety of twentieth-century music, with Mathes covering entire first movements of piano sonatas, and Hall concentrating on smaller pieces, in the form of selected passages from violin concertos.² Berry's study is even more general and covers the gamut of music from Josquin's madrigals to the compositions of a selection of twentieth-century composers. On the other hand, despite the breadth of music to which the theories are applied analytically, we have seen that they do not adequately account for the role of texture in Carter's music. This could be in part, at least in the case of Hall and Mathes, because the pieces that they analyze, that is, sonatas and concertos, are based on thematic relationships, unlike Carter's music. As both of these theorists admit, thematic materials affect texture significantly,³ so, for example, traditional textural relationships such as theme and accompaniment prevail. In contrast to these studies, the present theory of

¹ The only traditional term that will be used is "contrapuntal". Contrapuntal conventionally denotes a multilinear texture of interlinear independence (in rhythm, contour and/or timbre) where there is a dynamic relationship between the components. A contrapuntal texture can be characterized by imitative procedures, for example rhythmic or inversional imitation. In non-imitative counterpoint the dynamic nature of the relationship between the components can be achieved by a reciprocal intensification and relaxation of activity in the individual components, where the intensification may be the result of any textural aspect or combination of aspects (for example, increased linear attack point density). This term then essentially describes the combination of streams, a stream counterpoint, which can be perceived as texture.

² Mathes analyzes the first movements of Prokofiev's Sonata #7, Op. 23, Sessions's 2nd Sonata for solo piano, Boulez's 2nd Sonata for Piano, and Barber's Piano Sonata, Op. 26. Hall analyzes passages from the violin concertos of Stravinsky, Berg, and Schoenberg, as well as Bartók's second Violin Concerto.

³ Hall, "Texture in Violin Concertos," 9.

texture is derived from the music of a single composer in whose compositions texture plays an undeniably vital structural role.

ELLIOTT CARTER

I have selected Elliott Carter's music for this study because of the primary role that texture plays in his compositional style. In his compositions traditional rhythmic and harmonic schemes have largely been abandoned. For example, he uses time signatures, but the meter and the beat are usually not perceptible aurally because of the complex rhythmic patterns on the surface of the music. Since his music is atonal, the concepts of key and conventional harmony are irrelevant, although these are frequently replaced by other ways of structuring pitch. In his 3rd String Quartet (1971), for example, each of two duos plays a number of different types of music -- movements -- each associated with a unique interval. In his Duo for Violin and Piano (1974) each instrument has a unique vocabulary of intervals and three-note chords. Carter's music is also often very dense, in terms of the number of processes that occur simultaneously, as can be observed in pieces like the Concerto for Orchestra (1969), where the ensemble is divided into four orchestral groups that proceed concurrently. Despite the difficulties experienced in describing accurately Carter's musical organization in traditional terms, the music retains clearly perceptible structural designs and the musical processes have traditional functions, for example, closure and climax. Critics and musicologists have identified texture as being important in Carter's music, but they usually simply describe his music as being texturally complex, without referring specifically to what comprises texture or in what particular way the texture is complex.¹ For these reasons, Carter's music is eminently suitable for a textural study in which the

¹ For example, Robert Henderson states as a fact Carter's "virtuosity" in handling "textures of the utmost complexity" ("Elliott Carter," *Music and Musicians* 14/5 [January 1966]: 21).

components of texture are defined, the processes that they undergo are catalogued and their relation to form is elucidated.

Carter himself has made statements regarding texture in his music, although often using the term in a somewhat loose or general sense. In an interview with Benjamin Boretz in the late 1960's Carter said that early in his compositional life he had questioned the universality of the traditional textural formats of music (for example theme and accompaniment) and imagined other musical textures where lines (or voices) could recall things that had happened before or predict things to happen later.

Composers had been very routine about what goes on in any given instant of music -- simultaneously, I mean -- usually they settled for harmonic effects that emphasize certain qualities of the theme, or contrapuntal ones that repeat fragments of the main theme in order, so to speak, to cook the chicken in chicken broth... I was interested, by contrast, in flow, in the contribution of the past to the present and the effect of predicted futures on it, in dealing with the process of an emerging present.¹

Although Carter's stated interests may contrast with those of other composers, in a sense there is nothing revolutionary in this concept of texture, and it can be viewed as an extension of the conventional notion of imitative polyphony. What is more significant is that Carter does not feel bound by traditional concepts of texture in his compositional process. It is clear then that conventional methods of textural analysis are unlikely to provide the greatest insight into his music .

What does Carter perceive to be the elements of texture? He is less than specific. Concerning his *Brass Quintet* he writes: "this Quintet, rather than employing all the resources of colour possible with modern mutes for the brass, relies primarily on linear

¹ Benjamin Boretz, "Conversation with Elliott Carter," *Perspectives of New Music* 8/2 (Spring-Summer 1970): 13.

materials, textures and instrumental virtuosity".¹ By "textures" he means the different types of sounds produced by varying combinations of instruments playing characteristic intervals ("linear materials") and rhythms with particular expressive characters. Texture thus comprises four elements: timbre, articulation, pitch and rhythm. In a reference to texture in *Night Fantasies* he writes: "Even when there is an abrupt change of texture and sound, usually it is made up of the same notes you have been hearing for the last three measures".² This time different textures result from changes in aspects other than pitch, which remains constant. Perhaps Carter's most succinct statement about texture was made in the Boretz interview when he said: "The relations of pitch to timbre, of pitch to texture, and of timbre to texture, vary greatly within each of my recent works. They are also treated differently from work to work".³ Once again, timbre and pitch are identified as significant components of texture in his music. We can see also that Carter's varying treatment of texture means that a textural theory will have to encompass an array of ways in which the different aspects of music can interact in order for the theory to be applicable to his music analytically.

It is, however, in Carter's eloquent response to a question about musical time in an interview with Allen Edwards that he makes his most revealing statements about both the elements of texture and how these elements interact in textural processes:

What began to interest me was the possibility of a texture in which, say, massive vertical sounds would be entirely composed of simultaneous elements having a direct and individual horizontal relation to the whole progress or history of the piece -- that is, simultaneous elements, each of which has its own way of leading from the previous moment to the following one, maintaining its identity as part of one of a number of distinct, simultaneously evolving, contributory thought-processes or musical characters.

1 Elliott Carter, liner notes for Carter, *Brass Quintet* (Odyssey Y34137, 1976).

2 Elliott Carter, liner notes for Carter, *Night Fantasies* (Nonesuch, 1982).

3 Boretz, "Conversation," 7.

In trying to deal with this idea in a viable way I've used many different methods -- such as producing a texture of musical layers or streams in which the progression of one is slow and another fast, or in which one is very spasmodic and another very continuous, and so on; sometimes, in fact, the total notion of the piece is derived directly from this idea of simultaneously interacting heterogeneous character-continuities, as in my Second String Quartet... The coordination of these contrasting layers of music then forms an integral part of the musical discourse of the work and gives it its small and large formal evolution.¹

STREAMS

In his explanation of musical texture, Carter refers to simultaneous "layers or streams", which connotes forward, flowing movement and variation within a unified continuity. His use of the word streams in the description of music has parallels in the area of music perception. The concept of musical streams is one that has been gaining prominence over the past few decades, particularly among psychologists researching psycho-acoustic perception. However, in these studies streams are often defined very simply, or are constrained to facilitate clinical experiments. Let us examine some of the more significant studies.

In their paper "Hearing Musical Streams", Stephen McAdams and Albert Bregman write that: "Auditory stream formation theory is concerned with how the auditory system determines whether a sequence of acoustic events results from one, or more than one 'source'".² By "source" they do not mean the physical source, which is limited to sounds originating from one location. Rather, they are referring to the psychological organization whereby a sequence of sounds are mentally grouped into a whole, a stream, emanating

¹ Allen Edwards, *Flawed Words and Stubborn Sounds: A Conversation with Elliott Carter* (New York: W.W. Norton & Co. Inc., 1971), 100-101.

² Stephen McAdams and Albert Bregman, "Hearing Musical Streams," *Computer Music Journal* 3/4 (December 1979): 26.

from one illusionary source. Their study is concerned with the factors used by the perceptual system to build descriptions of streams. They identify such factors as frequency, rate of occurrence, intensity, timbre, and attack/decay transients as stream defining. Unfortunately they restrict their study to the manipulation of a single sequence of tones, although some attention is given to two simultaneously-sounding tones. This limitation leaves open the question about the relative importance of these factors in the perception of polyphonic music.

A complementary study by David Huron investigates subjects' ability to determine the number of concurrently sounding voices in polyphonic textures of homogeneous timbre, such as Bach's keyboard fugues. He defines "voice" as a single line of sound that "maintains a separate identity in a sound field or musical texture" and claims that the musical term is parallel if not equivalent to the term stream which is preferred by the psychologists.¹ His results indicate that accuracy in identifying the number of simultaneous voices declines when there are more than three voices. Again, this does not address the concern about music in which concurrent multivoiced components have varying timbres. Thus, although the psychological reality of musical streams is supported by psycho-acoustic research, it is clear that a more detailed study of stream formation and interaction using existing music is needed to clarify this theory of musical organization.

A new study by Bregman answers these concerns in part. His accumulated research in the field of the perceptual organization of sound is presented in a book entitled *Auditory Scene Analysis*. In it he defines an auditory stream as "our perceptual grouping of the parts of the neural spectrogram that go together".² Although differently worded, this definition is

¹ David Huron, "Voice Denumerability in Polyphonic Music of Homogeneous Timbres," *Music Perception* 6/4 (Summer 1989): 362.

² Albert S. Bregman, *Auditory Scene Analysis: The Perceptual Organization of Sound* (Cambridge, Mass., MIT Press, 1990), 9.

essentially unchanged from the McAdams/Bregman one mentioned earlier. This study, however, goes much further than any other in the field and includes a chapter called 'Auditory Organization in Music', in which Bregman discusses music from Palestrina to contemporary atonal compositions. He uses the principles of auditory perception developed in the other chapters to show how "properties of musical sound could emerge from the perceptual integration of acoustic components over time and across the spectrum".¹ He asserts that the established processes of auditory organization work in the same way in simplified laboratory experiments as in real music. His approach differs slightly from the present study in that he defines the sonic aspects that make musical sounds distinct from each other, while this theory is concerned both with stream segregation and with those aspects that make a stream cohere. Despite the fact that his references to actual musical compositions are brief and unsatisfactory, the principles that he develops are useful and his work will be referred to in the textural theory in Chapter Two.

A MIRROR ON WHICH TO DWELL

The work that has been chosen for this study, *A Mirror on Which to Dwell*, composed in 1975/76, is a set of six songs for soprano and chamber orchestra. It has been selected for a number of reasons. The *Mirror* cycle is a mature work using many of the compositional devices that Carter developed in the years that followed his early vocal works. It occupies an important position in his musical output as it marks his return to the vocal medium after an absence of nearly thirty years. The song cycle is, in some ways, an ideal vehicle to examine the substance of texture and the role that textural processes play in his music. It is a chamber work and so has accessible proportions -- it is shorter than his large

¹ *ibid*, 528.

compositions and is scored for fewer instruments -- but it is still structured by the same compositional processes as his larger works. Each song is scored for a different combination of instruments, which permits an investigation of the relation of timbre to texture. Finally, the text for each song is unique in its form and meaning, and Carter conforms the musical structures to the poetic forms; as a result the cycle exhibits a variety of ways in which texture contributes to musical form.

TEXTS

A Mirror on Which to Dwell is a setting of six poems by the twentieth-century American poet Elizabeth Bishop (1911-1979). Bishop, although not an internationally acclaimed figure like T.S. Eliot or Robert Lowell, is recognized as one of the best poets of her time. She won several awards and fellowships in her lifetime despite her relatively small output, which comprises only four volumes of poetry. Her position in the contemporary literary scene can be recognized from her associations with other poets. In the early 1930's Bishop formed a close (and lifelong) friendship with Marianne Moore, who influenced Bishop in her unpretentious, controlled language, in her use of clearly observed images, and in her interest in animals as subject matter. She was also influenced by other modern poets like Wallace Stevens, W.H. Auden and the French Symbolists.¹ She met Lowell in the 1940's, and he became both a friend and advocate of her work. Lowell was, in turn, inspired by Bishop's technique of creating form through the accumulation of images, which he then developed further in his *Life Studies* poems.² A later generation of poets, including John Ashbery and James Merrill, has also acknowledged her influence on their writings.

¹ Thomas J. Travisano, *Elizabeth Bishop: Her Artistic Development* (Charlottesville, University Press of Virginia, 1988), 7.

² Travisano, *Elizabeth Bishop*, 67.

Thomas Travisano, in his recent book *Elizabeth Bishop: Her Artistic Development*, divides Bishop's work into three phases to show how her writing developed chronologically in response to the poetic movements of her time. Her early phase (1934-38) places her in the world of the Symbolists, where history is renounced "for the ambiguous pleasure of enclosure."¹ In this phase she is introspective, concerned with individual isolation and limits. Ambiguity is prevalent in the poems, and she uses intricate verse forms. Her middle stage (1939-55) reflects her years of travel and observation and combines "the precision and conciseness of imagism with a liberating dimension of temporal development."² Her final phase (1956-79) is a reflective one and is described by Travisano as being concerned with personal and private history.³

Bishop's writing is stylistically consistent through these phases; it has little mannerism or overtly emotive language, and tends towards objectivity, control, honesty and intellectual clarity. Her poetry is characterized by minutely precise observation of detail, a trait she inherited both from Marianne Moore and from the Imagists. Often her concern is with an object, either a familiar object seen from a new angle, or an object whose image is intensified through the accurate observation of its particulars.

The precision of Bishop's poetic images is balanced by the resonance she achieves in her writing.⁴ Resonance in poetry occurs when an objective image has multiple, subjective meanings with which the poet and the reader can associate it. Bishop achieves resonance

1 *ibid*, 7.

2 Travisano, *Elizabeth Bishop*, 7. The Imagist movement, which flourished in the years 1910-1920, was a rejection of the subjectivity and abstraction of Romantic poetry in favour of a Classical revival of objectivity and poetic craftsmanship. The two leading Imagist figures were Ezra Pound and T.S.Eliot, whose poetic works, incidentally, have been extensively read by Elliott Carter.

3 *ibid*, 7.

4 Anne Stevenson, in *Elizabeth Bishop* (New York: Twayne Publishers, Inc., 1966), devotes a chapter to explaining how Bishop achieves a balance between the traits of precision and resonance in her poetry, 74-94.

through different means. In one method she attributes emotions to an external object (another trait typical of the Imagist writers) and thereby enhances its value and provides a secondary layer of meaning. In another method, Bishop uses deliberately ambiguous images; these are exceptional, however, since she is usually quite precise. Resonance is also achieved through mixing visual precision with symbolic value, and through technical devices like rhythmical resonance.

Themes that recur in Bishop's writing are those of travel and, inherent in that, the conflict between choice and necessity (the traveler can choose where to go, but not what to find). It is only in the imagination that the universe is equal to one's desires. Other themes of tension are the relationships between the artist and society, and between survival and erosion. Common to these themes is the concept of boundaries, not just geographic ones, but the boundaries or rifts that Bishop finds to exist in what, according to James McCalla, is often taken to be the bedrock of human existence, "our sensory experience and our knowledge".¹ The theme of boundaries is also closely connected to Bishop's means of achieving resonance, i.e. the boundary that exists between the observed surface of an image and the (perhaps ambiguous) meaning that lies below the surface, or that is contained within.

Bishop returns to the past in many of her poems, although not with any therapeutic aim: she sees her past as the only way things could have happened. Time is considered to shape human experience, as can be seen, for example, in the painful observation of each successive breath in 'O Breath'. Bishop's awareness of the passage of time is apparent in her concern with the temporal flow of a poem. She believes that the timing and articulation are crucial in poetry; her aim is "to catch and preserve the movement of an idea -- the point

¹ McCalla, "I, We, a Sandpiper: Persona in Elliott Carter's Settings of Elizabeth Bishop," (unpublished paper), 15.

being to crystallize it early enough so that it still has movement".¹ Frequently the progression of the poem is generated by a succession of linked ideas and images, a succession of linked moments.

In Bishop's more personal poems, of which there are few, the themes of loss and pain comprise her vision. The connections with her own personal life are unmistakable. One of her parents died young, the other suffered from lifelong madness, and her love relationships were often unsuccessful. She seems to find the exposure of love to be less attractive than the empty safety of isolation.

Elliott Carter's decision to write a song cycle was motivated by a commission from *Speculum Musicae* in honour of the United States Bicentennial in 1976. It had been nearly thirty years since he had composed for the vocal medium (the previous vocal work being *Emblems* for men's voices and piano in 1947), and during that time he had voiced his aversion to text-setting. In an interview with Allen Edwards Carter stated that he found it "difficult to find a text that I would like to set to music", and explained that "with a text there is a whole other time-structure to be thought of and dealt with, something I'm not sure I could teach myself to work with now without wasting a large amount of effort".² The problem was twofold. He had to work out how to juxtapose musical time (specifically his musical time, which usually progresses with a strong sense of direction) and poetic time (texts are often not directed in time). He also had to coordinate the linear flow of individual words in the text with the kind of complex music he was writing in which many things happened simultaneously and at different speeds. Another, more general problem was to find poetry that was rhythmically suitable for song-writing. In the poetry of Elizabeth

¹ Travisano, *Elizabeth Bishop*, 70.

² Edwards, *Flawed Words*, 106.

Bishop, however, Carter found texts that would help him to overcome the problems that he experienced with text-setting.¹

Since *A Mirror on Which to Dwell* was commissioned for an American celebration, it was appropriate for Carter to choose an American writer for the texts. More specifically, the songs were intended for a soprano (Susan Davenny Wyner) and so he sought out works of female American poets. In his liner notes to the Speculum Musicae recording of the *Mirror* cycle Carter states that Bishop's poems appealed to him because of their "clear verbal coherence as well as their imaginative use of syllabic sounds that suggest the singing voice."²

Clearly Carter also found analogies between the form and content of Elizabeth Bishop's texts and his own established compositional style. Bishop's strong sense of the passage of time is compatible with Carter's concept of musical time and helped to provide a solution to his problem with the "whole other time-structure". He writes of Bishop's poems: "I was very much in sympathy with their point of view, for there is almost always a secondary layer of meaning, sometimes ironic, sometimes passionate, that gives a special ambience, often contradictory, to what the words say".³ Bishop's practice of achieving resonance in her poems through personification and the use of ambiguous images provide the secondary layer of meaning which Carter found so appealing. These layers of meaning find their musical expression in Carter's "simultaneous streams of different things going on together",⁴ a concept developed from his idea of musical time whereby the complex motion

¹ In a recent interview with Jonathan Bernard ("An Interview with Elliott Carter," *Perspectives of New Music* 28/2 [Summer 1990]: 180-214), Carter stated that one of his primary reasons for returning to song-writing was that he felt contemporary singers had the technical and musical capabilities of performing music that was previously considered "unsingable", for example, vocal music by Schoenberg, Webern and Babbitt, and, by implication, his own music (184-185).

² Elliott Carter, liner notes for Carter, *A Mirror on Which to Dwell* (Columbia Masterworks M35171, 1980).

³ *ibid.*

⁴ Edwards, *Flawed Words*, 101.

of life is reflected in the musical motion where layered musical events proceed simultaneously.

Carter selected poems that are similar in expression and thematic content. Like most of Elizabeth Bishop's poems, they are all characterized by minute observation of detail and clarity and control of expression. However, in a sense the six poems chosen by Carter for this set are not typical of Bishop. Three of them are intimate and express the personal feelings of her inner world, instead of attributing emotions to an external object. These three, 'Argument', 'Insomnia' and 'O Breath', are taken from a collection titled *A Cold Spring* (1955) and in all of them the pain of personal relationships is expressed. 'Argument' has a sense both of travel ("distance") and of the diminished past where the days are reduced to the impersonal blocks on "some hideous calendar". 'Insomnia' presents the speaker ruminating on the reflection of the moon in a bureau mirror and imagining a more desirable, "inverted" world where she is loved by her partner. In 'O Breath', the fourth poem in a group of four, the alienation between two lovers is again expressed through the thoughts of a woman, while her partner sleeps.

A fourth poem, 'View of the Capitol from the Library of Congress', is taken from the same set. Elizabeth Bishop worked as a Consultant in Poetry at the Library of Congress from 1949 to 1950, during which time this poem was most probably inspired, if not written. Although the subject matter is largely concerned with description of an external event, that of the Air Force Band playing on the steps of the Capitol, it is written in the first person and expresses the artist's feelings about the government. For this reason it could be grouped with the other three 'personal' poems.

'Sandpiper', from the 'Elsewhere' section of the 1965 collection titled *Questions of Travel*, is one of Bishop's poems dealing with travel and the object of her scrutiny is one of the

animal world. The sandpiper is obsessed with the detailed particulars of his world and is unable to achieve a comprehensive vision of the world, a situation, Bishop intimates, that is not uncommon in human life. The poem chosen for the opening song, 'Anaphora', is taken from an early collection *North and South* (1946) and is the most elusive of the six. It follows the progression of a day starting with the morning's primal energy, which is gradually dissipated, like man's "mortal fatigue". It closes with an image of the poet who attempts to invert reality (like the narrator in 'Insomnia') and to reverse the fall of energy through "stupendous studies" and "endless assent".

The ordering of the songs is Carter's, he says, "alternating as they do between considerations about nature, love and isolation."¹ This alternation is not necessarily meant literally as many of the poems overlap thematically. For example, 'Argument', 'Insomnia' and 'O Breath' deal with love and isolation in their expression of the pain of personal relationships. 'A View of the Capitol from the Library of Congress' (hereafter referred to as 'View of the Capitol') is concerned primarily with the speaker's alienation from the scene she is observing, although the intervening role of the "giant trees" suggests a secondary theme of nature. The bird in 'Sandpiper' is isolated from the larger natural world that surrounds him, while being obsessed with the details of his immediate physical environment. Considerations of nature dominate the poem selected for the opening song 'Anaphora', although here again there is a sense of isolation in the lonely figure of the "beggar in the park".²

1 Carter, liner notes for *Mirror*.

2 David Schiff, in his book *The Music of Elliott Carter* (London: Da Capo Press, 1983) divides the songs into only two groups that reflect "the geographical and the personal" aspects of Bishop's art. He characterizes 'Anaphora', 'Sandpiper' and 'View of the Capitol' as describing "the relationship between the poet and the world" (282), and the other three as being about love. Schiff's classification of the poems, although not inaccurate, is limited and does not fully describe the pervasive thematic links that were discussed above. James McCalla, in his paper "I, We, a Sandpiper", also finds fault with Schiff's reading of Bishop. The implications for the structuring of the overall cycle of the "unabridged gap Schiff finds between the personal and the geographical" is, in his opinion, "misguided" (15).

McCalla, in his paper "I, We, a Sandpiper", does not view the ordering of the songs as random. Instead he hears a progression, "a process of emotional concentration from the first 2 songs... to the final 'O Breath', with the fifth song, the 'View of the Capitol,' as an intercalated piece that serves at the same time to remind us that such emotional journeys still transpire in a public world and to separate 'Insomnia' from 'O Breath', the better to enhance the effects of the last song."¹ The process of intensifying emotional concentration is supported, in McCalla's opinion, by musical aspects like pitch and rhythm schemes and instrumentation. Ultimately these processes serve in the emergence of a single, clearly defined *persona*, a woman who "throughout is forced to examine her place in the world about her, and who finds in each instance, more forcefully as the cycle continues, at least the possibility of forging a separate peace with that world, the continued hope for peace."²

The forms of these six poems, although varied, demonstrate Bishop's approach to structure: stylization. In one manifestation of this principle, the poem is visually designed to resemble the formal but is not itself formal. For example, in 'Sandpiper' and 'View of the Capitol' the material is organized into stanzas, but the phrases and sentences do not always follow the lines or the stanzaic division and run freely across them. In other words, the two textual structures, the form and the content, sometimes cadence together and, at other times, are opposed. This variation in correspondence between them creates a kind of structural counterpoint that enhances the multi-layered resonance of the poetry. In other poems the form and content are more closely related. For example, 'Argument' demonstrates a more traditional use of form with stanzas separating different images or ideas, while in 'Anaphora' Bishop uses the visual device of indenting the lines at points where the energy she is describing starts undergoing a transformation. In 'O Breath',

1 McCalla, "I, We, a Sandpiper," 16.

2 *ibid*, 23.

written in free verse, she uses a typographical device in order to depict the inhalation/exhalation described in the text: two words within each line of the poem are separated by a space larger than that found between the other words.

Carter is sensitive to the structural counterpoint inherent in Bishop's poetry and his setting of each poem is determined primarily by his understanding of the meaning of the text. Formal divisions in the music correspond to the sentence structure and images in the poem rather than the stanzaic structure (unless they correspond). In 'Argument', for example, his formal sections correspond to the stanzas of the poem, whereas in 'View of the Capitol' the correspondence is with the sentences and images in the poem and stanzaic correspondence is incidental. Within the broad formal divisions musical processes shape the progression of the song and correspond to the meaning of the text. These musical processes function both symbolically and musically. Carter's expression of the text is not limited to mere surface features, or text-painting, and involves a combination of all aspects of the music, from tempo to texture. In a recent interview he explained the symbiotic relationship between text and music in *Mirror*: "I wanted to explore the way one could suggest things [musically] that were in the poem, emphasize certain details, evoke its general ambiance -- but also to make countersuggestions against its contents and so forth."¹ In Chapter Four, the analytical applications of the textural theory, a detailed discussion of the form and meaning of each poem, and its corresponding musical form, will precede the analysis of each song.

Collectively, the songs comprising the *Mirror* cycle display a balance between similarity and contrast. Carter composed the songs for nine players playing twenty-one instruments, and from this common base he selected different combinations for each song. However, in every combination each of the three main groups of instruments is represented: winds,

¹ Bernard, "An Interview with Elliott Carter," 187.

strings and percussion (including piano). An obvious element of continuity is the continuous, dominant presence of the soprano voice. Although each song expresses its text with a unique timbral combination, there are other strong underlying unities in the songs achieved through common compositional devices, and through the organization of the musical material into streams which control functional textural processes.

CHAPTER TWO: TEXTURAL THEORY

STREAMS

As an introduction to texture in Elliott Carter's music, let us examine **Example 2** overleaf. It is taken from 'Argument', the second song in *A Mirror on Which to Dwell*. A definite musical organization is perceptible even on first hearing, although there is no audible pitch or tonal centre, no perceptible pulse or characteristic rhythmic grouping, and no conventional textural relationship such as melody and accompanying figuration between the different instrumental parts. The most salient organizational features are the changes in sound that propel the music through time. The following observations about these changes are based on an aural experience of the song. Although some of the observations are rather self-evident, they will lead to a discussion of musical qualities that are fundamental to this song, to the entire song cycle and to Carter's other music as well.

The excerpt opens with a sustained sonority comprising a mixture of wind and string instruments which overlap in register. The alto flute emerges solo from this sonority, then continues to sustain a single pitch, B4, while the piano enters low in its registral range with a rhythmically active arpeggiated figure. In m.19, after the piano gesture, the bongos sound a fast-moving figure, also against the continuing flute pitch. This is immediately followed by another piano statement similar to the previous one both in rhythmic and melodic character, in register and in overall duration. During the second piano gesture, the sustained pitch in the alto flute is taken over by the cello (m.20). At the conclusion of the piano statement the alto flute reenters with A5-C5 followed by another sustained B4, while the double bass sounds a melodic figure of predominantly descending contour which stands

Example 2: 'Argument' mm.17-22

17 *p legato* *mp*

Sop. Re-mem-ber all that land be-neath the plane; that

A. - Fl. *pp* *p*

B. - Cl. *pp*

Bongos

Piano *pp* *pp* *legato* *mp* *pp* *p* *p*

Vcl. *pp*

Cb. *pp*

18 *mf* *mp*

Sop. coast-line of dim beach-es deep in sand stretch-ing

A. - Fl. *mp* *pp*

B. - Cl. *pp*

Bongos *p* *mp* *pp* *p*

Piano *pp* *p* *pp*

Vcl. *pp*

Cb. *pp*

21 *mf* *p* *f sub.*

Sop. in-dis-tinguish-a-bly all the way, all the way to where my

A. - Fl. *p* *pp* *sf*

B. - Cl. *pp* *sf*

Bongos *mf* *p* *pp* *f* *mp*

Piano *pp* *f* *mp*

Vcl. *pp* *p* *pp* *sf* *f*

Cb. *mp* *p* *mp-mf* *p* *sf* *f*

out prominently as a solo. The cello accompanies the bass with two entries of briefly sustained pitches. While the sustained pitch in the alto flute and the bass melody continue, the bongos enter with another fast-moving figure. The bass ceases to sound during the bongos statement. At the end of m.22 another sustained sonority enters *sforzando*. It is similar to the opening sonority in its timbral mix, in the registral overlapping that occurs between the wind and string instruments, and in its registral placement.

Certain general characteristics of the music can be drawn from this description. During any given time span several distinct continuities are perceptible. Some of these continuities consist of a series of events played by a single instrument (for example, the piano gestures), while others consist of events stated by more than one instrument (for example, the sustained sonorities of the winds and strings in m.17 and m.22). The vocal part remains aurally distinct throughout; it is the most consistent and compelling continuity because of the meaning that is imparted by the sequence of words that it articulates (as well as its distinctive timbre). As such, it will not be emphasized in the ensuing discussion about the nature and behaviour of the purely instrumental continuities.

All these distinct continuities are *streams*. Each stream is defined by those musical aspects that associate its participating events and by those aspects that dissociate its events from the events in other streams. The criteria for deciding which musical aspects define a particular stream and how it is distinct require a comparative approach -- that is, the musical events of one stream are only as similar to one another as they are dissimilar from other sounding events. For example, the wind and string events that are observed as "sustained sonorities" in m.17 and m.22 associate because they have the same attack points and are registally proximate. The same aspects dissociate the events of the winds/strings stream from the events of the piano stream, as these events have no common attack points and are widely disparate in register. The piano events cohere in a stream because of the timbral similarity

between them, while the disparity in timbre between the piano events and the wind and string events dissociates them into a separate stream. The difference in temporal location between the events in the winds/strings stream and the piano stream also plays a part in making the streams distinct. Although at the beginning of the excerpt the streams do not overlap in time, streams can sound simultaneously without losing their identity. From the fourth beat of m.17 through to the third beat of m.22 several streams overlap temporally and yet remain aurally distinct.

Streams Defined

On the basis of these observations we can propose a general definition: A stream is a distinct continuity, made up of a series of events that are perceived as a temporal continuity because they are recognizably similar, and because they are differentiated from events belonging to other, possibly concurrent, streams.

Three aspects of streams help us to perceive and distinguish them: properties, behaviours and processes. Any one of these aspects is said to define a stream if its particular characteristics cause us to perceive a set of musical events as a stream. Properties are sonic characteristics that can be perceived and evaluated at any given time point, or within a very short time span.¹ A property defines a stream if it remains relatively consistent over a longer time span, that is, if it is perceptibly the same when evaluated at various time points over a time span. Streams may also exhibit behaviours. Behaviours involve consistent changes in stream properties and require a certain temporal duration to be perceived. Unlike properties, behaviours cannot be evaluated at any given time point, or within a very short

¹ Exactly how short this time span can be before a property is perceived depends, in part, on the musical context. Psycho-acoustic research could help to clarify this issue.

time span.¹ Processes involve the perception of consistent changes in stream behaviours over a longer time span. The behaviours and processes that define individual streams will be discussed in the sections that follow the discussion of stream properties. Lastly, the combination of individual streams, and the behaviours and processes of those combined streams that comprise musical texture will be discussed.

1. INDIVIDUAL STREAMS

1.1 PROPERTIES

This section discusses those aspects of a musical event that are perceptible and evaluable² at any given time point, or within a very short time span, and provides musical examples, from Carter's *A Mirror on Which to Dwell*, of how each property can define a stream. For a property to define a stream it must remain relatively consistent over a longer time span. In general, the term "relatively consistent" means that when a particular property is evaluated for different events it can be perceptibly similar, not necessarily identical, in order to define a stream. Our perception of a property being the same at different time points depends in part on the context in which it occurs; these contexts will be discussed in connection with the musical examples below. The term "parity" will frequently be used to indicate the

¹ My categorization of stream-defining aspects as properties and behaviours is analogous to Berry's division of textural aspects into "quantitative" and "qualitative" aspects in *Structural Functions of Music*, which was discussed in Chapter One.

² "Evaluable" means that, in psychological terms, the aspect can be measured on a scale of degrees, but is not necessarily measurable numerically.

perceptible similarity, or equality, of a particular property between different events. If there is parity of a stream-defining property between events, then they cohere in a stream.

While streams are often referred to by their instrumental names in the following discussion, e.g. the piano/winds stream, it should be understood that streams are not the same as what are commonly called "instrumental lines". In Carter's music, the events in an instrument exhibit a wide variety of properties (and behaviours) and often cohere with the events of other instruments based on properties other than timbre. For example, the piano events sometimes cohere with the woodwind events, sometimes with the string events, sometimes with the percussion events and sometimes with other piano events only. In other words, streams transcend the individual instrumental parts.

In our discussion stream-defining properties are classified as being primary or secondary. The criterion for classification is as follows. A "primary" stream property is one which, theoretically, can define a stream by itself, all other aspects being equal. Under the same conditions, a "secondary" property does not have the same ability and must be combined with a primary property in order to define a stream. For example, if a clarinet and a violin play exactly the same melodic line at the same time, then the only aspect in which they differ is timbre; if the clarinet events can be perceived as distinct from the violin events, then timbre is a *primary* property, and the clarinet events form a separate stream defined by timbre. Thus the designation of a property as primary or secondary is based on a hypothetical situation in which all other aspects are equal. In real music, of course, this is seldom the case. In other words, in a particular context, a property that is classified as secondary can be as musically important, or as perceptually prominent, as one that is classified as *primary*.

1.1.1 Primary Properties

1.1.1.1 Timbre

Timbre is one of the primary stream-defining properties.¹ Timbral consistency can make events cohere as a stream, while timbral distinction can set apart one stream from another. In **Example 3** events in the oboe stream cohere timbrally to each other more than they cohere timbrally with the events in other instruments. A second stream of events played by the violin, viola and cello is defined similarly by the timbral parity between the events relative to events in the oboe stream.

Example 3: 'Sandpiper' mm. 56-57

oboe events cohere timbrally and are timbrally distinct from string events

string events cohere timbrally and are timbrally distinct from oboe events

registral density of string stream 3 4 5 4

¹ In his book *Sound Structure in Music*, Robert Erickson's definition of timbre covers a broader spectrum than the one presented here (including electronic timbres) and is more acoustically precise in its defining qualities, but there are important similarities between the theories. Both designate the role of timbre as fundamental in the perception of texture, and Erickson's "layers" are analogous to my streams.

Carter most frequently orchestrates his music to create timbral parity between events played by the instruments within each traditional orchestral section, for example, wind instruments or string instruments. In certain contexts, however, members of the same section can sound sufficiently different to belong to different streams, or members of different sections can sound sufficiently similar to belong to the same stream. In **Example 4**, from 'Insomnia', the piccolo and violin play events that are timbrally similar because in that high register and with the *legato* bowing of the violin, the timbral differences between them are minimized. Here the events played by members of different orchestral sections sound similar enough to belong to the same stream.

Example 4: 'Insomnia' mm.6-7

picc and vln events cohere timbrally in this register and have similar modes of articulation

vln and mar events are more similar to each other in timbre and articulation than either is to picc or vln

medium-hard sticks

(sul pont.)

(pp)

ppp

ppp

ppp

relatively distinct timbres

In the same example one can see how the events played by members of the same orchestral section can participate in different concurrent streams. Because the viola events are played *sul ponticello* and have a lower registral placement than the violin events, their sharp, distinct attacks make them more similar in timbre to the marimba events than they are to the violin events. The viola and marimba events cohere into a separate stream that is also defined by other properties and behaviours that will be discussed later.

Special conditions exist concerning the timbral properties of percussion instruments and the voice. Because percussion instruments are varied and have diverse timbres, each musical setting must be evaluated individually to determine the timbral identity of the streams. The voice is always a separate stream from the instrumental ones because of its distinctive timbre and its articulation of words with grammatical continuity. Even when there is a high degree of parity in the other properties and behaviours between events in the voice and the instrumental events, the vocal stream remains distinct.

1.1.1.2 Register and Pitch

Register is another primary stream-defining property. Events that are located consistently in the highest or lowest register of a particular context may be perceived as a stream, while registral distinction sets streams apart. Let us examine m.1 of **Example 5**. The oboe events cohere because of their timbral similarity, and because of their similar placement in the upper registral extreme of the sounding range -- they are the highest pitches in m.1. The oboe events are also made distinct from the piano events by their dissimilarity in timbre and

registral placement. In this example registral location and timbral distinction define a stream.¹

Example 5: 'Sandpiper' mm.1-2

oboe events are timbrally and registally distinct from piano events

Registral proximity also plays a role in the perception of these events as a stream. The oboe events cohere in a stream because they are closer to each other in register than they are to the piano events in m.1. Whether events cohere as a stream due to registral placement, then, depends partly on their registral proximity relative to the registral proximity of other sounding events.² In general, a given set of pitch events cohere as a stream on the basis of register if the interval from the lowest pitch of the set to the highest pitch of the next registral stream down is appreciably greater than the interval from any pitch in the set to the nearest pitch in the same set. This condition is true for m.1 of **Example 5**: the interval between the lowest oboe event (F5) and the highest piano event (Gb2) -- 35 semitones -- is

¹ The important role that registral placement plays in Carter's music is discussed by Jonathan Bernard in "Spatial Sets in Recent Music of Elliott Carter" (*Music Analysis* 2/1 [1983]: 5-34), and by Cogan and Escot in their analysis of the Introduction to Carter's second String Quartet in *Sonic Design: The Nature of Sound and Music* (Englewood Cliffs, N.J.: Prentice-Hall, 1976), 59-71.

² Bregman, in his book *Auditory Scene Analysis*, draws on a number of psychoacoustic studies to affirm that "notes that were closer in frequency to one another stuck together better perceptually" (462).

appreciably greater than the interval between any two registrally adjacent oboe events or piano events. In m.2 events in the sixteenth-note piano gesture ascend registrally so that the highest event in the gesture (Bb4) is closer to the lowest oboe event than it is to the nearest piano event. Because of the establishment of registral distinction in the previous measure and because of the continued timbral dissimilarity between oboe and piano events, this momentary lack of registral distinction does not, however, detract from our perception of two separate streams.

In **Example 6** (overleaf), from 'View of the Capitol', two timbrally homogeneous streams are distinguished by their registral properties. The violin events cohere in a stream because of the parity of registral placement between them and their registral proximity to each other, relative to the placement of the viola, cello and bass events. The latter events cohere in a stream because of their consistently low registral placement and registral proximity to each other, relative to the violin events. As we can see from the numbers alongside the excerpt (indicating intervals between registrally adjacent events in semitones), the interval -- 18 semitones -- between the lowest violin event (F5) and the highest event in the viola/cello/bass stream (B3 in the viola) is appreciably greater than the interval between any given violin event and the nearest violin event. Similarly, the interval between the lowest violin event and the highest event in the viola/cello/bass stream is appreciably greater than the interval between any two registrally adjacent events in the viola/cello/bass stream.

Example 6: 'View of the Capitol' mm.14-15

In order to confirm why register is classified as a primary, not a secondary property, let us manipulate the data in **Example 6** so that this passage meets the criterion of "all other aspects being the same". Let us assume, firstly, that all events are played on the piano, and are thus timbrally equivalent. Secondly, let us imagine that all events are grouped into the same rhythmic patterns as the violin events. Now the only difference between events is in their registral location. The uppermost events (formerly violin) are still going to be perceived as distinct, and will associate themselves into a stream separate from the lower events which are closer to each other in register than they are to the higher events. The ability of register to define a stream under these conditions classifies it as a primary property.

Pitch, too, can play a role in associating events into a stream. Looking back at **Example 4** on page 37, events in the marimba/viola stream also cohere because of the pitch duplication

between them, namely repeated the B4's and Bb/A#5's. Thus pitch parity is another factor in the definition of streams. Events cohere in a stream if they duplicate each other in pitch within a relatively short number of intervening events. In 'Sandpiper', **Example 7**, the piano and string events form a stream because of their parity of pitch content: pitches in the piano are duplicated in the strings. In this example, as in **Example 4**, not all of the pitches are duplicated, for example, A4 and F5 occur in the violin only. These events are not dissociated from the stream, however, because they have other important properties (and behaviours) in common with other events in the stream, particularly registral similarity. In general, pitch parity between events associates them into a stream if this property is true of most the events in a given context.

Example 7: 'Sandpiper' mm.47-48

The image displays a musical score for five instruments: Piano, Violin (Vln.), Viola (Vla.), Violoncello (Vcl.), and Contrabasso (Cb.). The score is for measures 47 and 48 of the piece 'Sandpiper'. The time signature is 4/7. The Piano part is written in two staves (treble and bass clef). The string parts (Vln., Vla., Vcl., Cb.) are written in single staves. The score includes various dynamic markings such as *pp*, *p*, *mf-p*, *mf-pp*, *p-pp*, *mf*, and *mf-pp sub.*. There are also articulation markings like *sul pont.* and *mf*. The score features several slurs, ties, and triplets (marked with a '3'). The key signature has one flat (Bb).

This excerpt is an interesting example of our perception of the interaction of properties in the definition of streams. Two primary properties can be observed here. There is parity of pitch and register between all the events, and disparity of timbre between some of them. While the timbral disparity between the piano and string events might dissociate them from each other, in this case the strength of the pitch and registral parity between them (which is reinforced by secondary properties) makes all of them cohere as a single stream.

Examples of pitch (but not interval) as a stream-defining property are, in fact, rare in Carter's music. More frequently, recurring pitches are sounded in *all* of the streams. In 'Anaphora', for example, each of the twelve pitch classes is assigned a specific fixed register, that is, in the entire piece there are only twelve distinct pitches, although they occur at many different time points and in many different timbres. On the basis of pitch alone we would say that the entire song comprises one stream only. However, properties and behaviours other than pitch, specifically timbral properties and rhythmic behaviours, group the events in 'Anaphora' into different streams. In this case, then, pitch does not play a stream defining role.

In the above examples, where the registral parity between events includes, specifically, pitch duplication, we can consider pitch parity between events to be a special case of registral parity. More conventionally, pitch parity is considered to be related to *pitch-class* parity. We would thus assume that, like pitch, events cohere in a stream if they duplicate each other in pitch-class within a relatively small number of intervening events. Under this definition, octave doubling between events would associate them into the same stream. This issue does not arise, however, in the songs with which this study is concerned, since octave doubling does not occur. While pitch parity between events does occasionally define

a stream in Carter's music, as we have seen in **Examples 4** and **7**, pitch-class parity almost never does.¹

Events that rearticulate a distinctive, established set of *intervals* cohere in a stream; the property of belonging to such an established set of intervals is immediately perceptible and defines that stream. Carter often structures streams with pitch intervals.² In this study melodic intervals are treated in the same way as harmonic intervals since Carter combines the two types consistently in his musical streams. In the excerpt from 'Sandpiper' in **Example 3** (page 36), the timbrally cohesive events in the violin, viola and cello form a stream that features minor sixths between pairs of events. The oboe stream excludes this interval between its successive pitch events, and features minor seconds and minor thirds instead. Similarly, in **Example 5** (page 39), the piano stream features m6's between simultaneous and successive pairs of events, while the oboe stream features m2's and P5's.³ In both of these examples pitch parity between pairs of events in each stream help to define that stream and to distinguish the streams from each other.

Interval-class is also a consideration in the process of defining a stream. Types of pitch-class sets, presented either melodically or as vertical sonorities, are often repeated in individual streams in Carter's music. But, although they structure the pitch material of the streams and are characteristic of them, they cannot be said to define the stream in the same

¹ Pitch-class distinction can occur when the events of one stream belong to a particular subset of the total chromatic and the events of another stream belong to the complementary subset. This type of distinction, while rare in Carter's music, can reinforce a stream division. For example, pitch-class distinction provides a discernible contrast between two timbrally distinct streams in mm.3-4 of 'Argument', where the piano gesture is the aggregate-completing complement of the cello/bass gesture.

² Carter's use of intervals as a structural device is exemplified in his Second String Quartet. Here each instrument has a unique repertory of intervals and rhythmic patterns, and is associated with an expressive character. Each of the first three movements is dominated by one of the instruments and the cadenzas that close the movements are dominated by another instrument. In this way the intervals that are associated with each instrument come to the fore when that instrument is being featured.

³ Similarly, the events comprising the piano/strings stream in **Example 7** on page 42 are organized into minor sixth dyads that define the stream.

way as other behaviours do unless they are perceptible to the listener. In most cases one hears the repeated interval content of the set class rather than the complex, and often abstract, pitch relationships.¹ For example, in the vocal part of 'Insomnia' tetrachords of type [0125] occur repeatedly.

1.1.2 Secondary Properties

A secondary property reinforces the identity of an individual stream that is defined by one or more primary properties. If all other aspects are equal, a secondary property cannot define a stream.

1.1.2.1 Registral Density

The property of registral density can help to define a stream that is defined by primary properties. Consistency in registral density makes events cohere as a stream, while distinction in this property sets streams apart. One way of measuring the registral density of a stream at any time point is to count the number of simultaneously sounding events per unit of register. However, that number is of little significance. Of more relevance is whether the stream is registrally dense or sparse relative to the total density of all streams proceeding concurrently. Registral density is also modified by the registral proximity and distribution of the events; for example, three events that occupy a total registral range of a

¹ In her experimental study "The Perception of Contemporary Pitch Structures" (*Music Perception* 2/1 [Fall 1984]: 25-39), Cheryl Bruner evaluates one type of pitch relationship that exists between pitch-class sets, namely Robert Morris's similarity index -- a tool for measuring the similarity relationships between pitch-class sets. Morris claims that the index provides "a rationale for the selection of sets that insures a predictable degree of aural similarity", but Bruner found that "the similarity index does not seem to explain the listener's similarity judgements". Instead she determined that the perception of similarity between pc sets is dependent on context and manner of presentation. One of her findings is that "the size and location of 'characteristic' intervals in each set... seems of have affected the judgements" (38).

minor third will sound more registrally dense than three events that occupy a total registral range of three octaves.¹ In **Example 3**, page 36, the oboe and string streams, each defined primarily by the properties of timbre and interval, are also defined and made distinct by their registral densities. The oboe stream is registrally sparse, sounding at most one pitch event at any given time point. The string stream is relatively dense and its registral density is characterized by simultaneously sounding pitch events, principally double-stopped dyads.²

1.1.2.2 Attack Points

If a given event belongs to a stream defined by timbre or register/pitch, then events attacked at the same time point (but not necessarily similar in the other stream-defining dimensions) tend to cohere in the same stream.³ In **Example 8** (overleaf), from 'View of the 'Capitol', the events in the winds/strings stream cohere because of the pitch parity between them, and because of their attack-point parity.

¹ The treatment of registral density by other theorists, which was discussed in Chapter One, also asserts that the numerical measurement of this aspect is can be refined by taking into consideration the spacing and distribution of the events.

² Instead of defining a stream by its registral density, we might consider a more general concept of multiplicity, such as streams that are solos, duos, trios etc. However, these designations imply the music is organized into lines, which is not true of most of the songs in *Mirror*. In fact, although Carter's other music is frequently organized into such combinations, for example, in the Triple Duo, or the two duos of his 3rd String Quartet, he does not seem to use the same instrumental organization in any of his recent vocal works (*Mirror*, *Syringa* and *In Sleep, In Thunder*).

³ In the context of determining factors that result in "distinctness of voices", Bregman writes that the "synchronous onsets" of notes favour "vertical grouping" (496). Translated into the terminology used in this study he means that attack-point parity between events tends to associate them into the same stream.

Example 8: 'View of the Capitol' mm. 70-72

wind and string events exhibit pitch and attack-point parity

The musical score for Example 8, 'View of the Capitol' mm. 70-72, consists of seven staves. The top three staves are for woodwinds: Flute (Fl), Oboe (Ob), and Bassoon/Clarinet in B-flat (Bb Cl). The bottom four staves are for strings: Violin (Vln), Viola (Vla), Violoncello (Vcl), and Contrabass (Cb). The music is in 3/4 time and features a melodic line with triplets and dynamic markings. The dynamics are *mf-p*, *f*, and *f-mf*. The score includes a rehearsal mark 70 at the beginning of the first staff and an 8vb marking for the Cb staff.

While the stream in the excerpt in **Example 8** is defined in part by pitch consistency, in **Example 9** (overleaf), another excerpt from 'View of the Capitol', attack-point parity reinforces the perception of a stream defined primarily by the timbral consistency of events in the strings.

Example 9: 'View of the Capitol' mm.54-55

string events cohere timbrally and exhibit attack-point parity

1.1.2.3 Dynamic Intensity

The property of parity in dynamic intensity between events can reinforce the perception of those events as a stream if they are also associated by some primary property.¹ Parity in the levels of dynamic intensity between events tends to make them cohere as a stream, while disparity in dynamic intensity makes streams distinct. This property is classified as "secondary" because the phenomenon of masking, whereby louder events aurally "hide" softer events, can prevent dynamic intensity from defining a stream by itself (all other aspects being equal). Although in Carter's dynamically expressive music the dynamic

¹ Other textural studies also treat dynamic intensity as a secondary aspect. Berry, however, does not include dynamic intensity as an element of texture. Instead he considers it to be as aspect of coloration which, together with textural aspects, comprise the "overall sonorous character" of a musical sonority (192). Because intensity levels are easily perceived aurally and because of the prominent reinforcing role that dynamic intensity plays in defining streams in Carter's music, it is included as a stream-defining property in my study.

intensity levels of events are rarely uniform, relative parity in this aspect between events plays a role in stream definition. For instance, in **Example 10** (from 'Sandpiper'), shown overleaf, loudness plays a supportive role in defining two streams and making them distinct. The events in the piano/strings stream, defined primarily by their low registral placement and the pitch parity between them, are relatively soft, with dynamic levels ranging from *ppp* to *mp*. The events in the oboe stream, defined by their high registral placement, contrast with relatively high levels of dynamic intensity, *f* and *mf*.

Example 10: 'Sandpiper' mm.39-42

Musical score for measures 39-42 of 'Sandpiper'. The score is in 4/4 time and features the following parts and markings:

- Ob.:** Measure 39 starts with a *f* dynamic. Measure 42 has a *mf* dynamic with a fingering of 5.
- Piano:** Measure 40 has a *mp* dynamic.
- Vln.:** Tempo marking $\text{♩} = 105$. Measure 40 is marked *normale*. Measure 41 has *p-pp* and *legato* markings. Measure 42 has *p* and *pp* markings.
- Vla.:** Measure 40 has *p* and *mp* markings. Measure 41 has *pp* and *legato* markings. Measure 42 has *p-pp* markings.
- Vcl.:** Measure 40 has *ppp* and *arco* markings. Measure 41 has *mp* and *pp* markings. Measure 42 has *pp* markings.
- Cb.:** Measure 40 has *ppp* markings. Measure 41 has *mp* and *pp* markings. Measure 42 has *pp* markings.

Musical score for measures 43-46 of 'Sandpiper'. The score is in 4/4 time and features the following parts and markings:

- Ob.:** Measure 43 has a *f* dynamic with a fingering of 5.
- Piano:** Measure 43 has a *p* dynamic. Measure 44 has a triplet of eighth notes.
- Vln.:** Measure 43 has a *ppp* dynamic. Measure 44 has a *p* dynamic.
- Vla.:** Measure 43 has a *ppp* dynamic. Measure 44 has a *p* dynamic.
- Vcl.:** Measure 43 has a *p* dynamic. Measure 44 has a triplet of eighth notes.
- Cb.:** Measure 43 has a *p* dynamic. Measure 44 has a triplet of eighth notes.

1.2 BEHAVIOURS

The second aspect that distinguishes a stream is its *behaviour*. Behaviours are perceivable in a series of time points, or very short time spans, in which specific properties change from time point to time point, or very short time span to time span, in a consistent way. The changes in a specific property (creating a behaviour) should not be great and at least one of the properties defining that stream should remain unchanged so that a new stream is not perceived. A behaviour is not manifested instantly or within a short time span, but over a longer span of time. The duration that it takes to perceive a behaviour depends both on the nature of the behaviour itself and on the context in which it occurs.

As with properties, there are primary and secondary stream-defining behaviours. A primary stream behaviour is one which can define a stream by itself when all other properties and behaviours are equal. A secondary behaviour cannot define a stream under the same conditions, and must be combined with a primary behaviour in order to do so. Like secondary properties, secondary behaviours reinforce the perception of an individual stream which is defined by other aspects.

1.2.1 Primary Behaviours

1.2.1.1 Pulse

When the attack points of events conform to a *pulse*, this rhythmic behaviour is primary in defining a stream. A pulse is defined as a series of time points marking off time spans that

are perceived as equal.¹ In this study, based on aural experience, it is assumed that the series of equal durations must be at least three durations long for a pulse to be perceived. It is also assumed that, to the degree that a pulse is established, one's perception of that pulse remains unaffected by an occasional time point not being articulated by an attack.² In **Example 11** (overleaf), excluding the initial piano flourish, the wind instruments, piano and string events combine to form a massive stream that opens the *Maestoso* section of this song. The stream is defined primarily by the pitch and interval parity between the events, and by the attack density behaviour in the form of a pulse articulating a regular attack every tenth triplet eighth-note. (The E4 clarinet pitch event in m.3 does not disrupt the pulse because its onset is *ppp* and imperceptible).

¹ Pulse, although closely related to attack density, a secondary behaviour, is a rather special case of attack density. This is because we, as listeners, are accustomed to marking off time-spans subconsciously, and intuitively perceive regularly-spaced attacks as being primary organizational factors in music. Some important theoretical studies have been done in the field of rhythm, meter and pulse, for example the one presented by David Lewin in a chapter titled "Some Investigations into Foreground Rhythmic and Metric Patterning" in *Music Theory: Special Topics* (edited by Richmond Browne, New York: Academic Press, Inc., 1981). In this study he explores, using mathematical modeling, our metric interpretation of rhythmic activity, particularly in ametric music. The distinction of pulse as a primary behaviour in my study is important since pulses play a prominent role in Carter's music, as we will see in the analyses.

² Richard Parncutt, in his article "The Perception of Pulse in Musical Rhythm" (in *Action and Perception in Rhythm and Music: papers given at a symposium in the Third International Conference on Event Perception and Action*, edited by Alf Gabrielsson, Stockholm, Sweden: Royal Swedish Academy of Music, 1987), defines pulse as a "simple sequence of equally-spaced event percepts" (129), and suggests that the grouping of sound events on the basis of pulse is important in the perception of streams. Although he does not specify how many successive equally-spaced "event percepts" comprise a pulse, he does write that "like all perceptual patterns, a pulse may be perceived even when some elements of the pattern -- the equally spaced events -- are missing" (132).

Example 11: 'View of the Capitol' mm.1-3

This musical score is for the first three measures of 'View of the Capitol'. It is written for a full orchestra with the following parts: Flute (Fl), Oboe (Ob), Clarinet (Cl), Piano (Pno), Violin (Vln), Viola (Vla), Violoncello (Vcl), and Contrabass (Cb). The score is in 3/4 time and features a key signature of one sharp (F#). The first measure is marked with a '1' above the Flute staff. The second measure is marked with a '3' above the Flute staff. The third measure is marked with a '3' above the Flute staff. The Piano part has a '3' above the first measure. The Violin part has a '3' above the first measure. The Viola part has a '3' above the first measure. The Violoncello part has a '3' above the first measure. The Contrabass part has a '3' above the first measure. The Piano part has a 'ppp' dynamic marking in the third measure. The Contrabass part has an '8vb' marking below the first measure. The score includes various musical notations such as triplets, slurs, and dynamic markings. At the bottom of the score, there are three measures of a 'pulse' with a '10' and a triplet of eighth notes marked with 'r 3 1'.

The longer the time spans between events, the more difficult it is to apprehend the time spans as equal. Similarly a pulse cannot be perceived if the speed is too fast.¹ This is the case in 'Argument', as can be seen **Example 12** where gestures from the piano and cello/bass streams have been excerpted from mm.17-22 (**Example 2**). Each of these streams is defined primarily by the timbral and registral parity of its respective events. The piano stream presents a consistent nonuplet division of the beat and proceeds at a speed of MM 756, which is too fast for the listener to perceive as a pulse.² Nevertheless the high and regular attack density which one does hear helps to define the stream and to contrast it with other streams like the cello/bass stream, which has a somewhat lesser and variable attack density, arising from *rubato* rhythms.

Example 12: 'Argument'

piano stream has a high, regular attack density

The image shows a musical score for piano and cello/bass. The piano part is written in the upper staff and consists of a continuous stream of notes, with many groups of three notes beamed together and marked with a '3' above them, indicating nonuplet divisions. The cello/bass part is in the lower staff and features more widely spaced notes, some with slurs and fermatas, indicating a more flexible, rubato-like rhythm. The score is numbered 17 at the beginning of the piano part.

¹ Parncutt writes that the limits of the durations of time spans for a perceptible pulse are determined by short-term memory. When the period of a pulse (the time interval between successive events) increases to approach that of short-term memory, the salience of a pulse percept "levels off to a finite value" (133). Similarly, pulses whose periods exceed "a few seconds cannot evoke a feeling of pulse, as no more than one of the events of such a pulse can be 'stored' in a single 'chunk' of short-term memory" (133). Based on the work of other psychoacousticians, Parncutt puts the duration of short-term memory at "a few to several seconds", and later specifies that "pulse percepts normally have periods in the range 0.2-1.8 seconds" (133-134).

² Yet Carter clearly expects the fast speed to be perceived; speed will be discussed as attack density in the section on secondary rhythmic behaviours.

Example 12 (cont.): 'Argument'

cello/bass stream has a low, variable attack density

The image shows a musical score for two instruments: Violoncello (Vcl) and Contrabasso (Cb). The Vcl part is in the upper staff, and the Cb part is in the lower staff. The Vcl part starts at measure 20 and features several triplet markings (indicated by a '3' above a bracket) over groups of notes. The Cb part starts at measure 8vb and also features several triplet markings. The notation includes various note values, rests, and dynamic markings.

In the above examples the pulses are articulated by the attacks of single events. A pulse can also be articulated by the attack points of musical gestures comprising several events. In 'Anaphora', **Example 13** (overleaf), the piano has a series of gestures whose initiating attack points are always at a distance of twenty-three sixteenth-notes. The gestures have different numbers of attack points, but each is clearly separated from the next by a period of silence. The initiating attack point of each gesture is emphasized through high dynamic intensity markings relative to the other pitch events in the gesture and through stress accents. In this way the pulse is created by the series of equal durations between the attacks of complex, but similar, gestures.

Example 13: 'Anaphora' mm.3-7

pulse: 23 ♪

..... 23 ♪

1.2.2 Secondary Behaviours

Secondary behaviours support primary behaviours in the definition of an individual stream. While a secondary behaviour cannot define a stream by itself, the consistent changes in properties that create these behaviours are perceptible and strengthen the distinction of that stream.

1.2.2.1 Connection Behaviour

When a stream is defined by one or more primary properties and/or behaviours, then connection behaviour between the events in that stream can reinforce the perception of the

stream. Connection behaviour occurs when one event is perceived to displace another; that is, when the attack point of an event is coincident with the release of the preceding event. For example, the piano stream from 'Argument', shown in **Example 14a**, is defined primarily by the timbral parity between events, while the connection behaviour between piano events enhances the definition of the stream.

Example 14a: 'Argument' m.44

The musical score for piano in Example 14a shows a single melodic line in the right hand and a supporting bass line in the left hand. The right hand features a sequence of chords, each marked with a triplet '3' above it. The left hand plays a steady eighth-note accompaniment, also marked with triplets '3' below it. The notation is designed to illustrate coincident attack and release points between successive chords, creating a continuous stream of sound.

The coincident attack and release of successive events is not strictly necessary for connection to be perceived. In **Example 14b**, rhythmic connection is perceived as a behaviour of the cello/bass stream in 'Argument', even though the releases of some events are delayed across the attack points of succeeding ones. By joining successive cello and bass events notationally on the score with a line, Carter requires the players to emphasize the connection.

Example 14b: 'Argument' mm.46-47

The musical score for cello and bass in Example 14b shows two staves. The cello part (top staff) is marked 'Vcl.' and the bass part (bottom staff) is marked 'Cb.'. Both parts are marked 'con sord.' (con sordina). The cello part features a sequence of chords, each marked with a triplet '3' above it. The bass part plays a steady eighth-note accompaniment, also marked with triplets '3' below it. A horizontal line connects the notes of the cello and bass parts, indicating a rhythmic connection between successive events. The score is marked with '46' and '8vb'.

1.2.2.2 Register and Pitch

Pitch contour is another secondary stream-defining behaviour that can reinforce our perception of a stream defined by one or more primary properties and/or behaviours. If the contour behaviour of a stream is characterized by successive events increasing (or decreasing, or even alternately increasing and decreasing) consistently in pitch, then contour can help to define that stream. Determining the contour behaviour of stream whose events exhibit connection behaviour is relatively easy, since we simply observe the contour created by successive pitch events. However, if the events comprising the stream are not connected in the same way, for example if they are sustained and overlap, determining the contour behaviour of the stream is a more complex task. In this study, we will assume that, for each moment, there is a "contour pitch" which is the mean of all the concurrent pitch events. The contour of that stream is then determined by the contour created by successive contour pitches. For example, the piano/strings stream in 'Sandpiper' (**Example 7**, page 42), defined by the pitch and interval parity between pairs of events, comprises sustained, overlapping pitch events. If we observe the contour created by successive contour pitches, we can see that this stream is also characterized by the consistent alternating ascending and descending pitch contour of the gestures. Frequently in Carter's music the rate of attacks is so high that the contour patterns occur over very short time spans and the behaviour is best described as a *fluctuation*. An example of contour characterized by fluctuation can be seen in the piano stream from 'Argument', excerpted in **Example 2** (page 31).

There are two special cases of overall contour behaviour that help to define streams. By "overall" contour we mean the underlying contour curve abstracted from the more complex surface patterns, which ornament this underlying contour. In recent studies theorists have found ways of measuring contour so that these kind of general statements can justifiably be

made.¹ In the first case, if a series of events in a stream ascend in overall registral placement (pitch contour behaviour) we will consider them as undergoing an *intensification* of registral placement. In m.51 of 'Sandpiper', shown in **Example 15**, the oboe stream is defined by the properties of timbre and registral placement, which is relatively low in the oboe's sounding range. The oboe events that occur in mm.52-53 have the same timbral property as the earlier events, but the later ones exhibit an increasingly high registral placement. The contour fluctuates in mm.52-53, but over a longer time span, mm.51-53, the stream can be described as undergoing an intensification of registral placement.

Example 15: 'Sandpiper' mm.51-53 (oboe stream)

oboe events intensify in overall registral placement

In 'Argument', **Example 16** (overleaf), the registral placement behaviour takes place over a longer time span. Throughout the song the piano events are associated in a stream through their timbral parity and fluctuating contour within short time spans. At first the registral placement of the events in the piano stream is relatively low in the piano's registral range, as can be seen in the piano stream in **Example 2** (page 31), and the placement remains unchanged for most of the song. At m.42, however, the stream starts to ascend

¹ For example, Michael L. Friedmann, in "A Methodology for the Discussion of Contour: its Application to Schoenberg's Music" (*Journal of Music Theory* 29/2 [Fall 1985]: 223-248), has a method for tallying the pitch ascents and descents in a gesture to summarize the overall contour.

registrally, and from here until the end of the song the identity of the stream is strengthened by the intensification of registral placement of the events. While the stream continues to be defined by the consistent timbral parity between the events and fluctuating contour within short time spans, the property of registral placement is no longer stream-defining and is replaced by the behaviour of overall intensification of registral placement.

Example 16: 'Argument' mm.44-51 (piano stream)

The musical score consists of four systems of piano music, each with a grand staff (treble and bass clefs). The music is characterized by a continuous stream of triplets. The first system starts at measure 44 and includes dynamic markings *pp*, *ppp*, and *una corda*. The second system includes the tempo marking *poco riten. - a tempo* and a *pp* dynamic. The third system features a *pp* dynamic. The fourth system includes dynamics *p*, *pp*, and *ppp*, and a *(loco)* marking. The score is filled with various musical notations including slurs, ties, and articulation marks.

The second special case involves overall descending pitch contour. If a series of events in a stream descend in overall registral placement (pitch contour behaviour), we will consider them as undergoing a *diminishment* of registral placement.¹ In **Example 17** the marimba stream, defined by the timbral parity and pitch consistency of its events, moves from the middle to higher registral range in mm.17-19. This intensification of registral placement is followed by a significant diminishment behaviour as the registral placement of the marimba events drop gradually until they are low in the marimba's registral range in mm.23-24.

Example 17: 'Insomnia' mm.17-24

1.2.2.3 Attack Density

Attack density is another example of a reinforcing behaviour that defines a stream in combination with one or more primary properties and behaviours. Attack density is defined as the perceived number of attack points within a given time unit. Although this behaviour

¹ Berry's term for diminishment is "recession", and his "progression" is akin to my intensification. In concept, they are essentially the same. He includes a further process of "stasis", where a texture remains relatively unchanged for a time span. I do not believe that there can be a behaviour, or process, of stasis, since change is inherent in my definition of behaviour.

is quantifiable, it is often more useful to describe it in comparative terms as high or low, relative to other concurrent or proximate attack densities, particularly in music where no beat is present to mark off the time points.¹ Whether the attack density of a stream is perceived as being high or low is dependent on the relative attack densities of the other sounding streams. In **Example 18** the string stream and the piano stream are each defined by the primary property of timbral consistency. The same property makes the two streams distinct. Reinforcing this distinction, the string stream has a high attack density relative to the extremely temporally separated events in the piano stream.

Example 18: 'Anaphora' mm.22-23

The musical score for Example 18, 'Anaphora' mm. 22-23, is presented in a standard orchestral layout. It includes staves for Piano, Violin (Vln.), Viola (Vla.), Violoncello (Vcl.), and Contrabasso (Cb.). The Piano part features a sparse texture with a forte (ff) chord and a piano (p) chord. The string parts (Vln., Vla., Vcl.) play dense, rhythmic patterns with dynamic markings ranging from f to pp. The Cb. part is marked 'con sord.' and 'pp'. The tempo is Moderato (♩ = 70-72).

¹ As was discussed in Chapter One, other textural studies, such as that of Mathes, do not take this comparative approach, but treat attack density as a "quantifiable" aspect of "lines". Since the music on which these studies focus are not always organized into clearly perceptible "lines" that behave independently, I do not find their approaches effective as analytical tools.

The events in this string stream do not share every attack point, nor do their attacks consistently belong to the same beat subdivision, but their high attack density contributes to one's perception of a stream with a consistent rhythmic behaviour. On the other hand, while events in the piano stream have important properties in common with those of the string stream -- close registral proximity and pitch consistency -- their attack-density behaviour is so different from that of string events that they are perceived as parts of a different stream.

1.2.2.4 Registral Density

When a stream is defined by one or more primary properties and behaviours, then a consistent increase or decrease in the registral density of that stream from one time point to the next can reinforce the definition of the stream. A consistent increase in the number of sounding events in a stream is described as an *intensification* of registral density, a term analogous to that used for ascending pitch contour behaviour (p.11). For example, the piano/strings stream of 'Sandpiper', which was discussed in **Examples 7** and **10** (pages 42 and 50 respectively), is partly defined by intensifying registral density behaviour in mm.9-11 (reproduced overleaf in **Example 19**). Sustained pitch events enter in a temporally staggered manner so that the registral density increases gradually. This behaviour supports the other stream-defining properties and behaviours such as the pitch and interval parity between the events and their consistent contour behaviour.

Example 19: 'Sandpiper' mm.9-11

The image shows a musical score for five instruments: Piano (Pno), Violin (Vln), Viola (Vla), Violoncello (Vcl), and Contrabass (Cb). The score is divided into three measures, with measure 9 starting at the top left. The Piano part is in the bass clef and has a measure rest in measure 9, followed by a melodic line in measures 10 and 11. The Violin part is in the treble clef and has a melodic line in measure 9, followed by a measure rest in measure 10, and then a melodic line in measure 11. The Viola part is in the treble clef and has a melodic line in measure 9, followed by a measure rest in measure 10, and then a melodic line in measure 11. The Violoncello part is in the bass clef and has a measure rest in measure 9, followed by a measure rest in measure 10, and then a melodic line in measure 11. The Contrabass part is in the treble clef and has a measure rest in measure 9, followed by a measure rest in measure 10, and then a melodic line in measure 11. The score is written in 2/2 time and has a key signature of one flat (B-flat).

In the same way that an increase in the registral density of a stream constitutes an intensification of registral density, a consistent decrease in the number of concurrent events participating in the stream results in a *diminishment* of registral density. In the opening measures of 'View of the Capitol' a single stream is defined primarily by the pitch and interval parity between the events and in part by a pulse, as was discussed in **Example 11**, page 53. In mm.4-6, **Example 20** (overleaf), the diminishing registral density behaviour helps to define this stream. The registral density is significantly reduced until the stream comprises the string events only and is defined by a new property of timbral consistency. Starting in m.4 the piano and wind events are differentiated from the string events and cohere in a stream defined by the pitch and interval parity between the events and by a higher attack density than the string stream.

Example 20: 'View of the 'Capitol' mm.4-6

The musical score for Example 20, 'View of the 'Capitol' mm.4-6, is arranged in a system with the following parts and dynamics:

- Fl.:** Dynamics include *pp*, *p*, *pp*, *p*, *mf*, *pp*, and *mf*. It features several triplet markings.
- Ob.:** Dynamics include *mf*, *pp*, and *mf*. It features a triplet marking.
- B♭Cl.:** Dynamics include *pp*, *pp*, *p*, *mp*, *mf*, *pp*, and *mf*. It features triplet and quintuplet markings.
- Perc.:** The time signature is 3/4.
- Piano:** Dynamics include *mp*, *mf*, *pp*, *pp*, and *mf*. It features triplet markings.
- Vln.:** Dynamics include *p*, *pp*, *p*, *pp*, *mp*, and *pp*.
- Vla.:** Dynamics include *p*, *pp*, *3 p*, *pp*, *mp*, and *mf-p*. It features a triplet marking.
- Vcl.:** Dynamics include *p*, *pp*, and *mf-p*. It features a triplet marking.
- Cb.:** Dynamics include *p*, *pp*, *mp*, and *mf-p*. It features a triplet marking.

1.2.2.5 Dynamic Intensity Contour

Another secondary behaviour that involves consistent changes in a property over a time span is dynamic intensity contour behaviour. If a stream is defined by primary properties and behaviours, then parity between the changes in dynamic intensity (in the form of *decrescendi* and *crescendi*, or repeated abrupt changes) of the events will reinforce the perception of those events as a stream, i.e. if the events have the same contour of dynamic intensity. The dynamic intensity contour of a stream can take the form of *decrescendi* and *crescendi*, or repeated abrupt changes of dynamic intensity. In **Example 8**, page 47, the events in 'View of the Capitol' cohere partly because their changes in dynamic intensity are similar to each other, as well as because they exhibit pitch and attack point parity. In **Example 21** overleaf, an excerpt from 'Argument', all events cohere into a single stream because they exhibit parity in the primary property of pitch and in the behaviours of pitch-contour and attack-density. The parity in dynamic intensity contour behaviour between all of the events also helps them to cohere into a single stream. For example, during the second quarter-note of m.31 all of the events at successive time points are getting louder. The same *crescendo* behaviour¹ is repeated at the end of m.31 and again during the second quarter-note of m.32. These properties and behaviours combine to overcome the perception of separate streams that was discussed in connection with **Example 2**. In particular, the distinction between the piano and bongos events is less clear as a result of the parity of behaviours between them.

¹ The term "*crescendo* behaviour" will be used to mean "intensification of dynamic intensity behaviour"; similarly, "*decrescendo* behaviour" will be used instead of "diminishment of dynamic intensity behaviour".

Example 21: 'Argument' mm.31-32

The musical score for Example 21, 'Argument' mm.31-32, is a complex orchestral piece. It features six staves: A. Fl., B. Cl., Bongos, Piano, Vcl., and Cb. The music is in 4/4 time and is characterized by intricate rhythmic patterns, including many accents and dynamic markings. The dynamics range from *mf* to *pp*, with crescendos and decrescendos. The score is marked with '31' at the beginning of the first staff.

Looking back at **Example 15** (page 59), the primary behaviour of intensifying registral placement in the oboe stream is supported by the secondary *crescendo* behaviour. There is an overall increase in the dynamic intensity in the form of a series of *crescendi*, so that the highest pitch events in m.53 are also the loudest.

1.2.3 Abrupt Changes in Properties

A behaviour has been defined as comprising a series of changes in a specific property at successive time points that are consistent from time point to successive time point. The changes in that property can also occur abruptly from one time point to the next, and then remain consistent at some new value. This kind of change in a property does not constitute

a stream-defining behaviour in the sense that this study defines the term, because it is not a repeated series of changes. Either we perceive the start of a new stream because the change is so dramatic, or we perceive that the established stream has undergone a one-time transformation. In the latter case the stream is still recognizably the same; one of its properties changes, but the other stream-defining properties and behaviours remain consistent.

Timbral transformation is an interesting example of this type of change in a stream-defining property because of the primary role that timbre plays in defining streams. Timbral transformation occurs when the established timbral properties of a stream undergo a one-time change, while the other stream-defining properties and behaviours remain unchanged. In 'O Breath', an excerpt of which is shown in **Example 22a** overleaf, three streams are defined partly by attack density, specifically by pulse.¹ The diagram in **Example 22b** (on the following page) plots the attack points of events in mm.6-13, showing their timbral properties. Those events that conform to each of the pulse streams are joined to a solid line which represents the pulse. The streams are defined by timbre as well. Stream A comprises wind events, which are attacked at a distance of 43 sixteenth-notes. Stream B comprises the cello and bass events, which are attacked every 65th triplet sixteenth-note. Stream C is defined by a pulse of attacks separated by 37 dotted quintuplet sixteenth-notes and also comprises string events -- in the violin and viola and occasionally in the bass too. The timbral distinction of the streams is established in the first nine measures of the song. Then, in m.10, Stream A undergoes a timbral transformation from a pure wind timbre to a mixture of winds and strings. The diagram shows how the pulse in Stream A is articulated by two exclusively wind attacks in mm.6 and 8, before the transformation takes place in

¹ Some apparent "attacks" on the score are imperceptible onsets in which one instrument takes a pitch over from another.

Example 22a: 'O Breath' mm.6-13

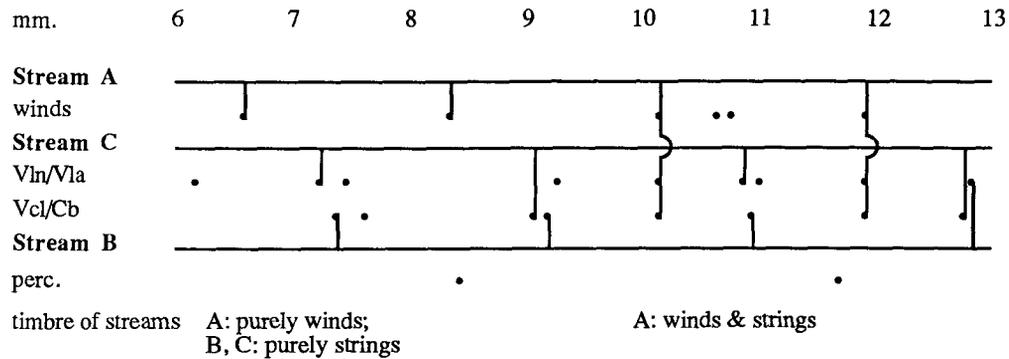
Musical score for measures 6-13, left page. The score includes parts for A.-Fl., E. H., B.-Cl., Vln., Vla., Vcl., and Cb. The key signature has one flat (B-flat) and the time signature is 4/4. Measure 6 is marked with a '6' above the staff. Dynamics include *ppp*, *pp*, and *fff*. A note in the Cb. part is marked with a '5' and the instruction '(Sound's Box lowers)'. A double bar line is present at the end of measure 13.

Musical score for measures 6-13, right page (continued). The score includes parts for A.-Fl., E. H., B.-Cl., Perc., Vln., Vla., Vcl., and Cb. The Perc. part includes 'Sus. Cym.' (Suspended Cymbal). Dynamics include *ppp*, *pp*, and *fff*. A double bar line is present at the end of measure 13.

Musical score for measures 14-21, left page. The score includes parts for A.-Fl., E. H., B.-Cl., Perc., Vln., Vla., Vcl., and Cb. Dynamics include *ppp*, *pp*, and *p*. A double bar line is present at the end of measure 21.

Musical score for measures 14-21, right page (continued). The score includes parts for A.-Fl., E. H., B.-Cl., Perc., Vln., Vla., Vcl., and Cb. The Perc. part includes 'Sus. Cym.'. Dynamics include *ppp*, *pp*, and *p*. A double bar line is present at the end of measure 21.

Example 22b: 'O Breath' mm.6-13



m.10 (and is maintained in m.12). Since the events comprising Stream A in m.10 are preceded by silence, unlike the events in the other streams, they are prominent aurally and the timbral change is easily perceptible. The stream is still recognizably similar because the attack density behaviour, in the form of the pulse, is maintained.

Looking back at **Example 2** on page 31 we can see that the alto-flute stream also undergoes a transformation of timbre. Initially this stream is defined primarily by the timbral and pitch parity (B4) between its events, as well as its low attack density. In m.20 the stream undergoes a timbral transformation from alto-flute to cello, while the other properties remain unchanged. At the end of m.20 another transformation takes place in the stream when the timbre reverts back to alto-flute.

1.3 PROCESSES

The third aspect that defines an individual stream is the *processes* that it undergoes. Processes are perceivable in the changes in established stream behaviours that occur over a time span. If the changes are too severe, the listener will not perceive a single continuous stream but rather one stream being displaced by another. However, in order for the listener

to hear a process *within* a stream, rather than the establishment of a new stream, some of the established properties and behaviours must remain consistent while the others change.

1.3.1 Attack Density

The established attack density behaviour of a stream can undergo a process whereby the attack density of successive time spans increases or decreases consistently. This process, like attack density behaviour itself, cannot alone define a stream and must be combined with other primary stream-defining properties and behaviours. A consistent increase in the attack density of a stream between successive time spans is a process of intensification of attack density. In the excerpt from 'O Breath', **Example 23** (overleaf), all the events belong to a single multitimbral stream defined by the property of registral placement, which is relatively low, and by its low attack density. The rhythmic behaviour of the stream up to m.35 has been characterized by relatively long time spans between successive attacks. The change to trill figures, which is initiated by the bass drum roll in m.35, intensifies the attack density of the stream considerably. During the following time span the stream is defined by a process of intensification of attack density. This excerpt provides a good example of the interaction that typically occurs between stream-defining properties, behaviours and processes. The properties of registral placement and timbral consistency remain unchanged. The property of registral density changes in a behaviour of intensifying registral density. This intensifying behaviour is supported by a process whereby the attack density behaviour also intensifies.

Example 23: 'O Breath' mm.35-37

The musical score for Example 23, 'O Breath' mm.35-37, is presented in two systems. The first system includes staves for A.-Fl., E. H., B.-Cl., Perc., Vln., Vcl., and Cb. The second system includes staves for A.-Fl., E. H., B.-Cl., Perc., Vla., Vcl., and Cb. The music features complex rhythmic patterns, including sixteenth-note runs in the woodwinds and strings, and a prominent bass drum pattern in the percussion. Dynamics range from ppp to mf.

In Example 24, from 'Sandpiper', the attack-density behaviour of the oboe stream changes while the stream-defining timbral property of the events and their connection behaviour remain unchanged. The process of intensification of attack density occurs over a period of time and reinforces the perception of a single stream. In this process the time

spans between the attack points of successive events become increasingly shorter. In the same way that pulse is a special case of attack density behaviour, the intensification of attack density in this excerpt is a special case -- a relatively regular rhythmic acceleration. After the first two pitch events (i.e. starting in m.41), each successive pitch event is attacked at an ever decreasing multiple of a fixed metrical unit. The time span between adjacent attacks measured in quintuplet sixteenth-notes is: 24 - 20 - 14 - 16 - 13 - 12 - 11 - 10 - 9 - 8 - 7 - 6 - 5 - 4 - 3 - 4 - 1. Although this series is not completely regular, the effect of gradual acceleration is unmistakable.

Example 24: 'Sandpiper' mm.36-50 (oboe stream)

fixed metrical unit: $\frac{5}{16}$

24 20 14 16 13 12 11 10 9 8 7 6 5 4 3 4 1

A consistent decrease in the attack density between successive time spans is a process of diminishment of attack density. In the excerpt from 'Insomnia' in **Example 17** on page 61 the marimba stream, defined primarily by the timbral parity between its events, is also defined in mm.17-19 by its high attack-density and ascending pitch-contour behaviours. In mm.20-22 the behaviour of diminishing registral placement occurs together with a process of diminishment in attack density as the marimba articulates a series of descending single pitches separated by increasingly long durations of silence, in mm.20-22. The primary stream-defining property of timbral consistency remains unchanged during these other changes in properties and behaviours.

Diminishment of attack density can take place abruptly, as in the above example, or gradually. In the next excerpt, mm.38-41 of 'Anaphora', two streams are defined in part by diminishments of attack density. The first process occurs gradually in the vocal stream, reproduced in **Example 25a** (overleaf), which is defined primarily by its timbral consistency and, initially, by its high attack density. In mm.38-40 the time spans between the attack points of successive events become increasingly longer.¹ The second diminishment of attack density occurs more abruptly when the aggregate high attack density of the instrumental stream in mm.39-40 is reduced suddenly at the end of m.40 as the events group into two successive sustained sonorities. As can be seen in **Example 25b** the other stream-defining properties and behaviours, like timbre, registral placement and registral density remain consistent across this change.

¹ This example is similar to the intensification of attack density discussed in **Example 24** (page 73), in that the adjustments made in the durations between successive event attacks are multiples of a fixed metrical unit. In 'Anaphora' the time spans between adjacent attacks measured in triplet eighth-notes are: 2 - 1 - 2 - 3 - 4 - 5, thereby creating a rhythmic deceleration.

Example 25a: 'Anaphora' mm.38-41 (vocal stream)

vocal stream

(dreaming squandered) up-on him with that look, suf - (fers)

Example 25b: 'Anaphora' mm.39-41

A.Fl
Ob
Bb Cl
Vln
Vla
Vcl
Cb
8vb

There are two special types of changes in a stream's attack density behaviour that affect our perception of that stream in a different way than do the intensification and diminishment

processes discussed above. In the first type, extremely regular changes in attack density behaviour may take the form of a *cross-pulse*, which is created by the simultaneous procedure of two (or more) different pulses. The systematic coordination of the attack points belonging to the related pulses can reinforce the perception of a single stream if that stream is defined by other primary properties and behaviours.¹ In 'Insomnia', **Example 26**, the piccolo/violin stream is characterized primarily by the registral and timbral parity between the events, discussed in **Example 4** (page 37). The stream is further defined by a cross-pulse in which a piccolo event is attacked every 17th triplet sixteenth-note, while an attack in the violin occurs every 14th quintuplet sixteenth-note. Because of the way in which Carter coordinates the pulses, the attacks alternate without becoming perceptibly closer or further apart from each other, and thereby contributing to a process of intensification or diminishment. In this excerpt, then, the process of regularly changing attack density behaviour supports the other stream-defining properties.

Example 26: 'Insomnia' mm.2-5

The image shows a musical score for Piccolo (Picc) and Violin (Vln) from 'Insomnia' mm. 2-5. The Piccolo part is marked '8va 2' and has a pulse unit of 17 triplet sixteenth notes, indicated by a bracket and the number 17 above the staff. The Violin part has a pulse unit of 14 quintuplet sixteenth notes, indicated by a bracket and the number 14 below the staff. The two parts are coordinated to create a cross-pulse effect, with attacks alternating between the two instruments. The Piccolo part has three pulse units, and the Violin part has four pulse units. The notes are connected by slurs, and there are some triplets and quintuplets indicated by brackets and numbers 3 and 5 respectively.

¹ Carter frequently uses cross-pulses to structure his music rhythmically, but does not believe that the cross-pulses need to be perceptible all of the time, and can fade in and out of "perceptible order". In an interview he stated that: "these polyrhythmic passages, which at times give the impression of almost hysterical disorganization are in the end part of a graspable order, and if they can be heard both ways, that's what I want" (*Flawed Words and Stubborn Sounds*, 114).

Another special case of changing attack density behaviour occurs when the attack density of a stream repeatedly fluctuates down to zero. Repeated zero values for attack density means that the stream is proceeding *intermittently*. In other words, groups of events, in which the attack density is greater than zero, form *gestures* that are separated by silence during which the attack density is zero. The temporally separated continuities are recognizable as a single interrupted continuity provided the other aspects that define them as a stream remain unchanged. How long a silence can separate the gestures before one's perception of a continuity is destroyed depends on the distinctiveness of that stream relative to its context. In general, temporally separated continuities are recognizable as a stream when they maintain consistent, identifiable properties and behaviours, when the separate gestures occur twice or more, and when the occurrences are in relatively close temporal juxtaposition.

This type of extremely fluctuating attack-density behaviour, where a stream proceeds with intermittent gestures, can help to define a stream particularly if each gesture is of a similar duration. In **Example 2** (page 31) the two bongos gestures (m.19 and m.21), separated by two full measures of silence, are associated as part of the same stream because of their parity in timbre, contour behaviour, dynamic intensity behaviour and attack density -- both gestures have relatively high attack densities and similar duration. The bongos stream is thus defined by timbral consistency, contour behaviour, dynamic intensity behaviour and a rhythmic process whereby gestures of similar duration and high attack densities proceed intermittently.¹

¹ Referring back an excerpt from 'Anaphora', shown **Example 13** on page 56, we can observe that the piano stream is defined (in part) by a similar rhythmic process as the bongos stream in 'Argument', proceeding with intermittent gestures. In 'Anaphora', however, the stream is also defined by a pulse.

When a stream proceeds with intermittent gestures, events that are dissimilar in some primary aspect can cohere as a stream. For example, timbrally distinct gestures can be associated as a stream because of their temporal proximity to each other, provided there is parity in some other primary property or behaviour between them. That is, two or more gestures with dissimilar timbres can cohere in a stream if they sound together and are separated by shared silence. In **Example 27**, the marimba/viola stream, whose primary stream-defining aspects were discussed in **Example 4** (page 37), is also characterized by the temporal proximity of the marimba and viola gestures. The marimba and viola events sound together in m.3 and there are no marimba or viola events in m.4.¹ This process of systematic changes in attack-density behaviour supports the parity in register, pitch and attack density between the same events.

Example 27: 'Insomnia' mm.3-5

The musical score for Example 27, 'Insomnia' mm. 3-5, consists of two staves: Marimba (Mar) and Viola (Vla). The Marimba part is written in treble clef with a dynamic marking of *pp*. It features triplet patterns in measures 3, 4, and 5. The Viola part is written in treble clef with a dynamic marking of *(pp)* and includes *sul pont.* markings in measures 3 and 4. The music is in 7/8 time and consists of five measures.

¹ Once it has been established that timbrally different events cohere in a stream in this way, one timbral event (or gesture) can sound without temporal proximity to another event with which it is usually concurrent (like the marimba gesture in m.5), without the stream losing its coherence. The change that is perceived could be perceived as a timbral transformation or, in more extreme circumstances, could result in the perception of a new stream.

2. COMBINED STREAMS

In the preceding discussion, an examination of an excerpt from Carter's *A Mirror on Which to Dwell* introduced the concept of streams. Individual streams were discussed in terms of the musical properties, behaviours and processes that define them. Properties can be evaluated at any given time point, while behaviours and processes are perceivable over a time span. Behaviours result from changes in properties and processes result from changes in stream behaviours. These aspects were discussed and illustrative musical examples from the *Mirror* cycle were examined to observe the ways in which individual streams are defined.

In some of the examples two or more individual streams were observed proceeding concurrently. Clearly streams do not usually proceed in isolation and are frequently *combined*. Changes in the properties of individual streams can affect the overall behaviour of concurrent streams, while changes in stream behaviours can create processes involving combined streams. In fact, the interaction between simultaneous streams with distinct properties and behaviours can result in other processes.

This combination of individual streams is fundamental to musical *texture*. A definition of texture in Carter's music can now be proposed: It comprises those contextually defined aspects of sound which lead one to perceive music as consisting of distinct streams. Behaviours and processes of streams, the ways in which streams are combined, and the changes that occur in stream combinations can have symbolic and musical functions and thus can play a role in the delineation of form.¹

¹ In *Structural Functions* Berry defines a number of "functional processes by which forms are shaped, and by which expressive functional events... are projected" (241). Although his terminology for the individual processes differs from mine, there are similarities in our broad definitions. The "functional processes" that "shape" forms can be compared to the processes I define which are brought about by consistent changes in the established behaviours of the events in a stream. Berry describes processes as "projecting functional events"; my analytical framework involves considering an event, or, more usually, a

In the next section some of the ways in which Carter combines streams are examined and the behaviours and processes of combined streams are discussed. Following this, the functions of these textural processes and behaviours are discussed and their formal significance is examined.

2.1 TYPES OF COMBINATION

Carter combines streams in two fundamental ways. In the first type of combination, *alternation*, each distinct stream proceeds intermittently. The alternation need not be of a repeating ordered sequence; it simply implies that gestures in any one stream are relatively distinct temporally from gestures in the other streams. In the opening of 'Argument' each successive stream gesture -- winds/strings, bongos, piano or cello/bass -- is separated from the preceding one by a time span of silence, ensuring a clear alternation. The excerpt in **Example 28**, reproduced overleaf, shows how four intermittent streams alternate in the order: winds/strings, bongos, piano, cello/bass, bongos, piano.

The second type of combination is *concurrency*, in which two or more distinct streams proceed simultaneously. In this combination type, the events in at least one of the participating streams must unfold continuously. In 'Insomnia', see **Example 4** on page 37 (also **Examples 26** and **27** on pages 76 and 78), the piccolo/violin stream proceeds continuously and is combined simultaneously with the marimba/viola stream, which proceeds intermittently.

series of events, as constituting a stream, and these streams can have musical (or symbolic) functions. As I introduce each process in the ensuing section I will provide Berry's equivalent term and discuss any differences between the two.

Example 28: 'Argument' mm.1-5

Allegro agitato (♩ = 84)

Soprano

Alto Flute
(actual pitch)
mf *pp* *mf* *pp*

Bass Clarinet
(actual pitch)
mf *pp* *mf* *pp*

4 Bongos
f Fingers

Piano
molto chiaro sempre
impetuoso
p *mf*

Cello
pp *acc.* *mf-pp*

Contrabass*
mf *pp* *mf* *pp* *f* dramatically

** □ □ = bring out (solo)

≡* Sounds one octave lower.

Sop.

A.-Fl.

B.-Cl.

Bongos
f

Piano
p *mf*

Vcl.
p *pp* *mp*

Cb.
meno f *f*

The combination of individual streams can involve a mixture of concurrency and alternation. In his music Carter often creates a counterpoint of streams through complex combinations and interactions of individual streams, analogous to the interaction of lines in conventional counterpoint. In 'Argument', for example, distinct individual streams are combined in a variety of ways. In mm.17-20, shown in **Example 2**, the alto flute/cello stream, defined primarily by the pitch coherence between events, proceeds continuously with a sustained B4. Gestures in the piano and bongos streams alternate. Thus the alto flute/cello stream is concurrent first with the piano stream and then with the bongos stream. Starting at the end of m.20 the combination is further complicated when the events in the cello/bass stream overlap with both the alto flute and bongos streams. The overlapping of streams introduced here develops until all the streams are concurrent, as was seen in **Example 21** on page 67. The other various ways in which Carter creates a counterpoint of streams will be discussed in the analyses of the complete songs in Chapter Four.

2.2 BEHAVIOURS

When changes occur in the property of an individual stream that is combined with other streams, the behaviour of that stream can affect the overall behaviour of the combined streams.¹ Changes in the overall texture can also occur because individual streams proceeding simultaneously have the same behaviour: for example, both may have intensifying registral density. Whatever the origins of the changes, the behaviours of the

¹ Like single streams, combined streams are defined by certain consistent properties, but, since this study is concerned more with the ways in which properties change and the effect that these changes have, these properties will not be discussed.

combined streams will be described here by the adjectives "composite", "aggregate" or "overall".

2.2.1 Composite Registral Density

A consistent increase from one time point to the next in the composite registral density of multiple concurrent streams creates an intensification of composite registral density. Intensification in composite registral density can occur as a result of intensification of registral density within one or more concurrent streams and/or by the entrance of new streams. Similarly, a consistent decrease from one time point to the next in the overall registral density of multiple concurrent streams creates a diminishment of composite registral density. This diminishment can be the result of diminishment of registral density within one or more concurrent streams and/or through the cessation of sounding stream(s).

2.2.2 Composite Dynamic Intensity Contour

An intensification of composite dynamic intensity contour occurs when the overall loudness increases. In future references, the rather cumbersome phrase "intensification of composite dynamic intensity contour" will be replaced by "composite *crescendo* behaviour". This aggregate stream behaviour can result from a *crescendo* in one or more concurrent streams, or it can be the result of intensifying composite registral density, even if the dynamic intensity of the individual streams remains constant. Similarly, when the overall loudness decreases, the behaviour is considered to be a diminishment of composite dynamic intensity: composite *decrescendo* behaviour.

2.3 PROCESSES

A process involving combined streams can take place when changes occur in the behaviour of one or more of the individual streams in the combination, and because of the particular way in which the streams are combined. Like processes in an individual stream, these combined stream processes occur over a time span and, while changes take place in specific behaviours, other stream-defining properties and behaviours should remain unchanged so that the listener perceives a process within the original stream combination rather than the establishment of new streams.

2.3.1 Composite Attack Density

The composite attack density of combined streams can undergo a process of intensification or diminishment. Intensification of composite attack density occurs as a result of intensifying attack density behaviour in one or more concurrent streams, and/or the entrance of new concurrent stream(s). Diminishment of composite attack density occurs when the overall attack density behaviour of an aggregate of streams decreases in successive time spans. This process takes place because of diminishing attack density behaviour in one or more concurrent streams, and/or because streams simply cease to sound.

2.3.2 Fusion

Fusion is an interstream process that occurs when distinct streams that are combined (concurrent or alternating) lose their distinctiveness because the changes in their respective

behaviours make them merge and become indistinguishable.¹ Fusion often involves other processes and behaviours that have already been discussed, like intensification or diminishment of attack density.

In 'Argument', **Example 29** (overleaf), a number of individual streams fuse as a result of the changes they undergo and the way in which they are combined. The cello/bass stream is characterized by the timbral parity between its events, by its consistent contour behaviour, by the low registral placement of the events, as well as by its high attack density. The wind stream is defined in m.27 by the timbral parity between its events, the registral proximity and mid-range registral placement of the events, and its low attack density (sustained pitch events). Starting in m.28 with the bass clarinet this stream becomes increasingly similar in behaviour and properties to the string stream, and both streams proceed continuously. The piano stream and the bongos stream are each defined by their timbral consistency, fluctuating contour and their attack density behaviours -- high and intermittent. (The distinction between the high attack densities of the events in the piano and the cello/bass streams was discussed in **Example 12** on page 54). There is growing parity in the attack density, registral placement and pitch contour behaviour between the streams -- the attack densities of all the streams become high, the pitch contour behaviours are characterized by fluctuation and the events in the streams cover the same registral range. By mm.31-32 the individual streams lose their distinctiveness and merge into a single stream. Retrospectively

¹ In his discussions on interlinear relationships Berry describes a similar process, although he does not define it as "fusion". For example, on pp.188-189 he discusses how four "components" that are diverse in rhythm and "direction of movement" gradually become more similar to each other in these respects until they combine in "one real component". Berry's terminology and method is adequate for his textural analysis of a four-part Milhaud Sonnet, but does not work well for music, like Carter's, whose "components" are far more complex than vocal lines. Furthermore, although the interlinear changes occur in the context of a "recession", Berry does not make it clear whether this kind of process will always result in recession or not. By defining a separate process of fusion, I provide the flexibility for this process to proceed independently of, or concurrently with, processes of diminishment or intensification.

Example 29: 'Argument' mm.27-32

A. - Fl. *pp*

B. - Cl. *p*

Bongos *mf*

Piano

Vcl. *pp*

Cb. *mf*

A. - Fl. *mf*

B. - Cl. *f marc.*

Bongos *mf*

Piano

Vcl. *f*

Cb. *mf*

A. - Fl. *f marc.*

B. - Cl. *p*

Bongos *mf*

Piano

Vcl. *f*

Cb. *f*

one can hear this single stream coalescing as the culminating intensification of registral density and attack density of all the preceding streams.

A special case of fusion occurs when two or more individual streams, each defined in part by a pulse, merge because of our perception of the emerging relationship between the pulses. The single stream that results from the fusion is then defined by a cross-pulse. In this process the cross-pulse, to use Carter's phrase, "fades into perceptible order".¹ The ordered relationship between the two pulses (hence the streams) becomes perceptible to the listener and the individual streams are heard to merge into a single stream. In 'Anaphora', reproduced overleaf in **Example 30**, two streams fuse as a result of the emerging cross-pulse relationship between them. The piano stream, which was discussed in **Example 13** on page 56, is defined by its timbral consistency and attack density behaviours -- it proceeds with intermittent gestures that articulate a pulse. The initiating attack point of each piano gesture is always at a distance of twenty-three sixteenth-notes from the previous one and is emphasized through high dynamic intensity markings relative to the other pitch events in the gesture and through stress accents. The vibraphone stream is also defined by the timbral parity between its events and by similar rhythmic behaviours -- it proceeds intermittently and articulates a different pulse in a slightly different way. Like in the piano gestures, one attack point in each gesture is accented though dynamic intensity, in the form of a *crescendo* culminating on the pitch, and through the use of accents. Unlike the piano gestures, this highlighted attack point is not the first attack of the gesture, but one in the middle of the gesture. The distance between the accented vibraphone pitch events in each gesture is sixty-six triplet thirty-second-notes or, occasionally, sixty-four or sixty-five triplet thirty-second-notes (which are perceptibly the same to the listener). Carter coordinates the streams so that the attack points articulating the pulses gradually become

¹ See footnote on page 76.

Example 30: 'Anaphora' mm.16-23

The musical score is divided into four systems, each with a Vibraphone (Vib.) and Piano (Pno) part. The first system (mm. 16-23) features a 65 BPM tempo marking and a 23-measure duration. The second system (mm. 20-23) features a 60 BPM tempo marking and a 23-measure duration. The third system (mm. 20-23) features a 52 BPM tempo marking and a 23-measure duration. The fourth system (mm. 20-23) features a 52 BPM tempo marking and a 23-measure duration. The score includes various dynamics such as *p*, *mf*, *mp*, *f*, *ff*, and *p*, as well as articulation like *secco*. The Piano part includes a 5-measure rest in the final system. The score is marked with a double bar line at the beginning of the second system.

65 ♩

23 ♩

23 ♩

60 ♩

23 ♩

52 ♩

23 ♩

= 23 ♩
(with tempo modulation)

closer to each other until they articulate their only simultaneous attack in the entire song in m.23. The close relationship between the pulses emerges from about m.16 and the two pulse streams are gradually heard to merge into a single stream.

A cross-pulse can also define an individual stream without fusion taking place, as was seen earlier, in **Example 26** on page 76, where the piccolo/violin stream from 'Insomnia' is defined by the cross-pulse between the piccolo and the violin events. In this example the coordination of the individual pulses is such that the attacks articulating the pulses alternate consistently and do not become perceptibly closer or further apart from each other.

2.3.3 Splitting

A process of *splitting* also involves the interaction of streams and takes place when the properties and behaviours of events in a stream diverge to create two or more distinct streams. This may occur, for example, when streams that have fused resume their individual identity once again, or when a single stream splits into two or more distinct streams.¹ Splitting, like fusion, often involves other processes and behaviours that have already been discussed. Looking back at **Example 20** on page 65, the diminishment of registral density taking place in the stream that opens 'View of the Capitol' is partly a result of the splitting process that the stream undergoes as it divides into a string stream, with most of the same properties and behaviours as the original stream, and a piano/winds stream with new properties and behaviours.

¹ Berry does not have a term for splitting, although he describes the same fundamental process as a change in the relations between linear "components" (186-190).

In 'Anaphora', **Example 31** (overleaf), a single multitimbral stream also splits into three distinct individual streams in the opening measures. The song opens with a stream which is defined by the pitch and registral parity between the events, and by its consistently fluctuating contour and high attack density. Although the events in the vibraphone, piano and bass do not exhibit the behaviours of high attack density and fluctuating contour, the pitch and attack-point parity between these events and the other concurrent events masks the differences, and they are perceived initially as part of the same stream.¹ After the *fortissimo* flourish of the opening two measures, three distinct streams can be perceived -- piano, vibraphone and winds/strings. The properties and behaviours that define the piano and vibraphone streams starting in m.3 were discussed above in **Example 30** (*before* the fusion process occurs). Each individual stream is defined by its timbral properties and attack-density behaviours, proceeding with intermittent gestures that articulate a pulse, while the two streams are made distinct from each other by their dissimilarity of timbre. The winds/strings stream continues with the same fluctuating contour and high attack density as the original stream. Although the three streams continue to share properties like registral placement and pitch consistency, their distinctive contour and rhythmic behaviours dissociate them into distinct, simultaneous continuities. The process of splitting that occurs here is indicative of the kinds of textural processes that recur throughout the piece and that are essential to its musical progression. These will be discussed further in Chapter Four.

¹ In retrospect, it is clear that the seeds of division are contained in the opening, in the form of these masked events.

2.3.4 Focussing

Focussing is a process that involves the emergence of a series of successive events from one or more streams through various musical means so that the listener's attention is focussed on that series. In this process the series of events temporarily forms a distinct stream, which proceeds concurrently with the stream(s) it has emerged from. Although focussing can occur through a change in the established properties and behaviours of certain events in a stream (while the other streams proceed concurrently), in Carter's music the stream which is being focussed on is usually marked by a solo playing instruction.¹

Focussing recurs periodically throughout 'Argument', as can be seen in the opening measures, reproduced in **Example 28**, page 81. In mm.3-4, the events in the double bass are marked as solo with the playing instruction "bring out" in order to focus the listener's attention momentarily on that element of the total texture. The prominence of the bass events is enhanced by stress accents.

The other concurrent streams do not have to be silent for a focussing process to be perceived by the listener. Referring back to an excerpt from 'Anaphora', **Example 18** on page 62, one notices how the listener's focus is shifted briefly to the events in the cello in mm.22-23 while simultaneous events in the string stream continue. The emergence of the cello stream is made explicit by the playing instruction "to the fore" and by the rhythmic distinction of the cello events from the other concurrent string events. The moment is short-lived and the cello events soon fade back into the stream.

¹ Some of the examples of focussing in Carter's music are analogous to the more traditional textural process of a change from equal voiced counterpoint to solo line with accompaniment.

Another kind of focussing occurs when individual pitch events, defined by one or more particular property, are repeatedly highlighted. An example of this kind of focussing takes place in the piccolo/violin stream in 'Insomnia'. Here the pitch C#7/Db7 recurs throughout the song, usually stated as a piccolo event and, occasionally, a violin event. The referential pitch is made prominent by its extremely high registral placement and distinctive timbre -- the piccolo and violin are timbrally almost identical in this register -- rather than by playing instructions as in the above examples. The first two occurrences of the highlighted pitch, the piccolo event in m.2 and the violin event in m.3, have been circled in **Example 32**.¹

Example 32: 'Insomnia' mm.2-5

2.3.5 Emulation

Emulation is an interstream process that occurs when one stream undergoes changes and imitates another, concurrent stream by emulating some of its properties and behaviours. This process differs from fusion because, in emulation, the two streams remain distinct from each other in some properties and/or behaviours. In the songs in the *Mirror* cycle emulation almost always involves the voice, and the special timbral distinction of the vocal

¹ The other statements of the referential pitch occur as piccolo events in m.6, m.10, m.19 and m.31.

stream, discussed earlier, ensures that it remains a separate stream. In 'Sandpiper' the voice frequently emulates one or more of the other concurrent streams, as we can see in **Example 33**. In mm.5-6, shown in **Example 33a**, the vocal stream is defined by legato articulation and a medium attack density with duple subdivision of the beat, and it features m6 dyads between successive events. In mm.7-9, **Example 33b** (overleaf), several properties and behaviours change, and the vocal stream starts to emulate aspects of the oboe and *pizzicato* string streams. (The *pizzicato* string stream is defined by the timbral consistency and *pizzicato staccato* articulation of its events, and by a triplet eighth-note pulse). In mm.8 and 9, for example, the voice imitates the *staccato* articulation of both the oboe and string streams. While the attack density of the vocal stream does not change much, it now emulates, intermittently, the triplet pulse articulated by the string stream. The vocal stream's intervallic properties are also altered when the voice features 2nds and 3rds between successive events like the oboe stream, instead of m6's. As a result of this emulation process, the the vocal stream becomes more closely associated with the other concurrent streams while still maintaining its distinction.

Example 33a: 'Sandpiper' mm.5-6 (vocal stream)



Example 33b: 'Sandpiper' mm.7-9

The musical score for Example 33b, 'Sandpiper' mm.7-9, consists of four staves. The top staff is for Voice, showing a melodic line with triplets and a fermata. The second staff is for Oboe (Ob), featuring a complex rhythmic pattern with quintuplets. The third staff is for Violin (Vln), marked 'pizz.' (pizzicato), and the fourth staff is for Cello (Vcl), also marked 'pizz.' and featuring rhythmic patterns with triplets. The key signature has one sharp (F#) and the time signature is 3/4.

2.3.6 Compensation

A process of *compensation* takes place when one or more streams cease, or undergo diminishment processes, at the same time as the remaining stream(s) come to the fore, usually because of various intensification processes. In a compensatory process we perceive that growth (intensification) in one stream compensates for the coincidental relative sonic and polyphonic thinness in another stream(s). In an excerpt from 'Sandpiper' immediately following the previous excerpt, shown in **Example 34** (overleaf), a process of compensation occurs in the instrumental streams. Preceding m.9 the texture was dominated by the oboe and *pizzicato* string streams, as was seen in **Example 33b**. Starting in m.9 a new *arco* string stream starts to take over and, in m.10, the *pizzicato* stream is reduced to events in the cello. In the next measure the *pizzicato* stream ceases and the registral density of the '*arco* stream' intensifies as events in the piano combine with

Example 34: 'Sandpiper' mm.9-13

Ob. *mp p mf f 5 mf 5 f 5 ff marc.*

Piano

Vln. *pizz. p (p) arco pp p > pp mf-p*

Vla. *p mp p pp p pp mf-p*

Vcl. *p 3 mp p mp p 3 arco pp 3 mf 3*

Cb. *p 3 arco pp 3 p*

(actual pitch)

Ob. *mf p pp*

Piano *f mf p* $\text{♩} = 75$

Vln. *f mf p*

Vla. *f* *legato pp tranquillo*

Vcl. *f p*

Cb. *f p pp* *legato pp tranquillo*

string events to form the piano/strings stream that was discussed earlier in **Examples 7** and **19** (pages 42 and 64). This stream now dominates the texture. Coincidentally, in m.11, the oboe stream starts to fade into the background -- it diminishes in registral placement, undergoes a *decrescendo*, and the oboe events start to group into shorter gestures separated by longer time spans. In this example increased intensity in the piano/strings stream compensates for the cessation of the *pizzicato* string stream and the diminishment in the oboe stream.

CONCLUSION

In this chapter a theory of musical texture has been presented. Individual streams have been defined in terms of their properties, behaviours and processes. We have seen how streams combine and how textural processes and behaviours result from different combinations and changes in individual and composite stream behaviours. Musical excerpts from Carter's *A Mirror on Which to Dwell* have been examined to support the theory. In the next chapter we will examine some of the ways in which textural streams, their processes and behaviours function musically and symbolically to delineate the form of the songs.

CHAPTER THREE: FUNCTIONS

INTRODUCTION

In the preceding chapter we have examined the ways in which individual streams combine and have discussed the behaviours and processes that constitute texture, as it was defined on page 79. The distinct streams of each composition, as well as the textural behaviours and processes that are generated by changes in properties and behaviours, have functional roles. They can have a purely musical function, for example, one of intensification leading to climax, or one of recession leading to a cadence. In the songs in *A Mirror on Which to Dwell*, streams and textural processes also function symbolically to connote certain personae or actions described in the text. In both cases streams and the textural processes that they undergo serve to delineate the form. In most of Carter's songs, because of the close relationship between text and music, processes have both musical and symbolic functions.

In this chapter, the symbolic functions of streams are examined first, followed by the musical functions, and the ways in which these textural behaviours and processes help to articulate the forms of the songs are discussed. The dual functional role of certain processes (symbolic and musical) will be mentioned only briefly in this section and discussed more fully in the analyses in Chapter Four.

1. SYMBOLIC FUNCTIONS

1.1 Streams Representing Personae

Individual streams can signify personae in the text. The properties and behaviours that define a distinct stream often have non-musical connotations which correlate with characteristics of the persona. Certain conditions must exist for the association between a stream and a persona to be made by the listener. The text must present at least two personae with contrasting characteristics. Two individual distinct streams must have properties and behaviours that contrast with each other. The properties and behaviours of one stream must connote the characteristics of one persona and the properties and behaviours of the other stream must connote the characteristics of the other persona through their non-musical associations. The association of a persona and the corresponding stream must be established through the musical setting of textual descriptions of the persona with the corresponding stream.

The song 'Sandpiper' is a good example of the way in which streams can function symbolically to represent personae. The text of 'Sandpiper' presents an opposition of two personae, the sandpiper and the ocean, as can be seen in the table reproduced overleaf as **Example 35**. The bird is small in comparison to the vast, deep ocean. The sandpiper is a conscious individual in contrast to the ocean, a vast physical entity controlled by impersonal forces. While the bird's movements and thoughts are quick and change rapidly, the ocean is characterized by slow, flowing, repetitive movements.

Comparing how the streams are distinguished musically with how the personae are opposed, we see a correlation between the oboe stream (see **Examples 15** and **24** on pages 59 and 73) and the bird, and the piano/strings stream (discussed in **Examples 7**,

19 and 34 on pages 42, 64 and 96) and the ocean. Although the oboe stream does not reproduce the *sounds* that a sandpiper makes (except for a few multiphonic squawks), the properties and behaviours of the stream connote the sandpiper's character, actions and thoughts. The properties and behaviours of the piano/strings stream contrast with those of the oboe stream to connote the ocean and its wave motion. In **Example 35** the properties and behaviours that define each stream are tabulated together with their non-musical connotations (the characteristics of the personae) below them.

Example 35: 'Sandpiper'

	registral placement	connection behaviour	attack density	contour behaviour
oboe stream	high (relative to other events)	single line of connected pitches	high but fluctuant	random fluctuation
sandpiper	smallness	continuity of a conscious individual	fast and rapidly changing movements and thoughts	
piano/strings stream	low (relative to oboe events)	indistinct, overlapping pitch events	low	consistently ascending and descending
ocean	depth, vastness	movement of unconnected physical quanta caused by impersonal forces	slow, flowing, repetitive movements	

In both cases the registral placement and connection behaviour of the stream depict a persona in a rather abstract way. The high registral placement of the oboe stream is associated with smallness, while the consistent connection behaviour connotes the continuity of an individual being; hence the sandpiper of the title. In contrast, an image of

the ocean is evoked through the low register of the piano events in the piano/strings stream, associated with depth and vastness, and the lack of connection behaviour. Attack density and contour behaviour represent more specifically the physical movements of the personae and, in the case of the sandpiper, the bird's mental actions too. The high attack density and rapidly changing contours of the oboe stream depict both the bird's fast, jerky physical movements and his disturbed mental state. The lower attack density and consistently ascending and descending contours of the piano/strings stream portray the ocean waves that ebb and flow alongside the sandpiper. Any one of these properties and behaviours by itself would not connote a persona, but the combination of all of them strengthens the connotations. Further, the associations between personae and streams are made by the listener as the song progresses and are sometimes only perceived retrospectively since some characteristics of the personae are presented later in the text while the properties and behaviours of the streams are often established at the beginning of the song.

Clearly the defining properties and behaviours of the two streams in 'Sandpiper' contrast significantly, for example the high registral placement and high attack density of the oboe stream *versus* the low registral placement and low attack density of the piano/strings stream. Thus the symbolic representation in this example depends as much on the opposition of the properties and behaviours of the streams as it does on their actual values. The listener's association of a different persona with a corresponding stream is made by setting textual descriptions of the persona with the connotating stream. For example, when the text is describing the bird, the oboe stream either proceeds alone or comes to the fore aurally through various musical devices and processes.

Once the symbolic associations of a stream have been established, the signification of a persona can be reinforced by an independent stream emulating the properties and behaviours of that stream. For instance, the emulation process that occurs in 'Sandpiper',

discussed in **Example 33** on pages 94 and 95, associates the previously independent vocal stream with the oboe stream and *pizzicato* streams. As we have seen, the oboe stream signifies the sandpiper, as does the *pizzicato* stream (to be discussed in the analysis of the song in Chapter Four). In this way, the image of the sandpiper is reinforced, and music associated with the bird dominates the texture.

1.2 Processes Representing Actions

The combination of streams and the textural behaviours and processes involving changes in behaviours can represent actions that are described in the text. The representation is often quite direct. Let us examine a passage from 'Insomnia', reproduced overleaf in **Example 36**, for examples of stream processes representing actions. In mm.20-22 diminishment of registral placement and of attack density behaviour takes place in the marimba stream, as were described in **Example 17** on page 61. The diminishments connote the speaker's imperative to "wrap up care in a cobweb and drop it down the well". Specifically, the descending registral placement of the marimba events signify the gradual descent down the well, while the diminishing attack density signifies a move away from the anxiety of the real world, connoted earlier in the piece by high attack density, into an imagined, dream-like state where anxieties (care) are sublimated. The single descending pitch events could also symbolize the bundle of wrapped care that is being dropped, with each descending event representing the falling bundle frozen briefly in a single time frame.

Example 36: 'Insomnia' mm.21-25

The musical score for Example 36, 'Insomnia' mm.21-25, consists of five staves. The top staff is for the Soprano (Sop.) with lyrics: "in a cob-web and drop it down the well in-to that world in". The second staff is for the Piccolo (Picc.), the third for the Marimba (Mar.), the fourth for the Violin (Vln.), and the fifth for the Viola (Vla.). The score includes various musical notations such as dynamics (p, pp, ppp, con sord.), articulation (legato), and performance instructions (soft sticks tremolo). Measure numbers 21 and 23 are indicated in boxes at the start of their respective systems.

Changes also occur in the other concurrent stream as the marimba stream undergoes a diminishment of registral placement in mm.22-25. The established piccolo/violin stream, which we will refer to as Stream A in this discussion, undergoes a timbral transformation. The violin adopts the previous piccolo attack pattern and the viola, now muted like the violin, replaces the piccolo and adopts the previous violin attack pattern. Stream A is thus altered by undergoing a timbral transformation and a slight diminishment in registral

placement (the registral placement of the violin remain consistent, but the registral placement of the viola events is lower than that of the piccolo events). However, Stream A is still recognizably similar to the original stream through the maintenance of its defining rhythmic behaviours (the cross-pulse discussed in **Example 26** on page 76). These changes occur when the insomniac starts to describe an inverted, more desirable world, the reflected world into which care has been dropped. The continued diminishment of register in the marimba stream completes symbolically the descent into this imagined world, while the changes in the timbral property and registral placement of the Stream A represent the world in which the established order is subverted.

Stream processes can also signify the immediate emotional state of the speaker, rather than portraying an action described in the text. In many of Carter's songs poetic 'actions' represented by processes can refer to changes in the expressive content of the text or to shifts in the focus of the poem. In mm.49-53 of 'Sandpiper', shown in **Example 37** (overleaf), diminishment behaviours and processes prepare for processes and behaviours of intensification that represent an emotional intensification in the text. The speaker moves from depicting the world that the sandpiper sees as confusing ("the tide is higher or lower./ He couldn't tell you which"), to describing the bird's preoccupied search for "something". Her tone reflects the bird's increasingly agitated search until she reaches a moment of emotional intensity as she personifies his actions as "obsessed". An overall diminishment in the composite registral density of the streams in mm.49-50 focus the listener's attention on the oboe stream, which has been associated earlier with the sandpiper. As the aggregate registral density decreases so does the composite attack density. The oboe stream continues to proceed once the other streams have ceased and, in mm.51-53 (see **Example 15** on page 59), undergoes intensification of registral placement and dynamic intensity contour. The intensifications that occur in the oboe stream symbolize the bird's increasingly frenzied emotional state and physical movements, which are described in the text.

Example 37: 'Sandpiper' mm.49-53

49

Sop. *mf*
could-n't tell you which. His beak is fo-cussed; he is pre-

Ob. *pp* *p* *mf* *f* *mf* *mf-pp*

Piano

Vin. *pp* *mf*

Vla. *pp* *mf* *pp*

Vcl. *p* *mf*

Cb.

53

Sop. *ff*
he is ob-essed!

Ob. *ff* *f* *ff*

Piano

Vin.

Vla.

Vcl.

Cb.

51

Sop. *cresc.* *f*
oc-cu-pied, look-ing for some-thing, some-thing, some-thing. Poor bird,

Ob. *p* *mf* *p* *mf* *p* *mf* *f*

Piano

Vin.

Vla.

Vcl.

Cb.

2. MUSICAL FUNCTIONS

The behaviours of streams and the changes in stream behaviours that generate textural processes can also have purely musical functions. Musical functions, like symbolic ones, are essentially expressive in nature. Wallace Berry describes the functions that processes might have: "Examples of universal musical processes can be indicated in observations of the sort: 'the music is coming to a close,' or 'the music is advancing toward a peak of intensity'".¹ The former process refers to the function of cadence and the latter to climax. The musical functions that will be discussed below are climax, cadence, local structural articulation and prolongation.²

Up to now, this study has focussed on streams with instrumental timbres and treated the vocal stream only occasionally for the reasons provided at the beginning of Chapter Two. However, the events in the vocal stream can exhibit the same behaviours and undergo most of the same behavioural changes, and hence processes, as the other streams (excluding behaviours like intensification of registral density of events, for example). In Carter's music when a stream undergoes a process that has a particular musical function, it is usually concurrent with similar behavioural changes in the vocal stream that function in the same way.

¹ Berry, *Structural Functions*, 4.

² In *Structural Functions* Berry discusses how functional processes project expressive functional events and "shape the form" of the music (241). He mentions four functional events in this context, namely climax, cadence, introduction and exposition. Elsewhere in his chapter on texture he includes developmental functions, complementary and compensatory functions, and, of course, structural functions. In general he defines function as "the processive, structural role of an event or succession... function is the role, or nature of participation, of an event in the import of expressive content and significance" (23). While I find his broad definition to be valuable, some of the functional events he lists, I would argue, are actually processes, and cannot be described in terms of purely musical functions. Complementation and compensation, for example, have more to do with the nature of process (as was discussed in the previous chapter), and with the contrapuntal organization of streams, than with the musical effect or function of that process. (For example, intensification in one behaviour, complemented by diminishment in another behaviour, would not have a "compensatory" role, but could have a climactic, cadential, or any other function, depending on the context.) For this reason I have limited this study to include the musical functions of climax, cadence, prolongation and structural articulation; I consider these to be established musical functions and find them to be relevant to Carter's music.

2.1 Climax

Climax may be defined as a moment (a time span or a time point) where we perceive a peak of intensity. The expressive effect of the high intensity of a climax can result from different kinds of changes in established behaviours. In Berry's interpretation of a climax peak intensity often results from maximum diversity between "components",¹ but in Carter's music a climax can also be the result of minimum "diversity" between the streams, as is apparent in **Example 38** below. While, as one might expect, climaxes often involve the intensification of particular behaviours, they can also be the result of diminishment of other behaviours. The context in which the processes and behaviours occur is obviously primary in determining the expressive effect.

In **Example 37** from 'Sandpiper' (discussed earlier on page 105), a combination of diminishment and intensification are used to function climactically in mm.48-53. Diminishment in the composite registral and attack densities of the streams takes place in mm.48-50. The oboe stream proceeds solo from m.50 and undergoes intensifications of registral placement and dynamic intensity, reaching the highest and loudest pitch events in m.53. In this example the musical climax is generated by dramatic reductions in the overall registral and attack densities of the streams as well as by the behavioural changes in the oboe stream. Concurrently there is a climax in the vocal stream, which intensifies in register and in dynamic intensity, climaxing simultaneously with the oboe stream in m.53 with the highest and loudest vocal pitch events in the song (A5, *fortissimo* and accented).

¹ Berry, *Structural Functions*, 190.

The climax in this excerpt from 'Sandpiper' involves multiple individual streams and a combination of intensification and diminishment processes and behaviours. We can also see how certain processes have both symbolic and musical functions since the climax occurs at the most emotionally intense moment in the text, as was discussed on page 104.

A climax can also result from a fusion in which individual streams intensify to the point where they merge into a single stream. In connection with the excerpt from 'Argument' in **Example 29** (page 86) it was discussed how the streams become increasingly similar to each other until the streams lose their distinctiveness and fuse into a single, registrally dense stream. In this example the climax is brought about by the culmination of the intensification of overall attack density, registral density and dynamic intensity. As in the excerpt from 'Sandpiper' the climax in the instrumental streams occurs simultaneously with a vocal climax in mm.31-32, as can be seen in **Example 38** overleaf. The voice, whose events have been ascending registrally and intensifying in dynamic intensity, articulates its loudest pitch events high in the vocal range. Coincidentally, these pitch events have the same properties as the climactic ones in 'Sandpiper': A5, *fortissimo* and accented.

Example 38: 'Argument' mm.31-32

31

Sop. were like some hideous calendar compliments "Com-pli-ments"

A.- Fl. *f marc.* *p* *mf f* *f-mf* *mf-pp* *pp*

B.- Cl. *f* *mf* *marc.* *p* *f* *f-mf* *ff* *mf-pp* *pp*

Bongos *mf* *f* *p* *mf* *f* *mf sub.* *ff*

Piano *f* *mf* *ff*

Vcl. *mf* *f* *p sub.* *f* *mf* *ff* *mf*

Cb. *f* *ff* *f* *p* *f* *mf* *ff* *mf-pp*

2.2 Cadence

Cadence may be defined as a time span or time point of diminished intensity, or, in Berry's words: "an environment of relative decline and deceleration".¹ An important quality of a cadence is that it creates a sense of closure. Like a climax, the expressive effect of a cadence can result from different kinds of changes in established behaviours. Cadences frequently involve the diminishment of particular behaviours. However, they too can also

¹ *ibid.*, 6.

be the result of intensifications of other behaviours, depending on the context in which they occur.

In the last eleven measures of 'Argument' processes of diminishment and intensification combine to achieve a cadential effect. **Example 39** (overleaf) shows these processes in the last four measures of the song. Diminishments of aggregate registral density and attack density contribute significantly to a sense of recession and diminishing intensity, particularly since these are the same behaviours that underwent intensification in an earlier process of fusion which functions climactically (see **Example 38** above). There is also a gradual *decrescendo*, which occurs partly as a result of the diminishing registral density. Although the registral placement of the piano stream intensifies (see **Example 16**, page 60), it contributes somewhat to the effect of diminished intensity since, as the piano pitch events ascend, the dynamic intensities of the fundamentals decrease and the spectral densities become thinner. Diminishment is not as noticeable in the vocal stream, although there is diminishment in the attack density, and the registral placement of events diminishes in the sense that the voice does not articulate the most extreme pitches in its range. In this example textural processes achieve a musical cadence and the resultant sense of closure signifies the end of the song.

Example 39: 'Argument' mm.48-51

The musical score is divided into two systems, each containing six staves for different instruments. The first system covers measures 48 to 51. The second system covers measures 52 to 55. The instruments are: A. Flute (A.-Fl.), B. Clarinet (B.-Cl.), Bongos, Piano, Violoncello (Vcl.), and Contrabass (Cb.).

System 1 (Measures 48-51):

- A. Flute:** Measures 48-51. Measure 48 has a *pp* dynamic. Measure 51 has a *pp* dynamic.
- B. Clarinet:** Measures 48-51. Measure 48 has a *pp* dynamic. Measure 51 has a *pp* dynamic.
- Bongos:** Measures 48-51. Measure 48 has a *mp* dynamic. Measure 51 has a *p* dynamic.
- Piano:** Measures 48-51. Measure 48 has a *mp* dynamic. Measure 51 has a *pp* dynamic.
- Vcl.:** Measures 48-51. Measure 48 has a *mf* dynamic. Measure 51 has a *p* dynamic.
- Cb.:** Measures 48-51. Measure 48 has a *mp* dynamic. Measure 51 has a *p* dynamic.

System 2 (Measures 52-55):

- A. Flute:** Measures 52-55. Measure 52 has a *p* dynamic. Measure 55 has a *pp* dynamic.
- B. Clarinet:** Measures 52-55. Measure 52 has a *pp* dynamic. Measure 55 has a *pp* dynamic.
- Bongos:** Measures 52-55. Measure 52 has a *mf* dynamic. Measure 55 has a *p* dynamic.
- Piano:** Measures 52-55. Measure 52 has a *pp* dynamic. Measure 55 has a *pp* dynamic. Includes a *(loco)* marking in measure 54.
- Vcl.:** Measures 52-55. Measure 52 has a *pp* dynamic. Measure 55 has a *pp* dynamic. Includes a *via sord.* marking in measure 54.
- Cb.:** Measures 52-55. Measure 52 has a *pp* dynamic. Measure 55 has a *pp* dynamic. Includes a *via sord.* marking in measure 54.

In these songs cadences do not only occur at endings. In 'Insomnia', **Example 40**, various processes and behaviours function cadentially in the middle of the song.

Example 40: 'Insomnia' mm.13-15

The musical score for 'Insomnia' mm.13-15 is presented in two systems. The first system covers measures 13 and 14, and the second system covers measures 15 and 16. The score includes parts for Soprano (Sop.), Piccolo (Picc.), Marimba (Mar.), Violin (Vln.), and Viola (Vla.).

System 1 (mm. 13-14):

- Sop.:** Melody with lyrics "a day-time sleep-er...". Measure 13 starts with a circled measure number 13. A triplet of eighth notes is marked with a '3' above it.
- Picc.:** Melody with a triplet of eighth notes in measure 14 marked with a '3' above it. Dynamics include *3 p* and *mf*.
- Mar.:** Rhythmic accompaniment with triplets and sixteenth notes. Dynamics include *pp*, *mp*, *mf*, *mp*, and *mf*.
- Vln.:** Melody with a *sul pont.* marking in measure 13. Dynamics include *p* and *mf*.
- Vla.:** Bass line with triplets. Dynamics include *pp* and *mf*.

System 2 (mm. 15-16):

- Sop.:** Melody with lyrics "By the U-ni-verse de- sert-ed...". Measure 15 starts with a circled measure number 15. A triplet of eighth notes is marked with a '3' above it. Dynamics include *mf*, *dramatic*, and *f*. A *quasi accel.* marking is present above the staff.
- Picc.:** Melody with a triplet of eighth notes in measure 15 marked with a '3' above it.
- Mar.:** Rhythmic accompaniment with triplets and sixteenth notes. Dynamics include *f*, *mf*, *mp*, and *sf*.
- Vln.:** Melody with a *via sord.* marking in measure 15. Dynamics include *normale*.
- Vla.:** Bass line with triplets and a *via sord.* marking in measure 15. Dynamics include *sf-p*.

In mm.13-15 diminishment takes place in the instrumental streams to achieve this effect. The registral placement of the events in the piccolo/violin stream becomes progressively lower and the stream ceases in m.15, which results in a diminishment of overall registral and attack density. After the registral placement and dynamic intensity of the marimba/viola

stream intensify somewhat in mm.13-14, the viola falls silent and the marimba stream diminishes in registral placement. The composite diminishment of registral placement, registral density and attack density in mm.14-15 contribute further to the cadential effect.

Simultaneously in m.15 other processes start to occur that provide continuity into the next section. That is, the properties and behaviours of certain streams provide continuity by setting up further changes of a different nature. A single viola event is articulated *sforzando* and *normale* (instead of *sul ponticello*) and the marimba stream, while continuing to diminish in registral placement, articulates a *crescendo*.

2.3 Structural Articulation

The processes and behaviours that function cadentially here also function to create a moment of *structural articulation*, which signifies the end of one musical section and the start of another. Many of the other processes that function climactically and cadentially also function in a similar way in Carter's music. For example, the climax in 'Sandpiper', which was discussed above, signifies a moment of structural articulation that is followed by the closing section of the song.

Processes and changes in behaviours can also articulate a structural break without having a climactic or cadential function. In **Example 36** on page 103, another excerpt from 'Insomnia', the diminishment that occurs in the marimba stream in mm.21-22 and that has a symbolic function also articulates a structural break. They signify the onset of a new section, which starts at the end of m.22 and continues through m.25, and which is characterized by the new properties and behaviours of the streams that were discussed earlier. The vocal stream also plays a part in the process. The registral placement of the

vocal events diminishes concurrently with the descending marimba events, and then in m.22, start to ascend again. The changes in stream properties and behaviours signify the start of the next structural section.

One of the more self-evident ways in which streams can create a structural break is simply through the cessation of established streams and the introduction of new streams. This is a device that Carter uses frequently in these songs, although he usually overlaps the beginnings and endings of different streams so that the effect is not so much of a break as of a transition. Still, over a longer time span, the contrast in sound which is achieved through the introduction of new, distinct streams functions to delineate structurally the break between sections in a song. In m.12 of 'View of the Capitol', shown in **Example 41** overleaf, a stream comprising the events in the winds, piano and strings ceases and new streams are introduced. Up to this point the winds/piano/strings stream has been defined by the high attack density of the intermittent gestures into which the events are grouped, by the pitch parity between the events, by their high dynamic intensity, and by the wide registral range covered by the events. The properties and behaviours of the two new streams that enter in m.12 contrast with those of the established winds/piano/strings stream. The violin articulates a pulse of attacks every five triplet eighth-notes or multiple thereof, resulting in a relatively low attack density. The violin stream is also defined by the high registral placement, timbre, the connection behaviour and the low dynamic intensity of the events. The accompanying stream comprises intermittent pitches, usually sustained, and is also characterized by its low attack density and low dynamic levels. The contrast in texture, which is achieved by the replacement of the winds/piano/strings stream with other streams

Example 41: 'View of the Capitol' mm.10-13

Sop. and coarse. One small

Fl. *mf mfp f fp ppp*

Ob. *mf mfp ff f fp (p)*

B♭Cl. *mf mfp ff f fp p ppp*

Perc.

Piano

Vin. *mf p mf-p mf f ff f ff p ppp*

Vla. *mf p mf f ff fp f ppp ppp*

Vcl. *mf p mf f ff f ff p pizz. p*

Cb. *f ff ff*

defined by different properties and behaviours, functions structurally to delineate the start of a new section. The vocal stream does not play an active role in this delineation since it is silent across the change. In fact, the absence of the voice allows the listener's attention to focus on the instrumental streams and makes the functional role of these measures more easily perceptible.

2.4 Prolongation

Textural processes function *prolongationally* if the changes in the properties and behaviours of streams that take place simply provide some variety in the established overall texture, without having the effect of progression towards a functional climax or cadence, or articulating a structural break. In 'Anaphora' (mm.12-19), reproduced in **Example 42** overleaf, these changes take the form of repeated fusion and splitting processes that occur over very short time spans. Over a longer time span one does not perceive these processes as such, and the effect of the changes is to provide some variety to the texture. After three distinct streams emerge in the opening measures, seen in **Example 31** on page 91, the music alternates between two different textures. In one the winds/strings stream splits into two alternating streams of winds and strings (mm.12-15 and m.19). In the other, the two fuse again (mm.16-18). The durations of these textures are very brief, usually lasting only a few measures at a fast tempo (quarter-note = 88-90). Splitting and fusion are only perceptible fleetingly, if at all. The music is not static, however, and one is aware of a regularly recurring change. The short-lived and repetitive processes of fusion and splitting that take place between the winds stream and the strings stream involve discernable changes in stream behaviour without leading to a time span of peak intensity or to one of cadence, and function to prolong the texture.

Example 42: 'Anaphora' mm.12-15

Musical score for Example 42, measures 12-15, left page. The score includes parts for A. -Fl., Ob., B♭Cl., Vib., Piano, Vln., Vla., Vcl., and Cb. The key signature is one flat (B♭) and the time signature is 3/4. The score shows various dynamics such as *mf*, *pp*, *p*, and *f*. Measure 12 is marked with a box containing the number 12. The woodwinds and strings play complex rhythmic patterns, while the piano provides harmonic support.

Musical score for Example 42, measures 14-15, right page. The score continues from the left page, showing parts for A. -Fl., Ob., B♭Cl., Vib., Piano, Vln., Vla., Vcl., and Cb. The key signature is one flat (B♭) and the time signature is 3/4. The score shows various dynamics such as *pp*, *p*, *mf*, and *f*. Measure 14 is marked with a box containing the number 14. The woodwinds and strings play complex rhythmic patterns, while the piano provides harmonic support.

Example 42 (cont.): 'Anaphora' mm.16-19

The musical score for Example 42 (cont.): 'Anaphora' mm.16-19 is presented in two systems, each with two pages of music. The instruments listed are A. Fl., Ob., B♭ Cl., Vib., Piano, Vln., Vla., Vcl., and Cb. The score includes various musical notations such as dynamics (p, mf, f, pp, stacc.), articulation (accents), and performance instructions (trills, slurs). A rehearsal mark [16] is present at the start of the second system, with a tempo marking of ♩ = 59-60. The score is written in a key signature of one flat and a 3/4 time signature.

Focussing can also play a prolongational role. The emergence of a stream (or events) from multiple streams for a relatively short time span can have the expressive effect of prolonging the established texture. While the stream coming to the fore undergoes some changes, the other streams remain relatively unchanged and the variation in the overall sound does not induce a sense of progression towards a climax or cadence. In **Example 43** from 'Sandpiper' (overleaf), focussing processes occur in the piano/strings stream to achieve this effect. (The properties and behaviours of this stream were discussed earlier with reference to the table in **Example 35**, page 100). In mm.29-32 events in the piano are made prominent through the playing instruction "bring out (solo)" and in mm.32-36 the string events undergo the same process. In this way the textural changes provide musical prolongation without progressing towards a particular goal.

Example 43: 'Sandpiper' mm.29-36

29

Sop. *mf* *legato* (♩ = 88)
de-tail (too small) the At- lan

Ob.

Piano *pp* *p* *mp* *p* *mf* *legato*

29

Vin. *pp* *p* *arco* (♩ = 88)

Via. *pp* *p* *pp* *p*

Vcl.

Cb. *p* *mp* *p*

* □ □ - bring out (solo)

32

Sop. *sub. meno f*
tic drains rap id-

Ob. *mf* *pp* *mf* *mp* *p* *mp*

Piano *p*

Vin.

Via. *pp* *f* *espr.* *mf*

Vcl. *f* *espr.* *mf* *(non troppo)* *p*

Cb. *pp*

33

Sop. *f*
ly back - wards and down - wards.

Ob. *mf* *f*

Piano

Vin.

Via. *p* *pp*

Vcl. *mf* *pp*

Cb.

CONCLUSION

In this chapter we have examined some of the ways in which textural streams, their processes and behaviours function symbolically and musically to delineate the form of the songs. Using musical excerpts from Carter's *A Mirror on Which to Dwell* we have seen a variety of ways in which streams can play symbolic roles, and can be involved in the delineation of small-scale forms. In the next chapter larger scale formal structures are examined when the textural theory is applied analytically to each song from the cycle.

CHAPTER FOUR: ANALYSES

INTRODUCTION

In this chapter the textural theory that was presented in the previous chapters will be applied analytically to the six songs that constitute Carter's cycle *A Mirror on Which to Dwell*. The order in which the analyses will be presented is based on textural criteria, rather than chronology. The songs that are the simplest and clearest texturally will be discussed first, followed by those that are more texturally complex.¹ Thus we will start with 'Insomnia', the fourth song in the cycle, followed by the second song, 'Argument', and then the third song, 'Sandpiper'. These three songs are characterized by textural clarity, and are similar to each other in their textural structures and processes. 'View of the Capitol from the Library of Congress', the fifth song in the cycle, will be analyzed next; this song, while having some textural similarities to the preceding three songs, is much longer and more complex in its textural processes. Finally, analyses of the first and last songs in the cycle, 'Anaphora' and 'O Breath', will be presented (in that order). Both of these songs are more intricate texturally, and different from the other songs, as well as from each other.

Each analysis will be structured in a similar way. Because of Carter's sensitivity to the poetry, and the close correspondence between poetic form and meaning and musical setting, each analysis will start with a discussion of the text. Then, after a brief introduction to the musical structure of the song, the main textural features will be presented. In the

¹ The decision to reorder the songs was made because there does not seem to be a strong dramatic or musical progression in the published order, despite McCalla's suggestion that there is a "process of emotional concentration" in the cycle from 'Anaphora' to 'O Breath' (see page 27). David Schiff even suggests that "the songs are not connected" (282). Presenting the analyses in the chosen order allows the reader to become familiar with the terms and analytical method in a relatively simple context, before more complex structures are analyzed.

texturally simpler songs this presentation will often be limited to a discussion of the most significant streams in the song, while the longer, more texturally diverse songs will require discussion of other features, such as textural processes. After the main textural features have been presented, each song will be analyzed texturally, with the focus being on form and text-setting.

While a number of musical examples and diagrams are included in the analyses, it is presumed that the reader has access to the full score and a recording of the cycle.

'INSOMNIA'

First let us examine 'Insomnia', the fourth song in the *Mirror* cycle.

TEXT

The poem 'Insomnia'¹ is relatively straightforward formally. The poem is divided into three six-line stanzas with a regular rhythm of three stresses per line. The regularity of the rhythmic design is matched by the rhyme scheme which is almost identical for each stanza:

Stanza 1: x a x a b b¹
Stanza 2: x c x c x c
Stanza 3: x d x d e e

The letter 'x' indicates lines that do not rhyme, and the superscript indicates a very close association of two non-rhyming words, in this case the words "sleep, or" and "sleeper". The rhyming couplet that closes the third stanza and the near-repetition that ends the first stanza accelerate the relatively steady rhyming rhythm established in the rest of the poem, to

¹ The title, *A Mirror on Which to Dwell*, is taken from 'Insomnia', and is also a reference to the name of the ensemble for which the song cycle was commissioned, *Speculum Musicae*.

create closure. The close association of the last two lines in the first and third stanzas also creates a symmetrical rhyme scheme that is supported by a formal pattern of repeated phonemes. The first stanza is dense with repetition of the resonant nasal consonant [m], while in the third stanza sibilants occur repeatedly. Assonance pervades the second stanza where the forward vowel [e] is reiterated, frequently as the vowel sound of rhyming words ("tell", "hell", "dwell", "cobweb" and "well"). Other phonemes are repeated in phrases or areas of the poem to create local unity, for example in the third line of the opening stanza the reiterated stop-plosive consonant [p] dominates the phrase "perhaps with pride". In the first two lines of the second stanza the stop-plosive consonants [t] and [d] recur and create an area of increased rhythmic activity.

Like many of the other poems in the cycle, the sentences and images in 'Insomnia' do not always correspond to the straightforward formal design of the poem, resulting in the structural counterpoint that typifies Bishop's writing. Like the formal scheme, the semantic content is also structured around a tripartite division, and comprises three sentences. The conclusions of the first stanza and the first sentence coincide, as do the ends of the third stanza and the third sentence. The second sentence, however, ends unexpectedly after the fourth line in the second stanza, so that the third sentence and the meaning run across the break between the second and third stanzas. The break between the second and third stanzas is both visual and symbolic as it marks a transition in the poem's content. The run-on line at the end of the second stanza leads the poem forward into the repetitive lines that each begin with "where". The repeated "where"s in turn propel the poem forward to the last line of the poem: once again it runs on from the previous line, the repetition of "where" is abandoned, and there is a mid-line break. The breaking of these established or implied structures focus the reader's attention on the last four words, which are the most personal in the poem: "and you love me".

The poem opens with an insomniac contemplating the reflection of the moon in her bureau mirror. To the speaker, the moon's image has an independent personality. She describes how it "looks out a million miles", suggesting perhaps that the reflection in the mirror is looking back to the body from which it appears to be detached. The speaker projects herself onto the moon's image by referring to it in female terms. In a parenthetical comment the insomniac moves from describing the moon's image to speculating about the moon's 'feelings'. She personifies the image as being self-possessed and controlled (proud of herself, but she "never, never smiles"). After the parentheses the speaker suggests that the moon's image is either "beyond sleep" or a "daytime sleeper", thereby extending the moon's purported self-control to her sleep patterns. Although the sleeping habits of the moon's image are similar to those of the insomniac, the speaker's admiring tone in this stanza implies that she lacks the image's other projected qualities, like detachment and self-possession.

In the second sentence the speaker becomes more emotionally intense and her tone becomes more personal. The dense repetition of the stop-plosive consonants [d] and [t], and the shorter phrases set off by commas create increased rhythmic activity, which connotes the more agitated emotional tone of the speaker. She asserts that the moon's image has been "deserted", and implies that she too has been abandoned in some way. However, the reflected moon differs from the poet since, when deserted by "the Universe", "she'd tell it to go to hell" (Bishop's emphasis). The reaction of the moon's image to desertion is to reject that which deserted her and seek a place of peaceful contemplation ("a body of water, or a mirror on which to dwell"). In contrast, the speaker's response to desertion is a state of emotional upset and disrupted sleep patterns. The speaker clearly finds attractive the reflected moon's freedom to be independent and to move to another plane of abode. She, too, would like to be detached from her universe.

The second half of the poem, one long sentence, is written in the imperative, but it is unclear initially whether the poet is talking to herself or to the moon's image. The emotional intensity of the speaker diminishes as she suggests to herself/the moon to make care something of the past, to "wrap up care in a cobweb". As she suggests how to dispose of care ("drop it down the well"), she also introduces the concept of world which exists in the reflective water of the well. The rest of the poem, comprising the third stanza, is devoted to describing the conditions of this inverted (and more desirable) Universe. The repeated "where"s draw the reader through the descriptions, which become increasingly personal. It becomes apparent that this world is one that the speaker wishes to be immersed in because it imitates a state detached from reality that is similar to that of the reflected moon.

First the speaker describes how physical states are inverted, "left is always right" and shadows are "the body". Then her tone becomes more intimate and she describes how "we stay awake all night", the "we" presumably referring to humanity. The nocturnal sleeplessness of the moon's image, which was mentioned in the first stanza, is the norm in this world. She, the insomniac, already belongs in some ways to the inverted world as she is unable to sleep at night. The second-to-last line runs on to the last line, and draws connections between images that were presented earlier in the poem. The "shallow" heavens contrast with the "a million miles" through which the moon's image gazes, the "heavens" are the opposite of the "hell" to which the reflected moon banished "the Universe", and there is also a contrast between the relatively shallow water of the well and the depth of the sea. The run-on line accelerates the poetic rhythm to the last four words, and the breaking of the structures that have been set up or implied in the rest of the poem focus the reader's attention on these words. The final condition of the inverted world, "and you love me", has a plaintive tone, rather than a climactic one. The implied lack of love in the speaker's real Universe explains the speaker's insomnia, her emotionally upset tone and her desire for an inverted world.

'Insomnia' expresses all three of the themes that Carter is concerned with in this work: love, isolation and nature. Isolation is apparent from the beginning of the poem in the lonely figure of the insomniac contemplating the moon's image. The image of the moon, too, is isolated in a sense, as it is detached from the reality of its physical body. We become aware of the theme of unrequited love in the second stanza, although it is only made explicit in the last line of the poem. Images of nature, particularly those of water, recur throughout 'Insomnia'. The first reference is general ("a body of water"), while the others are more specific. The water image is implied in the reference to "the well", and the shallowness of the well-water contrasts with the "sea" which is "now deep". A connection is drawn between reflective qualities of water and glass ("body of water, or a mirror"), so that the mirror becomes an image of water too. The theme of real and reflected images is extended in the reference to "the shadows" and "the body": the earth also acts as a reflector when a shadow is cast on it. The concepts of reflection and inversion are closely connected and the poem is filled with inversions, and opposites, particularly in the third stanza, as was discussed above.

'INSOMNIA': MUSIC

Formally, Carter follows the sentence structure rather than the stanzaic one, as he does with other songs in the cycle. The tripartite division takes the form of two *tranquillo* sections, corresponding to the first and third sentences, which flank a section of increased rhythmic intensity with the expressive indication 'dramatic'. The first section is the longest, comprising fifteen measures, and including a three-measure instrumental prelude and a two-and-a-half measure instrumental interlude that leads into the second section. The second section is very short in duration; it is only four measures long and two of these proceed *quasi accelerando*. The third section follows without an instrumental break and is fourteen measures long. The sections thus form a rough (and unbalanced) symmetry based

on sectional lengths and expressive indications. After a discussion of the most important streams in 'Insomnia' and their symbolic associations, we will analyze 'Insomnia', focussing on the large- and small-scale formal structure, as well as on Carter's setting of the text.

Streams

'Insomnia' is scored for only four instruments and the voice. The textural clarity that results from this limited registral density is intensified by the division of the texture into three distinct concurrent streams: the vocal stream and two instrumental streams. Each of these instrumental streams is defined precisely by its properties and behaviours, which are established in the opening three-measure instrumental prelude. The events in the marimba and the viola combine in a stream that is defined primarily by the pitch parity between the events. Specifically, the marimba/viola stream features two recurring pitch events, B3 and B4, which are often placed together with one other pitch to form a referential dyad. For example, B4 is paired with E5 in mm.1 - 6.¹ Although the registral placement of the marimba and viola events is relatively high in their individual sounding ranges, their placement in comparison to the other simultaneous instrumental events is low. Thus the marimba/viola stream is defined by the registral placement of its events, which are placed in the lower end of the sounding range. The stream is also defined by the close registral proximity of the other events. The attack density of the stream is high since the events are grouped into fast *tremolo*-type gestures which proceed intermittently. The characteristic timbre of the stream is created in part by the articulation instructions, which indicate that the marimba is to be played with medium-hard sticks, and the viola without mutes and *sul ponticello*. The dynamic intensity of the events is low.

¹ Later the pitch events B4 and D#5 occur together in mm.15 - 18, and both the marimba and viola close with repeated B3 pitch events.

A *crescendo* to *mf* in the marimba/viola stream in the second measure precedes, and highlights, the entry of the other instrumental stream. This second instrumental stream comprises the events in the piccolo and the violin. Many of the properties and behaviours of these events contrast with those of the events in the marimba/viola stream and help to make the two streams distinct. The piccolo/violin stream is defined primarily by the timbral parity between the events, which was discussed in **Example 4** on page 37. Like the events that comprise the marimba/viola stream, the events in the piccolo/violin stream are placed in close registral proximity to each other, and high in their individual registral ranges. However, unlike those of the marimba/viola stream, these events occur in the upper end of the total sounding registral range. Although there is not a total pitch parity between the piccolo and the violin events, the piccolo/violin stream is characterized by recurring pitch events. C#7/Db7 occurs repeatedly and is often accompanied by the simultaneous sounding of the pitch-class event F#3/Gb (registrally variable), thus forming another significant dyad. For example see m.2 (C#7 in piccolo, F#6 in violin), and m.6 (Db7 in piccolo, Gb6 in violin). The attack density of the piccolo/violin stream is low since each instrument plays sustained pitch events. The rhythmic character of the stream is further defined by a cross-pulse between the piccolo and violin events, discussed in **Example 26** on page 76. They proceed in the rhythmic cross-pulse 84:85, that is the attack points of the violin events occur every 14th quintuplet sixteenth-note and those of the piccolo events occur every 17th sextuplet sixteenth-note. The events in the piccolo/violin stream occur at consistently low levels of dynamic intensity.

Both instrumental streams play symbolic roles in 'Insomnia'. The characteristic properties and behaviours of the events in each stream connote particular images in the poem. In the table in **Example 44** (overleaf) we can see that the piccolo/violin stream symbolizes the persona of the serene moon's image that is being observed by the speaker, while the marimba/viola stream represents the persona of the agitated insomniac (the speaker).

Example 44: 'Insomnia'

	registral placement	attack density	timbre/ articulation
picc/vln	high	low, sustained pitches	vln: muted, bowed picc: <i>legato</i>
moon's image	sky, heavenly	calm	smooth, serene
mar/vla	low	high	vla: unmuted, <i>sul ponticello</i> mar: med-hard sticks
speaker	earthly, lowly	agitated	sharp, excited

The two personae are created by the non-musical associations of the properties and behaviours of each of the stream events, while the opposition between the properties and behaviours of the events in each stream emphasizes the contrast between the personae. The high registral placement of the piccolo/violin stream signifies the height from which the celestial moon's image is projected and to where she "looks out", while the lower registral placement of the marimba/viola stream is associated with the speaker's placement on the earth below. The continuous rhythmic cross-pulse between the events in the piccolo/violin stream suggest the characteristic of consistency (attributed to the moon's image by the speaker), while the low attack density of the sustained pitch events connote calmness. In contrast, the intermittent, dense gestures of the marimba/viola stream suggest the agitated and uncontrolled state of the insomniac's mind. In future references the piccolo/violin stream and the marimba/viola stream will be referred to as the 'moon' stream¹ and the 'insomniac' stream respectively. In addition to signifying these personae, the streams

¹ Although the piccolo/violin stream represents the moon's image, it will be referred to as the 'moon' stream because the phrase 'moon's image' stream is too cumbersome.

undergo processes that often have symbolic functions (as well as musical functions), as will be discussed later.

The correspondence between an individual stream and a particular poetic image established by the non-musical connotations of that stream's properties and behaviours, is supported by the textural prominence of that stream when that image is being described in the text.¹ For example, in mm.9-13, when the singer describes how the moon is "beyond sleep", the 'moon' stream comes to the fore and the 'insomniac' stream drops out.

The voice enters in m.4, after the properties and behaviours of the instrumental streams have been established, and its text gradually makes explicit their symbolic roles. The defining properties and behaviours of the events in the vocal stream are distinct from those of the 'moon' and 'insomniac' streams in most respects. The registral placement of vocal events is low in the soprano's range (only one pitch event is higher than C5 in the first section), and the lowest in the total sounding range.² The stream is also defined by its medium attack density relative to the two instrumental streams. The pitch content of the vocal stream is organized by two recurring pitch-class-set types, the tetrachords [0125] and [0347]. The complex pitch relationships of these repeating, and often interlocking, tetrachords are not obvious, but the surface manifestation of this invariance is the melodic predominance of two interval classes. The stream is defined by the repeated statements of interval classes 3 and 4, which occur between adjacent pitch events. The dynamic intensity, like that of the 'moon' and 'insomniac' streams, is very low, although there is somewhat

¹ 'Insomnia' is similar to 'Sandpiper' in this regard, although this compositional procedure is followed more consistently in 'Sandpiper'.

² There is some pitch parity between the vocal events and the events in the viola, for example in mm.6-8, but the lack of parity between them in the other properties and behaviours dissociates the events from each other.

more gradation of dynamic intensity, in the form of *crescendi* and *decrescendi*, in the vocal stream.

Form and Text-setting

One of the most striking moments in 'Insomnia' takes place in the middle of the song, where the contrasting second section occurs. Not only does this section contrast in tempo, expression and stream behaviours from the surrounding sections, but there is also a musical climax, which corresponds to the increased emotional intensification in the text. This climactic section will be discussed first, in terms of the processes and behaviours that articulate the sectional break between the first and second sections, and, second, in terms of the properties and behaviours that characterize the streams in the central section and how they function climactically, and, thirdly, in terms of the changes in properties and behaviours that articulate the sectional break between the second and third sections.

The instrumental interlude in mm.13-15 closes the first section and also prepares the listener for the dramatic central section.¹ Processes and behaviours of intensification and diminishment take place simultaneously to achieve a cadential effect. The registral placement of the events in the 'moon' stream becomes progressively lower, and the stream ceases at the beginning of m.15, which results in a diminishment of overall registral density and attack density. The registral placement of the events in the 'insomniac' stream intensifies significantly to the highest marimba pitch event in m.14 (E6), and the stream exhibits *crescendo* behaviour. After this, a marked diminishment in the registral placement of the marimba events takes place, while the viola is silent. The overall diminishments of registral placement, registral density and attack density that occur from m.14 to the beginning of m.15 create a sense of closure that signifies the end of the first section.

¹ This interlude was discussed in connection with **Example 40** on page 112.

However, during m.15 other events and processes take place to counteract this effect. The viola has a single *sforzando* dyadic pitch event (articulated *normale* instead of *sul ponticello*). This forceful and dramatic event is accompanied by the continued intensification of dynamic intensity and diminishment of registral placement in the marimba events. These processes oppose the closure by creating a sense of continuity and by setting up the listener's expectation of further changes.

The listener's expectations are fulfilled in m.16 when the second section opens with the vocal stream proceeding unaccompanied for that measure. The vocal events intensify in attack density, dynamic intensity and registral placement, climaxing with the highest and loudest pitch events in m.17. After this peak of musical intensity, behaviours and processes of diminishment take place in the registral placement and dynamic intensity of the vocal stream, creating a sense of resolution. The intensifications leading to a climax function symbolically here, as well as musically. Intensification in mm.16-17 occurs when the speaker's tone becomes more personal and emotionally distraught as she describes how she and the moon's image have both been "deserted". The climax of these processes occur on the phrase "*she'd* tell it [the Universe] to go to hell", in which the speaker projects the image's response to rejection. Clearly the speaker wishes that her own responses could be that decisive and so the words are highly charged emotionally. After the climactic line, the insomniac's emotional intensity declines as she proposes a solution of personal reflection, finding "a mirror, on which to dwell". Correspondingly, the processes of diminishment symbolize her feelings of resolution.

The instrumental streams, once they reenter in m.17, exhibit some changes in this brief section. Most significantly the 'moon' stream is absent and the 'insomniac' stream, comprising the agitated marimba and viola events, dominates the texture. The absence of the 'moon' stream has symbolic importance, since the speaker, although she is talking

about the moon's image, is really expressing her own feelings in a moment of implied self-assertion. Thus it is appropriate for the 'insomniac' stream to engage the listener's attention. Some of the behavioural patterns that were established in the instrumental interlude of mm.13-15 continue. For example, events in the 'insomniac' stream are loud, which compensates for the lower overall registral density. Within the 'insomniac' stream the marimba events continue to be focussed on, particularly in mm.18-19 when they undergo an intensification of registral placement and a *descrescendo*. In m.18, just after the climactic vocal events, the viola is dissociated briefly from the 'insomniac' stream and fuses with the violin (now unmuted). They articulate single accented dyadic pitch events that overlap temporally, and that are reminiscent of the viola dyadic pitch event in m.15. The punctuating string dyadic events contribute to the musical climax that is taking place and, since they occur in close temporal proximity to the start of the marimba gesture, help to accentuate the initiation of the *diminuendo* and the rise in registral placement. As the solo marimba gesture concludes in m.19 with high *ppp* repeated pitch events, a sense of closure is achieved even though the vocal phrase continues for the rest of that measure.

The start of the third section is not as clearly delineated as that of the second and there is some overlapping of material between the two sections. While the last vocal phrase of the second section is still in progress, the 'moon' stream reenters (mid-m.19) with its characteristic high sustained piccolo and violin events. Because the piccolo timbre has been absent since the end of the first section, the reinstatement of piccolo events creates a sense of recapitulation. Starting at the end of m.19 the vocal stream resumes its previous behaviours. It proceeds *tranquillo* and the attack density of the events is lower. The other typical behaviours of the vocal events, namely the lower registral placement and low dynamic intensity, have already been anticipated in the processes of diminishment that take place in mm.18-19. One of the most significant changes that occurs across the structural break is the cessation of the 'insomniac' stream, but, since the stream proceeds

intermittently, this is not immediately perceptible. The reasons for the absence of the 'insomniac' stream become apparent in the next measures and will be discussed later. The sense of recollection that results from the reinstatement of the piccolo events and the resumption of earlier behaviours in the vocal stream is appropriate to the text here. At the start of this section the speaker resumes the contemplative tone that she had before the climactic middle section.

In the above discussion it was shown how Carter uses textural processes to articulate large-scale structural divisions in 'Insomnia' and to differentiate between sections. Textural processes are also used in smaller-scale structural delineation, particularly in the articulation of phrases in the text. As in the case above, these processes often have symbolic as well as musical functions. A focussing process, whereby a referential pitch event is stated prominently, is used to signify the beginning and end of structural subsections throughout the song.¹ The pitch event C#7/Db7 occurs in the 'moon' stream, usually as a piccolo event, and is made prominent by its extremely high registral placement and the resulting distinctive timbre. It is stated first in m.2 as the opening piccolo pitch event, and then functions to articulate the next three two-line text phrases. This referential pitch event occurs at the end of m.3 (violin) at the start of first line of text, in m.6 (piccolo) preceding the parenthetical remark,² and m.10 (piccolo) at the start of the next two-line phrase. The next statement of the referential pitch event takes place in m.19 (piccolo) at the start of the third sentence (and third section). Finally, in mm.31-32 a piccolo C#7 pitch event coincides with the end of the phrase that precedes the last four words of the poem, whose importance was discussed earlier. In order to understand the structural significance of this recurring pitch event, one must realize that these are the only occurrences of this pitch event in the

¹ This focussing process was discussed in connection with **Example 32** on page 93.

² While the piccolo Db7 does not immediately precede the parenthetical remark, its placement is nevertheless between the end of the previous textual phrase and the onset of this remark.

song. Their formal importance arises from the fact that none of them occur in the middle of textual phrases; rather, all of them function to articulate the beginnings or ends of phrases.

In the first section of the song each of the three two-line phrases is set apart from the others by a number of stream processes, as well as by the brief focussing on the referential pitch event discussed above. During the first phrase the stream properties and behaviours that were established in the opening prelude are continued. Then, at the start of the second (parenthetical) phrase, m.7, the composite registral density and attack density diminish suddenly as the 'moon' stream ceases. This lasts for the duration of the phrase until m.9, and the reduced texture helps to set the parenthetical remark apart from the music that precedes and follows it.¹

In the third two-line phrase, mid-m.9 to m.13, a compensatory process occurs whereby the 'insomniac' stream ceases and the registral density of the 'moon' stream intensifies as it undergoes a timbral transformation to include the viola events. In contrast to the previous high attack density of the 'insomniac' stream, sustained dyadic pitch events in the viola now imitate the sustained pitch events in the 'moon' stream, proceeding continuously without participating in the cross-pulse. The viola events also undergo a timbral transformation and proceed *sul tasto* and muted, which results in a greater degree of timbral parity between the viola and violin events. Although there is no change in the low registral placement of the viola events, the parity of rhythmic behaviours between all of the events associates them into a single stream. The vocal stream in mm.10-11 undergoes an emulation process by emulating the properties and behaviours of the 'moon' stream; there is a high degree of pitch parity between the vocal and viola events, and the attack density of

¹ The pc content of the vocal stream in the parenthetical phrase also helps to distinguish this second phrase from the preceding phrase. After presenting six pc's in the first phrase, the vocal stream presents all of the complementary six pc's in the second phrase except for pc 9; only two pc's (pc's 6 and 7) are held in common between the two phrases.

the vocal stream diminishes abruptly to resemble that of the 'moon' stream. The voice nevertheless retains its distinction as a separate stream because of the words, and the vocal events are dissociated again from the 'moon' stream in m.12 when the attack density intensifies. These processes of timbral transformation, and the changes in the vocal stream, create an area of textural variety to delineate the last two-line phrase of the first stanza, and also play a symbolic role. They take place when the speaker is speculating about the sleeping patterns of the moon's image, describing how she is "far and away beyond sleep". The absence of the agitated *tremolo* rhythmic gestures of the 'insomniac' stream in favour of the registrally denser 'moon' stream, helps to emphasize the detachment and the imagined serenity of the moon's image, who does not have the insomniac's sleeping problems. The association of the viola events (previously part of the 'insomniac' stream) and, to a lesser degree, of the vocal stream (the voice of the insomniac) with the 'moon' stream symbolizes the speaker's desire to emulate the moon's projected qualities.

In the third section of 'Insomnia' similar processes take place to delineate a longer, two-and-a-half-line, textual unit. This time the timbrally transformed texture sets apart the last two phrases that begin with the word "where" and that describe the conditions of the inverted world, mm.26-31. Once again the viola events participate in the 'moon' stream, proceeding with sustained pitch events, and the 'insomniac' stream is absent. Although the same pitch parity exists between the voice and viola events, the vocal stream's emulation of the 'moon' stream's attack density behaviour takes place more gradually this time since the attack density of the vocal stream diminishes gradually, rather than abruptly. The voice remains distinct from the 'moon' stream because of its timbral distinction and because, after *crescendo* behaviour in m.27, the vocal stream is appreciably louder than the 'moon' stream. The textural changes in mm.26-31 play a similar symbolic role to the one in mm.9-13 by emphasizing the persona of the moon's image. As before, the changes involving the viola and voice (formerly associated with the insomniac) symbolize the insomniac's wish to

emulate the moon, by inhabiting the inverted world in which she imagines the moon dwells. The speaker is concerned with the same theme of sleep patterns as before ("we stay awake all night") and, indirectly, with the moon (she refers to the moon's location, "the heavens"). In retrospect the inverted world she is describing here is anticipated musically (and textually) by the textural changes in mm.9-13.

The two areas of textural change that precede m.26 delineate two textual subsections as well as having important symbolic functions by depicting images in the text. The first of these subsections starts at the end of m.19 and lasts until the beginning of m.23, and corresponds to the first three-line phrase of the third section (following the climax). Some of the established behaviours, like those of the 'moon' stream, initially proceed unchanged, but then are gradually corrupted. For example, in m.21 the piccolo events split from the 'moon' stream and articulate a *tremolo* gesture reminiscent of the 'insomniac' stream in attack density, and in m.22 the 'moon' stream is reduced to a single sustained violin pitch which deviates from the cross-pulse. There is a new marimba stream comprising isolated *staccato* pitch events that undergo a diminishment of registral placement in mm.20-22, and a diminishment of attack density as of mid-m.21. The 'insomniac' stream is not initially apparent, although it is alluded to by the piccolo gesture in m.21 and then by a *tremolo* viola gesture in m.22, which occurs muted. In mm.21-22 the vocal events also diminish in registral placement, and emulate the *staccato* articulation of the marimba events. The most important symbolic function of these various, and somewhat confusing, processes is to represent the elimination of care and to depict the image of descent into the well.¹ The speaker wishes to "wrap up care in a cobweb" and so the 'insomniac' stream, whose behaviours connote the speaker's upset state of mind, is de-emphasized and receives minimal representation in the two unobtrusive *tremolo* gestures. The image of care being

¹ The symbolic functions of the processes in this passage, and in mm.23-25, were discussed in Example 36 on page 103.

dropped into the well is connoted by the descending marimba and vocal events, whose *staccato* articulation helps to focus the listener's attention on them. The other changes that occur, for example in the 'moon' stream, anticipate the subversion of defining behaviours that characterizes the next subsection.

The second textual unit of the third section comprises the first two lines that begin with "where" and that describe the inverted world of the speaker's imagination. Some of the textural changes that occur in this subsection, mm.23-25 (with some pitch events overlapping into m.26), are continuations of the processes that occurred in the previous measures. For example, the registral placement of the marimba events continues to diminish in m.23. These marimba events now group into the *tremolo* gestures associated with the 'insomniac' stream, but their registral placement and dynamic intensity are so low (they are played with soft sticks and *ppp*), that they are sound like sustained pitches, and fuse with the 'moon' stream. The 'moon' stream is defined by most of the same properties and behaviours as before, but it transforms timbrally and now comprises the events in the viola (instead of piccolo) and the violin, as well as the marimba. While the 'moon' stream is still defined predominantly by sustained pitch events, the timbre of the cross pulse articulated by these events changes. The viola events adopt the previous rhythmic pattern of the violin events (as well as the registral placement and articulation), and the violin events conform to the former pattern of the piccolo events. There is some overlapping of material between this subsection and the one that follows it, for example the piccolo events resume in mid-m.25 in anticipation of the next subsection, and the marimba events continue into m.26. The textural changes that take place in mm.23-25 symbolize the inverted world by subverting the established order of behaviours. Although the specific role changes effecting the 'inversion' may not be obvious to the listener, one is aware that the established

instrumental characters have been transformed in some way.¹ As in the previous subsection, the low profile of the 'insomniac' stream is representative of the near-absence of anxiety and care in the speaker's imagined perfect world. The association of the viola and marimba events, previously associated with the 'insomniac' stream, with the 'moon' stream also suggests a union of the two personae.

The final significant textural change in the song occur in the last two measures and corresponds to the last four words of the poem in which the speaker reveals her greatest desire, "and you love me". After the timbral transformation (which was discussed earlier) ends in m.31, the original 'moon' and 'insomniac' streams reemerge. They proceed with their original properties and behaviours (marimba is played with medium-hard sticks again), excepting that the marimba and viola events are now lower in their registral ranges. A *crescendo* occurs in the 'moon' and 'insomniac' streams in m.32, with the focus being on the *crescendi* in the marimba and viola gestures, while the voice sustains a pitch event from the previous subsection. The prominent 'insomniac' gestures here represent the 'insomniac's return to the (harsh) reality of her situation (she feels unloved by her partner) after her more abstract musings about the inverted world. The gestures also symbolize, in anticipation, the emotional intensity of the speaker's final words. The intensification process is followed immediately by *decrescendo* behaviour in the instrumental streams, and the vocal stream articulates its last four pitch events. The attack density of the vocal stream is maintained from the previous subsection (where the stream underwent a diminishment of attack density) and so is low, and in m.33 there is a diminishment of registral placement in the vocal stream and the 'moon' stream. The descending registral placement of the vocal events, and the stream's low attack density and softness (*mp-pp*) function cadentially to

¹ Inversion is more obviously depicted in the vocal stream through pitch inversion. Carter sets words describing aspects of the inverted world with inverted pitch intervals. For example, "left" is set to A4-F4 and "right" to F4-A4, "shadows" is set to G4-B4 and "body" to B4-G4. The pitch inversion occurring on the words "left" and "right" is part of a larger palindromic structure which extends from the G#4 in m.23 ("where") to the G#4 in m.24 ("where").

create closure. This sense of resolution does not, however, detract from the intensity of the last four words. They remain prominent because of their emotional meaning, which is stressed by the emphasis on the word "love", and because they have been set up by the processes that precede them.

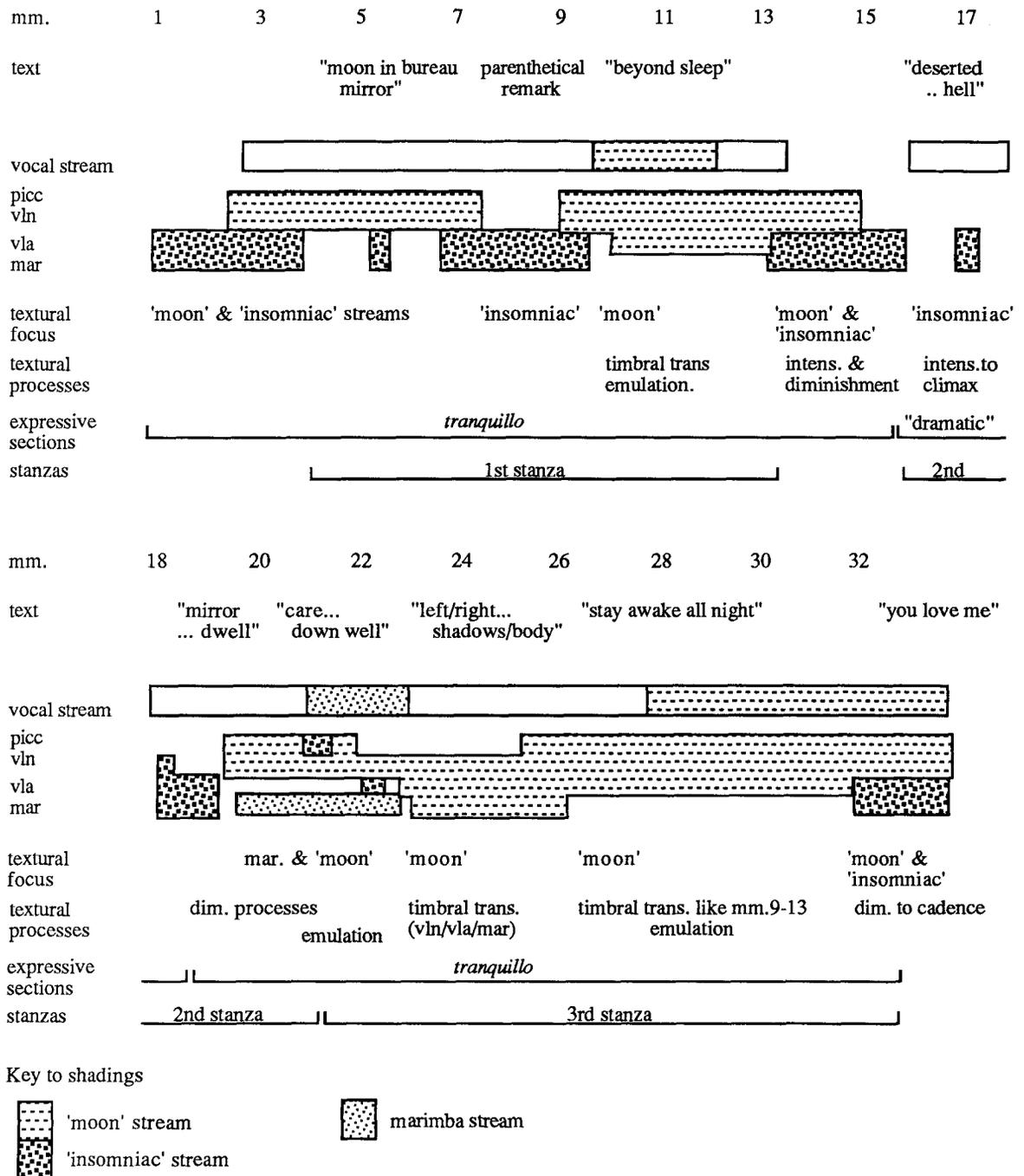
Conclusion

In summary, although 'Insomnia' can be divided into three broad sections based on tempo and expressive markings, there are many smaller subsections of textural variety within these divisions. Carter uses textural changes structurally in order to delineate phrases and textual units in the poem. Because the two predominant instrumental streams play perceptible symbolic roles, these changes often have symbolic functions too. The song can be divided then into several subsections. Each subsection is characterized by one or more textural process, some of which occur gradually, and others more abruptly. When the textural changes occur abruptly at the beginning of a subsection, an area with a particular textural sound is created which endures until the next significant changes occur. When the changes occur more gradually over the duration of the subsection, the resulting texture is in a state of flux and is more unstable. A brief overview of the kind of textural processes that characterize these subsections reconfirms the broad tripartite structure of the song: relatively stable textural subsections surround an area of greater change and instability.

A summary discussion of the subsections in 'Insomnia' is accompanied by a diagram, shown in **Example 45** overleaf,¹ which graphs the textural streams and processes in the song.

¹ The measure numbers delineating the subsections are somewhat approximate since many of the sectional breaks are deliberately obscured by the overlapping of material in order to ensure musical continuity.

Example 45: 'Insomnia'



In the opening instrumental prelude, mm.1-3, the properties and behaviours of the events comprising the 'moon' and the 'insomniac' streams are established. The first vocal subsection, mm.4-7, corresponds to the first two-line phrase of the poem and the

instrumental streams proceed as before. In the next subsection, the parenthetical two-line phrase (mm.7-9), the 'moon' stream is absent and the 'insomniac' and vocal streams proceed unchanged. The fourth subsection, corresponding to the third two-line phrase, is characterized by a more dramatic compensation as the 'insomniac' stream drops out, timbral transformation occurs in the 'moon' stream, and the vocal stream undergoes an emulation process. However, once the transformation has occurred, it is relatively stable texturally. In contrast, the processes and behaviours of intensification and diminishment that take place concurrently in the 'moon' and 'insomniac' streams of the instrumental interlude of mm.13-15 create an area of instability. These changes function cadentially as well as anticipating the climactic section that follows. The next subsection is clearly separate from the preceding one, and corresponds to the middle section of the large-scale division and to the four lines of increased emotional intensity at the start of the second stanza of the poem. The various textural processes that occur here build to a climax of musical intensity, before diminishing in m.19. The textural changes that take place in the first subsection following the climax, mm.19-22, are both abrupt and gradual. The 'moon' stream resumes as before, but the 'insomniac' stream is unstable and a new marimba stream is defined by a process of diminishment and is emulated by the vocal stream. The next subsection corresponds to the first two lines describing the inverted world, mm.23-26. Textural changes occur at the onset of the section and then the streams proceed unchanged until the next two-line phrase. This subsection is also relatively stable and is characterized by the same kinds of timbral transformation and emulation that took place earlier in mm.9-13. In the final subsection, corresponding to the last four-word phrase of the poem, the original properties and behaviours of the 'moon' and 'insomniac' streams resume and proceed with only minor changes to the end of the song.

The tripartite structure of subsections typified by abrupt and gradual textural processes which create areas of textural stability and fluctuation, corresponds to the emotional scheme

of the poem. The speaker moves from objective contemplation/speculation, to increased emotional intensity and agitation, to the resigned contemplation of an imaginary world. Carter's use of textural processes thus permeates all aspects of the song's construction -- the large-scale structures, the delineation of subsections that correspond to textual units, and the symbolic representation of personae and actions in the text.

'ARGUMENT'

Now that we have examined some of the textural processes in 'Insomnia', and seen how they correspond to the text, let us apply the same analytical method to a longer song, namely the second in the cycle, 'Argument'.

TEXT

The poem 'Argument' has the most straightforward formal structure of all the poems in the song cycle. It is composed of four stanzas, and each stanza is complete in its form and meaning, unlike the stanzas of other poems like 'Sandpiper' and 'Insomnia' where the syntactic content does not always conform to the stanzaic structure. Each of the stanzas comprises seven lines of variable length. The seventh line is the longest, and contains six stresses in all but that of the second stanza. This line has only five stresses, which intensifies the rhythm created by the repeated phrase "all the way". The other lines have an irregular sequence of two or four stresses per line. The exception to this occurs in the last stanza where lines of odd-numbered stresses create a rhythmic inconsistency that symbolizes the "disarray" mentioned there. In the final line the original metric order is reestablished (six stresses) and a sense of resolution is reached.

The stanzas have several other formal features in common besides the pattern of stresses. For example, each stanza comprises a complete sentence. In the first and third stanzas the phrases that form the sentence are separated by commas. The second stanza deviates slightly from this norm: the first phrase of this stanza is separated from the others by a semi-colon and the sentence ultimately takes the form of a question. The poetic rhyme scheme has elements of regularity and irregularity. While the ends of the first and seventh lines of each stanza rhyme or nearly rhyme, the end-line rhyme scheme within each stanza varies. Once again the second stanza is somewhat different: the first line ends with "land"

and the seventh with "end". This kind of near-rhyme occurs frequently throughout the poem, giving it a sense of formal patterning and unity while retaining semantic freedom. Other examples include "not" and "obstinate" in the first stanza, and "instruments" and "experience" in the third. The end-line rhyme scheme of 'Argument' is detailed below; letters with superscripts indicate near-rhyme:

Stanza 1: a b a b¹ c c a
Stanza 2: d e f d g h d¹
Stanza 3: i j k j¹ l l¹ i
Stanza 4: m n m¹ o p q m

The regular rhyming of the first and last line in each stanza creates closure and emphasizes the stanzaic scheme of stanzas as structural units.

Certain words, phrases and phonemes are repeated in 'Argument', usually for emphasis. Each stanza contains one or both of the words "Days" and "Distance", which are capitalized in each occurrence. They are introduced in the first stanza, occurring at the beginning of the first and third lines respectively. The two words then occur as the opening words of the next two stanzas, "Distance" in the second and "Days" in the third stanza. In the fourth stanza "Days" and "Distance" are coupled again. These two words obviously have thematic importance too, and will be discussed later in the section devoted to the poetic content of 'Argument'. The stop-plosive consonant [d], the phoneme that starts both "Days" and "Distance", is also reiterated at the beginning of other words. It occurs in the last word of the first stanza, "dear", and then repeatedly in the second stanza (although not always at the start of the word), "dim", "deep", "sand" and "indistinguishably". In the last stanza [d] occurs together with the other voiced stop-plosive consonants [b] and [g] in the last three lines:

Days and Distance disarrayed again
and gone
both for good and from the gentle battleground.

The increased density of stop-plosive consonants gives the speaker an emphatic tone which enhances the sense of resolve that she reaches in the last words of the poem. Other stop-plosive consonants recur in other areas of the poem. For example, in the third stanza [k] is repeated in the words "cluttered", "fact", "canceling", "calendar" and "Compliments". This consonant, like the other stop-plosives, serves to punctuate the rhythmic flow and to connote the emphatic tone of the speaker.

Other examples of the repetition of words and phrases include the thrice reiterated word "argue" in the first stanza, which emphasizes the incessant quality of the conflict which the speaker is describing (it continues "endlessly"). In the second stanza the phrase "all the way" is repeated, occurring first in the sixth line and then at the start of the seventh. Here the phrase connects two images, one physical and the other psychological. The physical stretch of beaches lead "all the way" to the speaker's psychological limits, rather than to a geographical landmark. The repeated phrase provides a transition between these two images.

The syntactic content of 'Argument' corresponds to the stanzaic division and, like the formal structure, is relatively clear. Within each stanza the lines group into syntactic units, and the syllabic scheme, created by counting the syllables in each unit, forms a relatively regular structure. In each stanza three two-line syntactic units are followed by a single line, the seventh (and longest) line. The resultant syllabic scheme (in syntactic units) is:

Stanza 1: 10 14 11 11
Stanza 2: 12 10 11 9
Stanza 3: 11 14 11 11
Stanza 4: 11 13 11 11

This relatively regular scheme counterbalances the irregular pattern of line lengths, resulting in a more even rhythmic flow than the variable line lengths would suggest.¹

Each stanza of the poem is complete in its semantic content, and has a rhetorical function. The first stanza is introductory, then each of the second and third stanzas elaborates on one of the two topics introduced in the first stanza, and finally the last stanza draws together the images presented in the middle two stanzas. In the poem the speaker describes her relationship with her partner in terms of the days and distance that separate them. Days and distance are symbols of time and space, the two aspects of separation in our universe. The "Argument" of the title refers to the conflict not between lovers, but between the lovers' togetherness and those factors which keep them apart. The speaker's tone is angry and frustrated as a result of these unpleasant circumstances that seem beyond her control. During the poem she involves the reader directly in her personal conflict by referring to herself in the first person and to her lover as "you".

The factors of separation, "Days" and "Distance", capitalized in the poem because of their thematic importance, are introduced in the opening stanza.² The speaker attributes to them the human quality of will when she suggests that the days "will not" bring her partner near to her, and that distance is "trying" to appear something beyond "obstinate". She sees herself in direct conflict with these factors as they deliberately conspire against her so that she cannot be with her mate. The ongoing conflict between her and the factors of separation, emphasized in the repetition of "argue", is made to seem futile in the last line of

¹ The same kind of tension exists between line lengths and syntax in other poems too, for example, in 'O Breath'.

² The capitalization of the words Days and Distance introduces a note of self-mockery into the speaker's tone. It is reminiscent of the practice of capitalizing important nouns and adjectives on old circus posters (and in some novels) for melodramatic effect.

the first stanza when the speaker states that the factors do not diminish her loving feelings towards her partner.

The topic of the second stanza is stated right at the beginning with the opening word, "Distance", followed by a colon. The rest of the stanza is written in the present imperative so that the distance, which referred to the spatial separation between the speaker and her partner in the first stanza, also refers here to the distance they travelled in the past. Using the metaphor of a plane as a vessel of communication between them, she describes the land that separates them. The double meaning of distance is brought about by the kind of land that she describes, which evokes memories of summer beach vacations. The phrase "land beneath the plane" also alludes to the expression "water under the bridge" and reinforces the sense of an unalterable past. From one perspective the land is "dim" and unclear because it is being seen from the distant viewpoint of a plane. From the other perspective, the memories of past vacations are fading, which make the beaches "dim", "deep in sand", and "stretching indistinguishably". As the speaker describes these seemingly endless beaches, which reflect the endless arguing of the first stanza, she expresses her exasperation. The stretch of physical distance transforms into the emotional isolation she is feeling, and she appears to be at the end of her psychological tether, "all the way to where my reasons end". The image of a coastline, the border between land and sea, reflects the image of the speaker who sees herself on the border between sanity and insanity.¹ The sentence comprising the second stanza starts as if written in the imperative, but the question mark at the end makes it apparent that she is asking her partner (and the reader), "[Do] you remember...". This gives the words a more plaintive tone than is first apparent.

¹ The poem 'Sandpiper' also presents the image of a border between land and sea. The bird on the sand feels threatened by the ocean waves; for him, the coastline represents the border between safety and danger.

The third stanza is set up grammatically like the second, with the thematic topic of the stanza stated as the first word followed by a colon. It too is in the present imperative, and describes the days that alienate the speaker from her lover. She assigns to each "fact" from the past (which could mean each experience, activity or day) an "instrument", borrowing jargon of the financial and legal business worlds to enhance the impersonal quality of the past. The proliferation of past experiences results in a "cluttered" collection. Since they are so different and varied, the one experience cancels the other, leaving the speaker with nothing. During these descriptions she becomes increasingly agitated until she reaches an emotionally climactic moment where she describes the days as "like some hideous calendar" and quotes from it despairingly, "Compliments of Never and Forever, Inc.". In this image she reduces the days of the past with all their varied personal experiences to impersonal blocks on a calendar, while extending the business image by suggesting that it is a corporate calendar. The calendar is "hideous" because it negates the experiences that she has undergone and make the past seem pointless. The speaker is at her most despairing in this stanza; her past is negated ("Never") and she sees herself condemned to an infinite future of unhappiness ("Forever").

In the last stanza the speaker returns to the present, and her tone changes from anger and despair to one of resolve, and even optimism. While admitting that the factors of separation are "intimidating", she is determined that they "shall be vanquished". A sense of hope is expressed in her resolve to win the conflict with her opponents. In the next line the image of victory is modified into one of reconciliation when the speaker suggests that days and distance will be "disarrayed", rather than destroyed. She refers to the themes of both time and space when she states that they will be gone "for good" (referring to days and time) and "from the gentle battleground" (referring to land, distance and space). The use of the adjective "gentle" reminds the reader that this battle is a psychological one and that the battleground exists only in the speaker's mind, not in reality.

The theme of time pervades the poem in various forms. The speaker places herself in different times by describing events both in the present and in the past. The future and past tenses are mixed freely in the last stanza when she describes how her opponent "shall be vanquished". In her world past, present and future are not clearly separated. The past is still present for her, in her memories (the beaches that stretch indistinguishably) and in the ongoing nature of the argument ("argue with me endlessly"). Even the calendar promises to be hideously infinite ("Never and Forever"). The incessant quality of the argument (between the speaker and the factors of separation) is in part what causes her distress, and, in her resolve to win this conflict, she stresses that days and distance will be gone "for good".

'ARGUMENT': MUSIC

As with the other songs in the cycle, Carter makes the musical structure of 'Argument' conform to the semantic structure of the poem. He divides the song into four sections which, unlike many of the other songs, coincide with the four stanzas in the poem. Carter uses two textural devices in the demarcation of the structural sections, both involving abrupt changes of texture. The first device takes the form of instrumental interludes, which separate the first three sections of the song. During these interludes the properties and behaviours of the textural streams do not change significantly, but the absence of the vocal stream creates an overall change of texture that articulates the formal break. The first instrumental interlude occurs in mm.14-16 between the first and second stanzas, at the return to *a tempo*. Although there is a sustained vocal pitch event for most of the interlude, the lack of rhythmic activity in the voice focuses the listener's attention on the instrumental gestures. As well as functioning to separate musical sections, the instrumental interlude provides continuity in that a cello/bass gesture overlaps with the start of the second stanza in m.16. The second instrumental interlude occurs in mm.23-26, and marks the break

between the second and third stanzas. Once again an extended cello/bass gesture overlaps with the entrance of the vocal stream at the start of the third stanza, m.26, thereby providing a link between the two sections. The break between the third and fourth sections is articulated in a different way. As with the other structural breaks, there is an abrupt change of texture. However, this time there is no instrumental interlude, and the vocal stream continues uninterrupted except for a short quarter-note rest. Instead, a textural contrast is created at the start of m.34 when a new stream, comprising events with different properties and behaviours from those of the other streams, enters.

The overall form of the song is symmetrically balanced in some respects. An instrumental prelude precedes the first stanza and is matched by an instrumental postlude after the end of the fourth stanza. They are similar in length, being five and four measures long respectively. However, although the lengths of four poetic stanzas are identical, the lengths of the four corresponding musical sections are not. The first three sections are nine, eight and eight measures long, but the fourth is significantly longer, comprising fourteen measures. The reason for this imbalance will be discussed later in the analysis. First, however, let us examine the textural streams in 'Argument'.

Streams

Texturally, 'Argument', like 'Insomnia', is one of the most straightforward songs in the cycle, being characterized by clarity and consistency. The most important streams are established in the opening measures, and remain relatively unchanged during the song. The streams themselves are clearly distinguished from each other by their properties and behaviours, particularly by their timbral distinction. Four instrumental streams are established in the opening instrumental prelude. Each of these streams proceeds with intermittent gestures that do not overlap in the first five measures. The lack of concurrency between the different stream gestures, as well as the disparity between the properties and

behaviours of their events, helps to make each of them distinct and easily recognizable to the listener.

The song opens with wind and string events grouping into a gesture in m.1. The wind/string stream is defined by the attack point parity between the events, and by its low attack density relative to the other streams in close temporal proximity. The stream is also characterized by its high registral density (relative to the other streams). The winds/strings stream has a relatively high degree of timbral disparity between its events, a property that is compensated for by the parity in other properties and behaviours. Another stream, which does have the property of timbral parity between its events, enters in m.3. This stream comprises cello and bass events. It is defined in part by the low registral placement of its events, relative to the wider and higher registral range covered by events in the winds/strings stream. The cello/bass stream has a relatively high attack density, and its contour behaviour is characterized by fluctuation. A process of focussing also characterizes the cello/bass stream (the process recurs with each cello/bass gesture). The events in the bass have the playing instruction "bring out (solo)" and the expressive indication "dramatically". These indications, together with stress accents and relatively high dynamic levels, ensure that the listener's attention is focussed on low bass events for the duration of the gesture.

The other two streams that are introduced in the opening measures are the bongos stream, which enters in m.2, and the piano stream, m.3.¹ These two streams have some properties and behaviours in common and others that set them apart. Within each stream, the events

¹ In his analytical comments about 'Argument' ("Elliott Carter: *A Mirror on Which to Dwell* ['Argument']," in *Anthology of Twentieth-Century Music* [New York: W. W. Norton & Co., Inc., 1992]), Robert Morgan asserts that the bongos and piano are part of the same "textural layer" (314). I disagree, finding that the timbral dissimilarity between bongo and piano events distinguishes them into different continuities. In other general respects, however, Morgan's textural analysis of 'Argument' is similar to mine.

cohere because of their timbral parity and connection behaviour. The timbral distinction of the piano stream is reinforced by the registral placement of its events, which is low in the piano's sounding range. Both streams have similar pitch contour behaviour, that is, the gestures are characterized by repeated, randomly ascending and descending, fluctuating contours. They also have similarly high attack densities and regular pulse rhythms; these pulses are too fast to be perceived as such, but the regularity of the attack density is perceptible. However, despite the identity in rhythmic and pitch contour behaviours, the timbral disparity and lack of temporal concurrency between the gestures in the two streams dissociate them from each other. The piano and bongos streams are also not associated with the cello/bass stream (whose attack density is similarly high), since the cello/bass stream does not have a regular pulse, and rather plays *rubato* rhythms.¹

The important textural and symbolic roles that the piano and bongos streams play throughout the song are suggested in this opening instrumental prelude. Unlike the other streams, which have only one gesture each, the piano and bongos streams are made prominent by having two gestures each.² After the initial gestures in each stream, the prelude concludes with another gesture in the piano stream in mm.4-5, followed by one in the bongos stream. Furthermore, the streams are consistently associated with each other during the song through the recurring juxtaposition of the gestures. The two streams signify the elements of dispute that comprise the "Argument". The sense of agitated conflict is connoted by their high attack densities and fluctuating contour behaviours. The way that they proceed, with alternating gestures, suggests two "voices" that are arguing with each other. In the discussion above, the "argument" was interpreted as being between the

¹ The distinction between the piano stream and cello/bass stream was discussed in **Example 12** on page 54.

² The term gesture here refers to groups of events, in which the attack density is greater than zero, that are separated by silence during which the attack density is zero (for further clarification, see page 77 where this term is defined, and an excerpt from 'Argument' is discussed).

speaker and days/distance, the elements of separation. According to this interpretation, one stream would represent the persona of the speaker and the other would represent days and distance. Initially, the symbolism is not that literal and neither stream seems to be assigned such a specific role. Later in the song, however, the signification seems more specific; this theory will be elaborated upon in the analytic discussion dealing with the last section of the song.

Form and text-setting

In the first section of the song, corresponding to the first stanza, the instrumental streams that were established in the prelude continue relatively unchanged. Each stream comprises gestures that alternate, although not in any particular order. The vocal stream, which enters in m.6, has fluctuating pitch contour and fluctuating dynamic intensity behaviours similar to those of the piano and bongos streams. Here these behaviours connote the agitation of the speaker as she struggles with the conflict that she perceives. The vocal stream is also characterized by a relatively high attack density. Occasionally vocal events are made prominent by not conforming to the established attack density behaviour, in being sustained, for example, the G#4 pitch event in m.6 and the B4 event in m.8. These longer pitch events articulate the words "Days" and "Distance", the most important thematic words in the song. A pitch relationship between the vocal stream and the winds/strings stream becomes apparent once the voice has entered, that is, the two prominent vocal pitches, G#4 and B4, occur repeatedly in both streams. The pitch parity between these events, which tends to associate them, is not supported by similarities in other properties and behaviours. It would appear that these pitch repetitions occur in order to make the pitches prominent, and thereby to strengthen their thematic associations, rather than because of textural considerations.¹ The vocal stream represents the persona of the speaker in the poem, the

¹ One could hear these two pitches as tonal centres in the song. However, since this study is concerned with texture, in which tonal centricity plays a limited role, this issue will not be explored.

"me" with whom days and distance argue endlessly. As we will see later in the analysis, the processes that the vocal stream undergo reflect the emotional states that the speaker moves through.

Towards the end of the first section processes of diminishment take place to create closure. The overall attack density diminishes in mid-m.12. The winds/strings stream articulates long sustained pitch events, which are also marked *ritardando*. The events in the vocal stream are marked as "freely retarding", while simultaneously undergoing a strict rhythmic deceleration. The vocal pitch events are attacked at an ever increasing multiple of the triplet sixteenth-note, as can be seen in **Example 46**.

Example 46: 'Argument' mm.12-14 (vocal stream)

The image shows a musical score for a vocal stream. Above the staff is a 'pulse unit' diagram consisting of a series of notes with stems pointing up. The durations of these notes are labeled as 2, 2, 3, 3, 4, 4, 5, 6, 7, and 8. Below the staff, the lyrics are written: 'nei - ther prov - ing you less want - ed nor less dear.' The notes in the staff correspond to these lyrics, with some notes being beamed together in groups of three (triplets).

The change of expression in the vocal stream from *marcato* to *expressivo* also helps to achieve the effect of diminishing intensity. In m.13 the overall dynamic intensity decreases too with *decrescendi* in both streams. Simultaneously there is a diminishment of registral density in the winds/strings stream created by the staggered releases of the pitch events that comprise this stream. As a result of these diminishment processes the instrumental interlude that follows *a tempo* in mm.14-16 provides a contrast that helps to articulate the structural break.

During the second section subtle changes start to take place in the behaviours of the streams. These changes involve intensification processes, and foreshadow the climax that

occurs in the third section. The first change concerns the way that the instrumental streams are combined, and involves a new stream which splits from the winds/strings stream. This alto-flute/cello stream is defined primarily by the pitch coherence between the events and proceeds continuously with a sustained B⁴¹ in mm.17-22. Simultaneously, the gestures that comprise the established instrumental streams, while still proceeding intermittently, start to overlap temporally with the alto-flute/cello stream. This can be seen in mm.17-22, where the alto-flute/cello stream sounds concurrently with the piano stream (mm.17-18 and mm.19-20), the bongos stream (m.19 and mm.21-22) and the cello/bass stream (mm.20-22). In mm.21-22 the temporal overlapping is intensified when three instrumental streams overlap briefly; the alto-flute/cello stream, the bongos stream and the cello/bass stream all proceed simultaneously. The second change that takes place in this section involves an intensification in the lengths of the instrumental gestures, for example, the piano gestures in mm.17-18 and mm.19-20 are longer than earlier gestures.

Unlike the end of the first section, the end of the second section is not characterized by processes of diminishment that function cadentially. Instead, intensification processes function symbolically to represent the increased emotional intensity in the singer's last words, "all the way to where my reasons end". In m.22 there is a sudden increase in dynamic intensity: the events in the winds/strings stream occur *sforzando* and *forte*, and the vocal events undergo a *subito* change from *piano* to *forte*. The vocal stream also changes its behaviour from irregular *rubato* rhythms to a strict triplet eighth-note pulse. The regular pulse and the loudness of the vocal stream make the singer's tone emphatic, and ironically imply an attempt to impose order in a state of loss of mental control.

¹ The prominence of this pitch throughout the second section makes a thematic association between B⁴ and "Distance", the topic of the second stanza. (Similarly, the pitch G^{#4} is prominent throughout the third section, whose topic is "Days".) The sustained B⁴ stream can be perceived as symbolizing the coastline "stretching....all the way" that the singer mentions when she describes the distance that separates her from her partner.

Closure is created in m.23 when there is a brief *decrescendo* on the last pitch events of the section, followed by a diminishment of composite registral density as the texture is reduced to the cello/bass stream. An extended cello/bass gesture then forms the instrumental interlude leading to the third section.

In the third section the processes of intensification that were initiated in the second section occur more dramatically. As certain behaviours intensify, the streams lose their individuality and start to merge so that the climax of intensification coincides with a fusion process (discussed on pages 85 and 108 with reference to **Example 29** on page 86). One of the changes that occurred in the previous section was the lengthening of the instrumental gestures. Now, in the third section, some gestures become even longer while others are significantly shorter than before. What appeared to be a cello/bass gesture at the start of the instrumental interlude in m.23 is extended past the beginning of the third section, and it soon becomes apparent that the events in the cello/bass stream no longer even group into gestures, but proceed continuously. The piano and bongos gestures, on the other hand, decrease in length so that the texture is dominated by the other two streams. The other change that occurred in the second section, that of different streams starting to overlap temporally, also intensifies; all of the other instrumental gestures overlap with the cello/bass stream, as well as with each other.

Other significant changes occur as the streams start to become more similar to each other and to merge gradually in the fusion process. Several changes take place in the winds/strings stream. Firstly, the winds/strings stream is reduced in registral density to alto-flute and bass clarinet events, since the cello and bass events participate exclusively in their own separate stream. Secondly, the wind events start to merge with the cello/bass stream by becoming increasingly similar in properties and behaviours. In mm.25-26 the events in the alto-flute gesture adopt the attack density and contour behaviour of the

cello/bass stream, while the bass clarinet proceeds with a sustained pitch event typical of the original winds/strings stream. Then in mm.28-29 the bass clarinet undergoes the same type of changes, while the alto-flute proceeds with a sustained pitch event. Finally, in mm.29-32 both the alto-flute and bass clarinet events group into an extended gesture that merges with the ongoing cello/bass stream. The fusion that takes place here also involves the piano and bongos streams, which reenter in m.31-32 with characteristic gestures. Because of the parity in the attack density, registral placement and pitch contour behaviour between all of the concurrent events, the individual streams lose their distinctiveness and merge into a single stream. The fusion process occurs together with the culmination of the intensification of overall attack density, registral density and dynamic intensity, and results in a musical climax. Simultaneously the voice, which has been getting louder and higher since m.28, articulates its loudest pitch events high in the vocal range, *A5 fortissimo* and accented. As well as articulating that purely musical climax, fusion takes place at the most emotionally intense moment in the poem, as the singer describes the "hideous calendar", and so the process is expressive of the text.

Immediately following the fusion process, at the end of m.32, there is an abrupt contrast in texture which is achieved through diminishment processes. The composite registral density is reduced to a single instrumental stream, the winds/strings stream, which returns with its characteristic low attack density. The dynamic intensity decreases dramatically from *fortissimo* to *pianissimo*. The vocal stream undergoes a similar *decrescendo* and the vocal events diminish in registral placement. Despite these diminishment processes, the sense of climax is nevertheless maintained in mm.32-33, through the drama of the contrast. The speaker's despairing quote from the imaginary calendar is highlighted too by the change of articulation to *staccato* pitch events.

The fourth section follows immediately in m.34 with the entrance of a new stream and a marked intensification in overall dynamic intensity. The new winds/strings stream is initially defined by a pulse of a regular attack every twelfth triplet sixteenth-note, which soon starts to accelerate as the time spans between attacks become shorter. Mm.34-36 are shown in **Example 47** overleaf. The attack points of the events which conform to the pulse are made more prominent than those that do not though various devices such as higher registral placement, accent marks, and higher dynamic intensity. Although this stream recalls the wind/string stream of the opening measures in its timbral mixture and overlapping registers, it is fundamentally different in behaviour and is perceived as a new stream. It functions symbolically by depicting the "intimidating sound" that the singer is describing through its accelerating pulse and forcefully articulated events, which occur accented and loud.

Simultaneously, in mm.34-35, the events in the vocal stream increase once again in registral placement and exhibit *crescendo* behaviour, as the voice executes a *forte* leap high into its vocal register (on the word "sound" m.35). Through these behaviours the musical climax of the previous measures is sustained and the emotional intensity signified by them is also maintained.¹

¹ Morgan suggests that the instrumental climax precedes the vocal climax, apparently because the voice only articulates its highest pitch in m.35. I think that the processes that the vocal stream undergoes in mm.30-32 create a climax that coincides with the instrumental climax, and that is then extended (as discussed) though to m.35.

Example 47: 'Argument' mm.34-36

After this extended climactic section, a process of splitting takes place, starting in m.36. The streams that had fused resume their individual identity once again and can be perceived as distinct. Most of the previous properties and behaviours of the streams are gradually restored, and eventually they undergo other processes, mostly of diminishment, that create a sense of resolution and closure. The first step in the splitting process occurs in the way the streams proceed and the way that they are combined. As of m.36 they proceed intermittently, although they still overlap temporally. The alto-flute and bass clarinet events continue to group into gestures defined by the same behaviours as the cello/bass stream, but they proceed independently of that stream. As of m.40, however, they participate in the original winds/strings stream, although some events are still reminiscent of the cello/bass stream, for example the alto-flute and bass clarinet events in m.42. The return to the former winds/strings stream results in a diminishment of overall attack density, which is accompanied by significant *decrescendo* behaviour in the instrumental streams. Although

the events in the vocal stream maintain their loudness initially, as of m.41 there is a gradual *decrescendo* and a diminishment in registral placement. These processes have symbolic importance as they occur while the speaker describes "Days and Distance" being "disarrayed". The decreased intensity correspond to her calmer state of mind and the sense of reconciliation that she voices.

Two other changes take place during these measures that also have symbolic significance because they involve the streams with the most consistent symbolic roles, namely the piano and bongos streams. Firstly, starting in m.40, the bongos stream is absent until m.47. Secondly, the events in the piano stream, formerly defined by their low registral placement, start to ascend registrally in m.42, and this process of registral intensification continues through to the final piano gesture in the penultimate measure of the song.¹ The effect of these changes is to diminish the sense of conflict that the streams connoted previously. The theory of specific symbolic representation, mentioned earlier, can now be elaborated on. Since the speaker imagines that days and distance are "gone", the absence of the bongos stream suggests that this stream represents these factors of separation. The piano stream would then represent the persona of the speaker, and the change in the registral property of the piano events would signify her transcendence of the situation.

In the last three measures of the fourth section the processes of diminishment continue, and contribute to a sense of cadence. In mm.44-46 the overall attack density, registral density, dynamic intensity and total registral span are reduced, and musical closure is achieved.

The final instrumental postlude follows after a *poco ritenuto* at the end of m.46. While some of the diminishment processes continue to take place until the end of the song, there

¹ In **Example 39** on page 111 it was discussed how this registral intensification in fact contributes to a sense of diminishment.

are also some changes in the behaviours of the streams, that have the effect of recalling earlier textural streams. For example, the overall registral span expands at the end of m.46 when the cello/bass stream reenters with a gesture in its original low registral placement. There is a timbral change since both the cello and bass events are muted, which contributes to a lower dynamic intensity. The cello/bass stream is also transformed rhythmically and is now defined by the connection behaviour between the events;¹ this rhythmic connection is emphasized notationally by a dotted line joining successive cello and bass events. The bongos stream resumes in m.47, at first with a very brief gesture and later with gestures of slightly longer duration. The symbolic significance of the return of the bongos stream seems to deny the speaker's desire for Days and Distance to be "gone for good". There is a significant change in the way that the bongos and piano streams interact, however, which can also be seen as having symbolic meaning. Earlier in the song, except for very briefly at the climactic fusion in m.32, the gestures in the two streams always alternated with intermittent gestures. Now, partly as a result of the length of the piano gestures (which proceed almost continuously), they proceed concurrently. The impression of two voices in an argument diminishes as a result and the sense of conflict lessens. The dominance of the piano stream over the bongos stream seems to signify the speaker's victory in the conflict, although the final bongos gestures in m.51 again deny her victory and remind the listener that the scenario of Days and Distance being vanquished was only a fiction in the speaker's mind.

The diminishment processes that take place in the last five measures occur in individual streams, as well as involving the aggregate behaviour of multiple streams. There is a further diminishment in the attack density of the alto-flute/bass clarinet and the cello/bass streams. The piano stream continues to ascend registally over these measures with each

¹ There is some overlapping of successive pitch events, but this does not detract from the perception of the connection behaviour between the events.

subsequent gesture moving into a higher registral range. As the piano pitches get higher, the dynamic intensities of the fundamentals decrease and the spectral densities become thinner, which contribute to the diminishment process. All the streams have *decrecendo* behaviour in the last measures, until the level *ppp* is reached in m.50. One notable exception is the *forte* solo bongos gesture in m.51, whose prominence is a reminder that the Days/Distance factor has not been vanquished, as was suggested above. In the last four measures the concurrent streams gradually cease to sound, concluding with the brief bongos gestures. The staggered cessation contributes to diminishments in the composite attack density, registral density and dynamic intensity, which function musically to create a cadence.

Conclusion

In summary, 'Argument' presents one of the clearest textural formats in the cycle. The overall sound is divided into distinct streams, with each stream distinguished by its properties and behaviours. Initially, the streams proceed concurrently with intermittent gestures. Later, they start to undergo intensification processes and to merge together by becoming more similar to one another in properties and behaviours. As the processes peak in intensity, the streams coalesce into a single continuity. After the extended climax, and the brief introduction of a new pulse stream, splitting occurs and the original, distinct streams resume. However, the streams never fully recover from the fusion process, and some of their properties and behaviours are changed irrecoverably.

Superimposed on this progression from distinction, to fusion, and then back to distinction, is a clear formal division of the song into four sections. The four sections correspond to the four stanzas in the poem, with different aspects of the "argument" presented in each.

'Argument', while texturally and formally explicit, is not as richly symbolic as the other songs in the cycle. Certain symbolic representations can be discerned. For example, the properties and behaviours of the piano and bongos streams, as well as the way in which they are juxtaposed, suggest that they are the opposing elements in the argument. Most importantly, the vocal stream represents the speaker's persona, and the processes that this stream undergoes reflect the rise and fall in the speaker's emotional intensity. The other streams, however, do not have independent symbolic roles. Rather, they are guided by the vocal stream and support it by their similar processes, particularly in the progression to a climax as the speaker reaches her peak of emotional intensity, and the diminishment processes that accompany her calmer emotional state and reconciliatory remarks.

'SANDPIPER'

So far we have analyzed texturally two of the most straightforward songs in the *Mirror* cycle. The next song we will examine, 'Sandpiper', is somewhat more complex as a result of more intricate stream interactions. We will see, however, that there are still similarities in the textural structure between this song and both 'Insomnia' and 'Argument'.

TEXT

The poem 'Sandpiper' is divided into five stanzas of four lines each. The regular stanzaic structure is articulated by a regular rhyme scheme whereby the second and fourth lines of each stanza rhyme. In the second stanza the rhyming pattern is extended and the first and third lines rhyme as well. All of the end-line rhymes occur within stanzas and not between them, thereby supporting the stanzaic form. Unlike the consistent rhyme scheme, the rhythm of metrical stresses is irregular, and varies between three and five stresses per line. Usually there are four or five stresses, and the stress pattern $\cup - \cup -$ is featured.

The pervasive repetition of words and phrases occurring both within stanzas and across them creates large-scale unity. For example, the word "world" occurs for the first time in the second line of the opening stanza and then is repeated twice in close succession in the fourth stanza. "He runs" is repeated at the beginning of the third line of the first stanza and also occurs as the first words of the fourth line of the second stanza. In the third stanza, third line, the phrase occurs without being reiterated ("As he runs"). The word "grains" occurs in the following line of the third stanza and is repeated twice in the fifth stanza. The repetition of these particular words will be explained later in relation to the poem's semantic content.

Repetition has also a rhythmic function in 'Sandpiper'. In the fourth and fifth stanzas repetition is used to propel the poem rhythmically to a climax. The phrase "the world is ..." opens the fourth stanza. It is repeated again in the same line. Then declarative phrases occur three times more in close succession with the subject replaced by "tide", "beak" and finally "he" in the fourth line of the fourth stanza. In the next line the repetition accelerates with the reiteration of a single word ("something, something, something"). This leads to the climactic line where "he is" occurs for the last time. The significance of this rhythmic intensification will be discussed below with reference to the meaning of the poem.

The semantic content of the poem 'Sandpiper' does not correspond to its straightforward stanzaic form. Although some semantic units occupy complete stanzas or complete lines, others run across the breaks between stanzas or across the lines within stanzas. As with many of the other poems in this cycle (for example, 'Insomnia' and 'View of the Capitol'), a kind of structural counterpoint is created by the lack of correspondence between the stanzaic and semantic structures. On a structural scale larger than that of sentences, the semantic content shifts focus from one subject to another. Some of these changes of focus are coincident with stanzaic breaks, creating moments of structural articulation, but overall there is no clear sectional form.

The poem is concerned with the movement of a sandpiper along a beach, and describes the ocean and the sand from the point of view of the bird. The first stanza is relatively ordered. It comprises two sentences of two lines each, and every line is a semantic unit. The opening lines describe the behaviours of the world surrounding the sandpiper as he hears it ("the roaring" waves) and feels it ("the world is bound to shake"). He has learnt to expect these behaviours and takes them "for granted". In the third line the focus moves from the surroundings to the running motion of the sandpiper. The adjective "finical" provides a hint of the bird's fastidious nature, which becomes apparent later in the poem. He is in a state of

"panic" (which also makes his motion "awkward") because the roaring and shaking threaten him, but the panic is "controlled" because the behaviours are repetitive and not unexpected. In the last line of the first stanza the bird is described ironically as a "student of Blake" in a reference to Blake's line "To see a World in a Grain of Sand".¹ The sandpiper attempts, like Blake, to see the whole through the detailed particulars, but, as becomes clear later in the poem, he is unable to.

In the next stanza the focus moves from the bird back to the world surrounding him and the menacing tone is maintained in the simile "hisses like fat". The short opening sentence is followed in mid-line by a longer sentence which elaborates on the threatening character of the ocean. The water is a "sheet" that could cover the sandpiper and it "glazes" over his feet as if to cast them and hold them. The powerful inanimate world contrasts with the bird's vulnerable "brittle" feet.

At the beginning of the fourth line, the focus moves back to the sandpiper with the repetition of "he runs". The bird's way of coping with the menacing natural world that surrounds him is to focus on small details. As he runs through the water he watches "his toes". At this point an interesting formal effect is created by the counterpoint between stanzaic structure and meaning. The next line is the beginning of the third stanza, but it does not start a new sentence, even though the previous stanza is semantically closed. Rather it backtracks by repeating the gerundive "watching" and modifying its object to "the spaces of sand between them". This unexpected extension connects the two stanzas into a larger unit. The rest of the stanza continues to describe the details on which the sandpiper

¹ This phrase is the opening line of the eighth poem, 'Auguries of Innocence', in Blake's collection titled *The 'Pickering Manuscript'* (c.1801-4). In his article "Musical Events: Reflections" (*New Yorker* 52 [March 8, 1976]), Andrew Porter writes: "the words 'Blake', 'sand', 'world' and 'grains' rise up through Miss Bishop's lines to be assembled, almost subconsciously, in the listener's mind." (122) The word "world" has already appeared in the second line and is repeated later in the fourth stanza, while "sand" and "grains" occur in the third stanza.

focuses, none of which is "too small" for his attention. As the sea drains from his feet and threatens to drag him "backwards and downwards", he steadies himself by staring at the grains of sand.

The last line of the third stanza evokes Blake's vision of the world in a grain of sand and leads on to a description of this world (as perceived by the sandpiper) in the fourth stanza. The bird is unaware of the larger patterns that control his world; to him the world is "a mist". However, when he focuses on "minute" details, the world is "vast" and "clear". The paradoxical vastness of the world occurs when the sandpiper's vision is expanded through his observations of the particulars. The tide, part of the larger natural world, is beyond his vision and he cannot tell whether it is "higher or lower". The sandpiper's focus on small details (in order to control his panic), starts to overwhelm his perceptions, and he becomes "preoccupied" with them. As Bishop describes how the sandpiper is looking for "something, something, something", the tone becomes increasingly emotionally intense until a climax is reached as the poet expresses sympathy for the "poor" bird and characterizes his behaviour as an obsession.

The sentence structure of the third and fourth stanzas supports the emotional acceleration and climax of the words. Like the second stanza, the third one starts with a short sentence and is followed in mid-line by another. The next two sentences also start in mid-line and are short in length. The altered sentence structures, together with the studied breaking of the format of lines as semantic units that was established in the beginning of the poem, accelerates the rhythmic flow of the poem. This accelerated motion is also supported by the rhythmic scheme of repeated phrases and words that was discussed above. The last line of the fourth stanza is an incomplete sentence and runs on to the first line of the fifth stanza, thereby connecting them. This in turn leads to the accelerated repetition of "something, something, something" which climaxes in the next line "Poor bird, he is obsessed!"

The last two lines of the poem are similar to a coda. In his obsession for details and his frantic search for that elusive "something", the bird discovers beauty in the many colours of the grains of sand. The frenzied activity and menacing tone of before is replaced by a calm, almost peaceful, description of the colourful stones, moving from the commonplace "black" and "white" grains to the more exotic, semi-precious "quartz", "rose" and "amethyst". A sense of closure is achieved by the lessening of the emotional intensity and by the flowing two-line sentence which contrasts with the short sentences and phrases that lead to the climax.

The themes of movement and direction that dominate 'Argument' recur in 'Sandpiper'. Verbs describing active physical movement dominate the first three stanzas of the poem, where Bishop is setting the visual and emotional scene. The movement is typically fast, depicting the bird's movements, or of a threatening nature, depicting the movement of the water and beach as the sandpiper perceives them. For example, Bishop repeats the verb "runs" to describe the bird's motion. The sandpiper's world shakes, the beach "hisses" and the Atlantic "drains". In the last two stanzas there is less movement and there are no verbs depicting physical action besides the bird "looking". Bishop describes the sandpiper and his world declaratively, using the verb "to be" in the form of "is" and "are".

Words and phrases indicating direction are prevalent throughout the poem. The bird runs "to the south" and the roaring water is "alongside" him and, more specifically, "on his left". The direction of the movement of the immediate world that surrounds the sandpiper is confusing to him; the water "comes and goes" and the tide is "higher or lower". It is also threatening, for example, the water drains "backwards and downwards".

The theme of contrast also recurs. The movements of the natural world have conflicting directions in the sandpiper's perception, as was discussed above. Paradoxically, the world

is at times "a mist" and, at other times, "clear", as well as being both "minute" and "vast". The theme of contrast is continued in the description of the grains where "black" and "white" are juxtaposed. The sandpiper too is a combination of contrasts. He has opposing emotions, being both controlled and in a panic. The sandpiper's striving for illumination in his search "for something" is akin to the visionary sensibility of poets like Blake. However, what he ultimately finds are the mundane realities of earth. Instead of discovering the 'world' in the grains of sand, the sandpiper finds a marvel of natural colours.¹ Bishop seems to reject the visionary stance in favour of contemplative-descriptive one and ultimately to contradict the image of the bird as a student of Blake.

From the above discussion it is apparent that a sectional division of the poem is not appropriate. Although the stanzaic form does coincide with structural breaks in the semantic content at the end of the first and third stanzas, the other stanzas are linked semantically. The poem presents two images, that of the sandpiper and that of the natural world as experienced by the bird. Because the one image is dependent on the other, they are not presented separately, and interact throughout the poem's duration. Thus there is an organic progression that climaxes formally and emotionally at the beginning of the fifth stanza. This is then followed by a couplet in which a sense of resolution and closure is achieved.

'SANDPIPER': MUSIC

The notation of Carter's setting of 'Sandpiper' implies four distinct sections, with each sectional break articulated by a change of time signature and a tempo modulation. The sectional breaks coincide with the stanzaic ones only where there are also clear breaks in the semantic content, that is, at the end of the first and third stanzas. The second sectional

¹ Sybil P. Estess, "Elizabeth Bishop: The Delicate Art of Map Making", *The Southern Review* 13/4 (1977): 720-21.

break occurs after the third line of the second stanza, before the last line which runs on to the first line of the next stanza, as was discussed above. By setting the lines that connect stanzas as part of the same sections he preserves the semantic connections between the second and third stanzas and the fourth and fifth stanzas. In this way Carter reinforces musically the semantic divisions in the poem.

However, the notated divisions are not always perceptible aurally. In fact, the same kind of contrapuntal relationship that exists between the stanzaic and semantic structures in the poem, exists between the notated and heard divisions in the music. The changes in tempo and meter do not provide the listener with clearly perceptible musical divisions for a number of reasons. Firstly, the metrical changes are imperceptible, since the beats are not explicit. Secondly, the oboe stream, which is aurally prominent (and whose symbolic role is discussed below) maintains the same speed throughout, proceeding at a tempo of smallest unit = MM 525. Thirdly, although the notated tempo modulates -- from $\downarrow = 105$ (m.1), then $\downarrow = 75$ (m.11), to $\downarrow = 131$ (m.23), to $\downarrow = 105$ (m.40) -- the textural streams and their characteristic properties and behaviours remain relatively consistent across these changes.

The textural processes that these streams undergo do not support the sectional structure, but they do function musically and symbolically to portray the nuances of the text, and to create the large-scale progression to a climax that was discussed above. After discussing the most significant textural features of 'Sandpiper', we will return to the form of the composition by presenting a chronological analysis, which will focus on stream interaction and on text setting.

A. Textural Features

1. Streams

The song built is built on contrasting aural continuities that correspond to the images in the poem. For example, distinct streams signify the persona of the sandpiper and the ocean.¹ While the ocean is signified by a single stream, two different streams represent the sandpiper. One is more prominent and is considered the primary 'sandpiper' stream, the other has a secondary role. The vocal stream behaves both independently and supportively, at times reinforcing either the 'sandpiper' streams or the 'ocean' stream through emulation processes. All four streams are presented within the first ten measures of 'Sandpiper', where their stream-defining properties and behaviours are established. The three instrumental streams will be discussed first, followed by the vocal stream.

The two most prominent streams -- the oboe stream, signifying the sandpiper, and the piano/strings stream, signifying the ocean -- enter in m.1. These signifying streams and their characteristic properties and behaviours were discussed in detail and tabulated in **Example 35** on page 100; however, since the entire song is based on the interaction of these two streams, we will reiterate their properties and behaviours here.

The oboe stream, which symbolizes the sandpiper by connoting his actions and character, will be referred to as the primary 'sandpiper' stream. The properties and behaviours of the events that comprise this stream have non-musical associations. The high registral placement of the events is associated with smallness, while their consistent connection behaviour connotes the continuity of a conscious individual being. The high attack density and *subito* fluctuating dynamics of the events in the primary 'sandpiper' stream depict both the bird's fast, jerky physical movements and his disturbed mental state. In the opening

¹ Later in the song the stream symbolizing the ocean also represents the natural world that is associated with the ocean, for example, the beach and the grains of sand.

measures the stream is also established by the pitch parity of the events (repeated B5's and C6's), but this property is not maintained consistently throughout the song and functions initially to draw the listener's attention to the oboe stream. Another behaviour that does characterize this stream, but which is not apparent in the first few measures, is the random fluctuation of contour, which contributes to the depiction of the bird's quick running motion. This fluctuation of contour can be seen, for example, in the oboe events of mm.7-9.

Events in the piano and strings combine to form the 'ocean' stream, and the properties and behaviours of this stream connote the motion of the huge, slow sea. Despite their timbral disparity, the piano and the string events are associated as part of the same stream through the pitch and intervallic parity that exists between them. The pitch events are frequently organized into M9 and m6 dyads, as can be seen in the opening measures. Stream unity is further achieved through their other similar properties and behaviours. The stream is defined by the low registral placement of events, and by their lack of connection behaviour in favour of overlapping pitch events. The low register of the events is associated with depth and vastness, and evokes an image of the ocean. The indistinct, overlapping pitch events connote the unconnected physical quanta moved by forces larger and more diverse than a single being. The 'ocean' stream is also characterized by the contour behaviour of its gestures; the ascending and descending contours of the gestures portray the ocean waves that ebb and flow alongside the sandpiper. With respect to attack density, these contour gestures occur at two rates: strings events group into gestures with low attack density, while gestures comprising piano events are usually defined by a higher attack density. The disparity in attack density between the gestures does not dissociate them from belonging to the same stream because of the parity between them in the other aspects. Instead it evokes images of waves swelling and breaking repeatedly and at different rates. The gestures cover

a wide registral range and are characterized by *crescendi* and *decrescendi* which contrast with the abrupt changes of dynamic intensity in the primary 'sandpiper' stream.

As was mentioned in Chapter Three, the symbolic representation of the sandpiper and the ocean depends as much on the opposition of the properties and behaviours of the streams as it does on their actual values. The defining properties and behaviours of the two streams contrast significantly in many respects, for example, in their registral placement, registral density, dynamic intensity behaviour and their connection behaviour. The correspondence between an individual stream and a particular poetic image is established by the textural prominence of that stream when that image is being described in the text (this will be discussed in the section on stream interaction), as well as by the non-musical connotations of that stream's properties and behaviours.

A second stream associated with the sandpiper enters in m.7. This stream comprises events in the viola, cello and bass, and violin from m.9. The string stream is defined primarily by the *pizzicato staccato* articulation that makes the events timbrally distinct from the bowed string events in the ocean stream. This *pizzicato* stream has some properties and behaviours in common with both the 'ocean' and the primary 'sandpiper' streams, but essential differences set it apart as a distinct continuity. Although events in the *pizzicato* stream are timbrally similar to events in the 'ocean' stream, the narrower registral span, higher attack density, and dissimilarity in contour behaviour of the *pizzicato* gestures help to dissociate them from those of the 'ocean' stream. The events in the *pizzicato* stream are similar in articulation to those of the oboe stream, but are dissimilar timbrally, and the stream proceeds with a lower attack density and covers a wider registral range. This *pizzicato* stream is also associated with the bird, and will be referred to as the secondary 'sandpiper' stream. The short duration of the events and relatively high attack density of the stream are associated with the description of the quick, sharp movements of the sandpiper as he runs

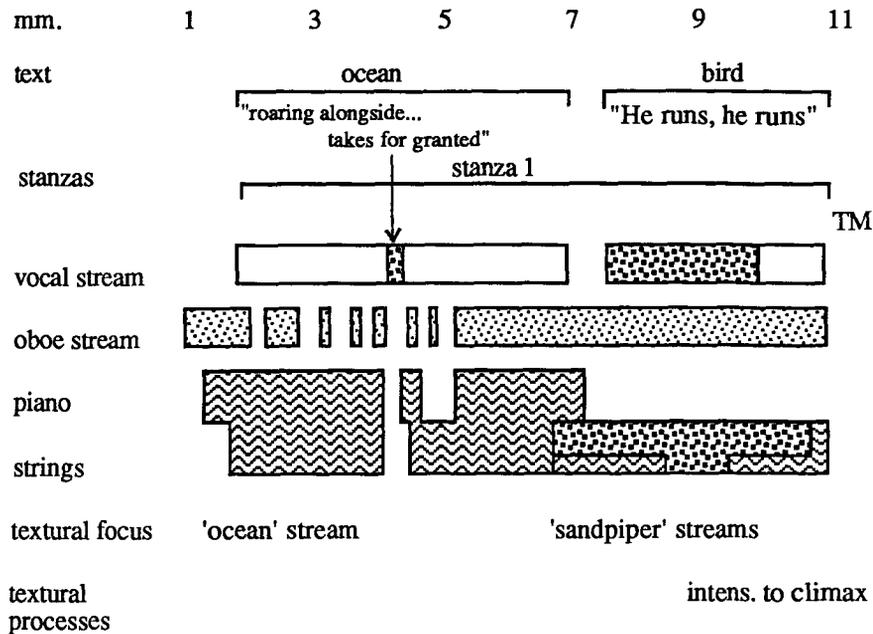
2. Stream Interaction

An important textural feature of 'Sandpiper' is the way in which the streams interact. Three or more streams usually proceed concurrently: the primary 'sandpiper' (oboe) stream and the vocal stream proceed almost continuously throughout the song, while the other two streams alternate or proceed simultaneously. Repeated processes of compensation occur, whereby various musical devices bring a particular stream to the fore and relegate other streams to the aural background, so that the listener's attention is focussed on that stream, in a similar way to 'Insomnia' and 'View of the Capitol'. Because the defining characteristic properties and behaviours of the individual streams are distinctive, our ability to perceive and to recognize the different streams as they interact and overlap is unimpeded. The stream interaction in the first eleven measures of 'Sandpiper' will be discussed as an example of the kind of stream combination that characterizes this song. The diagram in **Example 49** (overleaf) is a graphic simplification of the discussion, showing the presence of the different streams.¹ The other features of the diagram, such as how the presence of streams relate to the semantic content and stanzaic structure of the text, are relevant to the analytical discussion that follows this section.

The primary 'sandpiper' stream and the 'ocean' stream proceed concurrently from m.1, with the vocal stream entering at the end of m.2. The 'ocean' stream dominates the texture, while the primary 'sandpiper' stream proceeds with brief intermittent gestures. Focus shifts briefly to the vocal stream in m.4 when there is a momentary silence in the accompaniment. The vocal stream anticipates the secondary 'sandpiper' stream by articulating the *staccato* triplet eighth-notes that are later associated with that stream.

¹ In this diagram, as in all similar diagrams in the analyses, there is some graphic 'rounding off'. Gestures, particularly in the oboe stream, are shown as continuous when the rests between events are too short to be clearly graphed.

Example 49: 'Sandpiper' mm.1-11



Key to shadings and abbreviations

Shadings

-  properties and behaviours associated with sandpiper
-  properties and behaviours associated with ocean
-  properties and behaviours associated with sandpiper
-  independent properties and behaviours

Abbreviations

- TM = tempo modulation
- a.d. = attack density
- reg.d. = registral density
- reg.pl. = registral placement
- gest.dur. = gestural duration

The 'sandpiper' gestures gradually increase in duration until m.7 when they proceed almost continuously and are prominent aurally. Coincidentally, in m.7, compensation occurs when the 'ocean' stream is reduced severely to the sustained G4 in the violin in mm.7-8, which is

barely perceptible, and the secondary 'sandpiper' stream enters.¹ Simultaneously, the vocal stream starts to emulate the attack density and articulation of the secondary 'sandpiper' stream, as was discussed above. The texture is thus dominated by streams associated with the sandpiper. A transition occurs in m.10: the secondary 'sandpiper' and 'ocean' streams overlap slightly, and the vocal stream reasserts its independence from the 'sandpiper' stream. This transition leads to another textural section in m.11 in which the 'ocean' stream is reestablished, and the secondary 'sandpiper' stream ceases in another process of compensation. The primary 'sandpiper' stream, of course, continues across this change.

The first eleven measures typify the kind of interaction that occurs between the streams in 'Sandpiper'. Different streams are focussed on through compensatory processes, each for several measures, so that the song comprises time spans with distinct textural sounds. Because the primary 'sandpiper' stream proceeds essentially unchanged and at the same tempo during the song, these textural time spans do not have the effect of dividing the song into sections. Instead the song sounds through-composed. The way that the streams interact, however, corresponds to the symbolic roles that they play; the interaction of the two images in the text is represented by the interaction of the streams. The close correspondence with the text will be discussed in the next section.

B. Form and Text-Setting

Carter establishes the symbolic roles of the streams in the opening measures by associating each stream with an image in the poem: the stream on which the listener's attention is focussed depends on the focus of the text. In the opening lines the singer describes the roaring of the waves as the sandpiper hears it. The 'ocean' stream dominates the texture,

¹ Because these kinds of compensatory processes occur repeatedly in 'Sandpiper', they are not indicated on the diagram. It is to be understood that each change of 'textural focus' involves a process of compensation.

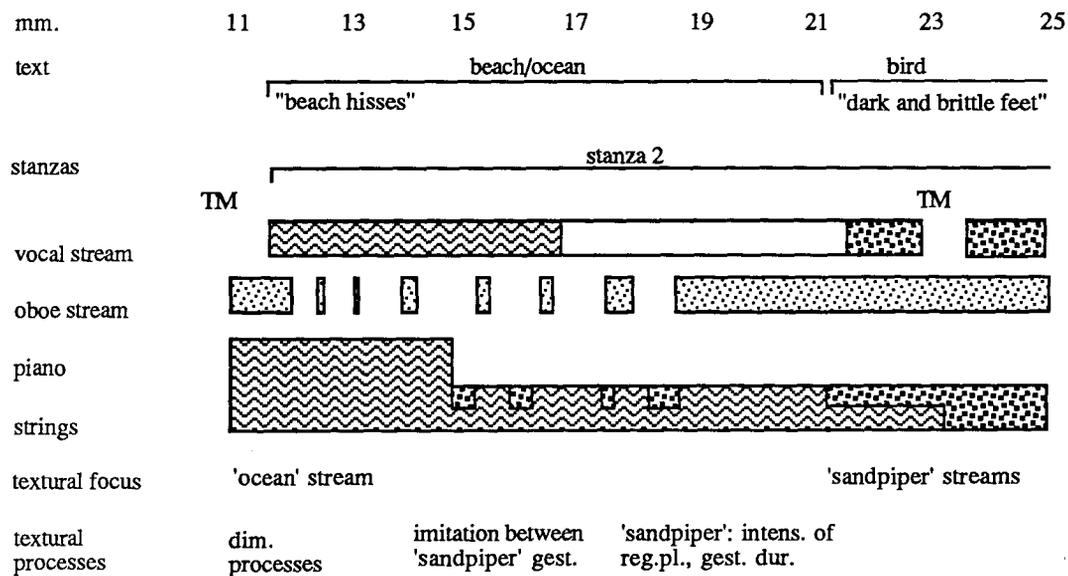
while the primary 'sandpiper' stream proceeds with brief gestures. In m.4 the vocal stream comes to the fore and the other streams cease for a few beats as the singer introduces the presence of the sandpiper, "he takes for granted" (my emphasis). Symbolically, streams associated with the bird dominate the texture briefly. The oboe articulates a strident, multiphonic squawk at the end of m.3, the 'ocean' streams are silent, and the articulation and attack density of the vocal stream change to those that are later associated with the secondary 'sandpiper' stream. The 'sandpiper' gestures gradually increase in duration so that when the singer starts to describe the bird more fully in m.7 ("he runs, he runs"), the 'sandpiper' gestures proceed almost continuously. Simultaneously, the 'ocean' stream ceases, the secondary 'sandpiper' stream enters, and the vocal stream imitates the rhythmic behaviour and *staccato* articulation of the secondary 'sandpiper' stream. These streams proceed throughout the singer's description of the bird's actions and panicked state of mind, establishing the connection between them and the image of the sandpiper.

The first ten measures of 'Sandpiper' act as an introduction in which the streams and their interaction are established. The rest of the song proceeds in a similar fashion: as the singer focuses on the different images, the different signifying streams come to the fore texturally. The most significant textural processes occur later when there is a progression towards a climax, followed by diminishment processes creating closure at the end of the song. In my analysis of the music and its relation to the text I will also refer to the notational structural features mentioned above, namely Carter's tempo modulations and the stanzaic structure of the poem. These features are included in the diagrams which accompany the analysis.

After the description of the sandpiper in mm.7-10, the singer starts to describe the beach as it is perceived by the bird ("The beach hisses like fat"). The change of focus in the text is accompanied by a change of texture, as can be seen in the diagram reproduced as **Example 50**. A moment of structural articulation occurs in mm.10-11 when intensification processes

lead to a climax, which is immediately followed by diminishment processes. In m.10, the 'ocean' stream intensifies in registral density and dynamic intensity. The primary 'sandpiper' stream also exhibits *crescendo* behaviour, and oboe events intensify in registral placement in mm.10-11. Simultaneously, the voice articulates its highest pitch in the phrase (F#5). Two notational factors support this moment of structural articulation -- a tempo modulation occurs in m.11, and a new stanza starts -- but these are not in themselves perceptible aurally.

Example 50: 'Sandpiper' mm.11-25



In m.11 diminishment processes in registral placement and dynamic intensity reverse the processes that lead to the climax, and help to articulate it as such. The 'ocean' stream now dominates the texture, supported by the vocal stream, which emulates its attack density and articulation. The dominance of the 'ocean' stream is compensated for by the secondary 'sandpiper' stream ceasing. The 'ocean' stream undergoes a transformation at the end of m.11 when the faster 'ocean' gestures drop out. The low attack density and registral

placement of the string gestures connote depth, and emphasize the threatening quality of the water. The presence of the sandpiper is maintained through brief intermittent oboe gestures in the primary 'sandpiper' stream which alternate imitatively with short violin gestures in the secondary 'sandpiper' stream in mm.14-18.

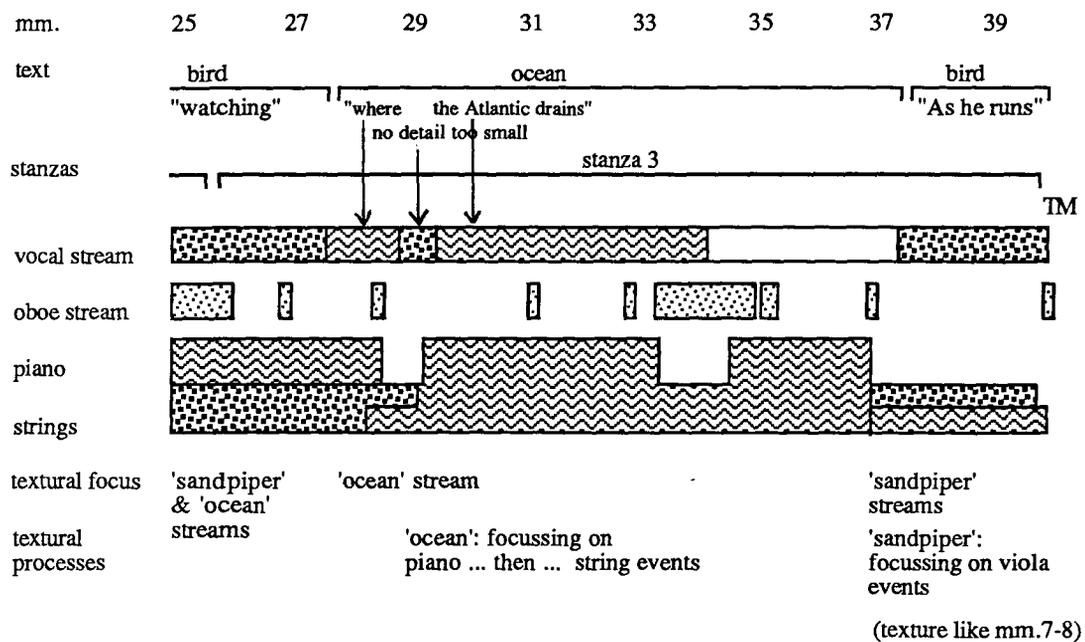
When the singer mentions the sandpiper in m.17 (on "his left"), and starts to describe how the water glazes over his feet, the 'sandpiper' streams start to come into focus and, in compensation, the 'ocean' stream gradually recedes. The oboe events are grouped into gestures of longer duration, and the registral placement of the gestures gradually intensifies in mm.17-25. The secondary 'sandpiper' stream intensifies in overall registral density and attack density, now comprising the events in the violin and cello (mm.17-18) and in the viola in mm.21-22. A new gesture is introduced in m.19 where the oboe events group into a *tremolo* figure. This figure also occurs in the secondary 'sandpiper' stream, and is imitated by the viola events in m.21 and again in m.22. This *tremolo* gesture thus represents another aspect of the sandpiper; it occurs first as the singer describes how the threatening water "comes" up to the bird, and represents his shiver of fear and anxiety. The attack density and articulation of the vocal stream become more similar to that of the secondary 'sandpiper' stream again in mm.21-22; its attack density intensifies and the events are articulated *staccato*. The background role played by the 'ocean' stream is caused by the diminishment in its registral density and attack density that render it almost imperceptible. The 'ocean' stream does, however, come briefly into focus in mm.19-20, in a gesture representing the "interrupting water" that comes closer to the bird before it recedes again.

The sandpiper streams continue to be the textural focus in mm.22-24 as the singer describes the sandpiper running through the water. A second tempo modulation occurs in m.23, but once again it is imperceptible because of the continuity of the sandpiper streams

across this notated break. An triplet eighth-note pulse, which was hinted at in mm.7-9 (and briefly in the vocal stream in m.4), now defines more precisely the attack density streams associated with the sandpiper. This pulse is articulated by both the secondary 'sandpiper' stream and the vocal stream in these measures. The registral placement of the events in the oboe 'sandpiper' stream continues to intensify through m.25. The 'ocean' stream is not present in these measures.

In m.25 a transformation of focus is initiated in the poem and in the musical texture, as can be seen in the diagram in **Example 51**.

Example 51: 'Sandpiper' mm.25-40



The speaker starts to describe what the sandpiper is watching, that is, his toes and the draining Atlantic that he sees between them. Accordingly, the 'ocean' stream returns, and proceeds concurrently with the two 'sandpiper' streams again. Starting at the end of m.24 the 'ocean' stream comprises the events in the piano. Their low registral placement

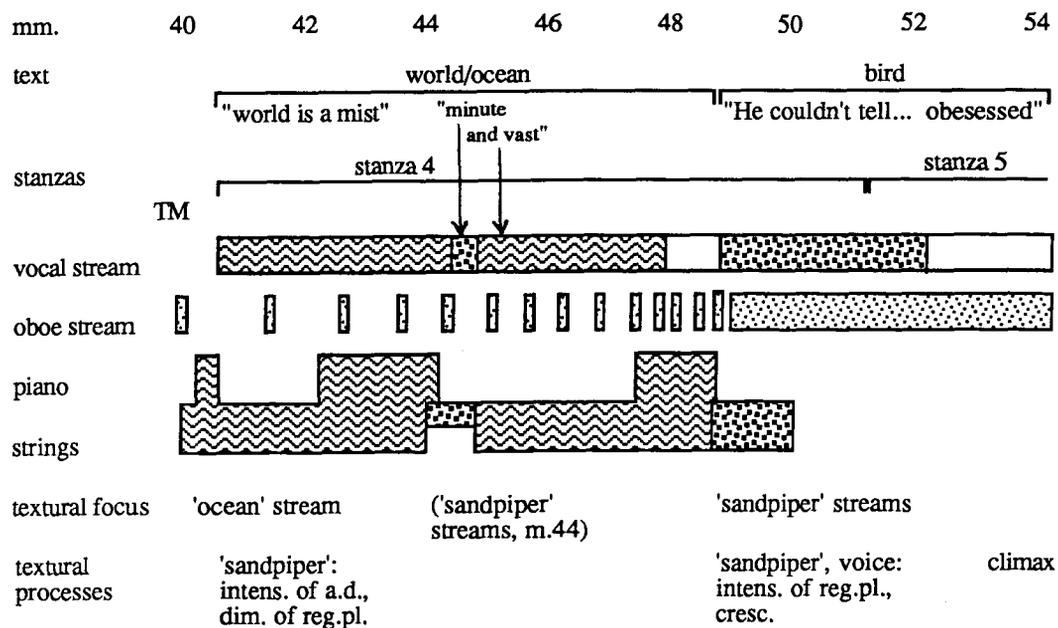
contrasts with the higher registral placement of the events comprising the *pizzicato* and *tremolo* gestures in the strings, which continue to symbolize the bird's movements. The events in the vocal stream emulate the secondary 'sandpiper' stream by sharing the triplet eighth-note pulse and *staccato* articulation in mm.26-27 when the singer describes the minutiae of the sandpiper's world -- "the spaces of sand" between his feet. As the text becomes more concerned with the receding water of the ocean, the 'ocean' stream becomes more prominent and, in compensation, the streams symbolizing the bird fade into the background. The oboe gestures are brief and intermittent as of m.26, and the *pizzicato* events comprising the secondary 'sandpiper' stream cease at the beginning of m.29. The events in the strings fuse again with the 'ocean' stream, which consequently intensifies in registral density and attack density. The vocal stream supports the dominance of the 'ocean' stream by becoming more similar to it than to the 'sandpiper' stream in behaviour through another emulation process. Namely, the attack density of the vocal stream diminishes at the end of m.27 at the start of the phrase "where... the Atlantic drains", and the vocal events proceed *legato*. A parenthetical interjection, "(no detail too small)", describing the microscopic view of the sandpiper, interrupts the flow of the 'ocean' streams, and recalls the texture of the 'sandpiper' streams. In striking contrast to the events that precede and follow this phrase, the vocal stream once again articulates *staccato* triplet eighth-notes, while secondary 'sandpiper' stream has its last gesture before its silence in the next nine measures. After this, the 'ocean' stream dominates the texture uninterrupted. It is made more prominent through focussing processes whereby events emerge temporarily from the texture through solo playing instructions. Focussing occurs in the piano events in mm.29-32 and in the string events in mm.32-39.

The music symbolizing the sandpiper comes to the fore briefly in mm.37-39 when the speaker, using the repeated phrase "he runs", describes how the bird "stares at the dragging grains". The texture recalls the texture of mm.7-8 where the phrase " he runs, he runs" first

occurred, so that the textural repetition reflects the phrase repetition. Similar compensatory processes occur. The 'ocean' stream is reduced to the events in the bass; in mm.7-8 it was reduced to events in the violin. The vocal stream now emulates the 'sandpiper' gestures through its higher attack density and *staccato* articulation, in a similar way to mm.7-8. The secondary 'sandpiper' stream proceeds with *pizzicato* gestures in the cello, as it did in the earlier measures. There are some changes from the earlier texture, however. A focussing process occurs in the secondary 'sandpiper' stream when events in the viola are made prominent by their articulation, *sul ponticello*, and by grouping into *tremolo* gestures which connote the bird's anxious reaction to the menace of the Atlantic, as they first did in m.19. Surprisingly, the oboe stream, which has acted as the primary symbol of the sandpiper, is not present in these measures; the reason for this becomes apparent later.

Another change of focus occurs in the text in m.40 and there is a corresponding change of focus in the textural fabric, shown in the diagram in **Example 52**.

Example 52: 'Sandpiper' mm.40-54



For the second time in 'Sandpiper' a tempo modulation coincides with a stanzaic division, as it did in m.11. Although these two features are not in themselves audible, the absence of a continuous oboe stream across the break, and the relatively long rest in the vocal stream, make the break somewhat perceptible to the listener. During this next section textural processes develop that ultimately lead to the climax. These processes occur in the primary 'sandpiper' stream and operate over a long time span, concluding in m.50 as the period of peak emotional intensity is approached in the text. The attack density of the oboe stream intensifies as the registral placement of its events diminishes. The intensification of attack density takes the form of a rhythmic acceleration, in which successive events or gestures are attacked ever closer together. (The acceleration was discussed in **Example 24** on page 73). In retrospect it can be seen that the series actually starts with the oboe event in m.36, which explains the long time span between that event and the next one in m.39, and the consequent absence of symbolic sandpiper activity in the oboe stream in mm.37-39.¹ Although the series is not immediately perceptible, the listener soon becomes aware of the accelerating rhythmic behaviour of the oboe stream, and the descending pitch placement of its events. Initially, in mm.36-43 when the time spans separating events are longer, this audibility is achieved through the disparity in dynamic intensity and registral placement between oboe events and other concurrent events. (Obviously the established symbolic role and distinctive timbre of the oboe stream help to make it prominent too.) These processes function to build intensity and to prepare the listener for the climax. However, the changing presence of the oboe stream also plays a symbolic role, as will be apparent from the following discussion of the behaviours of the other streams in mm.40-50.

¹ In the series, each successive pitch event is attacked at a decreasing multiple of a fixed metrical unit. Since the tempo modulation at the end of m.39 specifies that the upcoming quintuplet sixteenth-note has the same duration as the preceding sixteenth-note, the time spans between attacks are both multiples of the quadruple sixteenth and the quintuplet sixteenth-notes. The time spans between adjacent attacks, beginning in m.36, are: 31 - 28 - 24 - 20 - 14 - 16 - 13 - 12 - 11 - 10 - 9 - 8 - 7 - 6 - 5 - 4 - 3 - 4 - 1.

The combination of streams continues to describe texturally the interaction of images in the text in these measures. As was mentioned earlier, the section opens by changing the focus in the text from the sandpiper to his perceived world. Starting in m.40 the speaker describes the confusing world that surrounds the sandpiper and the tide that is lapping at his feet. During this section, which lasts until m.48, the 'ocean' stream dominates the texture. Events in both the piano and the strings contribute to the 'ocean' stream, and the primary 'sandpiper' stream proceeds with the brief intermittent gestures that form part of the series described above. The vocal stream is characterized by a lower attack density than in mm.37-39, reinforcing the image of the ocean. Exceptions to these behaviours, obviously motivated by the text, occur in m.44 on the words "is minute". The voice articulates three *staccato* triplet eighth-notes, accompanied by a single *tremolo* violin gesture. These brief reminiscences of the 'sandpiper' streams serve a symbolic function since they occur when the speaker intimates that the bird focuses on minute details in order to clarify his world. The presence of the bird is thus briefly established before the description of the incomprehensible macroscopic world ("and vast") is continued in m.45.

When the speaker mentions the sandpiper at the end of m.48 in the line "He couldn't tell you which", the bird's presence, which has been becoming more apparent in the emerging oboe stream, is musically reinstated. In a compensatory process, the 'ocean' stream is abruptly replaced by the secondary 'sandpiper' stream comprising *pizzicato* events in the strings and *tremolo* gestures in the cello, both of which connote the sandpiper's behaviour. Correspondingly, the events in the voice are articulated *staccato* and the stream proceeds at a higher attack density than before. The striking behaviours of mm.49-50 mark the culmination of the processes of intensification of attack density and diminishment of registral placement in the oboe stream, and prepare the listener for new processes that

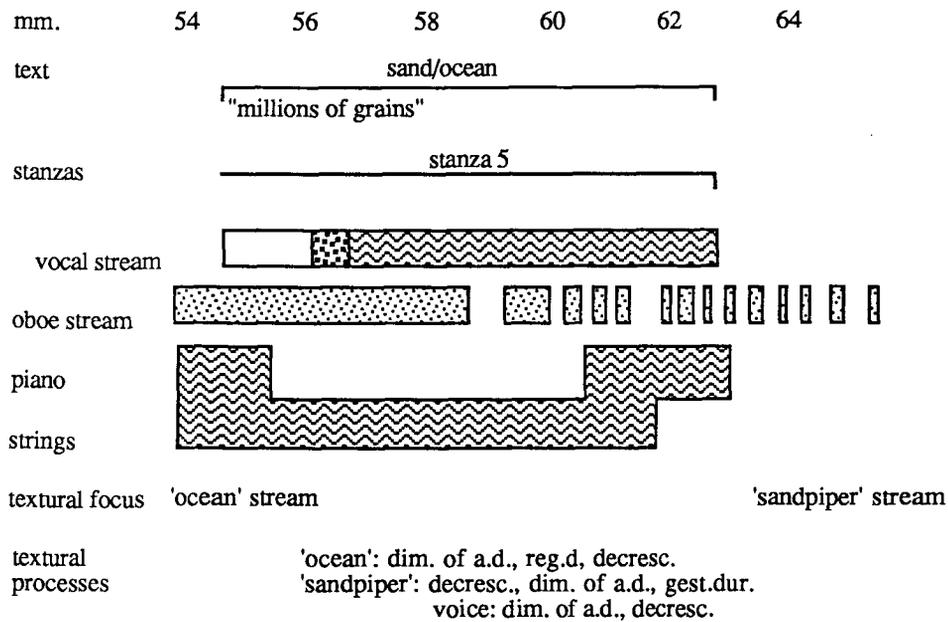
reflect the textual focus on the bird and his obsessive character. These processes in turn culminate in m.53 with a climax that symbolizes the peak of emotional intensity in the text.¹

At the beginning of m.50 the listener's attention focuses entirely on the oboe 'sandpiper' stream when the other streams cease and the composite registral density and attack density are dramatically reduced. An extended *tremolo* gesture in m.50 symbolizes once again the bird's anxious state of mind. Starting in m.51, the oboe stream undergoes an overall intensification of registral placement and dynamic intensity. (Although the behaviours fluctuate somewhat, the overall, long-term effect is one of intensification in these aspects.) The rise in pitch and loudness occur as the singer describes the increasingly frantic movements and desperate mental state of the bird. The vocal stream, mm.50-52, supports the symbolic depiction of the sandpiper by articulating the triplet eighth-note pulse associated with the secondary 'sandpiper' stream of before. An emotional climax is reached as the speaker describes the bird's psychological state in the line "Poor bird, he is obsessed!". Musically the processes of intensification in the oboe stream climax simultaneously, with the highest and loudest pitch events. The vocal stream also articulates its highest pitch events in the song (A5), accented and *fortissimo*.

In the last eleven measures, mm.54-65, the speaker describes the colourful grains of sand that the bird sees on the beach, and a sense of resolution is reached after the intensity of the climax. These measures are shown in the diagram reproduced in **Example 53** overleaf.

¹ This climax was discussed in **Example 37** on page 105.

Example 53: 'Sandpiper' mm.54-65



Musically, the two symbolic streams that opened the song proceed concurrently, and closure is achieved through processes of diminishment. The 'ocean' stream reenters in m.54 with events in the piano and strings. The exceptional loudness of the initial low bass and piano events in m.54 emphasizes the contrast in overall registral density and registral placement between m.53 and 54, which helps to set this section apart as a concluding coda. The other string events, however, are muted and are defined by low dynamic intensity, creating a sense of calmness and resolution. Diminishment in attack density takes place gradually in the 'ocean' stream as the events become longer in duration, and there is a *decrescendo* to *ppp* in mm.60-61. At the end of m.61 the registral density and dynamic intensity diminish further, and, after a single low sustained piano event, the stream ceases in m.63. The vocal stream also undergoes gradual diminishment in attack density and exhibits *decrescendo* behaviour, with the exception of the events in m.56, whose triplet pulse and *staccato* articulation are reminiscent of the secondary (*pizzicato*) 'sandpiper' stream.

The primary 'sandpiper' stream proceeds continuously from the climactic moments of m.53 through the concluding section. Although the intensity that characterized the climax is not immediately dissipated, overall processes of diminishment also occur to support the cadential effect. In m.54-55 the processes of intensification that brought about the climax are reversed. Initially there is diminishment in the registral placement of the primary 'sandpiper' stream and it exhibits *decrecendo* behaviour. Throughout the final measures the attack density of the stream diminishes gradually as the oboe events are grouped into progressively shorter gestures that are separated by longer time spans. By the time the 'ocean' stream has ceased in m.63, the primary 'sandpiper' stream comprises gestures no longer than four successive events. The solitary figure of the sandpiper, isolated, absorbed in his own world of minutiae and oblivious to the larger world, is evoked as the oboe stream continues alone for another three measures. A final *decrecendo* occurs in the last two measures where the gestures progress from *mp* to a single *ppp* event.

Conclusion

From the above discussion it is apparent that the most important textural features of 'Sandpiper' are the way in which the streams interact, and how they represent personae and actions in the text. By creating distinct textural streams and establishing strong symbolic roles for them, Carter produces a song in which the complex interaction of images in the text is accurately portrayed by the interaction of these textural streams.

Typically in 'Sandpiper' streams proceed concurrently, with one or more streams dominating the texture. This is made possible by a number of techniques. Firstly, we are able to distinguish which stream has come to the fore because of the clear distinction between the properties and behaviours of the different streams in the song. Secondly, the stream, or streams, being focussed on usually proceeds continuously, and, preceding this,

frequently undergoes intensification processes. For example, in m.17 the events comprising the primary 'sandpiper' stream start to intensify in registral placement and dynamic intensity, and group into longer gestures until, in m.22, they proceed continuously together with the other 'sandpiper' streams. Thirdly, in a compensatory process, when a particular stream, or streams, comes to the fore, the other streams are relegated to the background. This is achieved through the cessation of a stream, for example the secondary 'sandpiper' stream ceases to sound in mm.40-44, or through various diminishment processes, for example in m.11 the primary 'sandpiper' stream diminishes in registral placement and dynamic intensity and proceeds with short intermittent gestures instead of continuously. Occasionally Carter supports the prominence of a particular stream by highlighting some of its events through focussing processes. For example, in mm.29-39 the piano and strings gestures comprising the 'ocean' stream are focussed on through the playing instruction "bring out (solo)" .

The stream interaction that occurs in 'Sandpiper' plays an important role in the formal delineation of the song. 'Sandpiper' comprises time spans with distinct overall textural sounds, resulting from the particular streams that are being focussed on. These time spans support the changes in semantic content in the poem: each change in textural focus coincides with a change in the focus in the text. The two images that are presented alternately in the text are the sandpiper and the world (i.e. the ocean and the beach) that surrounds him. Since these images are clearly depicted in the music through the properties and behaviours of particular streams, the focussing processes that occur have symbolic meaning as well as musical function. When the text is concerned with the description of the sandpiper, his movements and his emotions, the streams associated with the bird come to the fore. When the ocean is being described, the 'sandpiper' streams recede and the streams associated with the ocean and the beach dominate the texture. Unlike many of the other songs in this cycle, the vocal stream does not have an independent symbolic role, but

imitates the other streams. In this way the depiction of the two images permeates the entire texture. As was discussed in the analysis, the changes in texture do not consistently correspond with the stanzaic structure of the poem or with the sectional structure articulated by the changes in time signature and tempo modulations, and even when they do there are no distinct moments of structural articulation in the song.

There are two other areas in 'Sandpiper' where significant textural processes occur that function musically and symbolically. The first of these takes place in mm.39-53, where a combination of intensification and diminishment processes lead to a musical climax in m.53. The climax occurs at the most emotionally intense moment in the poem and symbolizes the bird's obsessed mental state. The second major textural changes occur at the end of the song. Diminishment processes in many aspects of both the individual streams and the overall texture, create musical closure and symbolize the diminished emotional intensity and sense of resolution reached in the poem. The final solo oboe gestures reinforce the isolated figure of the sandpiper, obsessed with his microscopic world.

'VIEW OF THE CAPITOL FROM THE LIBRARY OF CONGRESS'

The next song we will examine, the fifth in the cycle, 'View of the Capitol', is more complex texturally than the other three songs we have analyzed. This is because the song is composed for a significantly larger instrumental ensemble than the other songs and divides into more streams, because the song is longer, and because of the greater structural complexity that reflects the interplay of images in the poem.

TEXT

Carter's selection of the poem 'View of the Capitol' was perhaps a response to the occasion for which the song cycle was commissioned, the United States Bicentennial. The poem does not celebrate the country's founders, however, but portrays the relationship between nature and the government in a comical and ironic way. A discussion of the formal aspects of the poem will be followed by a detailed account of the content, through which this relationship is made explicit.

Formally the poem is divided into five stanzas of unequal length: a five-line stanza is followed by two quatrains, then another five-line stanza, and finally a quatrain. There is an irregular but pervasive rhyme scheme, with end-line rhyming occurring within stanzas:

Stanza 1: a b c c b
Stanza 2: d e f e
Stanza 3: g h g g
Stanza 4: i j j k k
Stanza 5: l m n m

The correspondence in rhyme scheme between the second and fifth stanzas is not matched by other formal similarities, like stresses per line, nor does it have a close thematic correspondence. It can be attributed to Bishop's practice of formalizing the surface of her poems.

Each line has four stresses, with the exception of the last line in the first stanza and the second and fourth lines in the last stanza. The last line in the first stanza has five stresses, which emphasizes it rhythmically after the regular stress pattern that has been established in the first four lines. In the last stanza the irregular succession of stresses - four, three, four, two - accelerates the poetic rhythm towards the final climatic line in which the speaker reveals her feelings. Bishop also uses assonance as a formal device in this stanza by repeating phonemes in successive words. The back vowel [u] is repeated in the second and fourth lines of the stanza, the diphthong [eI] in the first line and the forward vowel [ɔ] in the third line:

"Great shades... music room"
"gathered brasses... boom-boom"

Typically of Bishop, the sentences and images in 'View of the Capitol' do not always conform to the formal structure into which she divides the surface of the poem. Although the semantic content is also organized into five sections, only the first and last sections occupy a complete stanza. A chronological examination of the content of each section will explain the relationship between the two structures.

The first section corresponds with the first stanza and comprises two sentences in which a complete image is presented. A speaker, presumably located in the Library of Congress, describes her view of the light falling on the Capitol Dome. The opening sentence is concerned with the movement "from left to left" of the sunlight along the circular Dome. A sense of nature's power is implied in the description of the light as "heavy", as if it is pushing at the structure. In the second sentence another reference to the light is used to describe the Dome. The building is portrayed as being impenetrable, for a lunette "turns [the light] aside" and "blankly stares" because it is "wall-eyed". Bishop's animation of the

building as a horse connotes the qualities of strength and power that the Dome needs to repel the natural forces exerted on it.

The particular combination and ordering of the adjectives in the simile, "like a big white old wall-eyed horse", presents an awkward succession of stop-plosive consonants like [g], [t], and [d]. This rhythmic feature, together with the imposition of a strong local series of stresses on the regular stress pattern, draws the reader's attention to the phrase, and functions dramatically to suggest the speaker's unflattering attitude toward the government, and to prepare the reader for the start of a new stanza in which a fresh aspect of observation is presented.

The second section of the poem includes both the second stanza, comprising one sentence, and the first two lines of the third stanza, another sentence. In this section the observer turns her attention to the Air Force Band that is playing on the steps of the Capitol. She focuses on the visual appearance of the band and emphasizes the institutional quality of their dress by describing their dull, bland "uniforms of Air Force blue". She then describes the sounds of the band comically: the members are playing "hard and loud", but their music is being distorted *en route* to the speaker's ears, so that "the music doesn't quite come through". In the second sentence of this section the speaker elaborates on how the music sounds when it reaches her, "dim then keen, then mute". She seems puzzled by the cause of the distortion, for, as she notes, "there is no breeze". From the speaker's perspective the fuzzy sound of the band does not correspond to the visual clarity that she observes.

The third section comprises the last two lines of the third stanza and the first two lines of the fourth stanza. In this section the speaker returns to the theme of nature and offers an explanation of why the music sounds sporadic to her. She suggests, rather fancifully, that the trees standing between herself and the band must "catch the music in their leaves". She

attributes "giant" grandeur to them, and also majestic volition, in that she says that they "intervene" rather than merely interfere. The trees exert an alchemy on the "hard" music, transforming the sound into the glitter of "gold-dust" when it reaches their leaves, and changing it from an aural phenomenon to a visual one. This transformation provides a thematic connection to the dichotomy of the visual and aural aspects of the band that the speaker observed earlier.

The fourth section is the shortest, comprising the last three lines of the fourth stanza. The pattern of two sentences per section is broken here for the first and only time in the poem. The early and unexpected end of this semantic section functions symbolically to reflect the speaker's observation: the words "vanish" in the same way as the music does. The observer's attention returns briefly to the band on the Capitol steps, and she describes the flags that are presumably carried by the band. She refers to them in diminutive terms and portrays them as ineffectual, feeding their "limp stripes into the air". (They are limp because there is no wind.) In a visual analogy to the aural distortion, where the music is blocked by the trees, the stripes of the flags are consumed by the air. The band, a symbol of the government, is once again being overcome by the forces of nature.

The fifth and final section corresponds to the last stanza. This section is differentiated from the others not only by the unusual rhythmic structure mentioned above, but also by its content, since it begins imperatively, not descriptively like the other sections. In the first two-line sentence the speaker issues an order to the trees, "Great shades, edge over,/ give the music room," and in the second sentence she explains the directive by stating the band's intention, they "want to go/ boom--boom". Her tone is ironic, and her attitude to the government, which has been hinted at through her earlier descriptions of the Capitol Dome and the band, becomes clear. Her command to the trees, which would appear to be in sympathy with the ambitions of the band, is clearly absurd; the trees may be able to catch

the music, but they cannot move. The band's ambitions thus run against the order of nature. Further, the intention of the band (and government) appears to be one of destruction; the innocuous "*boom--boom*" of the band's drum acquires sinister connotations when interpreted as the *boom-boom* of a cannon.

In summary, the poem presents a number of different images, the light and the Dome (the first section), the band (second, fourth and fifth sections) and the trees (third and fifth sections). The light and the trees are both images of nature, while the images of the Capitol Dome and the band both represent the government. Thus there are two main personae in the poem, nature and the government. Nature is personified as powerful and majestic while the government is portrayed as blind, officious and aggressive. The relationship of tension that exists between these two elements in the poem is characterized by a symmetrical power struggle. Both interfere with the other's activities: the Dome turns the light aside, and the trees catch the band's music in their leaves. The final stanza makes explicit this relationship when the speaker orders the symbols of nature, the trees, to stop interfering with the actions of the band, the symbol of the government.

A second look at the semantic structure of the poem in terms of the sections that have just been discussed reveals a slightly different scheme with a new symmetry. The lengths of the sections are: four lines, six lines, four lines, three lines, four lines respectively. The symmetrical scheme with four-line sections alternating with sections of irregular length reflects the alternation of recurring images in the poem, but the recurring four-line sections do not correspond to a particular image. This ambiguous structure, underlying a relatively straightforward surface structure, is another example of Bishop's penchant for achieving contrapuntal resonance through the superposition of conflicting structures. Connections are made between these different readings of the poem through, for example, the rhyme scheme. Instead of occurring within stanzaic sections, rhyming occurs between the second

and third sections, and between the third and fourth sections, linking the sections and the images and providing a sense of continuity.

'VIEW OF THE CAPITOL': MUSIC

Carter's setting of 'View of the Capitol' follows the poem's semantic structure, which is based on images and sentences, rather than the stanzaic structure. He divides the song into the five sections described above, with each sectional break articulated by a tempo modulation. The first, third and fifth sections proceed at a tempo of $\text{♩} = 90$ and have the expressive indication *Maestoso*. The second section proceeds *Alla Marcia* at a tempo of $\text{♩} = 72$, while the fourth section is marked *Vivace* and has a tempo of $\text{♩} = 135$. From the tempo and expressive indications of the music, which correspond to the symmetrical scheme of sectional lengths, one might assume that Carter's formal plan for this song would be ABACA. It is, however, more complex than that. After discussing the most significant textural features of the music, we will return to the form of the composition by presenting a chronological analysis of 'View of the Capitol', which will focus on aspects of form and on text setting.

A. Main Textural Features

1. Streams

The first main section of the song, the *Maestoso* (mm.1-22), presents three of the four most important instrumental streams in 'View of the Capitol', as well as establishing the vocal stream. These three instrumental streams are important because they recur repeatedly in the song and because they have symbolic roles in the depiction of the text. The streams will be discussed in the order that they are initially established, and their defining properties, behaviours and processes will be analyzed.

The song opens with a single multi-timbral stream comprising events in the wind and string instruments and the piano. Events are attacked singly or in pairs, then sustained; they exhibit pitch and intervallic continuity, that is, timbrally distinct events articulate the same pitches, and simultaneous or successive events often form M9's. The secondary property of high dynamic intensity supports the coherence of the stream. The stream is also defined by a pulse in which the events are attacked every tenth triplet eighth-note, as was discussed in **Example 11** on page 53. The relatively low attack density at the tempo of $\text{♩} = 90$ characterizes the stream, as does the wide registral range covered by the events. This stream, with all of its characteristic properties and behaviours, recurs throughout the song and will be referred to as Stream A.

The second stream of significance, which we will call Stream B, emerges from Stream A through a splitting process initiated in m.3. The onset in m.3 of a second pulse (also of attacks every tenth triplet eighth-note) signifies the initiation of the splitting process. The onset of the second pulse, a clarinet event, is inaudible so the listener perceives the second pulse only gradually. Not only is the onset weak, but, since attacks belonging to this pulse occur at a distance of five triplet eighth-notes from the attacks belonging to the original pulse, initially the second pulse simply sounds like it is filling in the 'ands' between the beats belonging to the original pulse. By the time the pulse is easily perceptible, mm.4-5, the events that comprise the second pulse have acquired other properties and behaviours that distinguish them from the events of Stream A. Our ability to hear Stream A and Stream B as distinct continuities is partly due to the opposition we perceive between their defining properties and behaviours. In **Example 54**, reproduced overleaf, an exemplary gesture from each stream is excerpted for comparison.

Example 54: 'View of the Capitol'

Stream A gesture

Musical score for Stream A gesture. The score is written for Flute (Fl), Piano (Pno), Violin (Vln), Clarinet (Cl), Viola (Vla), and Oboe (Ob) in the upper staves, and Piano (Pno) and Violoncello (Vcl) in the lower staves. The music features a complex rhythmic structure with a 10-measure phrase. The upper staves contain melodic lines with triplets and slurs. The lower staves provide harmonic support with triplets and a 'Sub-' marking. The score is divided into two measures by a vertical dashed line, with a 10-measure phrase indicated above each.

Stream B gesture

Musical score for Stream B gesture. The score is written for Flute (Fl), Oboe (Ob), B-flat Clarinet (Bb Cl), and Piano (Piano). The music features a complex rhythmic structure with a 3-measure phrase. The upper staves contain melodic lines with triplets and slurs. The lower staves provide harmonic support with triplets and a '3' marking. The score is divided into two measures by a vertical dashed line, with a 3-measure phrase indicated above each.

The piano and wind events that comprise Stream B group into short intermittent gestures with high attack densities, in contrast to the low attack density of Stream A. In retrospect, Stream B is anticipated by the anacrusic piano gesture in m.1, comprising two dyads attacked in close succession, which presents an interval characteristic of Stream A (D# - F is a M9 enharmonically), but, in other properties and behaviours, foreshadows Stream B. Aside from the distinctive rhythmic behaviour of the gestures, Stream B is also defined by the primary property of pitch parity between the events and is made distinct from Stream A by the lack of pitch parity between its events and those of Stream A. The events in the new stream occur within a relatively narrow, central registral band compared to the wide registral range covered by the events in Stream A, which are placed both higher and lower than the new events. While most of the stream-defining characteristics of Stream A remain unchanged, some changes do occur as a result of the splitting process in m.4. The stream is now also defined by the primary property of timbral parity between events -- only string events comprise this stream after m.4 -- and it undergoes a diminishment in registral density.

The vocal stream enters in m.4. It is characterized primarily by the timbral parity between its events and by the interval class parity between successive events, featuring M2's, M9's and m7's, all belonging to interval class 2. These stream-defining properties are supported by the secondary characteristics of high dynamic intensity and connection behaviour. There are other similarities between the vocal stream and the instrumental streams. The vocal stream has approximately the same attack density as those of the combined pulse streams, but it does not state a pulse, nor do its events exhibit attack point parity with the events of the other streams. In addition, there is some pitch parity between the vocal events and those of Stream B, and interval parity between the vocal events and those of Stream A. However, the strong timbral disparity between vocal events and those in the concurrent streams, as well as the distinctive dynamic intensity and connection behaviour, ensure that the voice is

heard as a separate stream. In fact, the vocal events form a distinct stream for the entire song, although the vocal stream's defining characteristics change, for example, when Stream C is introduced in the *Alla Marcia* section (discussed below).

The third important instrumental stream enters in m.16 and comprises events in the violin. This *scherzando* stream is characterized by the low registral placement of the events, by its high attack density, and by its rapidly fluctuating contour. Although this is the third important stream to enter, it will be referred to as 'the *scherzando* stream' rather than as 'Stream C'. This is because letter names are being reserved for streams with symbolic associations (which will be discussed later in the analysis); the *scherzando* stream does not have any specific symbolic representation. The *scherzando* stream proceeds intermittently and is concurrent with Stream B. It is similar to Stream B in its high attack density, but remains distinct because of the pitch disparity between its events and those of Stream B and because of the greater connection behaviour of its events. This *scherzando* stream's rhythmic behaviour grows more consistent from m.18 onward and a quintuplet sixteenth-note pulse emerges. The stream undergoes a timbral change to events in the clarinet in m.18, in the cello in m.20 and to events in the viola in m.21. Carter ensures that the *scherzando* stream will still be audible in the lower register by marking the cello and viola events as solos.

The second main section, *Alla Marcia*, opens with the establishment of the fourth significant stream in 'View of the Capitol'. This new stream, Stream C, comprises events in the viola, starting in m.22, and, as of m.23, intermittent events in the snare drum. The stream is defined by a repeating pitch set in the viola (Db4, Eb4, Bb4, C5), by its narrow registral range and by its quintuplet eighth-note pulse. Stream C proceeds continuously. There is a close relationship between the vocal stream and Stream C in this section, since they have many properties and behaviours in common: there is pitch continuity between the

voice and viola events, and the vocal stream is also characterized by a quintuplet eighth-note pulse. The vocal stream, however, remains distinct because of the overriding timbral disparity between its events and those of Stream C.

2. Combined Streams

The interaction of these recurring streams, as well as of lesser streams, is an important textural feature of 'View of the Capitol'. While one stream does occasionally proceed alone, there are usually two or more streams proceeding simultaneously. Our ability to perceive the different streams as they interact and overlap is, of course, permitted by the distinction of the defining characteristic properties and behaviours of the individual streams.

A good example of the way in which streams are combined in this song occurs in the *Alla Marcia* section and involves three of the most important streams, A, B and C. Stream C, formed by events in the viola and snare drum, is established in mm.22-24, as was discussed above, and proceeds relatively unchanged throughout this section. A modified version of Stream A enters in m.23 and comprises events in the strings and winds. It proceeds intermittently now, with varying timbral events: for example, in mm.23-24 Stream A comprises events in both the winds and strings, while in mm. 26-27 and mm.29-30 the events in the strings alone belong exclusively to Stream A. The most significant modifications to this stream are the lack of a regular pulse and the lack of simultaneous attack points. However, the retention of other properties and behaviours make it recognizable as the same stream: the pitch continuity between timbrally distinct events (in mm, 23-24), the intervallic continuity in the form of M9's between events, and the wide registral range of the stream's composite events. As before, the events are grouped into sustained dyads and individual pitches. Some rhythmic characteristics are consistent with the original Stream A -- the low attack density and the close temporal proximity of the

events. Stream B reenters in m.24 and comprises events in the wind instruments, piano and strings, played *quasi da lontano*. Although the piano gesture in m.24 exhibits pitch parity with events in Stream A, it is perceived as part of Stream B because of its high attack density, a behaviour that is characteristic of Stream B. The events in Stream B are, as before, grouped into gestures and the stream proceeds intermittently. Timbral distinction between the string events that belong to Stream A and those that belong to Stream B is ensured by different articulations: events belonging to Stream A are played *arco*, while those belonging to Stream B are played *pizzicato*.

After the three streams are established in the opening gestures of the *Alla Marcia*, Stream C proceeds continuously, while Streams A and B either alternate or proceed concurrently in such a way that the listener focuses on either one or the other. For example, in mm.26-27 the gestures in Stream B are spaced so far apart that the listener focuses on Stream A's sustained dyads. In mm.27-29, however, Stream B takes over. In a process of compensation Stream A ceases for three measures, while intensifications of attack density and registral density occur as Stream B now comprises events in all of the instruments (including bass drum events and excluding viola and snare drum events), and there is a *crescendo* at the end of m.28. Starting at the end of m.29 Stream A reenters, and, in compensation, the durations of Stream B's gestures become shorter and the time spans between gestures lengthen. The listener's attention is thus focused again on Stream A.

In summary, the interaction of streams in this song is characterized by a number of streams proceeding simultaneously, some continuously and others intermittently. Alternately, different streams come to the fore and claim the listener's attention through various textural processes.

3. Musical Functions

One textural feature of 'View of the Capitol' that contributes to the formal design of the song is climax. Moments of climax usually result from behaviours and processes of intensification, and the sense of arrival is reinforced by behaviours and processes of diminishment following the climax.

A typical example of climax occurs during the first *Maestoso* section, in mm.7-8. This climax involves a fusion process as well as behaviours and processes of intensification. Prior to m.7 two streams proceed concurrently, Streams A and B, both of which are characterized by pulses (as was discussed above). A process of fusion involving rhythm and pitch takes place in mm.7-8 as the two instrumental pulse streams merge. The individual rhythmic behaviours of the streams become more similar, for example at the end of m.7 the string events group into gestures with the same attack density behaviour as those of the Stream B, and the two pulses lose their distinctiveness when an attack conforming to the second pulse is articulated by the strings (formerly Stream A) on the second triplet eighth-note of m.8. Increasingly there is pitch parity between the wind, string and piano events, as can be heard on the third beat of m.8. This fusion process, together with composite *crescendo* behaviour, leads to a climax towards the end of m.8.

The sense of arrival at a climactic moment is reinforced by another aspect of pitch, as can be seen in **Example 55** overleaf. The total pitch content of two attacks on the last two triplet eighth notes of m.8, together with the last vocal pitch in m.8, comprises the chromatic pc aggregate. The presentation of the aggregate is significant at this point in the song because aggregates are not formed previously. The vocal stream not only completes the pc aggregate, but undergoes an intensification of behaviours which add to the local climax. Its registral range expands to articulate the highest vocal pitch event to this point, and the first and only example of melisma in this section occurs on the word "light".

Example 55: 'View of the Capitol' mm.7-8

Vocal Stream

the light is (heavy)

all twelve pitch classes

Fl 3 Pnc+Wnd

Ob BbCl Str Pnc+Wnd

Vla Vcl Str

Cb 3

10 11 12

* Cb written as sounds

Immediately following this climax, and helping to articulate it as such, there is an abrupt *decrescendo* and a decrease in the registral range of the fused instrumental streams.

A second textural feature of 'View of the Capitol' is that of cadence, usually involving behaviours and processes of diminishment. One such example occurs in mm.54-56 at the end of the second *Maestoso* section and involves behaviours and processes of diminishment in both Streams A and B. Stream A comprises events in the piano and proceeds concurrently with Stream B which comprises events in the winds and strings. Stream B is defined by parity of dynamic intensity between the events, as well as by the established properties and behaviours. In mm.55-56 the gestures in Stream B become shorter in duration and the time spans between the gestures become longer. The resulting diminishment in registral density and in attack density contribute towards a musical cadence which marks the end of the section. The *crescendo* behaviour of individual gestures here

does not detract from the composite *descrescendo* created by the other diminishment behaviours and processes.

A third textural feature of 'View of the Capitol' is the way in which Carter creates moments of structural articulation. Two different techniques can be observed. In one, he simply introduces new streams that replace the established streams, often overlapping the streams by a few measures. An example of this technique can be seen in mm.33-36 in the transition from the *Alla Marcia* section to the second *Maestoso* section. The tempo modulation marking the start of the *Maestoso* section occurs in mm.34-35, and at this point events in the vocal stream dissociate themselves from Stream C and acquire new properties and behaviours. Apart from this change, the established streams, Streams B and C, proceed across the break into m.35. Two brief triangle events occur in m.34 and m.35 and their distinctive timbre helps to articulate the structural break between sections. Simultaneously, Stream A enters, at first imperceptibly in m.35 where the piccolo and snare drum events articulate the first attack points of a pulse in which attack points occur every five triplet eighth-notes. This pulse is twice as fast as the one which regulated the original occurrence of Stream A (mm.1-3), but otherwise the stream is characterized by the same properties and behaviours as before and comprises events in the winds, piano and strings. As of m.36 Stream A proceeds alone and a new textural section is initiated.

Another technique that Carter uses to create moments of structural articulation is rhythmic and involves altering the pulse. Both of the examples discussed above in relation to climax and cadence involve pulse alteration. In the first example alteration of the pulse helps to reinforce the climax. Referring back to **Example 55**, the events comprising the pulse that characterized Stream A are excerpted and shown together with the vocal stream. In mm.7-8 Stream A's pulse of an attack every tenth triplet eighth-note is retarded so that events are attacked at a distance of eleven and twelve triplet eighth-notes after the last attack, i.e. these

attacks occur on the last two triplet eighth-notes of m.8. The two accented attacks in close succession disrupt the sense of regularly-spaced attacks that has been established by the pulse and emphasize the effect of increased intensity associated with the climax.

In the second example an accelerating pulse occurs across the structural break between the second *Maestoso* section and the *Vivace* section in mm.53-57. Stream A, comprising events in the piano, articulates a steadily accelerating pulse from m. 53 to m.57 across the sectional break and the tempo modulation. Each subsequent event attack occurs at an ever decreasing multiple of the triplet eighth-note in the durational series: 10, 9, 8, 7, 6, as can be seen in **Example 56**. Once again alteration of the pulse is used at a structurally significant moment as one section ends and another begins. In this case the pulse alteration does not contribute to the cadence that is taking place in mm.54-56, but forms a transition across the structural break.

Example 56: 'View of the Capitol' mm.53-57 (piano stream)

The image shows a musical score for piano, consisting of two staves: a treble clef staff and a bass clef staff. The score covers measures 53 to 57. The music features a steady stream of triplet eighth notes. Below the piano part, there are annotations for the durational series: 10, 9, 8, 7, 6. Above the treble clef staff, there are annotations for the tempo modulation: *Maestoso* and *Vivace*. The score includes various musical notations such as triplets, accents, and dynamic markings.

B. Form and Text-Setting

Now that the most important streams and textural features of 'View of the Capitol' have been discussed, let us look at the way in which the song unfolds and at how Carter articulates the form of the song and reflects the meaning of the text.

The first section, *Maestoso*, opens with the establishment of the Stream A, as was discussed above, and, after a splitting process takes place in mm.3-4, Stream B is established. The entrance of the vocal stream in m.4 is coincident with significant changes in the behaviours of the currently active streams. Both Streams A and B have *decrescendi* in m.4, the pulse attack belonging to Stream A on the downbeat of m.4 is weakly articulated by a single piano event (previously the pulse was articulated mostly by string events), and Stream B misses an attack on the fifth triplet eighth-note in m.4. These changes permit the listener's attention to focus on the vocal stream, as the singer starts to describe her view of the Dome.

As was discussed above, in mm.7-8 a fusion process, along with behaviours and processes of intensification, create a climax in mm.7-8. The pulse manipulation that occurs in m.8 contributes to the articulation of a structural arrival point, as does the completion of a pitch-class aggregate. The climax, which involves all of the concurrent streams, functions musically and symbolically. A musical point of structural articulation is created by the climax, although, since it is not matched by a structural break in the text, it has a secondary formal role. Simultaneously, the climax, an accumulation of intensity, symbolizes the weight of the light as it falls on the Dome, depicting musically the oxymoronic phrase "the light is heavy".

This climax is followed by abrupt diminishment behaviours (which serve to reinforce, in retrospect, the sense of arrival), after which behaviours and processes of intensification

build towards another climax of greater intensity that marks the end of the first sentence and a more significant point of structural articulation. As of m.9 Stream B is no longer defined by any pulse, but the events maintain most of their other characteristic properties and behaviours. Other processes of intensity, however, start to occur almost immediately and build towards the second climax. The vocal stream's attack density increases in m.9 as it approaches the end of its opening sentence, m.10. Simultaneously, in mm.9-11 Stream B undergoes a gradual *crescendo* and an expansion of the registral range covered by its events. Stream B continues through to m.12, where the processes of intensification culminate in a climax which marks a structural break articulating the end of the sentence.

The beginning of the next sentence of text is articulated by the entrance of a new violin stream in m.12 which replaces Stream B, and by changes in the vocal stream.¹ This new violin stream is defined primarily by the timbral parity between its events and by their high registral placement. Secondary properties and behaviours include the low dynamic intensity and the connection behaviour of the events. The violin stream is also characterized by a pulse of attacks every five triplet eighth-notes or multiples thereof, as can be seen in the upper staff of **Example 57** overleaf.

An accompanying stream of intermittent sustained pitches is also present. It too is characterized by low dynamic intensity, but is differentiated from the violin stream by the wide registral range and lack of connection behaviour between the events. Although this accompanying stream is not characterized by a consistent pulse, there are examples of brief pulses controlling the attack rate locally. For instance, the lower staff of **Example 57** shows how events are attacked at a distance of nine triplet eighth-notes in mm.14-16. The

¹ This moment of structural articulation was discussed in **Example 41** on page 115.

Example 57: 'View of the Capitol' mm.14-16

The image shows a musical score for two parts: Violin Stream and Accompaniment Stream, covering measures 14 to 16. The Violin Stream is written in a single treble clef staff, starting at measure 14. It features a melodic line with several triplet markings (indicated by a '3' over a bracket) and some notes with a flat (b). The Accompaniment Stream consists of two staves: a treble clef staff and a bass clef staff. The treble staff begins with a '8va *' marking above a note. The bass staff contains a more active line with triplet markings and some notes with a flat. Dashed lines connect specific notes in the Violin Stream to notes in the Accompaniment Stream, with labels '5', '3x5', and '9' indicating intervals or specific notes. A legend at the bottom left indicates '* harmonic'.

vocal stream reenters after these new streams have been established, in m.13. It is now characterized by a lower attack density than before and a low level of dynamic intensity, which soon changes at the *crescendo* at the end of m.14.

In m.16, as the singer reaches the end of the first phrase of the second sentence, the currently active streams change to mark another moment of secondary structural articulation. Stream B reenters, accompanied by the *scherzando* stream discussed earlier. It comprises events in the winds, piano and strings, and is defined by the same properties and behaviours as before, with the additional characteristic of interval (as well as pitch) parity between the events (P4's, M2's and m3's). As before, events are characteristically grouped together into brief intermittent gestures. Because many attack points of events occur simultaneously, the stream is also characterized again by its high registral density, which is deemphasized somewhat by the low dynamic intensity. The *scherzando* stream, while having some properties and behaviours in common with both Stream B and the violin

In summary, an important formal function of this first *Maestoso* section of 'View of the Capitol' is to introduce the listener to the main musical material. The streams and processes that have been described function musically and help to articulate the grammatical divisions, as well as symbolizing the text through intensification on the phrase "the light is heavy". In the music that follows, the association between the streams and the images and persona in the text, and their symbolic functions become more explicit. In retrospect the listener perceives that the music in this opening section is setting the scene for what the narrator is going to describe.

In the *Alla Marcia* section the speaker's attention shifts to the Air Force Band playing on the steps and symbolic associations between the streams and the text become apparent. The associations are made primarily through the non-musical connotations of certain properties and behaviours of individual streams. The new Stream C (discussed above) that delineates the start of a new section, symbolizes the Air Force Band described in the text through the rhythmic behaviour and the timbre of its events: the regular quintuplet eighth-note pulse alludes to the kind of rhythmically regular music played by a martial band, and the snare drum is a traditional band instrument. The stream proceeds continuously and presents an uninterrupted aural image of the band; it will be referred to henceforth as the 'continuous band' stream. Stream B reenters in m.24 with events in the wind instruments, piano and strings played *quasi da lontano*. While the 'continuous band' stream represents an unbroken image, corresponding to the continuous visual image the speaker has of the band, Stream B symbolizes a different aspect of the band. It depicts the way in which the speaker *hears* the band, "the music doesn't quite come through", but "comes in snatches, dim then keen". Here the connotation of the military band is again achieved in part through the instrumentation (the piccolo and bass events) and through the high attack density of the stream, which connotes conventional rhythmically active military band music. The intermittence of the gestures portrays the sporadic snatches of music that the observer hears

from her location. The *quasi da lontano* and the low dynamic intensity match the mutedness of the music as the speaker describes it. Stream B will hereafter be referred to as the 'intermittent band' stream to differentiate it from the 'continuous band' stream. The meaning of the presence of the 'intermittent band' stream in the first section is now clear: the speaker first heard the music while she was observing the Dome, and this was why she turned her attention to it and began to describe it in the second section.

The two 'band' streams can thus be interpreted as representing the two aspects of the band that the speaker experiences from her location in the Library of Congress, i.e. different streams contribute to the signification of different aspects of a single persona. The 'continuous band' stream represents the visual aspect of the band (the speaker describes with detail and clarity the band's uniforms), where a complete visual image is matched by an unbroken aural image. The 'intermittent band' stream represents the aural aspect of the band in that their music reaches her ears sporadically. Thus Carter's differentiating the texture into streams represents musically the opposition between the sensory images presented in the text.

The rest of the *Alla Marcia* section is devoted to the speaker's description of the band's music, and is characterized texturally by the way in which Streams A, B and C are combined, as was discussed earlier. The association of the 'intermittent band' stream (Stream B) with the speaker's aural image of the band becomes explicit in this section because of the close relationship between the words of the song, and because of the way in which the 'intermittent band' stream proceeds. While the 'continuous band' stream proceeds continuously and relatively unchanged throughout this section (from mm.22-36), the 'intermittent band' stream and Stream A interact by alternating so that the listener's attention is drawn alternately to each stream, depending on the focus of the text. **Example 59**, mm.28-31 (reproduced overleaf), shows the interaction between the 'intermittent band'

Example 59: 'View of the Capitol' mm.28-31

The musical score is divided into two systems, measures 28-31 on the left and measures 30-31 on the right. The vocal parts (Soprano) have lyrics: "and loud, but - queer - the" (mm. 28-29) and "mu - sic docs - n't quite come through. It" (mm. 30-31). The orchestral parts include Violins, Violas, Piccolo, Oboes, English Horns, Bassoons, Piano, Violoncello, and Contrabass. Handwritten annotations in black ink identify three distinct musical textures: **Stream C 'continuous' band** (circled around measures 28-29), **Stream B 'intermittent' band** (circled around measures 30-31), and **Stream A** (circled around measures 30-31). The score includes various dynamics such as *mp*, *pp*, *mf*, *p*, *ppp*, and *f*, along with performance instructions like *quasi da lontano*, *pizz.*, *arco*, and *(una corda sempre)*. Measure numbers 28, 30, and 31 are clearly marked at the beginning of their respective staves.

stream and Stream A and how they relate to the text. In mm.28-29 the 'intermittent band' stream comes to the fore through behaviours and processes of intensification, and Stream A ceases for three measures. The intensification processes have a functional symbolic role as they occur when the speaker describes the band's music as "hard and loud". Starting at the end of m.29 Stream A reenters, at first imperceptibly, the durations of the 'intermittent band' stream's gestures become shorter, and the time spans between the gestures become longer. The listener's attention is thus focussed again on Stream A, which seems to absorb the band's music; the speaker describes what we hear when she says "the music doesn't quite come through". This is the last Stream A gesture of the section.

After this passage the 'intermittent band' stream continues to portray the manner in which the observer is hearing the music of the Air Force Band. When she describes the music as coming in "snatches", m.32, the gestures become more intermittent and less registrally dense. In m.33 the word "dim" occurs at a moment of silence between gestures, and when she describes the sound as "keen" there is an abrupt intensification of registral density and attack density in the 'intermittent band' stream and an intensification of dynamic intensity in the 'continuous band' stream. Similarly, in m.34 the word "mute" has no attacks simultaneous with it.

In summary, the *Alla Marcia* section focuses textually and musically on the Air Force Band. For the first time in the song symbolic associations are made between streams (Streams B and C) and a persona in the text (the band). The role of Stream A appears to be an obscuring one, given its interaction with the 'intermittent band' stream, but its specific symbolic meaning is not made explicit until the next section, the second *Maestoso*.

The second *Maestoso* section starts in m.35 with the musical transition that was discussed earlier. The point of structural articulation is signified by the change of streams from the

'band' streams to Stream A, although, typically for Carter, the streams overlap for a few measures. There is a textual overlap too, since the last line of the previous sentence, "and yet there is no breeze", is sung after the tempo modulation has occurred. This line reintroduces the the theme of nature, which will be developed further in this section. Stream A exhibits its characteristic properties and behaviours once the stream has been established in m.37, and is also defined by a high level of dynamic intensity. In this section, for the first time, the symbolic role of this stream becomes explicit: Stream A represents the trees. A direct connection is made between the stream and the image when the speaker observes that "the giant trees stand in between" herself and the band. The striking M9 articulated on the words "The gi-[ant trees]" associates the trees with the M9's that characterize Stream A.¹ The attack density of the events in the vocal stream is lower in this section and there is intervallic parity between events (M9, M2, m7). Later the speaker suggests that the trees "intervene" and in retrospect it is apparent that the concept of the trees interfering with the music was depicted in the second section, where the 'intermittent band' stream faded into the background or ceased when the Stream A, the 'tree' stream, was active.

A moment of structural articulation occurs in mm.40-41, when the pulse is altered and new streams are introduced, and this is followed by a gradual build-up of intensification that leads to a climax. Although these textural changes do not occur at a structurally significant point in the poem, they have symbolic significance. In m.40 the pulse belonging to the 'tree' stream is extended so that there is an attack six triplet eighth-notes after the preceding one (m.41), a rhythmic device characteristic of points of structural articulation in this song. Two streams supplant the 'tree' stream, the *scherzando* stream and the 'intermittent band'

¹ An association can be heard here between the M9's of the giant trees and the M9's of the 'ocean' stream in 'Sandpiper'; both the trees and the ocean are portrayed in the text a powerful natural forces, and Carter gives their signifying streams similar harmonic materials.

stream. The *scherzando* stream comprises events in the viola, and, although the stream is not marked *scherzando* this time, it is defined by the same properties and behaviours as the original stream and proceeds at approximately the same tempo. Like the *scherzando* stream of m.16, events in the viola stream are focussed on through the playing instructions, *marcato* and *con intensita*, and by their designation as solos. The *scherzando* stream proceeds concurrently with the 'intermittent band' stream, as it did in its first appearance. Initially the 'band' stream is formed by the oboe and clarinet events and later by events in all of the instruments, with the exception of the viola. The stream enters at a low level of dynamic intensity, but as the speaker finally describes in words the relationship between the band and the trees that the music has been describing, "I think the trees must intervene/ catching the music in their leaves...", there is a *crescendo* and the band comes into focus. The process of intensification culminates on the word "catching" in m.48; both the viola stream and the 'band' stream proceed *fortissimo*, and the vocal stream has a *crescendo* and an intensification of registral placement, articulating its highest pitch event in the song (Bb5). The behaviours and processes of intensification function musically as a climax and emphasize the importance of the text, where the aural distortion that the observer has been experiencing and describing is finally explained. The predominance of the 'intermittent band' stream at this point helps to portray the music being caught by the trees; after this the 'tree' stream takes over, the trees having successfully stopped the music.

The remainder of the second *Maestoso* section is characterized by behaviours and processes of diminishment that function cadentially, and by a return to the 'tree stream', which serves to symbolically reassert the power of the trees over the band. After m.48 composite *decrescendo* behaviour occurs in the vocal and the viola (*scherzando*) streams, and there is a diminishment in the registral placement of the vocal stream. The 'intermittent band' stream ceases in m.48-49 and is replaced by the 'tree' stream, which is formed by events in the string instruments in mm.49-53. As can be seen in **Example 60** (overleaf), the

interval of the M9 still characterizes the stream, although the individual timbral pitch events are organized into 4th dyads in mm.49-50.

Example 60: 'View of the Capitol' mm.49-50

The musical score for Example 60, 'View of the Capitol' mm.49-50, is presented in two staves. The top staff is for Violin (Vln) and the bottom staff is for Contrabass (Cb). The key signature is one sharp (F#). The score is divided into two measures. In the first measure, the Vln part has a sustained note on G4, and the Cb part has a sustained note on G2. In the second measure, the Vln part has a sustained note on G4, and the Cb part has a sustained note on G2. The interval between G4 and G2 is a major 9th (M9). The score is labeled '49 Vln' at the top left, ''Tree' Stream' on the left side, and 'M9' on the right side of the second measure.

The rearticulation of the 'tree' stream's giant 9th's as 4th's, characteristic of the 'intermittent band' stream, functions symbolically: in "catching" the band music the 'tree' stream seems to have mutated and absorbed the harmonic materials of the band. The *scherzando* stream continues through to m.53. The result of the cessation of the 'intermittent band' stream and the entrance of the 'tree' stream is that there is also a diminishment in composite registral density and attack density. The diminishment processes occur as the speaker describes how the trees catch the music in their leaves "like gold-dust" and the quieter, more gentle music portrays the transformation of the "hard" music into shimmering "gold-dust".

The textural features that Carter uses to signify the end of this *Maestoso* section were discussed earlier. After some changes occur in mm.53-54 (in m.53 the 'tree' stream undergoes a timbral transformation to piano events, and the 'intermittent band' stream reenters in m.54), there is a moment of reintensification in mm.54-55, followed by further diminishment processes. As well as the diminishments in the instrumental streams discussed on page 206, the vocal stream diminishes in attack density and articulates sustained pitch events. These processes symbolize the sense of rest that is expressed by the

image of the big leaves sagging, while the 'intermittent band' stream gestures symbolize the dripping of the "gold-dust" music off the sagging leaves. The diminishment processes also function cadentially to close the section. Simultaneously, the acceleration of the piano pulse belonging to the 'tree' stream functions to signify the moment of structural articulation as well as to lead into the next section, the *Vivace*.

In summary, the second *Maestoso* section functions to make the important symbolic connection between Stream A and the trees. The textual and musical focus is on the trees, except for when the 'intermittent band' stream comes to the fore to portray the trees catching the band music at the musical climax of this section.

The *Vivace* is the shortest of the five sections, being only eight measures at a tempo of $\text{♩} = 135$. In this section the speaker moves her attention back to the band to describe their flags and their music, and, correspondingly, the texture is dominated by the 'intermittent band' stream. New snare drum events, previously associated with the 'continuous band' stream, enter in m.56 to reintroduce the 'intermittent band' stream. The events comprising this stream proceed *quasi da lontano* from m.58, as they did in the *Alla Marcia* section. The snare drum roll proceeds continuously from m.57 to m.61 and emphasizes the timbral connection to military music. Events in the piano, while belonging to the 'intermittent band' stream because of their characteristic properties and behaviours, are focussed on by articulating a pulse of attacks every five quarter-notes. The pulse is clearly perceived by the listener especially when concurrent, timbrally distinct attack events are accented starting in m.62. The vocal stream proceeds at an higher attack density than before, without conforming to a pulse. In mm.60-62 the voice undergoes a deceleration, perhaps symbolizing the absorption of the "stripes into the air", and then accelerates with a *decrescendo* in mm.62-63 to connote vanishing. To summarize, the *Vivace* section corresponds textually and musically to the *Alla Marcia* section: in both sections the speaker

describes aspects of the Air Force Band, and in both sections streams associated with the band predominate the texture. The *Vivace* section is, however, considerably shorter than the *Alla Marcia*, suggesting that the band has diminished in power and stature since its interaction with the trees.

The transition to the third *Maestoso* section begins in m.64 before the tempo modulation, which occurs in m.65. The transition is preceded by processes of diminishment in the 'band' stream: in m.63 the 'band' stream undergoes diminishments of registral density and attack density, and exhibits *decrescendo* behaviour. The vocal stream also has a *decrescendo* and diminishes in registral range. These diminishment processes function symbolically to depict how "the band's efforts vanish there". Musically, the processes function cadentially to create closure, as well as articulating the end of a structural section. As before, the moment of structural articulation is also signified by a change of active streams and by the alteration of a pulse. The pulse which was articulated by the piano events is intensified and three attacks occur in close succession at a distance of five sixteenth notes. Events in the other instruments, no longer *quasi da lontano*, participate in the pulse and there is an abrupt *crescendo*. These dramatic chords initiate the reestablishment of the 'tree' stream, now modified timbrally, but maintaining other defining properties like the interval parity (M9's) between events. The chords signal the end of a structural section and also function symbolically by replacing the 'band' music with the 'tree' stream just after the speaker has described how the band's efforts "vanish there".

The text of the last section, *Maestoso*, presents images of both the trees and the band, but texturally it is dominated by the 'tree' stream. The section opens with the words "Great shades" set to two sustained pitch events that articulate a M9, again associating this interval with the image of the trees. After the relatively high attack density of the previous vocal events, this gesture contrasts dramatically and prepares the listener for a new section. The

accompanying 'tree' stream is defined by a pulse whose attack points occur at a distance of ten triplet eighth-notes, as in the opening *Maestoso*. The events of the stream are now organized into individual pitches, dyads and occasional gestures in the winds and strings, the piano, cymbals and bass drum. The measures immediately following the sectional break are still transitional ones and the properties and behaviours of the 'tree' stream do not become firmly established until m.68. In mm.65-67 the violin, viola and cello events are focussed on through the playing instruction 'angrily'. Proceeding concurrently, the bass drum event is the only one to articulate the pulse in m.66. The violin, viola and cello gestures are reminiscent of the *scherzando* stream gestures which occurred in the other two *Maestoso* sections (in mm.16-21 and mm.40-53), and function to link the three *Maestoso* sections texturally. The gestures are also similar to the 'angry' gestures of the 'intermittent band' stream in m.7, and symbolize the band's attempt to escape the smothering presence of the trees as the speaker instructs the trees to "edge over, give the music room". In m.68 the 'tree' stream articulates a second pulse of attacks at durations of ten triplet eighth-notes, starting with an event in the violin and then moving to events in the bass drum. The resultant composite pulse is an attack every five triplet eighth-notes, again comparable to the pulse in the opening section. The events that present attack points of the original pulse have higher composite registral densities and higher levels of dynamic intensity than those of the second pulse, so that the listener perceives this pulse more readily.

When the speaker starts to state the intention of the "gathered brasses" in m.73, a number of behaviours and processes of intensification take place. There is an intensification of the registral placement, dynamic intensity level and attack density of the events in the vocal stream and a *crescendo* in the events comprising the 'tree' stream. The musical climax which results from the intensification processes, in m.75, functions to emphasize the text. The climax occurs as the speaker reaches her most revealing moment in the poem and, instead of simply continuing to describe a scene, she suggests the band's rather sinister

collective desire: "The gathered brasses want to go [boom, boom]" (my emphasis corresponding to the highest and loudest pitch in the vocal stream).

The climax is followed immediately in m.76 by diminishment behaviours and processes that lead to a cadence at the end of the song. There is a diminishment in the registral density of the 'tree' stream and a *decrescendo*. On the first beat of m.77 the attack point of the second triplet eighth-note pulse is articulated by an event in the vocal stream instead of the 'tree' stream, as can be seen in **Example 61**.

Example 61: 'View of the Capitol' mm.76-77

The musical score for Example 61 consists of three staves: Vocal Stream, 'Tree' Stream, and B. Dr. (Bass Drum). The score is for measures 76 and 77. The key signature has one flat (B-flat).
 - **Vocal Stream:** Measure 76 contains a quarter rest followed by a quarter note G4. Measure 77 contains a quarter note G4, a quarter note A4, and a quarter note B4. The word "boom," is written below the first note of m.77, and "boom." is written below the second note of m.77.
 - **'Tree' Stream:** Measure 76 contains three triplet eighth notes: G4, A4, and B4. Measure 77 contains a quarter rest followed by a triplet eighth note G4, a quarter note A4, and a triplet eighth note B4.
 - **B. Dr.:** Measure 76 contains a quarter note G2. Measure 77 contains a quarter note G2. Below the staff, there are three eighth notes with a "3" above them, indicating triplets, with a "5" below each, likely representing a specific rhythmic or pitch contour.

This is the first time that the vocal stream has participated in a 'tree' pulse and it occurs on the word "boom", which is made prominent by its exposure. The participation of the voice in the pulse belonging to the 'tree' stream suggest the speaker's identification with this persona at this time (earlier the voice had imitated the 'continuous band' stream). Carter's

musical treatment of the text is as ironic as the tone of the speaker. He has a climactically loud "boom" explode in the music in m.75, and then he sets the actual words "boom, boom" at a whisper, rendering the band's sinister intentions child-like and ineffectual. The processes of diminishment that occur in mm.76-79 also function musically to produce a cadence to the end of the song.

Conclusion

It is clear from the above discussion that the musical form does not correspond neatly with the five sections that are defined by the tempo modulations and changes in expression. Although the text focuses on a particular image in each section, the music is more ambiguous in that streams representing the different personae are present and interact throughout the song. The textural analysis does, however, present two main elements that function musically and symbolically, and which correspond to the two images that were discussed in the section on the poem. The first is the 'trees' element, which represents nature. The second element is the band, which represents the government.

The first section acts as an introduction, in which both of the elements are presented. Although neither the band nor the trees is mentioned, the music of both is heard and prepares the listener for later appearances. In the text the two elements are represented by the Dome (the government) and the light (nature). As well as establishing the properties and behaviours of the 'band' and 'trees' streams, the first section also introduces the *scherzando* stream which recurs in the third section and briefly in the fifth, both of which are *Maestoso* sections. Once Carter has presented the streams in the opening section, he establishes the symbolic associations to the personae in the text in the second and third sections, as was discussed in the analysis.

Changes in the established stream behaviours contribute to the formal articulation of the song. Carter uses certain textural devices to articulate the large-scale sectional breaks that are defined by the tempo and expressive changes, and occasionally to articulate smaller structural breaks. New or different streams are introduced at the sectional breaks, although the change is frequently disguised by the overlapping of material from the previous section, for example in the transition from the third to the fourth sections. Sectional changes are also usually characterized by the alteration of a pulse, for example in the transition from the fourth to the fifth sections. Cadences and climaxes occur at moments of structural importance as well as to symbolize inflections in the text.

The interaction and changes of streams correspond to the interactions and changes in personae. Each of the poetic sections is set to music that is associated with the images, but within each section we also hear music representing the other element. For example, the third section, in which the speaker's attention turns to the trees, opens with the 'tree' stream, but the 'intermittent band' stream appears in m.41 and dominates the texture until m.48. All three of the *Maestoso* sections start with 'tree' music and the two sections that fall between them open with music of the 'band' streams.

In this way the opening of each section seems to confirm musically the form ABACA, but in the progression of the section the music expresses nuances in the text, for example in the interaction of the band's music and the trees. Thus, from this textural analysis of 'View of the Capitol', we can see that textural streams and processes account for both the form and the meaning of the song.

'ANAPHORA'

'Anaphora', the song that opens the cycle, is significantly different from the songs that follow it, and that we have discussed earlier. Particularly, the kind of textural processes that characterize this song are unique, and its formal structure is different, corresponding to the unusual formal structure of the poem.

TEXT

The poem 'Anaphora' consists of two fourteen-line stanzas. While there is little formal similarity between the beginnings of the stanzas, the last four lines in each case are indented. Also, the second and fourth lines of each of these concluding quatrains rhyme ("intrigue" with "fatigue" in the first stanza, and "event" with "assent" in the second). There are other end-line rhymes in the poem, but they do not conform to any regular rhyme scheme, nor do the two stanzas exhibit the same rhyme patterns. Because the rhyming is sporadic in the main body of the poem, the thickened rhyme of the last four lines acts cadentially to close each stanza and to mark structural breaks in the poem.

This rhyming cadential gesture is reinforced by the metrical succession of stresses and by the repetition of sounds within lines. In both stanzas the number of stresses in each of the first ten lines varies between three and five stresses per line (usually three or four). The last four lines of each stanza are shorter, however, and have a fixed stress pattern. The quatrain that ends each stanza has a pattern of three, three, three and two stresses per line.

The formal rhyme scheme has an analogy in a scheme of reiterated phonemes. Sporadic repetitions occur in the first parts of each stanza, while repetition occurs more consistently in the closing quatrains. For example, alliterative repetition of the stop-plosive consonant [b] occurs in the second line of the first stanza, and assonance is used in the fourth line

where the vowel diphthong [aɪ] is repeated in the words "white", "skies" and "eyes". Sibilants are repeated in the sixth line of the second stanza, as well as in the next two lines (which are almost exactly the same with the exception of the last word in each line), while the glide consonant [w] recurs in the tenth line of that stanza. However, in the last four lines of each stanza the repetition of sounds is more dense and, like the thickening rhyme, the denser repetition helps to create closure. The resonant nasal consonant [m] is repeated in the closing quatrain of the first stanza and the forward vowel [i] is reiterated in that of the second stanza.

The title, 'Anaphora', refers to the repetition of a word or a phrase in successive clauses. Anaphora occurs throughout the poem, for example, in the phrases "instantly, instantly falls" and "mortal/ mortal fatigue" in the first stanza, in the repetition of almost the entire line in the second stanza ("sinks through the drift of ..."), and in the repetition of phonemes which was discussed above. Repetition pervades the poem; the fourteen-line stanzaic structure with a closing quatrain is repeated, and the event which Bishop is describing appears to be part of a repeating cycle. A discussion of the poetic content will explain the nature of the cycle.

The first five lines describe an early-morning scene that is filled with energy. The activities (the "ceremony") of dawn are ritualistic because they are repeated every day. They begin with auditory stimuli in the form of "birds" and "bells" and "whistles". The repetition of the explosive consonant [b] propels the words forward sonically. Visual energy is also emergent, as is apparent from the mention of "white-gold skies" and "brilliant walls". In the sixth line of the stanza the reader becomes aware of the presence of the narrator who is describing the scene. Using the first person plural, "we", to indicate that she represents humanity, she wonders aloud where the "music" (i.e. the birds, bells and whistles) is coming from, and draws an analogy between the music and energy. She then asks what

"ineffable" god-like creature the day was intended for, since she clearly feels that the day is too intense for mere humans and must belong to a being who is too great for words.

In line nine, as if prompted by her rhetorical questions, the enigmatic creature appears in his earthly form. Although the description of his appearance occurs in mid-line, the start of this new sentence articulates an important structural break, for as soon as the creature appears, the energy of the early morning is described as undergoing a transformation and decline. The energy of the morning is closely connected to that of the creature (perhaps he is the source), since the dissipation of the creature's energy affects the world around him. As the description of his decline continues, it is apparent that the "ineffable" creature is the sun, whose energy dissipates from dawn through to dusk. As soon as the sun appears "he" becomes a "victim of long intrigue", and is destined to set as he has done countless times before, in accordance with human expectations. The sun assumes "mortal, mortal fatigue" because it is people projecting their fatigue onto the sunset that gives the sunrise its doomed character.

The visual division in the stanza at the onset of the closing quatrain is not matched by a break in the semantic content of the poem. The sentence runs across the visual indentation and the image being portrayed by the words is continued across the break. However, the closing quatrain does signify the section in which the decline of energy first becomes explicit, in the phrase "falls victim", and in the personification of the sun as subject to "mortal fatigue". The repetition of words in this quatrain also acts to retard the energetic proliferation of images presented earlier. Bishop creates a play on words with the pun "falls victim", which functions both as an idiomatic expression and to infer the downward trajectory which the creature will follow.

In the second stanza the decline of energy continues, as suggested by the words "more slowly" and "showering". The sun becomes visible, "falling into sight", with another pun on the word "falling", where the clichéd expression also implies physical movement. It starts to interact with humans: its light is diffused by the "stippled faces" and absorbed by them resulting in the sun "darkening". The imagery also portrays a setting sun that is darker and more condensed than the daytime sun. The sibilant sounds pervading this section of the poem connote the hissing of air from a deflating object, and thereby create a sense of energy being lost. The speaker describes a series of increasingly demanding ways in which "we" humans interact with the sun: "dreaming", then using, and finally abusing him. The sun "suffers" our uses and abuses as we drain him of his remaining energy. Bishop's order of intensifying interactions between the sun and humans, culminating in the near-repetition of "uses" and "abuses", creates a local climax in the sixth line of the stanza.

In the next two lines the sense of weariness experienced by the sinking sun is reinforced by the near-repetition of the entire line, and by the continued emphasis on sibilant sounds. His downward trajectory takes him through "the drift of bodies" and of "classes". The ability to discern details, like the "stippled faces", is lost now as the sun loses his brightness and darkness comes. He reaches his lowest point at "evening". Here Bishop introduces the figure of the "beggar in the park", who symbolizes the lowest, most impoverished form of humankind. He is weary and has no light, "without lamp", or history and educational advantages, "without... book". His condition is also analogous to that of the sun, who is spent, exhausted and whose light has been expended. The two images seem to merge.

In the closing quatrain of the second stanza the energy being described in the poem starts to increase again, as Bishop describes the beggar's "stupendous studies". They are prepared without the aid of light or books, implying that they are somehow more natural and instinctive than academic. The beggar could represent the artist (poet/composer), who, out

of the detritus of society, constructs the work of art that energizes all human endeavour (as the sun does).¹ The studies that he is preparing could also refer to a natural event, namely the rising and regeneration of the sun, "the fiery event", that was described in the opening of the poem, and which recurs every day "in endless, endless assent". The repeated adjective "endless" emphasizes that the sun, despite his "mortal" fatigue, is immortal. There is also a pun on the word "assent". The fiery event reconfirms itself with every repetition, and, in the process, assents to our repeated uses and abuses. The fiery event is also one of 'ascent', that is, sunrise. The closing quatrain of the poem anticipates the renewal of energy and the repetition of the cycle and draws the reader back to beginning of the poem, where the high energy event was first described.

The stanzaic form of the poem corresponds with the poetic content in some ways. In each stanza a character is introduced in the ninth line, the sun in the first stanza and the beggar in the second. The appearance of the figure, in each case, signals a change in the energy which is being described in the text. This change of energy only becomes explicit in the closing quatrain which follows two lines later, and which acts cadentially in terms of rhyme, rhythm and sound repetition, as discussed above. In the first stanza the energy undergoes a decline and in the second the energy increases. The movement that is described between these two points, however, runs across the stanzaic break. It is truncated since the high energy of pre-dawn is followed immediately by dusk and sunset, and the sun's progression through the middle of the day is omitted. This is because the poem is concerned with energy, not with the sun's progression: once the sun rises, the energizing is over and sunset is inevitable. A formal plan other than the stanzaic one cannot be discerned;

¹ David Schiff also identifies the beggar as a symbol for the poet. However, for Schiff, the beggar's reversal of the fall of energy "suggests the poet's willed, even deceptive, inversion of reality". He concludes that the poem is "both cosmology and ontology; it creates a world and places the hapless poet in its midst to give it meaning"(283). If the ineffable creature is the sun, then it is difficult to understand why the reversal of energy is the "inversion of reality", since, in reality, the sun will rise again.

the poem is characterized by moments of transformation and local intensification, rather than by clearly defined sections.

'ANAPHORA': MUSIC

Carter's musical setting of 'Anaphora' follows the semantic content of the poem, rather than the stanzaic structure, as it does with the other songs in the cycle. The most easily perceived structural break occurs in mm.23-24, following a change in tempo from $\downarrow = 88-90$ (*Allegro*) to $\downarrow = 70-72$ (*Moderato*). This point of structural articulation is supported by changes in other musical aspects, as we shall discuss, and occurs at the moment in the poem where the figure of the sun appears and heralds the decline in the level of energy. Aside from this formal division, 'Anaphora' is through-composed. Other local points of structural articulation and climax occur in the second section of the song, and usually function as textual allusions, describing particularly the changes in energy.

The theme of repetition that pervades the poem also underlies the musical structure in pitch and pc-set structure, and, to a lesser degree, in Carter's use of intervals. This theme is manifest in the static pitch repertoire of 'Anaphora', where each of the twelve pitch classes is fixed in a specific register, within the range of the soprano, for the duration of the song. In other words, pitches constantly repeat. Repetition is also evident in the vertical pc structure. The set-class type [012478] recurs harmonically in different transpositions mapped onto the fixed-pitch twelve-note structure.¹ This is the only hexachord containing all twelve three-note set classes and Carter makes the property explicit by frequently articulating the hexachord as two trichords. Repeated intervals are associated with repeated

¹ The pitch structure of 'Anaphora' has been discussed in detail in Craig Weston's paper "Text and Conceptual Modeling in 'Anaphora' from Elliott Carter's *A Mirror on Which to Dwell*", presented at the annual conference of the Society for Music Theory in Austin, Texas in 1989.

words in the poem and with words that rhyme. For example, the word "sinks", which is repeated at the beginning of two lines, is highlighted through being set melodically as a falling m2 in both cases; the second "sinks" is a M2 lower than the first. This descent, as well as the descending interval articulated by each repetition depict the downward fall described by the words. Rhyming two-syllable words are frequently articulated by pairs of pitches that are the same distance apart. For example, "creature" (m.21) and "nature" (m.27) are both articulated by a falling m2's, and "intrigue" (m.29) and "fatigue" (m.31), which occur in the cadential quatrain of the first stanza, are articulated by falling m3's.

Despite this fixed pitch/register scheme, pitch and registral properties and behaviours do play a role in the characterization of textural streams in 'Anaphora'. However, streams are defined predominantly by other properties and behaviours, especially rhythmic behaviours. An analysis of 'Anaphora' using the textural theory developed in the previous chapters will show how these streams undergo functional processes to create a musical structure that closely supports the text.

In the first section of 'Anaphora', mm.1-22, the most important streams are established and the processes that characterize this song are introduced. The song opens with a single multi-timbral stream, which splits a few measures later into three distinct streams. The opening stream comprises events in the winds, strings, piano and vibraphone. It is defined in part by its high registral density, by the consistently fluctuating contour behaviour of the events, and by its aggregate high attack density. Although the timbrally coherent events in the vibraphone, piano and bass do not exhibit the same contour and rhythmic behaviour, their attack point parity with the other concurrent events masks their considerably lower attack density, and they are perceived initially as part of the same stream. The fixed-pitch scheme reinforces the unity of the stream at this point: the stream is defined by the pitch and registral parity between the events and by their registral placement (the entire registral range

is covered repeatedly). The composite events also have a high dynamic intensity. Although the vocal stream has not yet entered, the high level of energy connoted by the high attack, dynamic and registral densities of the stream sets the scene for the opening lines of the poem in which the energetic morning activities are described.

After the *fortissimo* flourish of the opening two measures, a splitting process occurs and three distinct continuities can be perceived. Two of the streams, involving events in the piano, vibraphone and bass, are defined most importantly by their timbre and by their individual pulses, while the third stream comprises events in the winds and strings. The first pulse stream comprises events in the piano and, occasionally, the bass, and the second pulse stream comprises events in the vibraphone and, occasionally, the bass. The pulse streams have other properties and behaviours in common besides their partial timbral similarity. Events in both streams each group into complex but similar gestures that proceed intermittently. Each gesture consists of many attacks of sustained events, but each is clearly distinguished from the next one by a period of silence. Gestural unity is further supported by the use of the sustaining pedal during the sounding period in all of the vibraphone gestures and in some of the piano ones, for example in mm.6-7. The two streams also have intervallic properties in common. Events in both streams are often articulated as P5 dyads, and timbrally distinct gestures feature the repeated hexachord [012478], for example, the piano and vibraphone gestures in mm.34 both belong to that set-class type. The pulse streams are made distinct, however, by their timbral disparity (the piano and vibraphone events both mask the bass events aurally), by the alternation of piano and vibraphone gestures, and by the distinctive pulses articulated by the events in each stream. The initiating attack point of each piano (and bass) gesture is always at a distance of 23 sixteenth-notes from the previous one and is emphasized through high dynamic intensity markings relative to the other pitch events in the gesture and through stress accents. This pulse stream will be referred to as Stream A. Events in the second pulse stream, played by

vibraphone (and bass), also articulate a regular pulse between gestures. As in the piano gestures, one attack point in each vibraphone gesture is accented through dynamic intensity, in the form of a *crescendo* culminating on the pitch, and through the use of accents. Unlike the piano, this highlighted attack point occurs in the middle of the gesture. The distance between the accented vibraphone pitch events in each gesture is 22 sixteenth-notes or, occasionally, a durationally similar combination of sixteenth-notes and triplet sixteenth-notes, for example, 20 sixteenth-notes plus 2 triplet sixteenth-notes, or 21 sixteenth-notes plus 1 triplet sixteenth-note. This pulse stream will be referred to as Stream B. The individual pulses of Streams A and B are shown in **Example 62** (overleaf). (From the score it is apparent that the opening vibraphone, piano and bass gestures in mm.1-2 have the same properties and behaviours as they do later on, but these are not aurally perceptible because of the high aggregate registral and attack densities).

Example 62: 'Anaphora' mm.3-7

The musical score consists of two systems. The first system covers measures 3 to 7. The Vib (B) staff begins with a triplet of eighth notes (marked '3') and a dynamic of *p*. A *Red.* (reduction) bracket spans from measure 4 to 6, where the dynamic changes to *mf* and includes an accent (>). A second *Red.* bracket spans from measure 6 to 7, with dynamics of *pp* and *p*. A measure bracket above the staff indicates a duration of 20 eighth notes plus 2 eighth notes, with a '3' above it. The Pno (A) staff starts with a dynamic of *f*, followed by *mf* in measure 4, and *ff* in measure 6. A *Red.* bracket spans from measure 6 to 7. A measure bracket below the staff indicates a duration of 23 eighth notes. The second system covers measures 8 to 10. The Vib (B) staff has a triplet of eighth notes (marked '3') with a dynamic of *mf*, followed by *pp* and *p*. A *Red.* bracket spans from measure 9 to 10. A measure bracket above the staff indicates a duration of 21 eighth notes plus 1 eighth note, with a '3' above it. The Pno (A) staff has a dynamic of *p* in measure 8 and a *Red.* bracket spanning from measure 9 to 10. A measure bracket below the staff indicates a duration of 23 eighth notes.

Events in the winds and strings form the third stream that emerges from the splitting process. They also group into gestures, which are defined by their high attack density, and are differentiated into two different types of gesture on the basis of properties and

behaviours other than rhythm. Some of the gestures, for example, those comprising wind events in m.3, are characterized by their contour behaviour: they fluctuate rapidly and widely in register. The other species of gesture is a *tremolo* one defined by rapid oscillation between two pitches and a relatively narrow registral range, for example, the violin, viola and cello gestures in m.3.¹ In the interests of quick and easy reference, the two types of gestures will be referred to as 'contour' gestures and '*tremolo*' gestures. Like the opening measures, the composite high attack density of this stream, comprising both types of gestures, connotes the high level of energy that is about to be described in the text. For this reason, the stream will be referred to as the 'energy' stream.

The three streams that result from the splitting process have properties in common, yet they remain distinct because of significant differences in certain behaviours. The pulse streams, A and B, and the 'energy' stream all proceed intermittently. All three share properties like registral placement, and pitch and interval consistency, and there is some attack point parity between their events. However, their distinctive contour and rhythmic behaviours dissociate them into distinct, simultaneous continuities.

When the voice enters in m.4 and the speaker starts to describe the bustling early morning scene, the connection between the 'energetic' music of the mm.1-3 and the text is made explicit. The vocal stream is defined primarily by the intervallic parity between pairs of pitch events: as in Streams A and B, the P5 interval occurs repeatedly, as can be seen in **Example 63** overleaf. Events in the vocal stream are also characterized by dynamic intensity, and by the connection behaviour between events. The stream has a lesser attack density than the 'energy' stream.

¹ Carter uses two notational devices for the *tremolo* gestures. In one he actually writes out the notes comprising the gesture (e.g. m.3-4), while in the other he simply uses *tremolo* playing indications, with the instruction "as fast as possible" (e.g. m.4).

Example 63: 'Anaphora' mm.4-7 (vocal stream)

Each _ day _____ with so much cer-e-mo-ny be - gins

The process of splitting that occurs between m.2 and mm.3-4 is indicative of the kind of textural processes that recur throughout 'Anaphora' and that are essential to the song's musical progression. Splitting and fusion processes recur repeatedly in the 'energy' stream during the first section of the song. In the splitting processes the 'energy' stream divides into two alternating streams of winds and strings. In fusion, the process is reversed and the winds and strings merge into a single stream again. These processes were discussed in **Example 42**, page 117, using an excerpt from mm.12-19. Because the time span for each process is only a few seconds, the overall effect is one of regularly recurring change, which functions to prolong the texture.

Let us look more specifically at these first splitting and fusion processes in order to establish the kinds of changes that characterize them. In mm.4-5 the 'energy' stream splits into two streams, one comprising events in the violin, viola and cello, and the other consisting of events in the winds. The important properties and behaviours that distinguish the wind stream and the string stream are the timbral parity between the events of each stream and the temporal proximity of the events within each stream. The streams are made distinct from each other by the lack of temporal proximity between the events in the winds stream and the events in the string stream, that is, the gestures alternate. Each stream is also associated with a distinct rhythmic behaviour. For example, in mm.4-5 the string events are characterized by *tremolo* behaviour, while the events in the winds are grouped into

'contour' gestures.¹ The two separate streams soon fuse again and become indistinguishable. For example, in m.8 clarinet events proceed concurrently with events in the violin and viola, and exhibit parity of pitch with them.

Similar splitting and fusion processes dominate the texture for nearly twenty measures. Each splitting process results in two smaller streams of winds and strings which sound alternately, as can be seen in mm.4-7, mm.11-15, and m.19. Fusion, on the other hand results in a single stream proceeding continuously, for example, in mm.8-10, mm.16-18, and mm.20-21.

The repeated processes of splitting and fusion contribute to the delineation of the semantic structure of the text in that the alternating textures that result from these processes are coincident with semantic units in the poem. For example, the first fusion process occurs simultaneously with the description of the aural stimuli in mm.8-10. The description of the visual energy in mm.11-15 is concurrent with the splitting of the 'energy' stream into the two alternating streams, while the first rhetorical question asked by the speaker occurs simultaneously with another fusion process in mm.16-18.

While the 'energy' stream undergoes its repeated short-lived processes, a more gradual fusion process occurs in the pulse streams. (This was discussed in **Example 30**, page 88). The attack points articulating the pulses in Streams A and B gradually become closer to each other until they articulate their only simultaneous attack in the entire song in m.23. The close relationship between the pulses emerges from about m.16 and the two pulse streams

¹ Initially there is an apparent fusion between the two new streams and the pulse streams. For example, in m.5 the string events are temporally proximate to a piano event belonging to Stream A, and there is pitch parity between them. Similarly, there is pitch parity and temporal proximity between a gesture in the wind stream and one belonging to Stream B (vibraphone) in m.5. These common behaviours, however, are not consistent and the listener's perception of the pulse streams as distinct continuities remains unchallenged.

are gradually heard to merge into a single stream defined by the rhythmic regularity that is created by the cross-pulse. This fused stream will be referred to as Stream C.

The first structural break in the text -- where the appearance of the sun is mentioned -- is supported musically by textural processes that create an important structural moment in the music. Behaviours and processes of intensification lead to a climax in m.22. This is followed in m.23 by diminishment processes that function cadentially. Finally, significant changes in the streams as of m.24 complete the articulation of a new structural section. These processes will be discussed in the chronological order that they occur.

Processes of intensification start in mm.20-22 and culminate in m.22. In mm.20-21 the 'energy' stream proceeds in its 'fused' version at maximum registral density with '*tremolo*' gestures. *Crescendo* behaviour, initiated in m.21, climaxes in m.22 with *fortissimo* gestures of both the '*tremolo*' and the 'contour' variety. The now-fused Stream C also reaches a climax in m.22. The piano and vibraphone gestures have been undergoing another form of intensification by becoming increasingly short in duration and increasingly close in proximity. In m.22 both the piano and vibraphone events articulate single, *fortissimo*, accented attacks in very close succession. The vocal stream does not undergo any significant behavioural changes, although the last word of the section, "missed", is emphasized by its location at the peak, by a *crescendo*, by its high registral placement, and by a dynamic accent.

Immediately following the climax, behaviours and processes of diminishment lead to a cadence in m.23. The 'energy' stream has a *decrescendo* and diminishes in attack density, articulating sustained pitch events on the 3rd beat of m.23. Events in Stream C also occur at a low dynamic intensity. The simultaneous attack of piano and vibraphone events (the only

one in the entire song) signify a turning point musically and symbolically.¹ Although the attack occurs at a low dynamic intensity, the even lower dynamic intensity of the concurrent 'energy' stream makes this structurally significant attack perceptible to the listener.

A new process is introduced in the 'energy' stream in mm.22-23 while the diminishments are taking place. Focus is shifted briefly to events in the cello, whose emergence is made explicit by the playing instruction "to the fore", by its relative loudness and by the rhythmic distinction of its events from the other concurrent events. The moment is short-lived and the cello events soon fade back into the stream. The introduction of the focussing process here is significant because focussing recurs as a device of textural progression in the second section, in the same way that splitting and fusion processes recur in the first section.

The second section of the song, m.24 to the end, subdivides into three subsections. Changes in the established stream behaviours and processes articulate the structural breaks, and in each case the moment of structural articulation corresponds to a structurally significant point in the text. These structural subdivisions are of secondary importance in the form of the song. Unlike the transition from the first to the second main section where dramatic changes took place, the streams and textural processes that are established in the opening measures of the second section undergo less significant changes in the second section. Instead, processes of intensification and diminishment create moments of local climax and cadence twice, thereby creating the three subsections. Once we have discussed the properties and behaviours of the streams that open the second section (and that proceed throughout the section), the kinds of textural processes that characterize this section will be

¹ Pulse alteration at structurally significant points is also a feature of 'View of the Capitol', as was discussed on pp.207-208

analyzed. Thereafter we will discuss the subsections in chronological order, focussing on the changes that occur and how they function.

At the start of the second section of 'Anaphora', in m.24, the speaker introduces the figure of the sun, whose appearance signifies the start of the decline in energy. Significant changes occur in the properties and behaviours of the vocal stream and Stream C to reinforce the start of a new structural section. Although a tempo modulation takes place in m.22, the onset of the second structural section is not perceived until after the cadence at the *a tempo* in m.24. This kind of structural overlapping is characteristic of these songs. The vocal events are placed low in the voice's registral range, and the stream has a lower attack density and dynamic intensity than before. The attack density and the dynamic intensity of the vocal stream increase slightly in mm.26-27, but the property of lower registral placement continues. **Example 64** shows that the stream is also defined by the interval parity between pairs of successive events: M3's and m3's are emphasized, in contrast to the P5's of the first section.

Example 64: 'Anaphora' mm.24-26 (vocal stream)

The musical notation shows a vocal line in treble clef starting at measure 24. The lyrics are: "Oh promptly he appears and takes his earthly". The melody consists of eighth and quarter notes. Above the notes, interval markings are provided: a minor third (m3) between the first and second notes, a major third (M3) between the second and third notes, a minor third (m3) between the third and fourth notes, a major third (M3) between the fourth and fifth notes, a minor third (m3) between the fifth and sixth notes, and a minor third (m3) between the sixth and seventh notes. There are also triplet markings (3) over the fourth, fifth, and sixth notes. The dynamic marking *P* (piano) is at the start, and *mp* (mezzo-piano) is under the fourth note.

Stream C also undergoes changes at the start of the new section, particularly in rhythmic behaviour and timbral properties. Both of the pulses that define in part the rhythmic behaviour of this stream are modified: the pulse in which accented attacks were separated by 23 sixteenth-notes (formerly Stream A) is now notated as a pulse of attacks every 23

quintuplet sixteenth-notes because of the the tempo modulation. The pulse that characterized the former Stream B is now established as a regular series of attacks every 13 triplet eighth-notes.¹ These combined pulses create a cross-pulse with the durational ratio 65:69. The timbral profile of the stream expands to include all of the instruments. There is timbral disparity between the events that articulate the two different pulses, and some timbral parity between the events articulating a single pulse. The quintuplet sixteenth-note pulse is articulated by violin, viola and cello events, which proceed *con sordini* from m.28. The triplet eighth-note pulse is articulated by events in the vibraphone (struck with soft sticks), winds and unmuted bass (except for the bass event in m.24 which fuses briefly with the vocal stream). The timbrally disparate events articulating the pulses in mm.24-25 are shown in **Example 65**.

Example 65: 'Anaphora' mm.24-25 (Stream C)

Another property is evident in m.25, **Example 65**, namely pitch parity between timbrally distinct events articulating the same pulse attack, in this case between the clarinet and vibraphone events.² The association of timbral and pitch properties with individual pulses

¹ The durations between the attacks articulating each pulse are measured from the simultaneous piano and vibraphone attacks in m.23.

² The gamut of timbres associated with the articulation of a particular pulse do not participate in every pulse attack. In this example, for instance, there is no oboe event concurrent with the alto flute, clarinet and vibraphone events.

suggests that the listener might perceive two separate streams defined by pulse, timbre and pitch parity. However, other properties and behaviours held in common between these events mask the pulses, and support more strongly the perception of a single stream. Events in both winds and strings are of two types: either they group into the *tremolo* gestures presented earlier, or they take the form of sustained individual pitches or dyads (in the case of the string events). Vibraphone events occur as sustained chords. Although the attack belonging to the pulse in each *tremolo* wind and string gestures is made prominent through being accented (in a similar way to that in which attacks were emphasized in the previous vibraphone gestures), the multiple attacks and the timbral variety of the events tend to mask the pulse attacks. Other behaviours that reinforce the perception of a single continuity, Stream C, are that all gestures and sustained pitch events proceed intermittently, and the dynamic intensity of all events is low.

The properties, behaviours and processes of the streams that open the second section function symbolically to depict the meaning of the text. The speaker describes the appearance of the sun ("promptly he appears"), and then goes on to describe how his energy is slowly dissipated. The music that opens this second section anticipates the low energy levels that will gradually be described by the speaker. The diminishments in attack density, registral placement and dynamic intensity in the vocal stream connote the lower energy levels, in the same way as the opening measures connote the high energy levels before the vocal stream enters and the speaker describes them. Many of the properties and behaviours of Stream C contrast with those that defined the 'energetic' music of the first section. The dynamic intensity is dramatically lower than before; this is reinforced by the muted timbres of the violin, viola and cello events and the striking of the vibraphone with soft sticks. The gestures are shorter and they exhibit less energetic contour behaviour, being of the *tremolo* variety or sustained pitches and chords. The *tremolos* proceed less rapidly because of the slower tempo and because they no longer have the playing

instruction "as fast as possible". The resulting composite attack density is lower too. The repeated processes of splitting and fusion that characterized the opening section, and that contributed to the sense of propulsion there, are not apparent here.

Instead, two different textural features characterize the second section of 'Anaphora'. One is the process of focussing, in which a series of events emerge briefly from the larger stream; this process was already seen in the cello events of in mm.22-23. The second feature is timbral transformation, in which abrupt changes occur in the timbral property of a stream. These features function to prolong the established texture without creating moments of cadence, climax or structural articulation, i.e. they have a similar function to the splitting and fusion processes of the first section. The first fundamental changes in texture occur only in m.36, at the onset of processes of diminishment and intensification that lead to a climax. We will discuss mm.24-36 by analyzing examples of each of the two textural features, focussing and timbral transformation.

The first of the focussing processes of the second section starts in m.26. In mm.26-30 the events in the alto flute are grouped into relatively long gestures (in comparison to concurrent gestures), and are made prominent through their high attack density. The focussing process occurs intermittently in these measures and the flute events soon merge back into Stream C. Another form of focussing occurs in mm.26-40. The events in the oboe undergo a rhythmic deceleration, whereby the distance between each successive attack increases gradually. The first five measures of the deceleration are shown in **Example 66**, reproduced overleaf.

Example 66: 'Anaphora' mm.26-30 (oboe stream)

Despite the relatively piercing timbre of the oboe events, the deceleration is only perceptible initially. The oboe events are very quiet so they are easily masked by the other concurrent events, and, once the distance between attacks is relatively long, the events are no longer recognizable as a continuing series.

Processes of focussing also involve the vocal stream. In m.30 the word "memory" introduces the concept of a cycle of energy; the sun will repeat its previous behaviour. The word also reinforces the *m* sounds which act cadentially in the closing quatrain of the first poetic stanza. (The cadential textual structure is not supported by any other musical behaviours). Carter emphasizes the word in the vocal stream by accenting the pitch event on the first syllable.¹ The behaviours of Stream C support this emphasis. The events in the alto flute and clarinet are relatively loud (they have the highest dynamic intensity in this section so far) and the clarinet events group into a gesture similar to the alto flute gesture which was described above in the focussing process. The timbre of the vibraphone event is altered: it is marked "fast vibe" in contrast to the previous events which were sounded with the motor off. Another focussing process involving the vocal stream occurs in mm.32-33.

¹ This emphasis could also be a reminder to the singer to give the word its normal accentuation despite the syncopated placement with respect to the notated downbeat.

The attack density of the stream diminishes abruptly and the stream is characterized by a consistent level of dynamic intensity in contrast to the fluctuating levels of before. These changes do not endure, and in mid-m.33 the previous behaviours of the vocal stream return. Because of its short duration, the period of change is more aptly described as a process of focussing.

Two further focussing processes occur in Stream C. In mm.32-33 the viola and cello events proceed *ponticello* with gestures of the *tremolo* type. The timbral distinction of these gestures render them more prominent than any concurrent events, but the focus is short-lived and the events proceed *normale* from the end of m.33. The violin events are focussed on rhythmically in m.34 when they group into a 'contour' gesture for the first time in this section. Immediately following that in m.35 the alto flute events group into an intervallically wide (d5) *tremolo* gesture. Both the violin and the alto flute gestures are made prominent by lack of concurrent rhythmic activity in the other events of Stream C and so are clearly audible.

These focussing processes often have symbolic or structural roles. The rhythmic deceleration articulated by the oboe events in mm.26-40, when perceptible, connotes a process of slowing down which symbolizes the gradual loss of energy. In m.30 the textural accentuation of "memory" in the vocal stream highlights the connection between the repetitive implications of this word and the concept of anaphora that permeates the poem. The changes in the vocal stream in mm.31-32 occur during the sectional break between the two stanzas of the poem. While there is no musical break to support this structure (and no break in the semantic content), the focussing process does articulate the visual textual structure.

The second textural feature of the second section of 'Anaphora', belonging exclusively to Stream C, is that of timbral transformation. The timbres of the events associated with the individual pulses change gradually. In m.32 the triplet eighth-note pulse is articulated by a violin event for the first time. This change is not immediately perceptible (although it becomes more audible later), particularly because the listener's attention is diverted to a local process of focussing which occurs in mm.32-33. The focussing process, in which the viola and cello events proceed *ponticello* with gestures of the 'tremolo' type (as discussed above), is also an example of a brief timbral transformation. The timbre of the vibraphone events is also modified slightly in m.33 when the playing instructions reduce the "fast vibe" to "medium vibe". Because of the concurrent focussing process, this change is not immediately perceptible either. Two timbral modifications also occur in m.35. The triplet eighth-note pulse is articulated by a cello event for the first time and the quintuplet sixteenth-note pulse is articulated by a piano event. The reintroduction of the participation of the piano events is a significant timbral change, since the pulses were initially articulated by events in the piano and vibraphone. The timbral properties of the two pulses are still in flux, however, and only stabilize later in the song. For example, following the articulation of the quintuplet sixteenth-note pulse by the piano event in m.35, there are no more vibraphone events and only two more piano events (m.37 and m.38) until m.41, where climactic attacks are articulated by events in both instruments.

In m.36 processes of intensification and diminishment are initiated, leading to a climactic moment which functions symbolically and structurally to signify the end of the first structural subsection. The events in Stream C occur in the form of individual pitch events and dyads and triads only, instead of grouping into gestures. The resulting composite attack density is consequently lower than before. However, because these pitch events are often sustained and overlap in duration, the registral density of the stream intensifies. *Crescendo* behaviour occurs gradually in all the events until m.40. The cross-pulse can also

be described as intensifying: the attack points of the pulses become closer and closer together so that the listener gradually perceives a single pulse articulated by two attack points in close succession rather than two separate pulses in a cross-pulse relation. The processes of intensification in Stream C build to a climax in m.40. The attack density intensifies dramatically when events in the winds and violin, viola and cello all group into 'contour' gestures. String events are emphasized by being played *marcato* and the sense of climax is supported dynamically by the *crescendo* to an accented pitch event which occurs in all of the gestures. The simultaneous climactic 'contour' gestures are reminiscent of the 'energy' stream of the first section; however, Stream C is not superseded by the 'energy' stream because the properties and behaviours of Stream C return once the 'contour' gestures are over.

The tension created by the climax is extended through to the end of m.41 through other processes in Stream C and the vocal stream. Stream C exhibits *decrescendo* behaviour in m.40, and its aggregate high attack density of mm.39-40 is reduced suddenly at the end of m.40 as the events group into two successive sustained sonorities. The lack of temporally proximate attack points make the two pulse attacks distinct and draw the listener's attention to the intensification of the cross-pulse which was described above. The next two pulse attacks occur at the end of m.41. They are articulated by chordal pitch events in the vibraphone, piano, violin, viola and cello, and by individual pitch events in the strings and bass. The two attack points of the cross-pulse, which are as close as possible without being simultaneous, are again made prominent by the lack of proximate attack points as well as by other significant behaviours and properties. The relatively high registral density of the attacks, the sudden increase in the dynamic intensity of the events (*mf* and *fp*), and the closeness of the attacks, make this another climactic musical moment. Simultaneously, processes occur in the vocal stream. As was discussed in **Example 25a** on page 75, the vocal stream undergoes a rhythmic deceleration in mm.38-40, while its dynamic intensity

increases. After the deceleration, the attack density of the vocal stream increases again, and, at the end of m.41, the voice reaches a moment of peak intensity when it articulates two accented pitch events, *forte*, on the word "uses".

The musical climaxes described above, an intense and extended one in Stream C and a less dramatic one in the vocal stream, function symbolically and structurally. The speaker describes the ways in which "we" (humans) interact with the sun with increasing intensity, as was discussed above in the section on the poetic form and content. The first climax in Stream C occurs after the speaker has described the "look" with which we draw its energy for our dreaming, perhaps symbolizing the burst of energy that it must provide us. Then the intensity builds until the speaker utters the accented word "uses", where Stream C climax occurs between the two syllables. This can be seen as another burst of energy from the sun, which leaves it drained and unable to respond to the third, most violent interaction: "abuses". Thus this word, although accented in the vocal stream, is ironically set anticlimactically.

As well as functioning symbolically, the climax at the end of m.41 signifies a structural break in the music after which more changes occur in the properties and behaviours of the vocal stream and Stream C, and a new textural subsection is established. The textural features that dominated the first part of the second main section, timbral transformation and focussing, continue to be prevalent here. In m.43 timbral and rhythmic changes occur in Stream C. The piano and vibraphone events have greater prominence: they are accented and proceed *marcato*, and the vibraphone events are struck with medium hard sticks and, if sustained, vibrate "fast" (e.g. m.44). The events in all of the instruments no longer group into gestures of any kind and comprise isolated pitches, which are usually sustained. The piano and vibraphone events articulate pulse attacks only, while some events in the other instruments occur between pulse attacks. The composite attack density of the stream is even

lower than before, the registral density is lower and the dynamic intensity of the events is also relatively low. The brief focussing processes which occurred earlier are now even briefer. Focussing occurs for the duration of one or two pitch events, highlighting the winds and strings events that are articulating the pulses as solos. As a result of the accented piano and vibraphone events and the "solo" wind and string events the cross-pulse remains prominent and can easily be perceived by the listener as a single pulse with two attacks in close succession. Processes of diminishment in the vocal stream start in m.44 and correspond to the diminishments that occur in Stream C at the start of the second subsection. The attack density of the vocal stream decreases, there is a diminishment in the registral placement of the vocal events, and a *decrecendo*.

These diminishment processes symbolize the dissipation of energy described in the poem. They occur when the speaker reiterates the phrase "sinks through the drift of ...", and depict the sun's even greater loss of energy as it "sinks" through the day. When "evening" is reached, the sun's lowest point, the lack of energy has a peaceful quality: both streams proceed *tranquillo* from m.47. The dynamic intensity of the events is very low, and attack density of the vocal stream diminishes still further.

The appearance of the figure of "the beggar in the park" signifies a reversal in the fall of energy in the poem, and the onset of abrupt processes of intensification in Stream C.¹ Intensification of dynamic intensity and attack density occur in m.53 when the string and wind events exhibit *crescendo* behaviour, and group into 'contour' gestures. The strings are unmuted for the first time in this section. Two accented piano events occur which do not articulate pulse attacks, but which contribute to the composite intensification of attack

¹ In fact the only musical change that occurs simultaneously with his appearance in m.50 is a slight change of timbre in the vibraphone events from "fast vibe" to "medium vibe". However, the intensification processes start a few measures later.

density. All of these processes anticipate the increased energy which the "beggar" will produce with his "stupendous studies". This burst of energy is premature, however, and at the end of m.53 Stream C resumes its established properties and behaviours for the next few measures.

Further intensification processes occur over the next measures, this time in both the vocal stream and Stream C. They lead to a moment of peak intensity in m.57-58, which functions as the most musically dramatic climax in the song. Like the climax in mm.40-41 this one also has symbolic significance and articulates a structural break between subsections. The vocal stream starts to change in m.53 when its attack density increases again, and, in m.54, when the registral placement its events starts to intensify. There is also a gradual *crescendo* from m.54 to m.57. The intensification processes in the vocal stream are concurrent with *crescendo* behaviour in Stream C and a slight increase in its attack density. The intensification processes culminate in m.57-58 with a climax to which all of the events contribute. In Stream C the events proceed at very high dynamic intensities and are accented. The winds and string events, excluding the bass, are *marcato*. The vibraphone events are sustained without the vibrations provided by the motor. Two events in the vocal stream articulate the two pulse attacks for the first and only time in the song. Moreover, these *fortissimo* events cover the widest possible registral range, articulating the highest pitch (Bb5) and then the lowest pitch (B3) of the pitch/register repertoire of 'Anaphora'. Because the vocal events conform to the pulse scheme, the vocal stream and Stream C might be considered to be a single fused stream in these measures. However, the timbral distinction of the voice remains intact, and the wide registral leap between the two events render them more prominent than events in Stream C, so the streams remain distinct.

As was mentioned above, the increased intensities in stream behaviours symbolize the increased energy that the beggar produces. The climax occurs on the word "stupendous

[studies]" and emphasizes the importance of the beggar's activities, through which the fall of the sun will be reversed. The big descent between the two vocal events signifies the fall of energy that the poem has been describing to this point. Since the beggar is a symbolic figure representing the artist, the "stupendous studies" of the climax could also represent the significance of works of art, in which case the wide intervallic leap indicates the breadth of artistic "studies".

The climax in mm.57-58 indicates a structural break in the text (after this point the energy that is described starts to increase again) and in the music. The third, and final, subsection is the shortest, lasting only eight measures. Once again, changes occur in the established streams at the onset of this subsection and help to delineate the break. The vocal stream maintains some pre-climax properties and behaviours, like high dynamic intensity, but is also defined by a new intervallic parity between events: wide intervals, M9's, are repeated. The most significant change that occurs is a splitting process in Stream C. In m.59 it splits into two streams: a modified version of Stream C, and the 'energy' stream of the first section. Stream C comprises vibraphone and piano events only, which occur as sustained, accented chords and articulate the same two pulses as before. Events in the winds and strings contribute to the 'energy' stream. As before, they are grouped into 'contour' gestures, and there is parity of dynamic intensity contour between the gestures. The stream is also characterized by the high attack density of the gestures, and by the high dynamic intensity.

Closure is created at the end of 'Anaphora' by processes of intensification and diminishment. Both the 'energy' stream and Stream C undergo crescendo behaviour and close with fortissimo chords. There is an abrupt diminishment in composite attack and registral densities in m.63 when the energy stream ceases. Stream C concludes with two more pulse attacks. The sense of rising energy is thus carried through to the end of the

song by the pulses which have generated most of the rhythmic movement throughout the song.

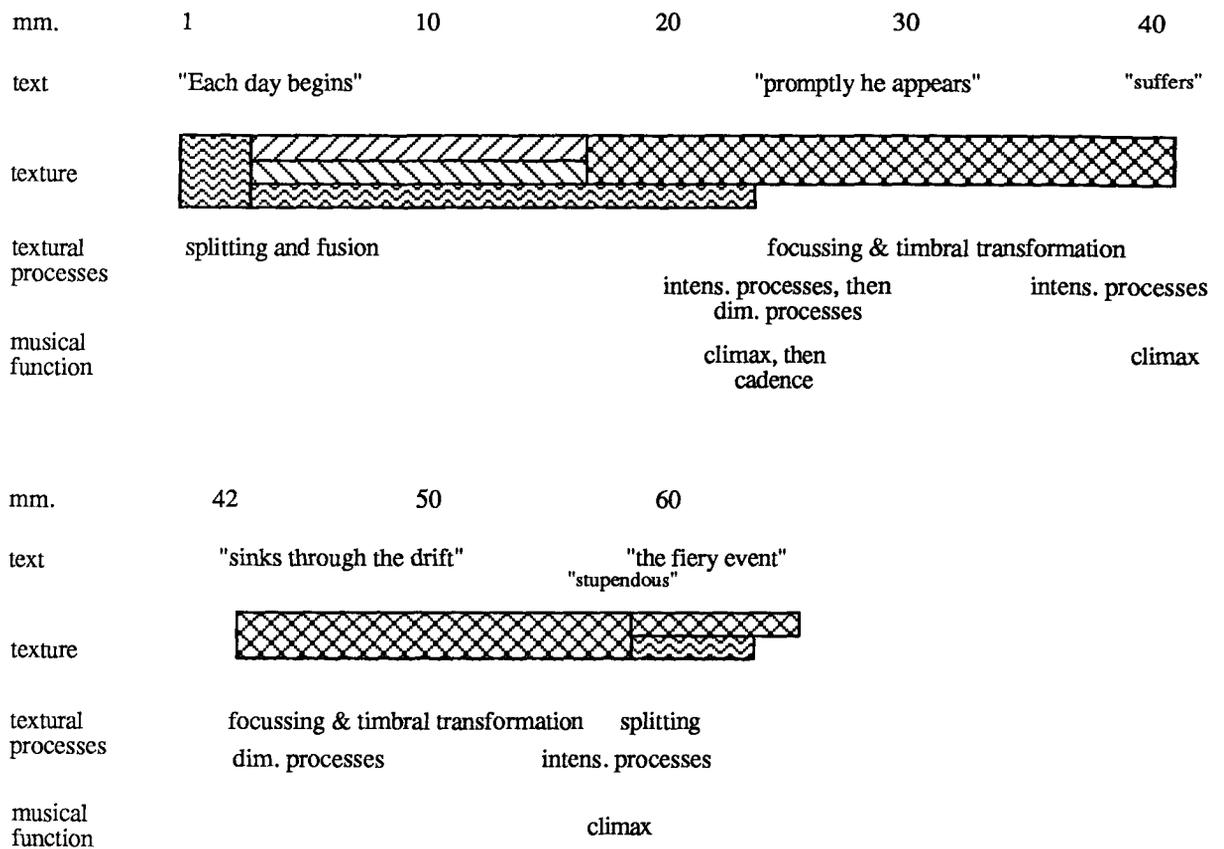
All three streams play a role in symbolizing the text in this final subsection. The high attack density of the 'contour' gestures and the relatively high dynamic intensity of the events in the 'energy' stream represent the higher level of energy of the "fiery event". The dynamic intensity contour behaviour, that is the fluctuations in dynamic intensity which occur in the gestures, provides the sense of impulse that was generated by the splitting and fusion processes of the first section. Events in the vocal stream makes explicit the pun on the last word "assent" when they articulate an ascending M9 interval on the two syllables of the word in m.64.

Conclusion

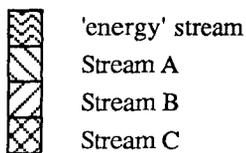
In summary, Carter uses textural processes to differentiate sections in 'Anaphora', and to create structural points of articulation in the music. Texturally, the song divides into two main sections, with the second section subdividing into three subsections. These sections correspond to the formal divisions in the poem based on the semantic content. Unlike the other songs in the cycle, in which personae in the text are represented by textural streams, 'Anaphora' is more abstract and the processes that take place texturally represent the progression in energy described in the text.

A summarized chronology of the song reviews the formal structure of the song. The diagram in **Example 67** (overleaf) summarizes graphically the streams, their interaction, the textural processes that take place, and how these factors relate to the text.

Example 67: 'Anaphora'



Key to shadings



In the first section, mm.1-23, a texture representing the explosive, early morning energy described in the text is characterized by the properties and behaviours of the streams (like high attack density and dynamic intensity), and by processes of splitting and fusion. A climax, followed by a cadence and changes in the established streams take place and articulate the start of a new section. The properties, behaviours and processes of the

streams that open the second main section contrast with those in the first section, and connote the diminished energy levels that are described in the text after the appearance of the sun. In this second main section the texture is prolonged though focussing processes and timbral transformations. Intensification processes occur in m.39-42 and build to a local climax that represents the intense energy that the sun must provide humans with for their "uses", and that articulates the end of the first structural subsection of the second main section. After this, diminishment processes connote the even lower energy levels that transpire as the sun "sinks". The appearance of the "beggar in the park" signifies another turning point in the energy and, correspondingly, the music starts to gain momentum through intensification processes. In mm.53-58 processes of intensification culminate in a climactic moment that represents the energy associated with the "stupendous studies", and that articulates the end of the second subsection. The third subsection acts as a recapitulation, recalling the texture of the opening section. It represents musically the completion of the cycle of energy that is depicted in the poem.

The repetition connoted by the title of the song, 'Anaphora', takes many forms texturally as well as in pitch, as was mentioned earlier. Textural processes and features are repeated in both main sections of the song, and there is a relatively small repertoire of streams. These repetitive features give 'Anaphora' a static quality. In fact, there is very little action in the text; Bishop uses large sections of the poem, cluttered with many words, simply to set the tone. Musically this is reflected by relatively long periods in which an established texture is prolonged. Controlling these static textural periods is the progression from the energetic music of the opening, to slower, quieter, less energetic music, and then finally back to energetic music, reflecting the large-scale cyclic progression in the text.

'O BREATH'

The sixth and last song in the cycle, 'O Breath', has the most unusual textural structure of the six songs. Once again, we will see that the textural format of the song is suggested by the form and meaning of the poem.

TEXT

'O Breath' completes a group of three intensely personal songs about human relationships, the others being 'Argument' and 'Insomnia'. In the poem a woman contemplates her sleeping lover and speculates about his/her feelings. Although 'O Breath' is related thematically to the other poems in the cycle, formally it is strikingly different. It is the shortest in length and comprises a single stanza of fifteen lines. The stanza is divided into three long and convoluted sentences (like those in 'Anaphora') that are rich with qualifying clauses. The sentences follow one another without a visual break, except that the middle sentence is offset somewhat by being enclosed in parentheses. Although there are no major visible structural breaks between the sentences, Bishop splits each line by spacing two words further apart than the others. This typographical device encourages the reader to pause in mid-line and symbolizes on one level the inhalation-exhalation breathing pattern of the sleeping person.

There is no regular rhyme scheme in 'O Breath', but end-line rhyme does associate lines within the first sentence and between the first and second sentences. In the first sentence rhyming occurs between the second and sixth lines ("veined... restrained"), and between the third and fourth lines ("lets... bets"). The last line of the opening sentence ends with the word "ripple", which rhymes with the second line of the parenthetical sentence, "nipple". Although there is no end-line rhyme within the third sentence, or between that sentence and the first two, unity is achieved in the second half of the poem through the end-line

repetition of the fricative consonant [θ]. The last line of the parenthetical sentence ends with "breath", and the last three lines of the third sentence close with the words "with", "beneath" and "with" again. The repetition of the word "with" is extended in the word "within", which opens the last line of the poem. The reiterated fricative consonants and the literal repetition of "with" in the second half of the poem stop the lines and interrupt the poetic flow.

The reiteration of phonemes also occurs in the rest of the poem. Bishop repeats phonemes densely in certain areas to create a focussed effect, and then uses them sporadically in other lines to create larger-scale associations. For example, the fricative consonants [θ] and [ð] that pervade the last part of the poem also occur in the first word of the poem ("Beneath") and in lines five to ten ("something", "with", "fathom", "thin", "the other" and "breath" respectively). In the opening four lines the stop-plosive consonant [b] punctuates the poetic flow emphatically, occurring both alliteratively and within words, for example, "Beneath... celebrated breast". This consonant then recurs sporadically in the second and third sentences ("black" and "breath" in the second sentence, and "bound", "bargain", "maybe" and "beneath" in the third). Sibilants abound in the first sentence ("breast", "lives", "let's", "passes bets", etc.) and balance the effect of the repeated [b]'s by helping the lines to run on from one another and restoring the smooth flow of the words. Like the [b]'s, sibilants recur less densely later in the poem, for example in the phrase "separate peace" in the second-last line.

The three sentences that comprise 'O Breath' are similar in some formal aspects: all of the lines are divided typographically in two, and almost all of the lines are complete syntactic units. The sentences differ, however, in their length (being seven lines, three lines and five lines long), and, to some extent, in their semantic content. The poem is written in the first person and the tone throughout is personal and contemplative. In the first sentence the

speaker observes her sleeping lover. She discloses some positive, although passive, feelings towards him by describing his "breast" as "loved" and "celebrated". In the next line, however, she expresses cynicism when she suggests that the silence of his breast is really boredom. She cannot see beneath the surface of his skin, so his chest is "blindly veined". This phrase introduces the theme of concealed processes, which is explored in the next lines. The speaker now speculates about her partner's feelings, which she cannot identify because they are hidden. She suggests various attitudes that he might have, for example one of non-interference ("lives and lets live"), or one in which life is a gamble ("passes bets"). She believes that there is something alive beneath his breast, "moving... with what clamor". However, she qualifies these beliefs in the second part of each split line with observations about the surface of his body, the movement occurs "invisibly" and she cannot hear the clamor because it is "restrained". Ultimately, she "cannot fathom even a ripple" of the hidden internal movement. The speaker's inability to perceive the movement and sound of this "something", presumably her partner's love or feelings for her, expresses her doubt about his feelings towards her.

The ambiguity of what really lies beneath the surface is a recurring theme in Bishop's poetry and one that provides resonance to her images. In her book on Elizabeth Bishop, Anne Stevenson writes: "... there seems to be a discrepancy in her poetry between what can be seen and what can be known -- between the surfaces of things which are observed and the significance or meanings of the surfaces...".¹ Indeed in this poem a distance or boundary is described between the visual exterior and internal feelings of the observed person, which reflects the boundary between the fact of the relationship between the speaker and her partner and the ambiguity of the true nature or meaning of their relationship. The ambiguity that pervades this first sentence is reflected in the contrast

¹ Anne Stevenson, *Elizabeth Bishop* (New York: Twayne Publishers, Inc., 1966), 107.

between the repeated phonemes. The reiterated sibilants are comparable to the hissing sound of exhalation and symbolize the speaker's unity with the sleeper. The repeated [b]'s interrupt the soothing poetic flow created by the sibilants and symbolize the speaker's anxiety and disharmony with her partner.

In the second sentence, the parenthetical one, the speaker focuses on minute observation of the details of her sleeping partner's body. She concentrates on the body surface beneath which his heart lies, since she is concerned with his feelings towards her and the heart is the organ to which feelings are popularly attributed. She describes in detail the hairs around his nipples by counting them. The word "flying" is repeated to emphasize the contrast between the movement which the speaker can see on the surface (the agitation of hair caused by his exhalations) and the movement (feelings) that she believes lies beneath the surface of his body, but which she cannot see. This contrast is painful to the speaker, and the flying movement occurs "almost intolerably" for her. Bishop places this sentence in parentheses to identify it as an interjection in which precise observation replaces speculation about feelings.

In the third sentence the speaker returns to the theme of ambiguity with the adjective "equivocal" that modifies the subject, "something", of the first sentence. This last sentence is no longer descriptive, but is devoted to musings about the nature of their relationship. She knows that the feelings that constitute their relationship, what they have "in common", probably exist. Bishop uses a pun in the expression "bound to be there"; not only are the feelings expected, but she also views them as inaccessibly withheld within her partner's chest. Indeed, she is unsure exactly what those feelings are, as is shown by the phrases that she uses: "what we have in common", "whatever", "something". There is a sense of a growing alienation between the speaker and her partner and her emotional tone becomes increasingly pessimistic and intense. She refers first to feelings that they have in common,

then, in the next line, to feelings that they have equivalents for (rather than something that they share), and finally she suggests that he might have merely "something" with which she could "bargain". This series of decreasing emotional connections is parallel to the decreasing series of his involvement which she described in the first sentence, "grieves", "lives and lets live" and "passes bets". The separation between the speaker and her partner is emphasized in the last line as she makes a futile attempt to clarify what lies beneath the surface of their relationship. In the next line the sense of separation is reinforced through the phrase "separate peace", but the tone becomes less intense and slightly more optimistic as the speaker suggests that a reconciliation between them is possible, even if they cannot be as one ("never with"). She can bargain with him, but she can't share equal feelings with him; her status must either be lower than his ("beneath") or contained by him ("within").

In summary, Bishop presents two personae in 'O Breath', the speaker and her lover. The speaker is the active persona, while her sleeping partner lies passively at her side. The poem explores the ambiguity between a visual surface and the emotional meaning beneath it: the speaker describes the surface of her partner's body and speculates about his feelings and emotions. During the three sentences that comprise the poem, the speaker progresses from relatively calm contemplation (first sentence), to minutely detailed description (second sentence), to more emotionally intense speculation in the third sentence, after which she reaches a sense of resignation.

'O BREATH': MUSIC

In an interview with Charles Rosen in 1983, Carter explained his interpretation of 'O Breath': "There was a poem about breathing, for instance. I made an accompaniment which sounded like one kind of breathing, a very slow rhythm that faded in and out, and

juxtaposed against it a rather hysterical kind of breathing for the singer."¹ Clearly the "slow rhythm" of the instrumental stream is intended to represent the sleeper's breathing and the soprano is meant to be the voice of the speaker. Carter's concern with the breathless quality of the speaker is shown in his attention to her breathing indications. Short strokes placed between words in the text indicate line-endings, while parenthetical apostrophes indicate places where words are spaced apart in the poem.

Carter's interpretation of the soprano's breathing as being "hysterical" reflects just one aspect of the speaker's tone; the hysteria is hidden below a surface of resigned, pessimistic contemplation. In fact, characterizing the poem as being about breathing is somewhat simplistic (although useful compositionally) as breathing is just one of the layers of signification in Bishop's poem; the poem is concerned more with the ambiguity of surface and meaning, and is about human relationships. His distinction between two separate continuities (voice and instruments) does however recognize the theme of distance separating the speaker from her partner, as well as the distinction between surface and underlying meaning which has been shown to be thematically important in this poem.²

The setting of 'O Breath' is different from the other songs in the cycle in a number of respects. The song, like the poem, is through-composed, whereas the other songs have large-scale structural divisions that correspond to stanzaic or semantic divisions.³ It is also the most dynamically subdued setting of the six songs. Rhythmically 'O Breath' is unique in the cycle: the vocal part is melismatic while the other songs are predominantly syllabic

¹ Charles Rosen, *The Musical Languages of Elliott Carter* (Washington, D.C.: Library of Congress, 1984), 40.

² To place the quote in context, Carter's remark about 'O Breath' was made eight years after he composed the song and does not claim to be an analysis of the poem. What is particularly interesting, however, is that Carter would remember the textural design of the song above everything else.

³ Although some of these notated structural divisions are not perceptible to the listener, for example, the tempo modulations and change of meter in 'Sandpiper', 'O Breath' is still fundamentally different from the other songs in that it has no notated structural breaks.

and, perhaps most notably, there is a lack of rhythmic activity in the instrumental stream in favour of homogeneous sustained sonorities.

While the song is through-composed, a formal structure corresponding to that of the poem can be perceived. There is a tripartite formal division with three sections corresponding to the three sentences in the text. The sections are not strikingly audible as they would be, for example, by being set to different tempi or having contrasting musical materials. There is, however, a noticeable change in the stream behaviours across the sectional divisions. The distinction between the second and third sections is obscured somewhat by a progression towards a climax in the third section, which corresponds to the emotional intensification in the third sentence.

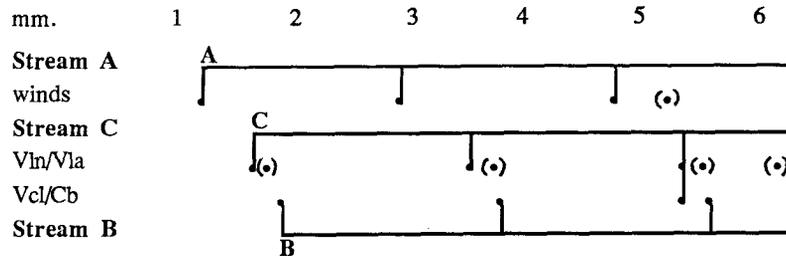
Two different textural schemes organize the music in 'O Breath' simultaneously. The first was mentioned above, in which two textural streams, the voice and the instruments, represent the two personae in the poem by invoking their breathing patterns. In the second textural scheme, the "very slow rhythm" of the instrumental stream breaks down into three coordinated streams defined primarily by timbre and pulse. We will discuss the latter scheme first, before discussing the 'breathing' scheme, which is more obvious on the surface of the music. After discussing the defining properties and behaviours of the three streams, we will analyze the textural processes that they undergo, and focus on how these processes contribute to the form of 'O Breath'.

'Pulse' Scheme

Three instrumental streams, defined by timbre and pulse, can be perceived in the opening measures. The first stream comprises events in the winds, which are attacked at a distance of 43 sixteenth-notes. We will call this stream Stream A. Another stream, which will be called Stream B, comprises events in the cello and the bass, and articulates a pulse of an

attack every 65th triplet sixteenth-note. The third stream, Stream C, is defined by a pulse of attacks separated by 37 dotted quintuplet sixteenth-notes. This stream is somewhat less timbrally distinct, as it too comprises string events -- in the violin and viola and occasionally in the bass, too. In the diagram reproduced in **Example 68a** the attack points of the events of Streams A, B and C are plotted over the first six measures, showing their timbral properties. Other wind and string attack points that do not coincide with any of the pulses are included in parentheses. These attacks are almost imperceptible: the pitches double others that are currently sounding and are attacked very quietly. For example, the G3 in the violin in m.1 doubles the viola's G3 and enters *ppp*. Percussion events have been excluded since they do not participate in any of the three pulse streams; they will be discussed later in the context of the other textural scheme.

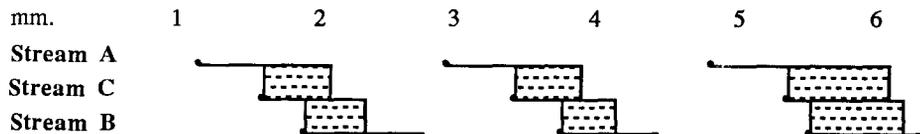
Example 68a: 'O Breath' mm.1-6



The three streams are carefully coordinated rhythmically. In all three streams the attack points initiate sustained single pitches, or double-stopped sustained dyads in the case of the strings. The durations of these sustained events are chosen so that, while attack points of events in different streams do not occur simultaneously, there is always an overlap of sounding duration and a shared duration (usually short) of silence. In this way events in the three streams group into sustained gestures separated by silence. Initially the order in which stream events occur the gestures is consistent: each gesture comprises events from Stream A, then Stream C, then Stream B. The first three gestures of the song are plotted in the

diagram in **Example 68b**, and comprise the coordinated events of the pulse streams. The attacks of the non-pulse related events that double pulse events (discussed above) have been omitted, as have the percussion events.

Example 68b: 'O Breath' mm.1-6



Streams A, B and C, although they remain distinct in the opening measures because of their disparate timbres and pulse behaviours, do have properties and behaviours in common. The events in all of the streams are organized predominantly into P5 and m7 dyads, as can be seen in **Example 69** overleaf. They are all very soft, with dynamic intensities ranging from *ppp* to *pp*.

The potential for the streams to fuse with each other is already apparent from the way in which their events group into gestures. Later we will see that fusion and splitting are two of the most important textural processes that occur in 'O Breath'.

Example 69: 'O Breath' mm.1-6

The image displays two systems of musical notation for the first six measures of 'O Breath'. The first system consists of three staves: A (bass clef), C (bass clef), and B (treble clef). The time signature is 12/8. Staff A begins with a first-measure rest, followed by a melodic line with dynamics *ppp* and *pp*. Staff C starts with a five-measure rest, then plays a rhythmic accompaniment with dynamics *pp*. Staff B begins with a three-measure rest, followed by a melodic line with dynamics *ppp* and *pp*. The second system continues the music, with Staff A playing a melodic line with dynamics *ppp* and *pp*, Staff C playing a rhythmic accompaniment with dynamics *pp* and *ppp*, and Staff B playing a melodic line with dynamics *pp* and *ppp*. The notation includes various articulations such as slurs, accents, and fingerings (e.g., 5, 3).

The processes that the streams undergo contribute both to the structural delineation of 'O Breath' and to its symbolic content. Our discussion will focus first on structure. Timbral changes in one or more of the pulse streams indicate moments of structural articulation, which coincide with moments of structural articulation in the text. In **Example 70** (on pages 267 and 268) a diagram plots the attack points of events over time. The timbral properties of the three pulse streams for the song's duration are represented by grouping the instruments that initiate each stream into a distinct layer, as in the diagram in **Example**

68a. At any point where a given pulse (associated with a given stream) is reattacked, the extent of the vertical lines connecting the dots signifies the timbral diversity of the stream relative to its original timbre.¹ The gestures into which the events group are indicated on the diagram by the shapes that enclose groups of events. In the first nine measures the streams are timbrally distinct and consistent, as was discussed above. Stream A is articulated exclusively by events in the winds, and the gestures are organized so that wind events lead, followed by events in Stream C (violin, viola and occasionally bass) and then events in the Stream B (predominantly cello and bass). The first change occurs in m.10, when Stream A undergoes a timbral transformation from winds only to a mixture of winds and strings. This is shown in **Example 70** at m.10 where a long, vertical line connects dots representing simultaneous attacks in both winds and strings. The other two streams remain timbrally consistent and comprise events in the strings. Since the events in Stream A initiate the gestures and are preceded by silence, they are the most prominent aurally and this change in timbre is easily perceived by the listener. The change coincides with a structurally significant moment in the text when the speaker first introduces the idea that her relationship with her sleeping partner is troubled, that is, when she suggests his silence betrays boredom. The new winds/strings timbre in Stream A is maintained for the next nine measures, as is shown graphically by the vertical lines, connected to the Stream A horizontal line, that connect attack-dots in both wind and string timbre groups.

¹ The distances between the attack points that comprise the pulses are not always strict, although the variations are so minor that they are still perceived as equidistant. For example, in Stream B an attack in the violin in m.29 occurs 64 triplet sixteenth-notes + 1 sixteenth-note after the previous attack in m.27, and the next attack, in m.30, occurs at a distance of 63 triplet sixteenth-notes + 1 sixteenth-note. The total distance between the attack in m.27 and the attack in m.30 is twice 65 triplet sixteenth-notes, and the minor deviation in the timing of the pulse attack that lies between them is not perceptible to the listener. Attacks that vary in this way are indicated by broken lines in the diagram in **Example 70**.

Example 70 (cont.): 'O Breath' mm.25-45

mm.	25	26	27	28	29	30	31	32
text								
Stream A								
winds								
Stream C								
Vln/Vla								
Vcl/Cb								
Stream B								
perc.								
timbre of streams	A: purely str.; C: purely winds; B: winds & str. (m.30)							
timbre of events	perc.				strings			
initiating gestures								
other comments	order of events: BCA				splitting back into A, B & C			

mm.	33	34	35	36	37	38	39	40
text	"Equivocal"				"equivalents"		"bargain with"	
Stream A								
winds								
Stream C								
Vln/Vla								
Vcl/Cb								
Stream B								
perc.								
timbre of streams								
timbre of events					tremolos in winds		strings	
initiating gestures								
other comments	gestures joined by sustained pitch			intens. processes to climax			gestures distinct; order of events: BCA	

mm.	41	42	43	44	45
text					
Stream A					
winds					
Stream C					
Vln/Vla					
Vcl/Cb					
Stream B					
perc.					
timbre of streams					
timbre of events					
initiating gestures					
other comments	order of events: BAC				

Another change in the timbre of Stream A occurs in m.19 when the pulse is articulated exclusively by strings for the first time. Again, since the gesture in mm.19-20 is initiated by events in Stream A, the change is aurally perceptible. This timbral change marks the start of a time span in which the timbres of the events in all three streams are transformed. As of m.20 Stream C now comprises events in the winds instead of in the strings. One of only two deviations in the consistent timbre of Stream B occurs in the same measure when the pulse is articulated by a wind and a string event, before it returns exclusively to string events. The timbral changes coincide with another important structural moment in the text, as m.19 marks the beginning of the parenthetical sentence and the second section of the song. As a result of the timbral fluctuation that characterizes the texture after m.19, and the increased number of attacks not associated with any of the pulses, Streams A, B and C are less distinct and they fuse into a single stream. The attacks conforming to the system of three pulses continue in the same ratios, but it is very difficult for the listener to perceive the three individual streams. The gestures into which the events in the streams group, however, are maintained with most of their characteristic behaviours. Some characteristics of the gestures are necessarily altered, for example, gestures are initiated by events in various streams instead of being consistently initiated by the events in Stream A.

In m.31 the process of splitting begins and reverses the fusion of the previous section. Splitting is initiated when the Streams A, B, and C start to resume their distinct and consistent timbral properties again. From here until the end of the song, m.45, Stream A comprises events in the strings exclusively, and Stream C comprises wind events. In other words, these two streams, after a period of fluctuation, undergo an exchange of their timbral properties. The second of the two deviations in the consistent timbre of Stream B occurs in m.30 when the pulse is articulated by combined events in the winds and strings. After this, events in the strings, predominantly cello and bass, comprise this stream. The behaviour established in m.27, whereby events in Stream B initiated each gesture,

continues through to the end of the song. The timbral changes that occur in mm.30-31 articulate a structural division which is coincident with the end of the parenthetical comment in the text and the start of the third section of 'O Breath'.

The structural role of Streams A, B and C, however, is somewhat obscured by other processes that take place during these measures. For example, after m.31 the gestures are no longer separated by silence and are joined by a connecting sustained pitch, which undermines the prominence of the initiating pulse events of each gesture. Processes of intensification, for example in attack density, lead to a climax in mm.37-38 and also mask the behaviours of the pulse streams. (These processes relate to the other textural scheme, and will be discussed in the next section). After the climax, starting in m.39, the distinct pulse streams become perceptible again. The listener becomes particularly aware of the increasingly close proximity of the pulse in Stream C and the pulse in Stream A, articulated by events in the winds and strings respectively.

From the above discussion it is clear that the textural processes that Streams A, B and C undergo, in the form of timbral transformations, play a formal role by articulating structural divisions in the music. These moments of structural articulation correspond with moments of structural significance in the text (m.10), and with structural divisions between sentences in the text (m.19 and m.31).

The streams are also related to the text by the symbolic role that they play. The relationship between the streams, in terms of timbre and temporal proximity, represents the speaker's perception of her relationship to her partner. When the emotional state of the speaker changes as she contemplates different aspects of her relationship, so does the relationship between the streams. Initially the speaker is relatively calm and emotionally detached, and the three streams are distinct and consistent in their timbral properties. Starting in m.10, the

speaker expresses doubt about what her partner feels about their relationship, and timbral changes start to occur in the streams. As the speaker becomes more confused about how her partner feels, in mm.19-31 the streams fuse and lose their distinctiveness. Even once the confusion has cleared in terms of the timbres (after m.31), the clarity of the separate pulses is obscured until after the emotional climax, when the streams become distinct again. Only when the speaker becomes less emotionally intense and more objective do the streams separate and become perceptibly distinct timbrally. In addition, as she reaches a sense of reconciliation in the last lines, the pulses in Streams A and C get increasingly close in proximity until the one overtakes the other in m.44. The irony of her reconciliation, where they can never meet on an equal footing ("beneath/ within"), is reflected in the fact that, given their starting points, in the duration of the song the pulses articulated by the streams can become very close to each other, but can never meet.

It is difficult to attribute more precise symbolic roles to the three pulse streams. For example, why are there three, not two streams, and what do they signify? One further observation can be made regarding timbre, however. From the discussion above we can see that Stream B remains relatively stable timbrally, while Streams A and C exchange timbres -- initially Stream A comprises wind events and Stream C string events, and in the last third of the song Stream A comprises string events and Stream C wind events. Stream B could represent that which is constant in the relationship -- the fact that the relationship seems fated to continue despite the concerns of the speaker. Streams A and C, the two that never meet, are the aspects that change, but are "equivalent" in some way.¹

¹ Or, more simply, Stream B could represent that something in common of which Streams A and C are the equivalents.

'Breathing' scheme

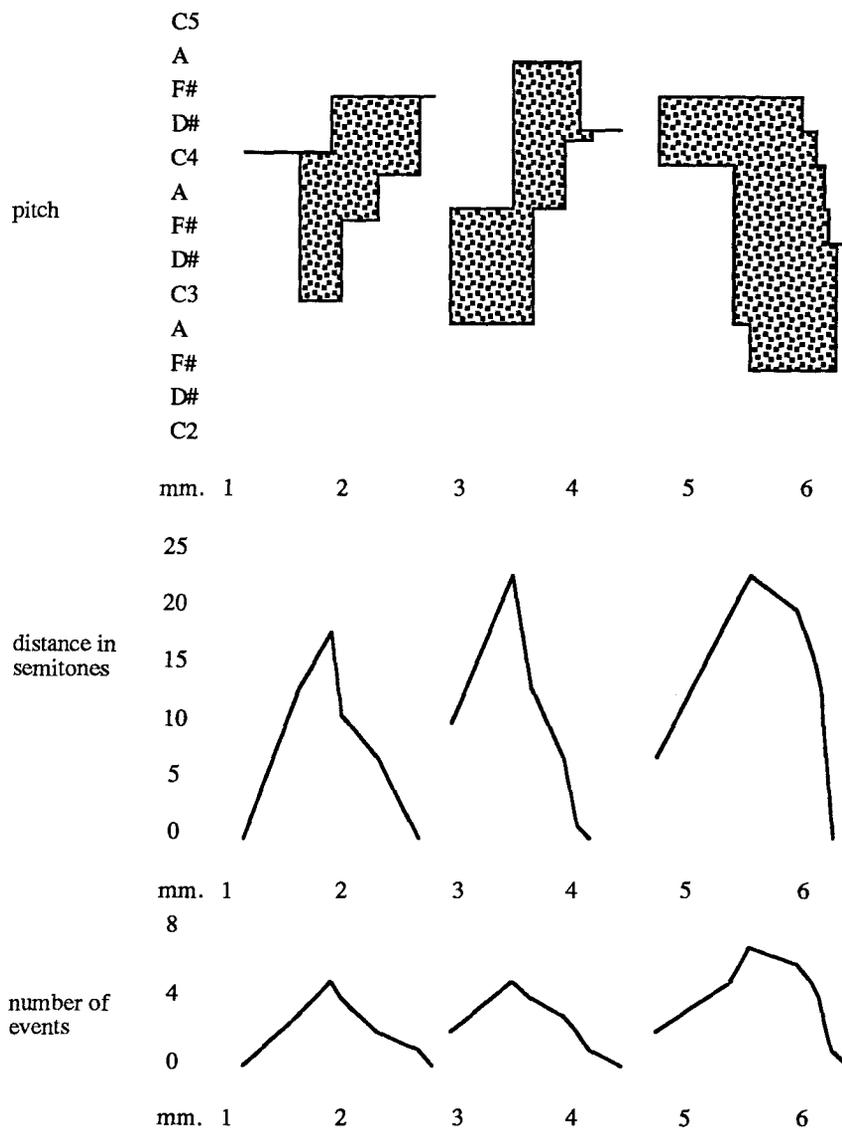
The second textural scheme organizing the material of 'O Breath' involves hearing just two streams: the vocal stream, and the gestures that are formed by aggregated events in Streams A, B, C in the pulse stream, plus percussion events. As was discussed earlier, these two streams represent the two personae in the text by connoting their breathing. During the song, textural processes involving these streams partly support the sectional division that has been discussed, and create moments of intensification and resolution that depict the speaker's feelings. After the properties and behaviours of each stream have been discussed, we will analyze the processes that these streams undergo, focussing on their relation to the text.

The events in the instrumental stream are coordinated so that the stream proceeds with intermittent gestures. In addition to their timbral and pulse characteristics, the gestures are defined by their pitch contour, registral density contour and dynamic intensity contour. These behaviours are graphed in **Example 71** overleaf. The first three gestures are plotted on a pitch/time grid in the upper system, the middle system plots the distance in semitones between the registral extremes of each gesture as that distance varies over time, and the lower system shows the registral density of each gesture by plotting the number of simultaneous events as it varies over time.

The middle series of graphs shows that each gesture has the same contour in terms of the expansion and contraction of the total registral space covered, although the actual placement of each gesture in the registral range changes. The filling of the total registral space within each gesture is often orchestrated in an unconventional way, in that the instrument with the highest range does not necessarily play the highest pitch in a given gesture. The repeating registral space contour of the gestures is supported by a characteristic registral density contour, as shown in the lowest series of graphs in **Example 71**, whereby the moments

of greatest registral density are coincident with the points of greatest distance between registral extremes.

Example 71: 'O Breath' mm.1-6



The dynamic intensity contour follows the same intensity pattern as the registral space contour and registral density contour: a *crescendo* to the point of greatest registral density is followed by a *decrescendo*. The symbolic role of the "accompaniment" has already been

mentioned in the context of Carter's comments about 'O Breath'. The organization of the events into gestures with characteristic pitch, registral density and dynamic intensity profiles, as well as the low attack density, all contribute to connote the deep, slow and regular breaths of a sleeper.

The properties and behaviours of the vocal stream contrast with those of the pulse gestures, and help to reinforce the symbolic roles of the streams. The high attack density and melismatic *rubato* rhythms of the vocal stream contrast with the low attack density and sustained pitch events that comprise the gestures, and help to convey the breathless, agitated tone of the speaker. The property of intervallic parity is also contrasted; while the pulse streams feature repeated P5's and m7's dyads, the vocal stream is defined by the absence of those intervals between successive pitch events. The registral placement of the vocal stream is high relative to the pulse streams, and the vocal pitch events are rarely lower than the gestural ones. The vocal stream is also defined by its fluctuating contour behaviour, which contributes to the connotation of the speaker's anxious state of mind.

Processes of intensification occur in the vocal stream in mm.11-16 and depict the intensifying emotions of the speaker. There is a gradual, although not consistent, *crescendo* in the vocal stream, and the registral placement of vocal events intensifies. The singer articulates the highest vocal pitch event to this point, B5, *fortissimo* on the word "clamor", as she imagines the clamorous sound that her partner's hidden feelings would make could she hear them. The next words, which contradict this aural image with reality, "why restrained", are set lower and significantly softer and occur in the silence between stream gestures. Clearly the contrast here in overall dynamic intensity plays a symbolic role too.

In m.19 changes in the behaviours of both the vocal stream and the instrumental streams help to delineate the structural division that is articulated by the pulse streams, namely the

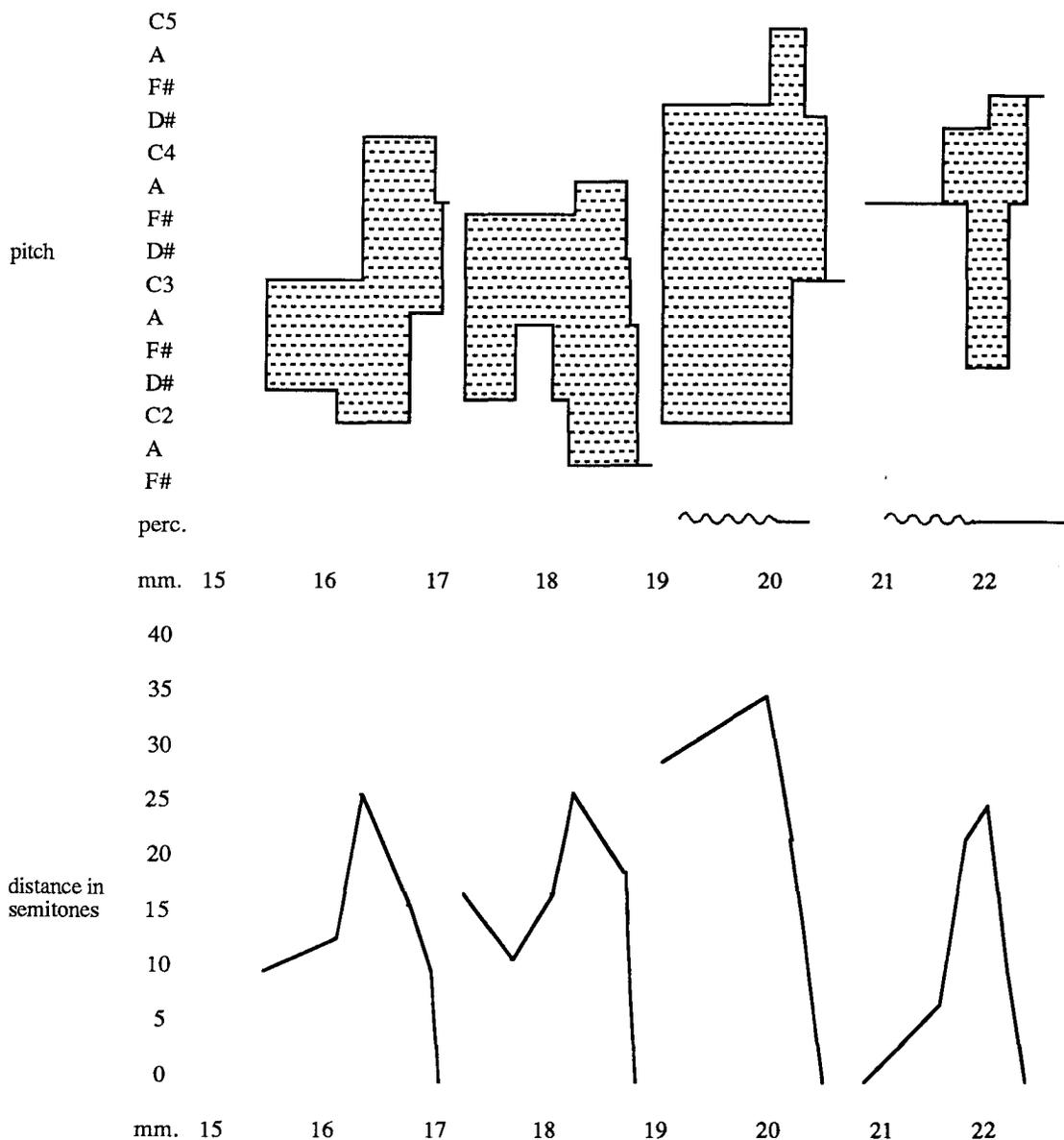
break between the first and second sentences. The vocal stream undergoes a dramatic diminishment in attack density and an abrupt *decrescendo*. As well as the timbral changes that occur in Stream A, the timbre of the gesture in mm.19-20 is transformed when the suspended cymbal enters with a roll after seven measures of silence. As well, an intensification occurs in the registral range of this gesture. The range covered by the pitch events that comprise the gesture is significantly wider than any previous gesture, as can be seen in the diagram reproduced in **Example 72** overleaf. On the upper system the four gestures in mm.15-22 are plotted on a pitch/time grid, while the lower system plots the distance in semitones between the registral extremes.

These processes of diminishment, intensification and timbral transformation draw the listener's attention to the moment of structural articulation and the start of a new section. It is at this point in the song, after the opening gesture of the parenthetical section, that the pulse streams fuse into a single stream because of the lack of timbral distinction between events, as was discussed above. In effect, the two textural systems merge, and for a short time span the instrumental events are perceived exclusively as a single continuity comprising intermittent gestures.

Processes of intensification contribute to another moment of symbolic depiction of the speaker's emotional state in mm.29-30. She describes the hairs on her lover's body as flying "almost intolerably", because the contrast between this clear movement and the lack of movement beneath his body surface (that is, his feelings) is painful to her. During this phrase there is a sudden intensification of attack density in the vocal stream, the stream exhibits *crescendo* behaviour, and the registral placement of the vocal events intensifies. The longest melismatic vocal gesture in the song occurs on the word "flying". Simultaneously, there is also a change in the timbre of the accompanying gesture as the violin and viola are instructed to play *tasto*. The sudden timbral change alerts the listener to

a moment of significance. Immediately following this phrase, at the end of m.30, the previous behaviours are resumed in the vocal stream.

Example 72: 'O Breath' mm.15-22



The splitting process and the timbral changes that occur in the pulse streams in mm.31-32, and which delineate the structural division between the second and third sentences, are masked by changes in the behaviours of gestures and, as of m.33, by changes in the behaviours of the vocal stream. These changes reinforce the perception of a single instrumental stream, and create processes of intensification that lead to a musical climax in mm.37-40. For the first time in the song, the "accompaniment" not only represents the sleeping person by connoting his breathing, but contributes to symbolize the speaker's intensifying emotional state. From m.32 onwards the gestures are connected by a sustained pitch event, although they partially maintain their characteristic profiles. This means that the last gesture of the parenthetical section is joined to the first gesture of the third section and thus the structural break between the two sections is undermined. At the end of m.36 the gestural formation is abandoned and the instrumental stream exhibits *crescendo* behaviour for the first time in the song. A roll on the bass drum starting at the end of m.35 initiates an intensification of registral density and attack density; in mm.36-37 the string events are organized into double stopped dyads the winds have *tremolo*-type figures. (This intensification of attack density was discussed in **Example 23** on page 72). The registral placement of the events comprising the instrumental stream also intensifies. The lowest pitch event in the song occurs in m.36 in the bass (F#1) and the highest pitch event occurs in m.38 in the violin (Eb5). The events in the vocal stream undergo a gradual intensification in registral placement from mm.33-37, and also exhibit *crescendo* behaviour. The highest pitch in the song, B5, which occurred on the word "clamor" in an earlier moment of intensification in m.16, recurs accented and *fortissimo* in m.37. The loudness and high registral placement of the vocal stream are maintained in m.38 and partially in m.39.

These processes of intensification in the vocal and instrumental streams correspond to an emotional intensification in the text as the speaker becomes more emotionally distraught. She describes the feelings between her and her partner in ways that are increasingly distant,

climaxing with the pessimistic suggestion that, instead of shared feelings, he might have "something that maybe I could bargain with". After this climax, she proposes some kind of reconciliation and the emotional intensity is diffused. Correspondingly, processes of diminishment take place in the vocal and instrumental streams to reflect this musically. The organization of the instrumental events into gestures separated by silence resumes in m.39 and the breathing gestures of the sleeper are once again perceptible. Streams A, B and C become timbrally distinct again, as was discussed above. Some processes of diminishment in the instrumental gestures overlap slightly with the maintained intensity in the vocal stream. Diminishment in the attack density of the instrumental stream is initiated in m.38, and diminishment in its registral density starts at the end of m.38 as the strings gradually return to individual pitch events. *Decrescendi* occur in the instrumental stream from mm.38-39.

By m.40 the overall texture of the song is reminiscent of the opening measures, with the exception of the changes in the pulse streams that were discussed earlier. Further diminishment processes take place in the last five measures and the musical resolution, or cadence, that is achieved by these processes symbolizes the reconciliatory, resigned tone of the speaker in the text. Diminishments of registral density, attack density and dynamic intensity continue in the instrumental stream. The vocal stream has a *decrescendo* too, and the events diminish in overall registral placement. The song, and the cycle, ends with a solo vocal event which symbolizes the speaker's isolation ("never with"), despite the reconciliatory tone.

Conclusion

Let us summarize the role of texture in 'O Breath'. Two concurrent systems of textural organization contribute to the structural articulation of the song and to the symbolic representation of the text. On the surface of the music, two streams represent the two

personae presented in the text. The vocal stream represents the speaker, while the gestures in the instrumental stream represent the breathing of her sleeping partner. The pulse streams, A, B and C, whose events comprise the gestures, operate in a different textural scheme that lies beneath the musical surface. There is a clear analogy between the two textural schemes and the text. The distinct breaths of the sleeper can be seen by the speaker on the surface of his body -- his chest rises and falls. These are the contour gestures that are perceptible on the musical surface. Beneath the sleeper's skin are the hidden mechanisms that make his breathing possible, as well as his invisible emotions. The pulse continuities are the equivalents to these subcutaneous forces, propelling the music through time.

The textural processes that these streams undergo function formally to articulate structural divisions in the song. In m.19, timbral transformations in the pulse streams, and processes in both the vocal stream and the instrumental gestures, contribute to a moment of structural articulation that marks the sectional break between the first and second sentences. In m.31 the pulse streams undergo further changes to articulate the break between the second and third sentences, but this time the processes are masked by processes of intensification that occur in the other textural scheme.

The streams comprising the two textural schemes also function symbolically. As was discussed earlier, the symbolic roles of the vocal and instrumental streams are the most easily perceived on the surface of the music, in accordance with Carter's comments about the song. The vocal stream is the voice of the speaker; the behaviours of the stream and the processes it undergoes symbolize her emotions, as can be seen in mm.11-16, mm.29-30 and mm.33-39. The instrumental contour gestures represent the breathing of the sleeping person for most of the song, except for the climactic section in mm.32-39 when they symbolically fuse with the vocal stream and also represent the speaker's emotional state.

The pulse streams play a more abstract role; the relationship between them represents the speaker's perception of her relationship to her partner. When she is objective about her relationship with him, the streams are distinct and have consistent timbral properties, but, when she becomes agitated and confused about their relationship, the streams lose their distinctiveness and merge. There is also a kind of formalistic irony in this tripartite scheme: in the outer sections the singer is concerned with internal processes, while in the inner section the singer focusses on externals. Carter's setting mimics this formally generated irony: the pulse streams (internal workings) are most clear in the outer sections, and, when the speaker focusses on external features, she loses touch with the internal processes.

Thus the two textural schemes in 'O Breath' create a texture that operates symbolically on several levels. Different streams represent the personae in the text, while textural processes symbolize nuances in the relationship between them, as well as depicting musically the changing emotions of the speaker.

CONCLUSION

In this study a theory of texture for Elliott Carter's *A Mirror on Which to Dwell*, based on textural streams, has been proposed. In the first part of the dissertation, individual streams were defined in terms of their properties, behaviours and processes. Each stream-defining property and behaviour, involving consistent, repeated changes in some property, was discussed. Stream processes, which involve consistent changes in some behaviour, were also discussed in terms of how they define an individual stream. We saw how streams combine, and how textural behaviours and processes result from different combinations and changes in individual and composite stream behaviours. The functional roles played by distinct streams, as well as by the textural behaviours and processes that are generated by changes in stream properties and behaviours, were discussed. These functions can be purely musical and they can be symbolic, connoting certain personae or actions described in the text. We saw how streams and the processes they undergo usually have both musical and symbolic functions in Carter's music, and how they help to delineate small-scale forms. All aspects of the theory were supported by illustrative musical examples from the songs in Elliott Carter's *A Mirror on Which to Dwell*.

In the last part of this dissertation the textural theory was applied analytically to each complete song from the *Mirror* cycle in order to elucidate its musical structure. While the poems are quite diverse, it is apparent from these individual analyses that Carter's settings of them are rather consistent. In order to draw them together, a brief overview of the formal structures, the streams and the processes that characterize the songs will be given below.

Formally, the relationship between the text and the music is very close since Carter follows the sentence structure of each poem rather than the visual stanzaic structure, unless they

coincide. Some songs, like the poems to which they are set, are clearly divided into distinct sections; for example in 'Argument' the music accompanying each stanza is separated from the next one by an instrumental interlude. 'View of the Capitol' and 'Anaphora' are also divided into large-scale sections (only two in the case of 'Anaphora'), although in these song textural processes delineate the sections rather than instrumental interludes. In 'Sandpiper' and 'Insomnia' the large-scale divisions are of secondary importance, and the songs divide into a number of smaller sections with different textural features, corresponding to smaller textual units such as phrases. 'O Breath', the last song in the cycle, is through-composed.

A number of textural devices are used to articulate structural breaks. Frequently Carter notates sectional divisions using tempo and expressive markings, but these changes are not always aurally perceptible. Usually the structural breaks are articulated more clearly by textural features. For example, textural cadences and climaxes occur at moments of structural importance, or textural contrast is created when new streams are introduced at the sectional breaks. Occasionally Carter introduces a special feature to articulate structural divisions, for example in 'View of the Capitol' sectional changes are also usually characterized by the alteration of a pulse.

Carter usually establishes the most important streams immediately in the opening measures of each song, as is the case in 'Argument', 'Sandpiper', 'Insomnia', and 'O Breath'. In other songs the streams are established over a longer time period, for example in 'Anaphora' and 'View of the Capitol'. In some songs the instrumental streams play striking symbolic roles, for example in 'Insomnia' one stream signifies the moon and another the insomniac, and in 'Sandpiper' different streams signify the bird and the ocean. In these songs a clear opposition of personae is presented in the text, and Carter exploits this by creating streams with contrasting properties and behaviours to represent the personae. In

'View of the Capitol' the associations between streams and personae are only apparent over a longer time period, and the listener gradually becomes aware that established individual streams represent the trees and the aural and visual aspects of the band. In 'Anaphora' and 'Argument' the streams do not symbolize personae in the text, although the processes that they undergo do represent actions in the text and the emotional state of the speaker in the poem. In terms of the symbolic role of streams 'O Breath' is unusual. Firstly, there are two levels of organization; in the 'pulse' scheme the three individual streams do not have specific symbolic roles, while in the 'breathing' scheme they combine to signify the breathing described in the text. Secondly, the vocal stream represents the speaker in the poem. Unlike 'O Breath', the vocal stream does not have a specific symbolic role in the other songs. Instead, it behaves independently, for example in 'Anaphora', or supports a given signifying instrumental stream by temporarily emulating its properties and behaviours, for example in 'Sandpiper' and 'Insomnia'.

Generally each song in the cycle is characterized by a number of textural processes, usually involving a combination of concurrent streams. All of the songs have processes of intensification and diminishment, which frequently function climactically and cadentially respectively, as well as having symbolic functions. Some songs have a single climactic moment, for example in 'Argument' processes of intensification and fusion lead to an extended climax just over halfway through the song. Similarly, 'O Breath' has a single peak of intensity, which also involves processes of intensification and fusion. In both songs the climax occurs as the speaker reaches her most emotionally intense state, and in both the climax is followed by the reverse processes of diminishment and splitting. Other songs, like 'View of the Capitol', have many moments of climax and cadence, which function climactically and cadentially to delineate sectional divisions and/or to symbolize an action in the text or the emotional state of the speaker. The songs in which individual streams signify personae in the text are usually characterized by compensatory processes

whereby one of the signifying streams comes to the fore while the other ceases or fades into the aural background, for example, 'Sandpiper'. In this way textural subsections are created with particular textural sounds. In 'Anaphora' repeated splitting and fusion processes function to prolong the texture in the first section, after which focussing and timbral transformation characterize the texture.¹ Timbral transformation is also a textural feature of 'O Breath'. Processes of focussing occur in many of the other songs, such as 'Argument', 'Sandpiper' and 'Insomnia', and function both symbolically and to prolong the texture.

As seen in these analyses, then, a textural theory based on streaming provides significant insight into the form and meaning of the songs in *A Mirror on Which to Dwell*. While some aspects of pitch and pitch-class have been dealt with relatively superficially (and would have to be investigated further for a complete analysis of the songs), the inclusion of other aspects of pitch, as well as rhythm and timbre as part of texture have enabled us to make meaningful analytical statements about the way in which the songs are structured. We have elucidated large- and small-scale musical structures, and have discussed many detailed relationships between text and music in the songs.

Although this study has been limited to Carter's *Mirror* cycle, it is interesting and important to question its applicability to other music. The songs in Carter's other recent song cycle, *In Sleep, In Thunder*, are similar in musical construction to *Mirror* songs, and it is likely that this theory would work well analytically for these songs too. *Syringa*, on the other hand, is somewhat different in structure, being much longer, written for a larger ensemble and setting a far more obscure poem than his shorter songs. However, the concept of streaming is apparent even superficially in the setting of the song for two singers, one

¹ Although timbral transformation is being incorporated into a discussion of textural processes, it is not strictly a process, but an abrupt change in the timbral properties of a stream. See page 68 for further discussion of timbral transformation.

articulating the Ashbery text, while the other simultaneously articulating a Classical Greek text. While the application of the present textural theory to other music needs to be investigated, in general, this theory, more than any other current textural theory, can be used to gain understanding of music in which texture is fundamental.

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