

EARTH ASCENDING: A COMPOSITION IN THREE MOVEMENTS FOR
FEMALE VOICE, ELECTROACOUSTIC MUSIC, AND VIDEO

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Earth Ascending is a composition in three movements scored for female voice, electroacoustic music, and video. Composed in the Year 2000, *Earth Ascending* lasts approximately sixteen minutes and was created specifically for live performance in which all three elements combine to create a sonic and visual environment. As such, no single element has greater importance than any other, with each of the three performing forces assuming a foreground role at various times throughout the work.

Earth Ascending is defined by a single poem written by contemporary female British poets Jeni Counzyn, Jehanne Mehta, and Cynthia Fuller. The movements are named according to the title of each poem: *Earth-Body*, *Light-Body*, *Wringcliff Beach*, and *Pool*. The movements are separated in performance by five seconds of silence and black on the video screen.

The paper accompanying the score of *Earth Ascending* is divided into five chapters, each discussing in detail an element central to the composition itself. The Introduction presents background information, general ideas, and

approaches undertaken when creating the work. Chapters 1 through 3 investigate in detail the content of the electroacoustic music, voice, and video. Chapter 4 discusses scoring techniques, revealing approaches and methods undertaken to solve issues relating to notation and ways of accurately representing sound, pitch, and rhythm within the context of a mixed media work. Chapter 5 presents information relevant to the live performance of the piece.

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INTRODUCTION

GENERAL INFORMATION

Earth Ascending is a composition in three movements scored for female voice, electroacoustic music, and video. Composed in the Year 2000, *Earth Ascending* lasts approximately sixteen minutes and was created specifically for live performance in which all three elements combine to create a sonic and visual environment. As such, no single element has greater importance than any other, with each of the three performing forces assuming a foreground role at various times throughout the work.

Each of the three movements of *Earth Ascending* is defined by a single poem written by contemporary female British poets Jeni Couzyn¹, Jehanne Mehta², and Cynthia Fuller³. The movements are named according to the title of each poem: *Earth-Body*, *Light-Body*; *Wringcliff Beach*; and *Pool*. The movements are separated in performance by five seconds of silence and black on the video screen.

¹ Jeni Couzyn, "Earth-Body, Light-Body", in New Women Poets, ed. Carol Rumens (Worcester: Billing and Sons), 1990, 45.

² Jehanne Mehta, "Wringcliff Beach", in New Women Poets, ed. Carol Rumens (Worcester: Billing and Sons), 1990, 72.

³ Cynthia Fuller, "Pool", in Earth Ascending: an anthology of living poetry, ed. Jay Ramsay (Devon: Stride), 1997, 83.

Creating a successful composition in which two elements are fixed, or unchangeable, and one element is human and changeable, has been a challenge to electroacoustic composers since the origins of the genre. Aesthetic issues and technical difficulties are the two predominant elements debated continuously by composers, performers, and analysts.

Aesthetically, combining a live performer with a fixed electroacoustic tape is of great concern to composers. A performer is accustomed to the flexibility inherent in solo or ensemble performance, where interpretation is expected, expressivity can be exaggerated, tempos fluctuated, and exceptions to scoring made to accommodate the performer's breathing, phrasing, dynamic control, or technical skill. Performing with a fixed medium such as tape can severely restrict the performer's interpretive freedom with the score in a way that he/she is traditionally accustomed. If the instrument and tape must sound simultaneously at certain points in the score, the instrumentalist must be the compromising force to ensure such alignments. The tape exists solely as an unyielding, unchanging, and absolutely non-participating member within the context of live performance.

The composer of such music, then, is faced with numerous issues to be solved as part of the compositional process. A common concern is whether the two forces can co-exist successfully within the context of the work. If one element is completely unchangeable, the other element must continuously modify its performance or interpretation in order to conform to the fixed element. Some composers balk at this seeming rigidity and seek alternative means of combining live performers with electroacoustic sounds, such as the use of live-interactive

devices that are programmed to 'follow' the performer and output various sounds based on figures played by the performer.

Technical issues can also plague a composer when creating a work for live performer(s) and fixed media. Electroacoustic music can be created with any type of sound able to be recorded to tape. Extensive processing of recorded materials has the potential of generating a sonic palette unmatched by any combination of live instruments. The possibility that one element of a composition can be larger than life and another less than such makes parity of elements seemingly impossible. Viable solutions include placing timbral constraints on the electroacoustic music and expanding the timbral palette of the performer through the employment of extended techniques.

Additionally, live performance itself can be a detriment to the successful creation of a cohesive mixed composition. The electroacoustic music must be heard over a sound system comprised of at least two loudspeakers. This creates a potential for great dynamic force, reinforcing the 'larger than life' impression created by the electroacoustic music. The live performer, on the other hand, is limited by the acoustic instrument's dynamic range. In some cases this can mean minimal volume, further exaggerating the difference between the two forces. Further, the electroacoustic music is never seen, only heard in live performance. The performer, however, usually stands in front of the audience just as he/she would in any other concert setting. This creates a multi-leveled dichotomy between the two forces: one element is larger than life, unconstrained by timbral or dynamic limitations, and is never physically seen; the other element is human,

timbrally and dynamically constrained, yet maintaining a physical presence during performance (unless purposely hidden).

Amplifying the live performer is one way of bridging the dynamic gap between the two forces. Increasing the dynamic capabilities of the live performer can achieve a greater sonic balance between the performer and electroacoustic music. Additional issues can arise from this simple solution, if a large multi-speaker setup is employed and the performer is amplified through speakers surrounding the audience. In this scenario, the performer is seen playing at the front of the stage, yet the sound emanating from the instrument can be perceived as being located throughout the performance space. This creates a discrepancy between the physical sound-producing location and the numerous virtual sound sources created through amplification. To avoid this issue, the performer should only be amplified through speakers close to his/her actual location on the stage. Although this does not allow complete dynamic equality between the two forces, it does help bridge the gap between them.

In *Earth Ascending*, I strove to create a unified sonic and visual environment in which the voice, electroacoustic music, and video coexist and complement each other. To achieve a balance between the electroacoustic music and voice, a number of ideas and techniques were explored and used in the creation of the composition. Extended techniques were employed in the vocal part, and voice samples were used as raw material for sections of the electroacoustic part. This allowed for some timbral similarity between the two elements, enabling the voice and electroacoustic music to merge timbrally at

certain places within the work. In live performance, instructions call for amplification of the voice through only the front two speakers of the sound system, giving it greater dynamic power yet avoiding the disembodied performer effect. Additionally, reverberation is suggested for live performance, serving to expand the stereo imaging of the voice and allowing it to sound larger and last longer than it might otherwise.

Other unifying techniques employed in *Earth Ascending* pertain to the timing of events and use of pitch. The entire composition was created based on the pacing of the text. Although the electroacoustic music was created first, it was composed with great care and attention given to the text and the amount of time needed for text declamation and phrasing. Additionally, it is not always necessary for the vocalist to align precisely with the electroacoustic music. Specific markings indicate required points of alignment between the two forces. When these points are not indicated, the vocalist is free to interpret words and phrases according to the given notation, as long as she remains within the temporal constraints indicated.

Pitch was an important concern when processing material for the electroacoustic portion of the composition. Numerous sounds were generated that centered on specific pitches, or deliberately moved from one pitch center to another. These, in turn, generated pitch cues for the vocalist, and placed the electroacoustic music at times into an accompanimental role and other times into the role of soloist. The careful use of pitched material in the electroacoustic part

of the piece helped to reinforce the idea of ensemble between the tape and the vocalist.

The video functions as another fixed medium in *Earth Ascending*. A common concern among mixed media pieces is that visual components frequently distract one's attention from sonic components. The video was conceived and created to complement the other performing forces. Its presence completes the performance environment, providing color and motion, as well as enhancing the mood of the composition. The video also aids in the merging of electroacoustic and live elements, since the complete darkness required for projection removes the stark contrast between the performers physical presence and the electroacoustic music's obvious physical absence. Just as the voice and electroacoustic music create a sonic continuum, the video creates a visual continuum, assisting with forward motion, exaggerating moments of stasis, and expanding the overall mood of the composition.

CHAPTER I

ELECTROACOUSTIC MUSIC

The electroacoustic portion of *Earth Ascending* was created over a period of two years in the Electroacoustic Studios at The University of Birmingham, England, and the studios of the Center for Experimental Music and Intermedia (CEMI) at the University of North Texas in Denton, Texas. Source material was recorded on Tascam DAP-1 Digital Audio Tape (DAT) machines, using Neumann and Soundfield Research microphones. Microphone techniques used in recording include mid-side and coincident patterns. Both allow great flexibility with stereo imaging as well as processing for spatialization.

Resulting source material was processed in a variety of ways on Macintosh computer systems. Applications used to create processed material include: Tom Erb's SoundHack, Jean Piche's Cecilia, Digidesign's SoundDesigner II, IRCAM's AudioSculpt, UPIC's Cloud Generator, GRM's TDM Plugin Series (including Doppler, Delay, Equalization, Pitch Accumulator, Comb Filter, Shuffler, and Freezing), Antares' Multi-Band Dynamics Tool, TC Electronics' Reverb and Chorus, Digidesign's DPP-1, DINR, and Short Delay, Arboretum System's Hyperprism suite of Plugins, Waves' suite of Plugins, and CSound. All mixing and post-production was done on Digidesign ProTools III and ProTools-24 systems.

Source material collected and recorded for *Earth Ascending* is varied in both timbre and duration. Material was recorded deliberately to facilitate the creation of sonic or timbral 'families'. Creating families of sound prior to mixing and post-production allows opportunities for generating complementary and contrasting compositional statements. Samples recorded for *Earth Ascending* include plastic scraping on metal, metal rolling on metal, metal dropped on cement, a metal tube shaken, material crinkled and ripped, paper and plastic envelopes crinkled and ripped, golf balls rolled in a terra-cotta dish, pins sifted in a terra cotta dish, plastic sifted in a terra cotta dish, ice dropped in a glass, and other miscellaneous sounds recorded and collected over a period of two years.

Additionally, five women — two British, one Irish, one Spanish, and one Dutch — were recorded reading the texts. These women were selected due to their unique accents, which facilitated a variety of processing as well as complemented the idea of creating a universal sound world within the context of the work.

The global objective in composing the electroacoustic portion of *Earth Ascending* was the creation of a rich sonic foundation on top of which all other elements rest. The electroacoustic music undulates as the work progresses, at times functioning as background supporting material to the voice and video, and at other times assuming a controlling or foreground role through presentation of motivic ideas, timbral unfolding, and evolution of pitch material. Since the electroacoustic portion of the composition is 'fixed', or recorded on a concrete

medium (compact disc or dubbed for performance onto the video tape), it functions as the controlling mechanism for timings among all elements.

Although the electroacoustic portion of the piece was created first, it was composed with very specific attention given to the pacing and flow of the text for each movement. Motivic ideas and gestures were created and developed deliberately to foreshadow, reflect, complement, and/or contrast the text as appropriate. The form of the composition is generally through-composed as mentioned previously, although the electroacoustic music does contain recapitulative elements within movements, as well as timbral and motivic links between movements.

Movement I, *Earth-Body, Light-Body*

The electroacoustic music portion of *Earth-Body, Light-Body*, was composed first. It utilizes a variety of sampled materials, including spoken voice, golf balls rolling, and ice dropping into a glass. Materials were processed using means described earlier, with careful attention paid to the creation of specifically pitched motivic statements. The image created in the text of two body types, one of earth and another of light, prompted the use of very specific timbres to create the movement's sonic environment. The sound of golf balls spinning around and dropping into a terra cotta dish created a round, surprisingly reverberant sonic quality after processing and was chosen to represent the idea of an earth body. This sound's transpositional flexibility allowed for the creation of motives that interplay with the text as the movement progresses. Samples of ice dropping into a glass were processed to create high-pitched, light, nonreverberant sounds, with

distinct attacks and clearly discernable decay-releases. These sounds were transposable in similar ways to the golf ball samples and were selected to represent the concept of a light body.

The ability to transpose these timbres allowed for the creation of two distinct sonic palettes with the ability to function as background drones or foreground motivic statements. The timbral diversity between the two created a foil, or contrast of materials, and reinforced the conceptual and actual differences between earth and light.

The formal structure of *Earth-Body, Light-Body* is divided into four continuous sections, defined by the appearance of distinct timbral material, employment of points of repose, vocal entries, or a combination of these elements. The Introduction begins with a sweep and small climax at 0:04, comprised of vocal and golf ball timbres. It continues with vocal material through to momentary cessation at 0:31. Although the texture and content of the electroacoustic portion of the piece changes little at this point, the entry of the voice at 0:40 signifies the beginning of the first section of the piece. The material of both the Introduction and section 1, then, are essentially the same in the electroacoustic portion of the piece. Section 2 begins with a climax at 1:42, leading to motivic development of the golf ball timbre from 1:49 to 3:17. Cessation of activity at 3:17 provides an opening to introduce a third section, which lasts until the end of the piece at 4:48. Primary sonic material for section 2 is the ice-derived timbres, with added reminiscences of vocal and golf-ball

material appearing toward the end of the movement. The overall structure of the electroacoustic part of movement 1 is shown in fig. 1.

TIME	0:00	0:40	1:42	3:17
SECTIONS	INTRO	SECTION 1	SECTION 2	SECTION 3
DURATION	(40")	(1'02")	(1'23")	(1'31")
PRIMARY TIMBRAL MATERIAL	Vocal	Vocal	Golf-ball	Ice in glass
SUPPORTING TIMBRAL MATERIAL	Golf-ball	Golf-ball	Material Ripping	Vocal Golf ball Clacking
PRIMARY PITCH MATERIAL	A/F	A/F	A/F#/B/C#	G/B/F/C/D/A

Fig. 1. Formal structure, timbre, and pitch in *Earth-Body, Light-Body*.

The primary sound material's ability to transpose without timbral reduction or compromise allowed for the creation of specific pitch centers and progressions as the piece evolved. The electroacoustic portion of *Earth-Body, Light-Body* opens centered on A and closes on F, with both the Introduction and section 1 each containing only those pitches.

Section 2 marks the first significant section of motivic and developmental material, consisting primarily of the golf ball timbre as illustrated in fig. 1 above. Although the golf ball timbre appears as part of the sonic texture early in the piece at 0:04, 1:10, and 1:28, its appearance in section 2 functions as foreground

motivic statement and development. The golf ball motive begins pitched on A at 1:49, its appearance growing out of a cadence with extension at 1:42. The second section's duration is 1:28, cadencing on F-sharp at 3:17. Development in this section is primarily pitch-based, with a general progression from A through F-sharp, B, and C-sharp. It also features rhythmic variation and development. The pitches A and F-sharp retain the greatest strength throughout this section through repetition. Fig. 1 illustrates primary pitch material throughout the movement along with timbre and form.

Vertically, *Earth-Body, Light-Body* was designed to imitate the text's simplicity and straightforwardness. Layers within the electroacoustic portion of the piece are primarily uncluttered, with clear divisions between frequency ranges. It is rare to encounter more than three distinct elements or timbres sounding simultaneously. When multiple elements are present, careful placement within the stereo field prevents sonic clashing and confusion. Dynamic contrast is created through layering sonic elements as well as employing simple linear and exponential volume curves.

Movement 2, *Wringcliff Beach*

Wringcliff Beach was composed using a similar approach to that undertaken in the composition of movement 1. Primary sonic material selected for this movement includes material crinkled and ripped, metal rolling against metal, metal striking cement, a metal rod shaken, and plastic scraping against metal. Vocally-derived timbres were not incorporated into this movement in order to create sonic diversity from movements 1 and 2, both of which employ

vocally-derived sounds. Extensive processing of this raw material created a wide palette of timbres for this movement. Regardless, *Wringcliff Beach* exhibits a global timbral unity not present in *Earth-Body*, *Light-Body*. Since fewer distinct raw samples were processed for this movement, there is less timbral diversity in *Wringcliff Beach*, resulting in greater timbral continuity and development as the movement progresses.

On one level, *Wringcliff Beach* depicts a conceptual journey from the seashore to the top of a lighthouse. The text illustrates in great detail the wide variety of elements encountered along this route. This vivid palette is enhanced and augmented through the representational expansion of some of the objects. While some objects exist solely as part of the beach, others' imagery is expanded thus reflecting life and the world. To accurately portray this journey and its numerous levels of meaning, the electroacoustic portion of this movement was developed meticulously, with careful attention paid to the variety of details inherent within the context of a single sonic object. Numerous drones were created that shift slightly and undulate, almost unnoticeably at times, as the movement progresses. Paper, plastic, and cloth are ripped in different ways to reflect the idea and flow of the text. The ripping sound itself, on a macro-level is one complete gesture with distinctive starting and stopping points. Internally, however, the sound is grainy and complex, imitating macro- and micro- levels that exist within the text.

One example in the poem of sound-to-text imitation is found toward the beginning of *Wringcliff Beach*. In the excerpt below, designed to be read from the

bottom upwards, the section as a whole flows smoothly from beginning to end, almost rushing in its ascension toward the “. . . vortical wind towers.”¹ Studying this passage more deliberately, however, uncovers a substrata of sharply illustrated, vivid segments of text, each one describing one small aspect of the progression from the lower level of the tide to the height of the wind towers.

wind towers...
light gull riders of the vortical
levels of the white wing borne
upwards to the nesting
into char black, blue black swart rock cliff, drop
salt weave, converge on shingle, ascending
with the sea rain, upseething in the dim brown surge
we, in the wide of the bay cloud, grey insweeping
we, whom you do not see but sense in the blood tide rising

Jehanne Mehta, “Wringcliff Beach”

The introduction and use of metallic sounds in *Wringcliff Beach* serves a number of purposes. Some metallic sounds are incorporated into single-attack climaxes, while others combine to create a layer of flowing strata above a drone. *Wringcliff Beach* exhibits extensive vertical layering, in contrast to the vertical simplicity of *Earth-Body*, *Light-Body*, with numerous events occurring simultaneously on a fairly regular basis. These elements, however, occupy different frequency ranges and stereo spaces, and although seemingly similar on the surface, differ internally. This vertical density is most frequently created by the simultaneous use of numerous drone timbres. Many sections of *Wringcliff Beach* use two to three drones simultaneously, with each drone occupying one

¹ Mehta. “Wringcliff Beach”, 72.

section of the frequency range, low, middle, or high. Although the drones may have been generated using the same source material, a variety of processing allowed for the creation of timbres exhibiting very different internal characteristics while maintaining similar external structures and generalized timbral similarities.

The formal structure of *Wringcliff Beach* is defined primarily through the sectionalization of the text. The electroacoustic part of the movement, however, deviates from the text's divisions, and can be analyzed through changes in drones, texture, and climax points. The movement contains no introduction and is divided into six sections. The first section opens with an airy, exponential sweep upward, followed by the high pitched, clacking timbre heard near the end of *Earth-Body, Light-Body*. Section 1 is generally static with a second sweep at 0:37 serving as a cadence that is extended by the voice, concluding at approximately 0:40. Section 2 begins similarly, with a sweep that is a derivative of the opening gesture of the movement. This gives rise to a low-pitched drone that continues throughout the section, embellished occasionally with sounds derived from processed plastic and metal. Climaxes of varying strength occur at 1:30, 1:35, and 1:57, with a final cadence eliding with section 2 at 2:01.

The third section introduces a new, high-pitched drone, with the low-pitched drone from section 2 returning after a short time, resulting in sonic stratification. After development incorporating the two drones and layered metallic timbres, section 2 closes at 3:14. A short interlude from 3:14 to 3:26 marks the opening of section 4, introducing a new drone created from highly

processed metallic sounds. The section ends with a sweeping gesture at 3:54, opening the sound world to another new drone and the beginning of section 5. This final section may be considered an extension of section 4 rather than a formal element on its own, since it is timbrally similar to and progresses at a pace reminiscent of section 4. The text, however, moves to a new section, and the content of section 5 exhibits enough unique characteristics to assert its differentiation from section 4. Section 5 contains the climax of the piece, located at 4:52. It is followed by a denouement or coda, which closes the piece at 6:05. Fig. 2 illustrates the formal structure of the movement with primary and secondary timbral content.

As in *Earth-Body*, *Light-Body*, pitch in *Wringcliff Beach* was an important concern and focus. The electroacoustic portion of *Wringcliff Beach* opens with an indefinitely-pitched sweep that moves quickly to a drone alternating between the pitches D, A, and F-sharp, and closes pitched on C-sharp. The first section's timbral material is extremely limited, consisting primarily of airy sweeps, sweeps somewhat grainy in content, and a high-pitched, clacking drone. Pitch centrality remains focused on the pitches D, A, and F-sharp throughout its forty-second duration. Section 2 contains airy sweeps similar to those in the movement's opening, but they are shorter and have middleground function. A drone enters beneath the opening airy sweep, sounding until the section's end at 2:00 with only short pauses throughout the one-minute and fifteen-second section. It begins pitched on F, but then alternates between the pitches E and F, and exhibits occasional dynamic fluctuations. Although continuous, the drone contains attack

TIME	0:00	0:40	2:01	3:14	3:54	4:52
SECTIONS	SEC. 1	SECTION 2	SECTION 3	SEC. 4	SEC. 5/ EXT. OF SEC. 4?	DENOUE- MENT /CODA
DURATION	40"	1'21"	1'13"	40"	58"	1'13"
PRIMARY TIMBRAL MATERIAL	high clacking drone	metallic pulsing drone dry popping	high-pitched additive synthesis drone	metallic scraping drone	resonant metallic drone	metallic popping and scraping low pulsing drone
SUPPORTING TIMBRAL MATERIAL	airy sweeps grainy sweeps	airy sweeps bell-like bongs	metallic pulsing drone airy sweeps grainy sweeps dry popping material ripping	dry popping grainy sweeps material ripping	dry popping grainy sweeps material ripping	grainy sweeps material ripping
PRIMARY PITCH MATERIAL	D/A/F#	F/E	E/C/F#/C#	C#/F	E/C#/A#	C/A/G/C#

Fig. 2. Formal structure, timbre, and pitch in *Wringcliff Beach*.

points that contribute to forward motion and lend internal variety to the changes in pitch and dynamics. The second section's foreground material consists primarily of popping-type sounds derived from samples of plastic scraping metal. These popping sounds function as sonic strata rather than motivic material, creating a further stylistic variation from movement 1. The popping sounds become almost drone-like in nature at times, although they change in complexity, density, and dynamics throughout the section. Structural divisions within section 2 are located at 1:31, 1:35, and 1:57, with a final elided cadence at

2:01 pitched on E. The climax at 1:31 completes itself at 1:35, and the climax at 1:57 functions similarly, closing the section at 2:01.

Section 2, opening at 2:01 with an elided cadence on E, begins with a high-pitched drone created using additive synthesis. This drone is one of the only artificially generated timbres in the composition, but exhibits spectral similarities to other drones created from recorded samples. The drone's initial statement is followed by an airy sweep, followed by the return of the same drone found in section 2, pitched on E and C. The new additive synthesis drone has similar characteristics to the drone from section 2, in that it exhibits generalized stasis with internal fluctuation. The presence of both drones simultaneously creates frequency stratification, with the returning drone from section 2 occupying the low-mid range, and the new additive synthesis drone sounding in the high frequency range. Airy sweeps provide foreground activity, with periodic interruptions by frenetic popping and metallic timbres. Section 2 remains pitched on E throughout most of its duration, with occasional expansion to the pitch C. The pitch center shifts at 3:03 to F and C-sharp, ending at 3:14 with a grainy, ripping, exponential sweep to a climax centered around the pitch C.

The opening of section 4 is a short interlude of metallic popping sounds beginning at 3:14. This is followed by a grainy ripping sweep, similar to the one initiating the closing climax of section 2, giving rise to a new drone pitched on C-sharp and F at 3:26. This drone is a derivative of the plastic-scraping-against-metal sample, and is specifically pitched, yet non-reverberant in comparison to the drone that follows in section 5. Again the drone functions as both

background and foreground material. Its external content is essentially static and repetitive, but it exhibits frenetic internal activity that shifts and changes as the section progresses. A point of repose comprised of a collection of pitches based from C-sharp at 3:44 allows for a momentary change of timbre and texture with another brief interlude. This leads to grainy shade rips signifying the entry of a new drone and progression to the fifth section of the movement.

Section 5 exhibits the greatest amount of density and dynamic contrast in the entire movement. The primary drone in this section is similar to that found in section Four but exhibits an expanded frequency content in the low end of the spectrum and is more resonant than its counterpart in the previous section. Grainy, ripping sweeps combined with frenetic metallic textures provide alternating middleground and foreground material for this section. The drone in section 5 is pitched on E, C-sharp, and A-sharp, lasting without change in pitch or content until the main climax point of the movement at 4:53.

The coda or denouement section of the movement provides closure and return to the stasis created in the beginning. Grainy sweeps alternating with frenetic, metallic textures slow the pacing of the movement considerably, leading to the entry of a final drone appearing at 5:00 and pitched on C, A, and G. As the foreground shade and metallic sounds dissipate, the drone remains, coming to a final cadence on C-sharp and fading at 6:05 to close the movement. Fig. 2 illustrates the pitch content of *Wringcliff Beach*.

Movement 3, *Pool*

The final movement of the composition, *Pool*, incorporates material from both *Earth-Body*, *Light-Body* and *Wringcliff Beach*, in addition to introducing previously unheard sonic material. Raw material processed to create the electroacoustic portion of this movement includes spoken text, lead striking cement, material ripping, plastic and other material being crinkled, and a metal tube being tapped and shaken. *Pool* exhibits the timbral variety found in *Earth-Body*, *Light-Body*, but makes use of the changing drone idea of *Wringcliff Beach* rather than the idea of motivic development.

Pool is the dream movement, the reflection after the journey undertaken in *Wringcliff Beach*. Its dreamlike imagery progresses from dry land to the lush wetness of a pond. Rather than create a motivically driven electroacoustic component similar to *Earth-Body*, *Light-Body*, I elected to create a sonic environment from which the live vocalist emerges and at times becomes submerged. The vocally derived sonic material has a timbral warmth and hypnotic quality that complements the mood of the text. The incorporation of metallic sounds recalls the beach and water images of *Wringcliff Beach*, with the use of drones creating a sonic backdrop for the ethereal mood created by the text.

Since it reflects a dreamlike state, the structure of *Pool* is less sectionalized and less text-dependent than the previous movements. This makes the determination of distinct sections more difficult, since the piece flows continuously from start to finish. As such, formal assertions are merely speculative for *Pool* and open to interpretation. Regardless, *Pool* is defined as a

flexible, tripartite structure. The movement opens with an introduction by the vocalist, who speaks the first line of the text. This is followed by vocally derived sounds in the electroacoustic part, which build to a cadence at 0:21, concluding the introduction and launching into the movement proper. Section 1, beginning at 0:22, contains a drone created by a rustling plastic envelope. Foreground material in this section imitates that of *Wringcliff Beach*, with the incorporation of airy sweeps and the eventual introduction and climactic build of metallic timbres. The dynamic expansion and textural accumulation of the drone, metallic attacks, and sweeping sounds propels the piece forward, creating contrast to the opening, and ending the section with a climax at 1:06.

Section 2 opens at that point, with a high-pitched, static drone that evolves into a non-reverberant, frenetic, metallic drone similar in character and structure to drones found in *Wringcliff Beach*. As section 2 progresses, another similarly shaped, mid-range drone enters, accompanied by whispered text. A resonant attack at 1:21 marks the return of the envelope-rustling sound, which continues until a second large attack at 1:46. A change of drones from 1:46 to 2:05 complements the building whispered text, creating a wash of sound in the mid-to-lower register. A non-reverberant, grinding attack at 2:06 could be interpreted as the end of the section. Following the attack is a short return to the vocal material found in the introduction. This material lasts a mere sixteen seconds, perhaps too short to be considered a section of its own. Rather, it may be considered a continuation of section 2, although the change in dynamics, texture,

and timbre contradict the label of cadential extension. Another large climax at 2:24 signifies the end of section 2 and beginning of section 2.

The third section opens with a low, non-reverberant, lurching drone that begins tentatively with airy sweeps functioning as foreground material. At 3:03 a small attack signals an increase in density and change in texture of the drone, which becomes thicker and more reverberant, flowing instead of lurching forward. The high clacking sound from movements 1 and 2 reappears one last time, becoming the only sound to occur in all three movements. As the drone texture thickens, the airy sweeping sounds increase in volume and density, yet a final climax is avoided. The entire texture fades gradually, as one final vocal sound appears in the texture, and the movement ends at 4:15. Fig. 3 outlines the formal structure of *Pool*, listing timbres contained in each section.

Issues relating to pitch were of less concern in *Pool* than in the previous movements, since the creation of a flowing sonic environment was paramount. Regardless, *Pool* contains a significant amount of pitch fluctuation in its electroacoustic component. The introduction begins with vocally derived materials on A, quickly bringing in A-flat as a second pitch. A cadence between the introduction and section 1 is centered on B-flat and D, followed by relatively non-pitched envelope-rustling sounds. As section 1 progresses, percussive attacks created from lead pipes striking the ground enter pitched on D, prolonging the pitch-focus created at the previous cadence. The end of section 1 is marked by a cadence on B-flat and A. Shortly after the beginning of section 2, a

TIME	0:00	0:21	1:06	2:24
SECTIONS	INTRO	SEC. 1	SECTION 2	SECTION 3
DURATION	21"	45"	1'18"	1'51"
PRIMARY TIMBRAL MATERIAL	vocal sounds	envelope rustling	high-pitched metallic drone	dry lurching drone becoming resonant low drone
SUPPORTING TIMBRAL MATERIAL		vocal sounds airy sweeps metallic strikes	mid-range dry metallic drone whispering envelope rustling airy sweeps vocal sounds	airy sweeps vocal sounds high clacking grainy sweeps
PRIMARY PITCH MATERIAL	A/Ab	Bb/D/A	B/G/C/Ab/D/F#/A/Bb/E/C#/F	D/F#/F/G/A

Fig. 3. Formal structure, timbre, and pitch in *Pool*.

chord containing the pitches B, G, C, and A-flat introduces two drones, one a return of the envelope-rustling timbre, and the other whispered text. A significant but non-sectional cadence on D follows after a dynamic and textural build of the drones, giving rise to a new drone that is expanded to incorporate F-sharp by 1:50. After development on these pitches, introductory material returns pitched again on A. Instead of expanding to incorporate A-flat as in the introduction, the return adds B-flat. A short vocally-derived motive using the pitches D, E, C-sharp, and B pushes the movement forward to a cadence on D, F-sharp and F at 2:24, signifying the beginning of section 2. The drone introduced in this final section is comprised of the pitches D, F-sharp and F. This drone

continues until a brief accent pitched on G and F at 3:02 marks the timbral expansion and pitch shift of the drone to those pitches. As section 2 reaches its greatest dynamic and textural saturation, vocally derived material enters one last time pitched on A, joining with the G and F-pitched drone to close the movement. Fig. 3 illustrates the pitch material of movement 3, combination with formal structure and timbre.

CHAPTER II

VOICE

The vocal portion of *Earth Ascending* was created in multiple stages, reflecting the difficulties inherent in combining fixed (electroacoustic/video) and flexible (live voice) mediums. The initial stage of compositional decision-making occurred early with text selection. I was interested in creating a composition based on poems written by contemporary female poets but did not limit myself to a single author. After much investigation and research while residing in England, I selected three texts that were written within the last nine years by the female British poets Jeni Couzyn Jehanne Mehta and Cynthia Fuller. Three poems are reprinted in their original format in appendix A.

The subject matter of the poems deals both directly and symbolically with women, their connection with nature, their place within the world, and the universal desire for acceptance and recognition. The unifying element of the three texts is their vivid depiction of the environment, earth, physical beings, and other natural elements. Selection was also based on the ability to adapt the texts to the sung voice. After selection, the three texts were deliberately ordered to create individual movements based on mood, imagery, length, and pacing.

During the initial compositional stages, the textual elements of *Earth Ascending* were paced with the electroacoustic portion of the piece, which was created first. At some points during the generation of the electroacoustic music,

definite pitches were determined for the vocal part. However, pitch material for the vocal portion of *Earth Ascending* was created largely after the electroacoustic part of the piece was completed. In this manner, it was assured that specific points of alignment between the voice and electroacoustic music could be successfully coordinated. Further, areas of non-alignment could be created to allow the vocalist greater interpretive freedom within the constraints of performing with a fixed medium. To ensure greater flexibility on the part of the vocalist, spatial notation was employed in the performance score. This gives the vocalist an opportunity to interpret the text within certain parameters, and create rhythmic ideas and gestures that flow with the electroacoustic music. A detailed explanation of the spatial notation and other symbols employed in the scoring of *Earth Ascending* can be found in Chapter IV.

Since the global objective of the composition was to create a sonic world or environment in which the voice, electroacoustic music, and video are interwoven, one focal element of the vocal part was text declamation. It was important compositionally that the rich, elegant phrases and imagery of the text be conveyed with clarity to the audience throughout the duration of the work. To accomplish this, the text was set simply and clearly in order to facilitate comprehension by the listener.

Although text declamation was paramount and purposely simplified in *Earth Ascending*, some extended techniques were incorporated to extend the timbral quality of the voice as the piece evolved. As mentioned in the introduction, this expanded timbral palette was one solution toward bridging the

gap between the voice and electroacoustic music. Extended techniques employed in *Earth Ascending* include speaking, sprechstimme, whispering, half speaking half whispering, and forced whispering. Other techniques used include the extension of certain vowels and consonants where appropriate, glissandi, and minimal filtering of sustained notes.

Movement 1, *Earth-Body, Light-Body* consists of vivid and flowing imagery, requiring attention to multiple levels of detail during the compositional process. Frequently repeated words were treated meticulously, scored at times similarly, and at other times deliberately in contrast to one another. Rhythms were intentionally kept free to reflect the floating nature of the text. As mentioned in the discussion of the electroacoustic portion of the piece, the ideas of earth and light are the two predominant elements of this text. Ascending vocal lines such as the one in fig. 4 below illustrate the literal interpretation of a segment of *Earth-Body, Light-Body* through text painting.

The figure shows a musical score for a segment of *Earth-Body, Light-Body*. The top staff is a vocal line in treble clef with a key signature of one flat (B-flat). The lyrics are: "round me,[i] shi - ning and stream - ing with light.[a1] → → → [a]". The dynamics are marked *ff* and *fff*. Below the vocal line, a piano accompaniment is shown with a dense, textured sound field. The piano accompaniment is divided into three sections: 3:10 to 3:15, 3:15 to 3:17, and 3:17 to 3:20. The piano accompaniment features a series of chords: [B], [F#], [B], [A], and [F#].

Fig. 4. Example of text painting in *Earth-Body, Light-Body*, 3:10-3:20

The pitch content of *Earth-Body*, *Light-Body*, although varied, centers primarily around A, D, F-sharp, and B. Sung phrases predominate, with minimal inclusion of sprechstimme, forced whispering, and speaking where appropriate to reflect the text.

Wringcliff Beach, the poem for movement 2, was designed to be read from the bottom of the poem up to the top, or from end to beginning. This very deliberate visual organization of the text reflects the author's intent to create not only an impression through the words themselves, but through their placement on the page, which reflects the predominating idea of ascent from the ground upward to the sky.

Wringcliff Beach is the longest of the three texts, as well as the most directional from the standpoint of narrative motion. These two elements made *Wringcliff Beach* a logical choice as the second movement of the work, since it provides a good balance between the more flowing texts of the first and third movements.

Due to the length of the text and the types of words used to illustrate the journey from the beach to a lighthouse, the use of extended techniques in this movement is greater than in the first movement. This allowed for greater text interpretation, and also ensured that all of the words could be incorporated within the context of the electroacoustic portion of the piece. In the second movement, the voice maintains a greater presence than in the first movement, frequently dominating the sonic environment with bold statements, extremes of dynamics and register, and sheer textual density. The lines in *Wringcliff Beach*

exhibit increased pointillistic qualities in contrast to the flowing lines of *Earth-Body*, *Light-Body*. The illustration below from *Wringcliff Beach* provides an example of the disjunct linear motion that characterizes the movement.

The figure displays two musical excerpts from *Wringcliff Beach*. The first excerpt, from 2:40 to 2:45, shows a voice line with lyrics: "up see[i] - thing in the dim[m]brown surge salt wave[e] → → → [v]". The dynamics are marked *mf*, *mp*, and *mf*. Below the voice line is a time axis and an electronic music track with a textured, pointillistic sound. The second excerpt, from 2:50 to 2:55, shows a voice line with lyrics: "con-verge[ɜ] → [dʒ]on shin - gle, as - cend - ing in-to char black, blue black". The dynamics are marked *f*, *sprech. mf*, *f*, *mp*, and *(sung) f*. Below the voice line is a time axis and an electronic music track with a more rhythmic, pointillistic texture, featuring a large downward-pointing arrow at 2:55.

Fig. 5. Disjunct linear motion in an excerpt from *Wringcliff Beach*, illustrated from 2:45-2:55.

Pitch material in *Wringcliff Beach* is also varied, but centers primarily around F, E, C-sharp, and F-sharp. The movement begins with sprechstimme approximately pitched on F, and ends sung on E-flat.

Pool, the final movement of the composition, returns to a mood similar to *Earth-Body*, *Light-Body*, yet contains elements found in both previous movements. Although predominantly dreamlike and flowing, *Pool* contains some clearly

defined imagery similar to *Wringcliff Beach*. In order to balance *Pool* with *Earth-Body*, *Light-Body* and *Wringcliff Beach*, the vocal portion was designed to incorporate both singing and extended techniques. *Pool* is unique as the only movement that begins with the voice, in which the first line of the text is spoken without accompaniment. The end of the movement is also spoken rather than sung, illustrating the predominance of spoken and whispered text in comparison to the previous movements. Sung portions of the movement exhibit greater use of long tones in comparison to the other movements. This allows the vocalist to contribute to the dreamlike state, singing without vibrato and shifting from one phoneme to another through the use of International Phonetic Alphabet (IPA) symbols. The excerpt in Fig. 6 from *Pool* illustrates the use of IPA symbols in the score. The entire set of IPA symbols used in creating the score of *Earth Ascending* can be found in appendix B.

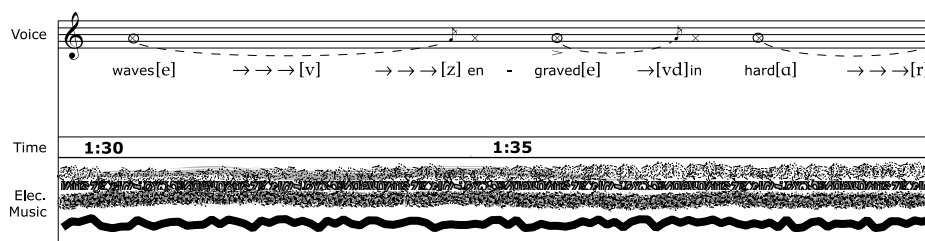


Fig. 6. Example illustrating the use of International Phonetic Alphabet characters in the score of *Earth Ascending*. Excerpt from *Pool*, 1:30-1:40.

CHAPTER III

VIDEO

The video component completes the multimedia aspect of the composition, providing a visual element to enhance the sonic environment. The video was shot with a Sony Hi-8 camera in various locations over a period of two years. Collected footage was digitized on Macintosh-based Avid and Media 100 systems. It was edited on Macintosh systems using Avid's proprietary editing suite and Adobe Premiere. The final video was mastered from a Media 100 system.

Raw footage shot for the video was processed significantly prior to final mastering since the source material was not to be recognized during the piece. Processed material includes fireworks, fire, smoldering logs, sparklers, carnival rides, water running and dripping, leaves rustling in trees, and other miscellaneous footage. These subjects were recorded specifically for their applicability to the themes of the text, and for their intrinsic properties of motion and color. The video was processed using techniques such as negative art, solarization, black and white rendering, pastel rendering, deliberate unfocusing of images, and the use of extreme close-up.

The video plays an integral part in the mood of the composition, and as such was created with great care and attention to detail. Although it was created last, much of the raw footage was shot before and during the time that original

samples for the electroacoustic portion of the piece were collected, and the text for the vocal part was selected. As such, the video played an integral role in the creation of the electroacoustic music and vocal parts of *Earth Ascending*, since the video material was collected prior to creating the piece's accompanying elements.

One concern regarding the incorporation of a visual element within the context of an electroacoustic composition is the possibility that adding visuals will detract from the act of listening. Due to this possible issue, the video was edited in a way that promotes interaction between all elements throughout the piece. The video does assume a foreground role at varying points throughout the composition, but its primary goal is to provide visual support and assist in the creation of an immersive environment.

Earth-Body, Light-Body, with its duality of earth and light, was represented visually in various ways. The primary footage used in this movement was derived from fireworks and other fire footage. With careful processing, gestures were created that reflected and supported the pacing and mood of the movement. In some sections the video presents flowing images or frenetic movements to compliment the vocal and electroacoustic elements. In other sections, the video provides a contrast to the activity present in the other elements, striking a careful balance between areas of precise alignment and free areas containing random images. Changes in background color between black, white, and gray reflects the varying moods of the text.

The video for *Wringcliff Beach* also utilizes footage derived from fire, making a literal connection with the text's vivid fire illustrations toward the end of the movement. The drone-like essence of the electroacoustic portion of the movement was reflected in the video through the use of long clips of footage that change in minute ways over time. The video, then, reflects the drone by presenting static images that possess fluctuating internal structures. As in the first movement, visual images in *Wringcliff Beach* alternate to create points of complement and contrast with the voice and electroacoustic music. The idea of ascent was represented through the use of footage containing upward sweeping motions. Abrupt cuts at certain key climax points help propel the piece forward as the movement progresses.

Pool's video was created to reflect the dreamlike essence of the movement. The incorporation of footage similar to that used in the first and second movements mimics similar employment in the electroacoustic and vocal parts of the piece. Pastel colors predominate in this movement, complementing the flowing environment created by the other elements. Fire is again a foreground element, but is tempered with water and rain footage that has been highly processed. Long fades and multiple layers of footage appearing simultaneously support the ebb and flow of the electroacoustic music and voice.

CHAPTER IV

SCORING

Earth Ascending was created for the purpose of live performance. The main goal in scoring the work was to create a clear guide for the vocalist to follow during rehearsal and performance. It could also be easily adapted as a diffusion score for performance on a multi-speaker sound system. The score was created on a Macintosh computer system using Coda's Finale 98. The composer created the electroacoustic music graphics using Adobe Illustrator. Special symbols used in the vocal part were created with both Finale and Illustrator.

Each system of the score is divided into two sections: at the top is a five-line staff for the vocal part; at the bottom is a graphic representation of the electroacoustic portion of the piece; between these two sections is an indication of lapsed time. The employment of lapsed time to indicate the progression of the piece is a method employed by many composers of mixed media to assist the performer in ascertaining the passage of time during the work and/or to facilitate precise alignments between forces at certain points during the work's progression. A few examples that were used as models for this work are Larry Austin's *BluesAx*,¹ *La Barbara: The Name, The Sounds, The Music*,² Joseph Klein's *Dog*,³ and Roger Reynolds' *The Palace*.⁴

¹ Larry Austin, *BluesAx*, (Denton: Larry Austin Music, 1996).

² Idem, *La Barbara: The Name, The Name, The Sounds, The Music*, (Denton: Larry Austin Music, 1991).

³ Joseph Klein, *Dog*, (Denton: Nopone, 1997).

Each page of the score contains two systems of ten seconds each, or twenty seconds per page. This results in frequent page turns for the vocalist, but allows for the best compromise between page turns and detail of musical elements. It was important to provide the performer with adequate detail to facilitate specific alignment between the voice and the electroacoustic music.

The graphics for the electroacoustic portion of *Earth Ascending* were designed to represent in a simple fashion the varying timbres present throughout the composition. Numerous scores were studied over a four-year time period preceding the creation of this score. Graphic scores by acoustic composers Earle Brown, John Cage, and Roman Haubenstock-Ramati and György Ligeti's *Volumina*,⁵ had a great influence on the shapes created for the electroacoustic portion of *Earth Ascending*. Influential graphic scores of electroacoustic works included Karlheinz Stockhausen's *Kontakte*,⁶ György Ligeti's *Artikulation*⁷ and Larry Austin's *Variations Beyond Pierrot*,⁸ and Trevor Wishart's *Vox-I*⁹ and *Anticredos*.¹⁰

Each graphic was designed to simply depict the type of sound it represented. Vocally derived material was represented using the alphabetic symbol or symbols it most closely represented with dashed lines indicating

⁴ Roger Reynolds, *The Palace*, (New York: C.F. Peters, 1980).

⁵ György Ligeti, *Volumina*, (New York: C.F. Peters, 1967).

⁶ Karlheinz Stockhausen, *Kontakte*, (London: Universal Edition, 1966).

⁷ György Ligeti, *Artikulation*, (Mainz: B. Schött's Sohne, 1970).

⁸ Larry Austin, *Variations Beyond Pierrot*, (Denton: Larry Austin Music, 1995).

⁹ Trevor Wishart, *Vox-I*, in *On Sonic Art*, ed. Simon Emmerson, (Amsterdam: Harwood Academic Publishers, 1996), pp. 100-101.

¹⁰ Idem, *Anticredos*, in *On Sonic Art*, ed. Simon Emmerson, (Amsterdam: Harwood Academic Publishers, 1996), p. 282.

prolongation of a syllable or sound. Fig. 7 below, from *Pool*, illustrates the primary graphic used for vocal timbres.



Fig. 7. Graphic representation of vocal timbres. Excerpt from *Pool*, 0:05-0:07.

Other timbres in *Earth Ascending* were created to depict varying states of activity and stasis. Denis Smalley's article "Spectro-morphology and Structuring Processes" in Language of Electroacoustic Music,¹¹ and Trevor Wishart's chapter in On Sonic Art entitled "Sound Structures in the Continuum",¹² provided detailed graphic and text-based ideas from which the drones and other graphic elements for *Earth Ascending* were designed. In keeping with Wishart's ideas, drones that remained essentially static were represented with solid, relatively unchanging lines. Fig. 8 illustrates a static drone found in *Earth-Body, Light-Body*.



Fig. 8. Graphic representation of static drone. Excerpt from *Earth-Body, Light-Body*, 0:05-0:10.

¹¹ Denis Smalley, "Spectro-morphology and Structuring Processes", in Language of Electroacoustic Music, ed. Simon Emmerson, (New York: Harwood Academic Publishers, 1986), pp. 61-93.

¹² Wishart, On Sonic Art, pp. 93-108.

Another type of drone found in *Earth Ascending* exhibits globally static qualities, but exhibits occasional attacks rather than sounding continuously. Two examples of this drone are found in *Wringcliff Beach*. The first illustration below is a continuous drone that contains specific attack points that propagate the drone's continuation. The second illustration is a drone that surges occasionally rather than exhibiting definite attack points.

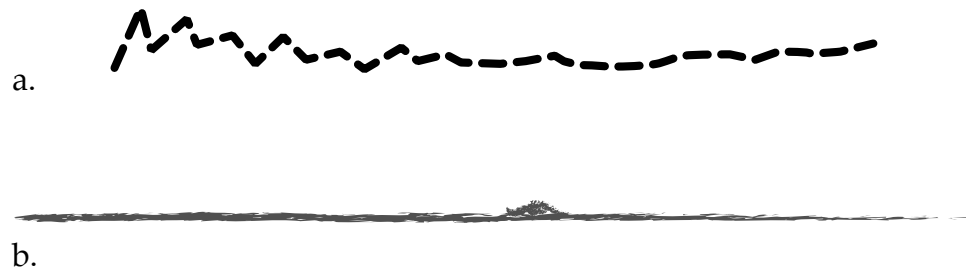


Fig. 9. Graphic representation of continuous drones: a, with specific attack points. Excerpt from *Wringcliff Beach*, 0:46-0:50; b, with occasional surges. Excerpt from *Wringcliff Beach*, 2:10-2:15.

Drones exhibiting granular internal structures were represented as continuous objects, but were created by combining various smaller graphics to illustrate their internal activity. Some drones were non-reverberant with granular internal elements while others exhibited greater reverberant qualities. Shapes were created to reflect these differences, while attempting to remain straightforward for ease in interpretation. Fig. 10 illustrates four different drones that are static on the macro level, but exhibit internal motion. The top illustration,

from *Wringcliff Beach*, was created with variously shaped and colored triangles. The pointed ends of the triangles illustrate the drone's non-reverberant, grainy internal elements, while the different shade of gray represent internal timbral differences. The recurrence of the patterns illustrates the continuity of a drone rather than the single iteration of the timbre.

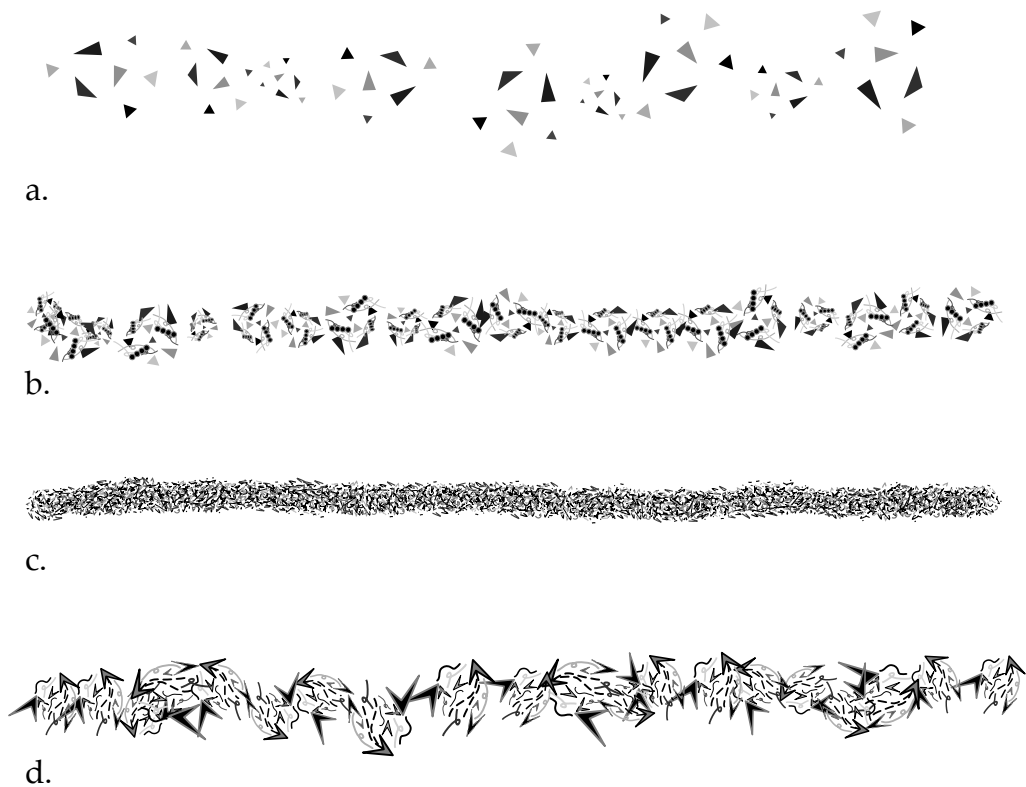


Fig. 10. Graphic representation of drones exhibiting internal motion. a. Excerpt from *Wringcliff Beach*, 3:30-3:35; b. Excerpt from *Wringcliff Beach*, 3:55-4:00; c. Excerpt from *Pool*, 1:10-1:15; d. Excerpt from *Pool*, 3:30-3:35.

The second illustration, also from *Wringcliff Beach*, is a variant on the first drone. The incorporation of round objects into the texture illustrates this drone's increased resonance compared to the first illustration. Greater graphic complexity points toward an increase in the internal complexity of the drone.

The third drone is from *Pool*. It exhibits a high level of internal motion and density. This drone, sounding in the mid-range, has a similarly designed companion in the high range, whose graphic is not shown above. The final drone illustrated above is also from *Pool*. The large, rotating pointed object represents internal attack points present in this drone. The accompanying lines of varying size, shape, and color, illustrate a reverberant background wash punctuated by the repetitive attacks.

A hybrid graphic, one containing both drone and vocally derived elements, is interesting in its combination of elements unique to each sound family. *Pool* uses a whispering drone that continues through the middle portion of the movement. It is vocally derived, so is therefore represented by printed text. However, its continuity defines it as a drone, and the changing text further defines its content as a drone with internal motion. A graphic representing these ideas was constructed using jumbled text within a continuing drone-like block, illustrated in fig. 11.



Fig. 11. Graphic representation of drone using text. Excerpt from *Pool*, 2:00-2:10

Sweeping timbres are another family of sounds represented graphically in various ways throughout the composition. Some sweeping timbres are light, airy, reverberant sounds that move in and out of the sonic texture. These wispy sweeps are represented differently in various movements. Fig. 12 illustrates two different airy sweeps found in *Earth Ascending*. The first, from *Wringcliff Beach*, has a smooth, undulating shape and gray color that represents its motion through space and reflects its soft, swishing timbre. The second illustration is encountered throughout the entirety of *Pool*: its variation in color illustrates an internal complexity, yet its simple external structure shows cohesion in the gesture.



Fig. 12. Graphic representation of airy sweeps. a. Excerpt from *Wringcliff Beach*, 0:43; b. Excerpt from *Pool*, :35.

Other sweeping timbres exhibit external sweeping motion with fragmented or granular internal structures. These sweeps are also found at various points throughout the piece. Many times they are found leading up to large attack points, as the sweeps illustrated below from *Earth-Body*, *Light-Body*.

Additional examples of sweeps containing complex internal structures that function to prepare climax points can be found in all movements. An example from *Wringcliff Beach* is illustrated in fig. 14.

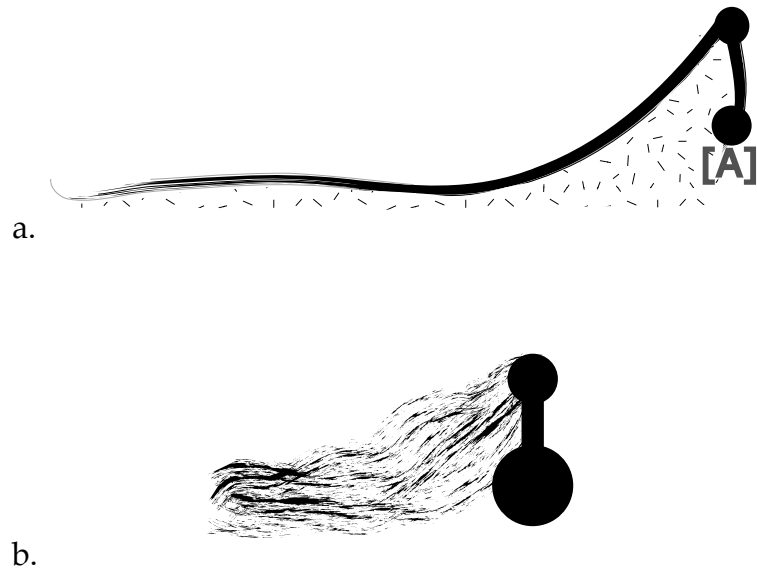


Fig. 13. Graphic representation of sweeps with internal motion. a. Excerpt from *Earth-Body, Light-Body*, 0:04; b. Excerpt from *Earth-Body, Light-Body*, 1:42.



Fig. 14. Graphic representation of sweep with complex internal structure. Excerpt from *Wringcliff Beach*, 0:36.

Some sweeps with internal granulation simply function as foreground material or add to the sonic environment. The two examples in fig. 15 are found in *Wringcliff Beach* and *Pool*, respectively.

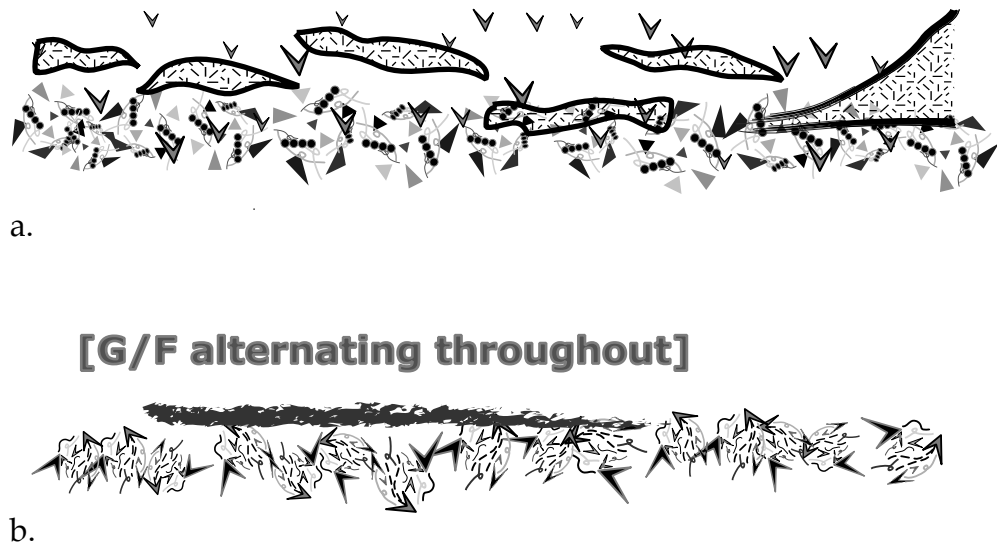


Fig. 15. Graphic representation of sweeps used as foreground material or part of a texture. a. Excerpt from *Wringcliff Beach*, 4:30-4:35; b. Excerpt from *Pool*, 3:10-3:15.

Graphics were also designed to represent motivic foreground material encountered throughout the piece. In *Earth-Body*, *Light-Body*, the golf ball timbre was represented with diamond shapes, while the ice timbre was represented by sharply-pointed spots. It is interesting to note the background textures of both examples below: their similarity in shape to the foreground elements illustrates the simultaneous occurrence of a single timbre as both foreground and background material.

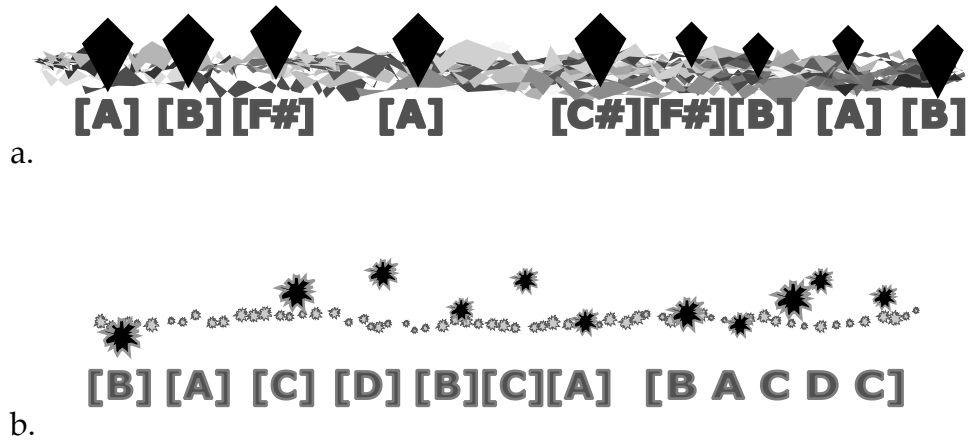


Fig. 16. Graphic representation of motivically developed foreground material. a. Excerpt from *Earth-Body, Light-Body*, 2:50-2:55; b. Excerpt from *Earth-Body, Light-Body*, 4:05-4:10.

In *Wringcliff Beach*, primary foreground material is derived from lead striking various substances and plastic scraping against metal. The timbres are primarily non-reverberant with sharp attacks and quick decays. They are represented in various ways throughout the movement depending on the quality, dynamic level, and duration of the sonic event represented. A few examples are shown in fig. 17.

Foreground material in *Pool* is comprised primarily of airy and grainy sweeps described earlier. One additional foreground timbre, however, is the sound of lead striking cement. Its sweeping quality is represented by a black, pointed swish. The strike is the bottom, rounded portion of the graphic. An example is shown in fig. 18.

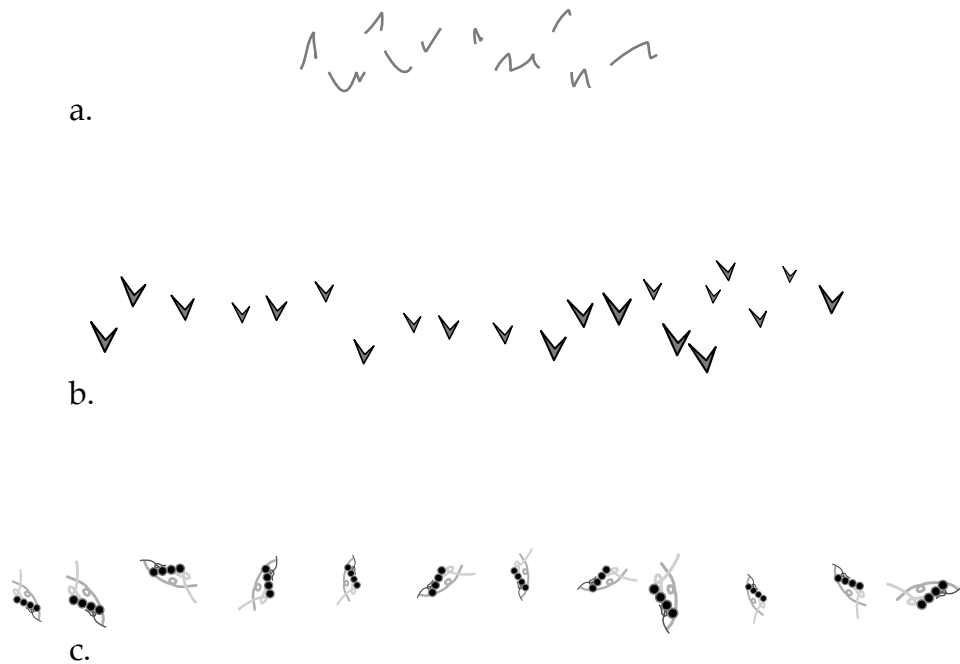


Fig. 17. Graphic representation of foreground material derived from lead striking various objects. All excerpts from *Wringcliff Beach*. a. 1:18; b. 2:52; c. 3:45.



Fig. 18. Graphic representation of foreground material in *Pool*, 0:55-1:00.

Climax points were created to illustrate frequency content, strength, and in most cases preparation and resolution. Many climax points are represented as vertical structures with circular tops and/or bottoms. These illustrate strength in

high, low, or both registers, with a full complement of sound vertically. Rounded structures frequently represent a bell-type timbre, or hollow sounding strike, while pointed structures represent quick, aggressive strikes prepared and followed in various ways. Fig. 19 below illustrates one climax of each type, from *Wringcliff Beach*.

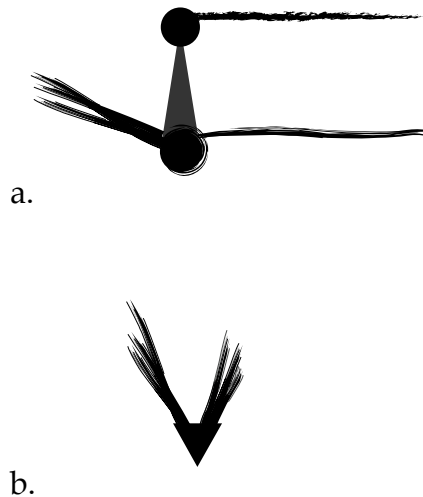


Fig. 19. Graphic representation of climax points. Both excerpts from *Wringcliff Beach*. a. 1:35; b. 1:57.

The vocal portion of *Earth Ascending* was scored in a more traditional fashion than the electroacoustic music to facilitate live performance. It was scored using spatial notation, employing black and white noteheads to represent pitch content and approximate duration. All notes are to be phrased according to their placement, with closely grouped black notes sung quickly, and sparsely placed white notes held for longer durations within the given time frame

according to lapsed time. This spatial, or time-lapse notation has become one standard for notating music that incorporates a live performer with fixed media. Two examples using this and similar approaches to notation are Luciano Berio's *Sequenza III*¹³ and Joseph Klein's *Dog*.¹⁴ Fig. 20 below illustrates a passage from *Wringcliff Beach*, to be sung and spoken within a ten second time frame.

The figure shows a musical score for a passage from *Wringcliff Beach*. It consists of three horizontal tracks. The top track is for the voice, written in a treble clef. The lyrics are: "salt blue boul - ders shine of slate grey sea brink peb - bles,[z] grind[a] ing". The notation features a series of closely grouped, stemless black noteheads. A graphic sweep labeled "gliss." is positioned above the notes, indicating a glissando. Dynamics include a forte (*f*) marking and a mezzo-forte (*mf*) marking with the instruction "growled; quasi vocal fry". A black triangle points down to the start of the passage. The middle track is labeled "Time" and shows two time intervals: "0:10" and "0:15". The bottom track is labeled "Elec. Music" and shows a waveform with the instruction "[alternating D, A, F#]".

Fig. 20. Closely grouped stemless black noteheads illustrating rapid declamation in *Wringcliff Beach*, 0:10-0:20.

Fig. 21 illustrates a more slowly-paced section from *Pool*, to be sung within approximately seven seconds beginning at approximately 1:14.

Glissandi in the score are represented with graphic and verbal indications. The abbreviation 'gliss.' is placed below the staff, while a graphical sweep indicating the general direction and shape of the glissando connects the starting and ending pitches. Similar graphic representation of glissandi can be found in

¹³ Luciano Berio, *Sequenza III per voce femminile*, (London: Universal Edition, 1968).

¹⁴ Klein, *Dog*.

The image shows a musical score for a voice part and an electric music part. The voice part is written on a single staff with a treble clef. It features widely spaced, stemless white noteheads. The lyrics are: "the light [a] → [t] too bright, [a] → [t]". Dynamic markings are placed above the notes: *mf* above "the", *f* above "light", and *mp* above "bright". The electric music part is represented by a dense, textured layer of sound below the voice staff, with time markers **1:10** and **1:15** indicating the start of the phrase.

Fig. 21. Widely spaced stemless white noteheads illustrating slow declamation in *Pool*, 1:10-1:20.

many twentieth-century scores, including Luciano Berio's *Circles*,¹⁵ Earle Brown's *Available Forms*,¹⁶ Mauricio Kagel's *Heterophonie*,¹⁷ and Karlheinz Stockhausen's *Kontakte*.¹⁸ An example from *Earth-Body, Light-Body* shows three glissandi within a phrase using sprechstimme.

Slurs are also illustrated in fig. 22, employed as defined by David Cope in *New Music Notation* to indicate "...smooth movement from one note to the next with the least possible separation."¹⁹ The use of slurs also aids in phrasing text and assists the vocalist in identifying portions of a line that must be sung continuously without a breath.

¹⁵ Luciano Berio, *Circles*, excerpted in Erhard Karkoshka, *Notation in New Music* (New York: Praeger, 1966), 66.

¹⁶ Earle Brown, *Available Forms no. 1*, excerpted in Erhard Karkoshka, *Notation in New Music* (New York: Praeger, 1966), 66.

¹⁷ Mauricio Kagel, *Heterophonie*, excerpted in Erhard Karkoshka, *Notation in New Music* (New York: Praeger, 1966), 67.

¹⁸ Karlheinz Stockhausen, *Kontakte*, excerpted in David Cope, *New Music Notation* (Dubuque: Kendall/Hunt, 1976), 111.

¹⁹ David Cope, *New Music Notation* (Dubuque: Kendall/Hunt, 1976), 58.

The image shows a musical score excerpt with three staves. The top staff is for Voice, featuring a treble clef and a melodic line with a glissando (gliss.) and dynamic marking (mf). The lyrics are: "side and out[au] - - -[t]side [a] [d] my earth". There are three downward-pointing triangles above the staff: an open one at the start, another open one above the first "side", and a solid black one above "earth". The middle staff is labeled "Time" and shows time markers "3:40" and "3:45". The bottom staff is labeled "Elec. Music" and shows chord progressions: "[C-D-C]" under the first part, "[F]" under the second part, and "[A]" under the third part. The electric music is represented by a series of small circles and asterisks.

Fig. 22. Score example illustrating the use of glissandi. Excerpt from *Earth-Body, Light-Body*, 3:50-4:00.

Extended techniques are notated symbolically in the score. There are numerous ways of notating sprechstimme, spoken, and whispered text. György Ligeti's notation in *Aventures*²⁰ was emulated in this score, employing the symbol 'x' to illustrate sprechstimme and spoken text, and the symbol '+' to illustrate varying levels of whispered text. Fig. 23 outlines symbols used to represent speaking, sprechstimme, whispering, and forced whispering. In ambiguous cases, a word defining the symbol is placed above the staff. Discontinuation of the technique is marked by the indication for a different technique, or simply through indication '(sung)' placed above the staff.

Because the use of traditional symbolic rests is inconsistent with spatial notation, note endings and phrases are represented in two unique ways throughout the composition: first, a breath mark is used to indicate both breathing and in some cases the cessation of a note; second, a small, flagged

²⁰ Ligeti, György, *Aventures*, excerpted in Howard Risatti, *New Music Vocabulary*, (Chicago: University of Illinois Press, 1975), 174.

- × note of short duration spoken, sprechstimme, or half spoken half whispered as indicated
- ⊗ note of long duration spoken, sprechstimme, or half spoken half whispered as indicated
- + note of short duration whispered or force whispered as indicated
- ⊕ note of long duration whispered or force whispered as indicated

Fig. 23. Symbols used to represent various types of spoken, sung, and whispered text in *Earth Ascending*. Excerpt from *Earth Ascending* score.

grace note is used to indicate the end of a phoneme when International Phonetic Alphabet (IPA) symbols are employed. Both symbols may be used simultaneously to indicate a phrase ending with a flexible breathing point. Fig. 24 illustrates these two symbols used in the first movement of *Earth Ascending*.

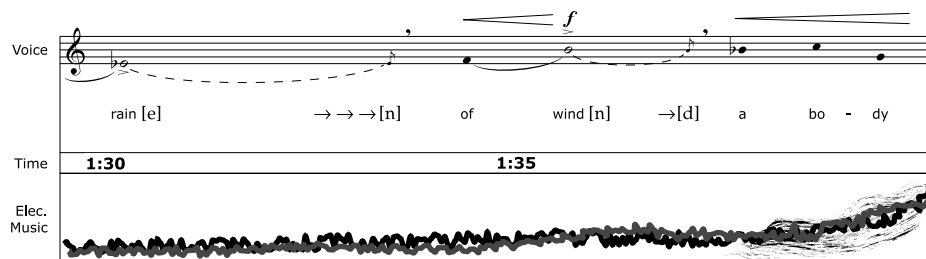


Fig. 24. Excerpt from *Earth-Body, Light-Body*, 1:30-1:40, illustrating the use of breath marks and flagged grace notes to indicate breathing and/or the end of a phrase.

Another system employed to promote clarity in the vocal part of *Earth Ascending* is the International Phonetic Alphabet (IPA). According to Kurt Stone,²¹ the IPA has become standardized for use in vocal music where precise pronunciation is required. These symbols were placed along with the lyrics beneath the vocal staff. They are designed to assist the vocalist in correctly interpreting the phonemic content of held notes, illustrating which vowel or consonant should be emphasized or held, as well as their approximate lengths. The employment of IPA symbols in *Earth Ascending* is consistent with its use by Luciano Berio in *Circles*²² and *Sequenza III*,²³ and more recently Joseph Klein in *Dog*.²⁴ The employment of three arrows grouped linearly represents a gradual shift from one sound to another, while a single arrow indicates swift movement to the indicated sound. These symbols are used by György Ligeti in *Aventures*²⁵ and Mauricio Kagel in *Anagrama*²⁶ and *Improvisation ajoutée*²⁷ to illustrate motion from one timbre to another. An excerpt from *Pool* illustrates these elements.

²¹ Kurt Stone, *Music Notation in the Twentieth Century: a practical guidebook*, (New York: Norton, 1980), 296.

²² Luciano Berio, *Circles*, excerpted in Howard Risatti, *New Music Vocabulary*, (Chicago: University of Illinois Press, 1975), 177.

²³ Idem, *Sequenza III*, excerpted in Howard Risatti, *New Music Vocabulary*, (Chicago: University of Illinois Press, 1975), 175.

²⁴ Klein, *Dog*.

²⁵ Ligeti, *Aventures*, in Risatti, 177.

²⁶ Mauricio Kagel, *Anagrama*, excerpted in Howard Risatti, *New Music Vocabulary*, (Chicago: University of Illinois Press, 1975), 177.

²⁷ Idem, *Improvisation ajoutée*, excerpted in Erhard Karkoshka, *Notation in New Music*, (New York: Praeger, 1966), 73.

Fig. 25. Excerpt from *Pool*, 1:40-1:50 illustrating the use of International Phonetic Alphabet symbols.

In many instances it is important that the voice align precisely with the electroacoustic music. To illustrate these timings clearly, a large black triangle was employed above the vocal staff, imitating the notational style of composer Witold Lutoslawski, who incorporates large black triangles indicating simultaneous events in numerous scores, including *Jeux venetiens*.²⁸ Kurt Stone in his book Music Notation in the Twentieth Century: A Practical Guidebook, discusses the use of large black arrows to define main beats and white arrows to indicate subdivisions in scores that contains metric structure. The score for *Earth Ascending* adapts this concept to its non-metric structure, employing black triangles to indicate absolute points of alignment, and open triangles to indicate cues or approximate areas of alignment between the voice and electroacoustic music. Additional vertical dashed lines were inserted between staves to more clearly delineate the simultaneous events, a notational element found in Richard

²⁸ Witold Lutoslawski, Jeux venetiens, excerpted in Erhard Karkoshka, Notation in New Music, (New York: Praeger, 1966), 39.

Felciano's choir piece, *Words of St. Peter*.²⁹ Instances where an event or gesture is approximate or flexible were indicated by a large white triangle.

The figure shows a musical score excerpt with three staves. The top staff is for the Voice, featuring a treble clef and a key signature of one flat. The lyrics are: "side and out[au] - - -[t]side [a] [d] my earth". Above the staff, there are three triangles: a white triangle above the first measure, a white triangle above the measure containing "[d]", and a black triangle above the measure containing "earth". The dynamic marking "mf" is placed above the staff, and "gliss." is written below the staff under a glissando line. The middle staff is labeled "Time" and shows two time markers: "3:40" and "3:45". The bottom staff is labeled "Elec. Music" and contains a series of small circles and asterisks representing electronic music. Below this staff are three brackets: "[C-D-C]" under the first measure, "[F]" under the measure containing "[d]", and "[A]" under the measure containing "earth".

Fig. 26. Excerpt from *Earth-Body, Light-Body* 3:40-3:50, illustrating the employment of filled triangles to signify specific points of alignment, and white triangles to signify approximate cue points.

²⁹ Richard Felciano, *Words of St. Peter*, excerpted in Frank Poole and Brent Pierce. *New Choral Notation*. 2d ed. (New York: Walton Music Corporation, 1973), 56.

CHAPTER V

PERFORMANCE

Earth Ascending was designed for playback on a multi-speaker system, although a smaller sound system will work equally well. Speakers should be placed for optimal stereo playback. It is expected that an arrangement can be created without jeopardizing the video playback.

The video must be projected on at least one large screen placed upstage center. Optimal playback requires four additional monitors placed downstage, evenly spaced across the stage edge. The video may be presented in a number of formats, VHS, S-VHS, or Beta SP. The electroacoustic music has been mastered to the video, so no additional playback device is needed in performance.

The vocalist is integral to the creation of a unified sonic environment, and as such, should be carefully amplified with a single, high quality microphone, and provided with a stage monitor or two if needed. The amplified voice should only be projected through the front two speakers of any sound system. It should not be amplified through any rear, side, or extra speakers, nor diffused or projected throughout the performance space. A level should be set on the two front speakers that creates the best balance between the voice and the electroacoustic music.

Specific instructions for adding reverberation to the voice were not provided in the score. It is anticipated that a reverberation unit will be necessary in performance, with a moderate, warm room setting selected to add warmth and body to the amplified voice. The reverberation setting may be slightly altered from movement to movement. If so, the most reverberant setting should be reserved for the final movement, *Pool*.

The vocalist should stand upstage near the large video projection screen, but off to either the left or the right so as not to block the video projection. She will need at least one music stand and at least one stand lamp for performance. If desired, a red or orange colored gel may be placed on the stand lamp to enhance the visual environment. There is no special costuming required for the vocalist, but black is suggested.

Fig. 27 illustrates a suggested staging for the performance of *Earth Ascending*.

Composing works for mixed media involves careful planning when live performance is the desired end result. Numerous factors must be taken into account when pairing live and fixed elements, each with its own set of limitations and strengths. The electroacoustic music must be created with sensitivity to the performer, and the performer must be provided with the clearest and easiest methods of interpreting and working with the fixed medium(s). Thought must be given to amplification of elements, projection of the video, and the ways in which all elements must combine to create a successful multi-sensorial environment.

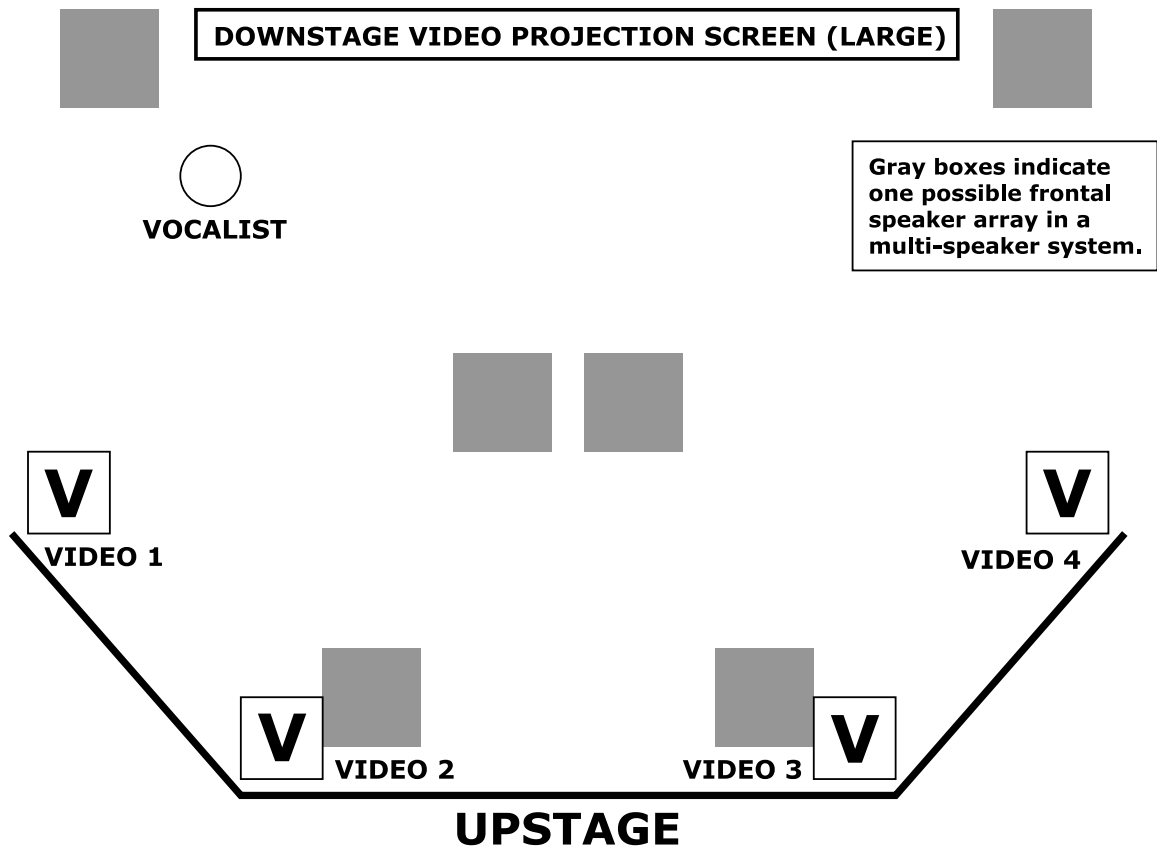


Fig. 27. Suggested staging for live performance of *Earth Ascending*.

Earth Ascending is a composition that combines three very diverse elements within the context of a single sonic and visual environment. Although the voice, electroacoustic music, and video were realized at separate points during the compositional process, specific elements of each were taken into account during the creation of other elements. The text was selected during the time that video and audio recordings were made. The electroacoustic music was composed with careful attention to the text, and taking into account the video

footage that had been collected. The voice part was interwoven with the electroacoustic music, creating a sonic environment in which both elements co-exist and share the responsibility of portraying the mood and imagery illustrated in the text. The video was then incorporated to provide visual support and further enhance the impression created by the other elements.

The composition was scored with great care, taking into account the issues created by joining fixed and human elements in performance. Methods were investigated and employed to create a clear guide for the performer while providing ample information regarding the activity level and sonic content of the electroacoustic music. Mastering the video and electroacoustic music to a single tape provides an easy vehicle for rehearsal and performance, while directions for performance illustrate the flexibility and portability of the piece.

Earth Ascending incorporates numerous elements that interact on many different levels. Ultimately, the live presentation of the work will dictate its success or failure. However, from a compositional standpoint, *Earth Ascending* solves many issues relating to live performance accompanied by fixed audio and visual elements. It creates an immersive environment in which sound and images flow through the audience, taking them on a journey through the thoughts and feelings of three poets contemplating the process of life.

APPENDIX A
EARTH ASCENDING TEXTS

EARTH BODY, LIGHT-BODY

I have an earth-body that is
water and blood
currents that flutter
in nerve and stir,
cells that thrum with wings.

I have another body
as real,
body of rain
of wind
a body of light.

It is my sun-body
my light-body.
It moves like a waterfall
over the rocks of me
running over the tumble of stones
and up the cliffs of me -
my earth-body with its
violent hungers.
Also it is outside me
around me
shining and streaming with light.

My light-body, Tarot-Ishtar,
inside and outside
my earth-body
flows between us like
a woven cable
an umbilical of light
from my heart-centre
to your heart-centre
and through our eyes
and our fingers
weaving its pattern in air.

Jeni Couzyn¹

¹ Jeni Couzyn, "Earth-Body, Light-Body", in New Women Poets, ed. Carol Rumens (Worcester: Billing and Sons), 1990, 45.

(Read from the bottom upwards)

Beacon
fireself
fire we are burning in you:
wide warm wild fire
and pale gold bush fire
wild bracken flame bursting into
moist moss shine green, in the mist rain
onto rich cliff grass, brilliant
sandglint, heave and roll over and up
in you through grit spark, sheer
feel us flooding up earth bloodbrown rising
warming to yourself, your name new on your tongue
purple and warm red again...
that will burn your char darkness
brood feathers, the passion
fledging name, kindling under wind weary
here, resting in your secret ledges, we speak your
wind towers...
light gull riders of the vortical
levels of the white wing borne
upwards to the nesting
into char black, blue black swart rock cliff, drop
salt weave, converge on shingle, ascending
with the sea rain, upseething in the dim brown surge
we, in the wide of the bay cloud, grey insweeping
we, whom you do not see but sense in the blood tide rising
of things...
long slow undertones
and substance, up from the undersong, undertow,
wet shoulders, ours we name the nameless Mothers of stone
and stacked, fallen back rocks
piled and pitted, slipped into rain-pocked pools
to sand ground, under tumbled monoliths
shine of slate grey sea brink pebbles, grinding and rounding
Rain sheet on cobalt blue, salt blue borders

Wind Song of the Mothers
WRINGCLIFF BEACH by Jehanne Mehta²

² Jehanne Mehta, "Wringcliff Beach", in *New Women Poets*, ed. Carol Rumens (Worcester: Billing and Sons), 1990, 72.

POOL

I have been this way before,
the path jarring across hot rocks,
edges falling in a dusty scramble,
high cracks hung dry with rasps of plant;
the light too bright,
memory of yesterday's waves
engraved in hard sand lines.
I knew the midday tricks of sunlight,
sparkling in a glint of water out of air.
I have been this way before.
Today the hard rocks opened on a pool
salt green and deep as any fantasy.
The water fits close.
The weed fronds cling
feathering against bare skin.
The light floats silver wet
as the opal silk of oyster shells.
This is the touch my skin was aching for,
this is the place I never dared to dream.

Cynthia Fuller³

³ Cynthia Fuller, "Pool", in Earth Ascending: an anthology of living poetry, ed. Jay Ramsay (Devon: Stride), 1997, 83.

APPENDIX B
INTERNATIONAL PHONETIC ALPHABET SYMBOLS
USED IN *EARTH ASCENDING*

INTERNATIONAL PHONETIC ALPHABET

Below are IPA symbols used in the vocal scoring of this composition. For a comprehensive list of IPA symbols, refer to Appendix 11 of Instrumentation and Orchestration, Second Edition, by Alfred Blatter.

Front Vowels

[i]	<u>ee</u> as in <u>seed</u>
[ɪ]	<u>i</u> as in <u>slid</u>
[e]	<u>a</u> as in <u>spade</u>
[ɛ]	<u>e</u> as in <u>sled</u>
[æ]	<u>a</u> as in <u>had</u>
[a]	<u>a</u> as in <u>lamb</u>

Back Vowels

[ɑ]	<u>a</u> as in <u>palm</u>
[ɔ]	<u>aw</u> as in <u>paw</u>
[o]	<u>o</u> as in <u>float</u>
[ʊ]	<u>oo</u> as in <u>look</u>
[u]	<u>oo</u> as in <u>boot</u>

The Nasals

[m]	<u>m</u> as in <u>mow</u>
[n]	<u>n</u> as in <u>no</u>
[ŋ]	<u>ng</u> as in <u>sing</u>

Diphthongs

[ou]	<u>o</u> as in <u>no</u>
[au]	<u>ou</u> as in <u>pound</u>
[eɪ]	<u>ai</u> as in <u>pail</u>
[aɪ]	<u>i</u> as in <u>pile</u>
[ɔɪ]	<u>oy</u> as in <u>toy</u>

Central Vowels

[ɜ]	<u>ir</u> as in <u>bird</u> (stressed)
-----	--

[ə]	<u>er</u> as in <u>brother</u> (unstressed)
[ʌ]	<u>u</u> as in <u>mud</u>

The Semi-Vowels

[w]	<u>w</u> as in <u>witch</u>
[l]	<u>l</u> as in <u>law</u>
[r]	<u>r</u> as in <u>raw</u>

Stop-plosives

[t]	<u>t</u> as in <u>to</u>
[p]	<u>p</u> as in <u>pat</u>
[b]	<u>b</u> as in <u>bat</u>
[d]	<u>d</u> as in <u>do</u>
[k]	<u>c</u> as in <u>cast</u>

Continuant Fricatives

[f]	<u>f</u> as in <u>five</u>
[v]	<u>v</u> as in <u>five</u>
[ð]	<u>th</u> as in <u>thy</u>
[θ]	<u>th</u> as in <u>earth</u>
[s]	<u>s</u> as in <u>sue</u>
[ʃ]	<u>ss</u> as in <u>mission</u>
[ʒ]	<u>s</u> as in <u>vision</u>
[z]	<u>z</u> as in <u>zip</u>

Combinations

[ʃt]	<u>shed</u> as in <u>rushed</u>
[dʒ]	<u>j</u> as in <u>judge</u>

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Elainie Lillios

Earth Ascending

**a composition in
three movements for
female voice
electroacoustic music
and
video**

PERFORMANCE NOTES

General Information

Earth Ascending is a composition in three movements scored for female voice, electroacoustic music, and video. Written in 2000, *Earth Ascending* lasts approximately 16 minutes, including time between movements. This composition was created specifically for live performance in which all three elements combine to create an sonic and visual environment. As such, no single element has greater importance than any other, with each of the three performing forces assuming a foreground role at different times throughout the duration of the work.

Electroacoustic Music

The electroacoustic portion of *Earth Ascending* has been mastered onto the video tape, so no additional unit (i.e. compact disc player, DAT) is needed for performance. Although the audio is designed for playback on multiple speakers (i.e. diffusion/projection), *Earth Ascending* may be presented successfully on any size system including two speakers. In the case of a diffusion system, the diffusionist is encouraged to practice placing sounds in different locations, but is reminded that at certain times the backdrop of the electroacoustic portion of the piece is meant to be static and therefore not moving in space.

Video

The video has been mastered onto Digital Beta tape and is available in that format for performance. It is also available in Beta SP, S-VHS, and regular VHS formats.

Voice

The vocalist should familiarize herself with the symbols used in the score (listed on page 5) as well as the International Phonetics Alphabet, provided on page 4. It is also important that the vocalist obtain a compact disc or cassette tape of the electroacoustic portion of the piece, since there are many carefully timed events which must be executed simultaneously with the electroacoustic portion of the piece. The vocalist need not be concerned about timings with the video. The video was designed to coincide with the electroacoustic portion of the piece. Therefore, as long as the vocalist follows the score, she will remain aligned with both the electroacoustic music and the video.

Unless appropriate to interpretation of the text, the vocalist is encouraged to sing without vibrato throughout the piece. Her general tone should be light and simple, with clear text declamation and enunciation. Spoken text and whispering should be generally enunciated more specifically than sung text.

Generally speaking, the vocal portion of the piece should always be louder than or equally as loud as the electroacoustic music. If a situation arises where sung or spoken dynamics cause the voice to be overcome dynamically by the electroacoustic sounds, the vocalist should increase her dynamic level, or amplification should be increased so that the forces are equal.

Staging and Technical Requirements

As mentioned previously, *Earth Ascending* was designed for playback on a multi-speaker system, but smaller systems will work equally as well. Speakers should be placed for optimal stereo playback. It is hoped that an optimal arrangement can be created without jeopardizing the video playback.

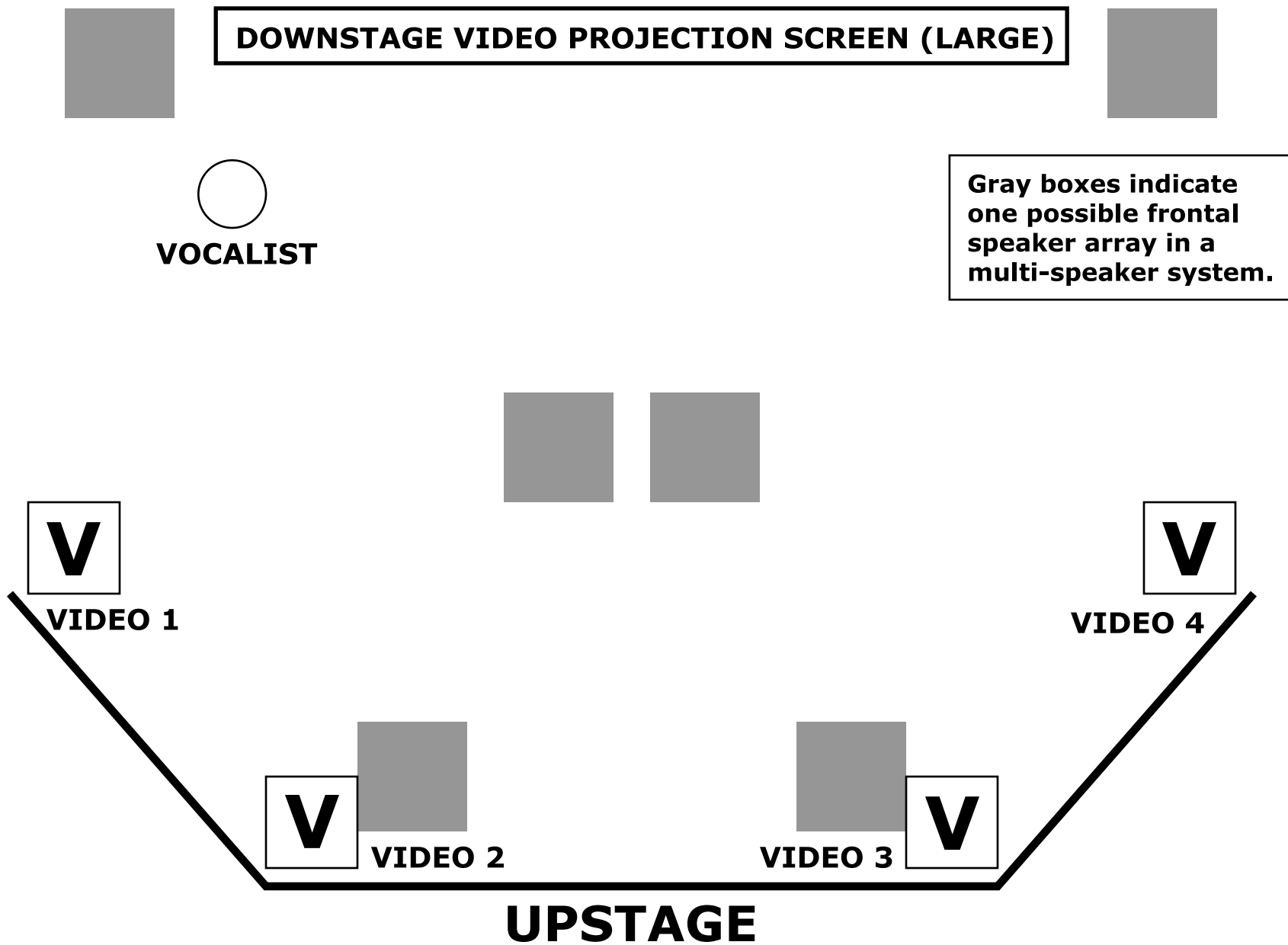
The video must be projected on at least one large screen centered upstage. Optimal playback requires four additional monitors placed along the front edge of the stage.

The vocalist is integral to the creation of a unified sonic environment and as such should be carefully amplified with a single, high quality microphone and be provided with a stage monitor or two if needed. The amplified voice should only be projected through the front two speakers of any sound system. Do not amplify the voice through any rear, side, or extra speakers. Do not diffuse the amplified voice. Simply set a good level on the two front speakers that creates the best balance between the voice and the electroacoustic music.

Specific instructions for adding reverberation to the voice have not been provided in the score. It is anticipated that a reverberation unit will be necessary in

performance with a moderate, warm room setting selected to add warmth and body to the amplified voice. The reverberation setting may be slightly altered from movement to movement. If this is done, the most reverberant or wettest setting should be reserved for movement three.

The vocalist should stand upstage, near the large screen, but off to either the left or the right so as not to block the video projection. She will need at least one music stand and at least one stand lamp for performance. If desired, a red or orange colored gel may be placed on the stand lamp to enhance the visual environment. There is no special costuming required for the vocalist, but black is suggested.



INTERNATIONAL PHONETIC ALPHABET

Below are IPA symbols used in the vocal scoring of this composition. For a comprehensive list of IPA symbols, refer to Appendix 11 of Instrumentation and Orchestration, Second Edition, by Alfred Blatter.

Front Vowels

[i]	<u>ee</u> as in <u>seed</u>
[ɪ]	<u>i</u> as in <u>slid</u>
[e]	<u>a</u> as in <u>spade</u>
[ɛ]	<u>e</u> as in <u>sled</u>
[æ]	<u>a</u> as in <u>had</u>
[a]	<u>a</u> as in <u>lamb</u>

Back Vowels

[ɑ]	<u>a</u> as in <u>palm</u>
[ɔ]	<u>aw</u> as in <u>paw</u>
[o]	<u>o</u> as in <u>float</u>
[ʊ]	<u>oo</u> as in <u>look</u>
[u]	<u>oo</u> as in <u>boot</u>

The Nasals

[m]	<u>m</u> as in <u>mow</u>
[n]	<u>n</u> as in <u>no</u>
[ŋ]	<u>ng</u> as in <u>sing</u>

Diphthongs

[ou]	<u>o</u> as in <u>no</u>
[au]	<u>ou</u> as in <u>pound</u>
[eɪ]	<u>ai</u> as in <u>pail</u>
[aɪ]	<u>i</u> as in <u>pile</u>
[ɔɪ]	<u>oy</u> as in <u>toy</u>

Central Vowels

[ɜ]	<u>ir</u> as in <u>bird</u> (stressed)
[ə]	<u>er</u> as in <u>brother</u> (unstressed)
[ʌ]	<u>u</u> as in <u>mid</u>

The Semi-Vowels

[w]	<u>w</u> as in <u>witch</u>
[l]	<u>l</u> as in <u>law</u>
[r]	<u>r</u> as in <u>raw</u>

Stop-plosives

[t]	<u>t</u> as in <u>to</u>
[p]	<u>p</u> as in <u>pat</u>
[b]	<u>b</u> as in <u>bat</u>
[d]	<u>d</u> as in <u>do</u>
[k]	<u>c</u> as in <u>cast</u>


Continuant Fricatives

[f]	<u>f</u> as in <u>fife</u>
[v]	<u>v</u> as in <u>five</u>
[θ]	<u>th</u> as in <u>thy</u>
[ð]	<u>th</u> as in <u>earth</u>
[s]	<u>s</u> as in <u>sue</u>
[ʃ]	<u>ss</u> as in <u>mission</u>
[ʒ]	<u>s</u> as in <u>vision</u>
[z]	<u>z</u> as in <u>zip</u>

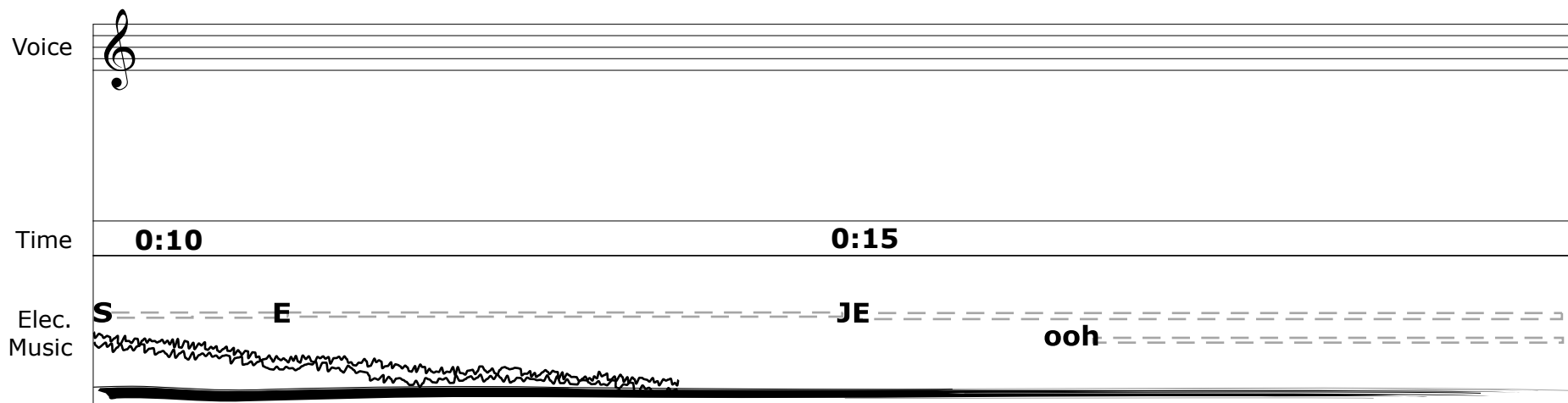
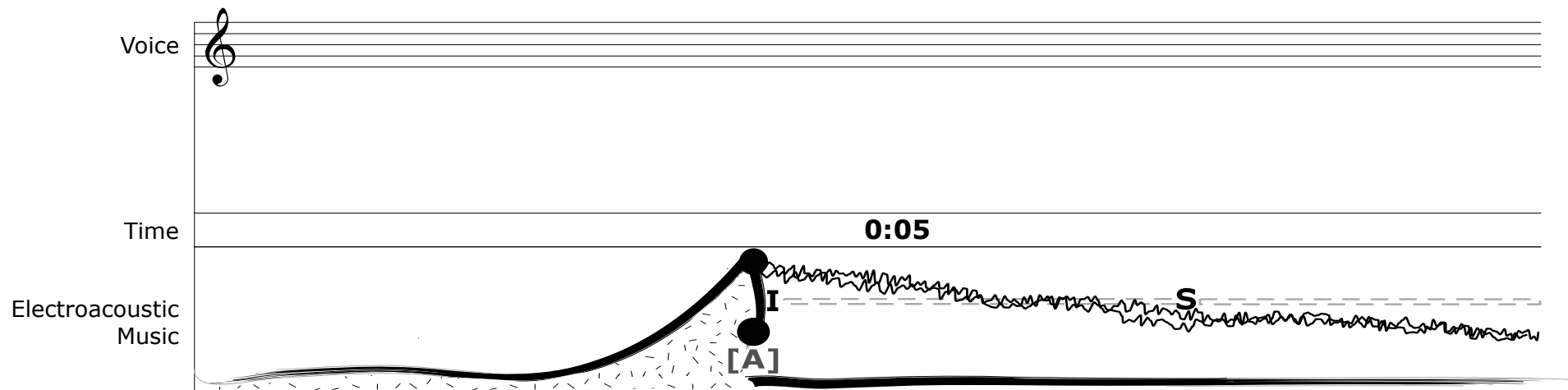
Combinations

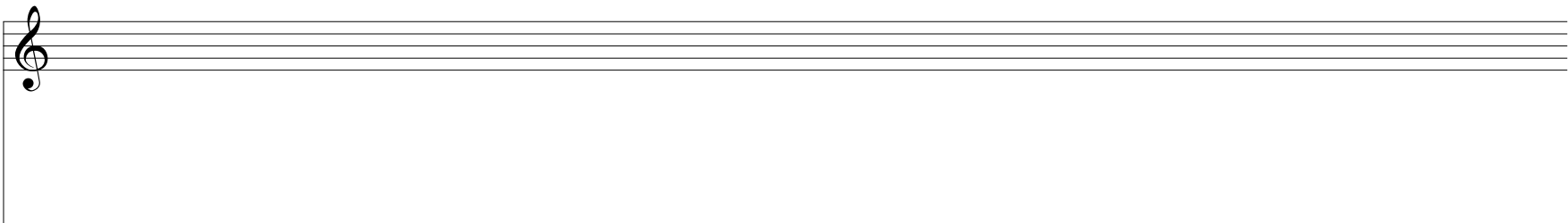
[ft]	<u>shed</u> as in <u>rushed</u>
[dʒ]	<u>j</u> as in <u>judge</u>

SYMBOLS

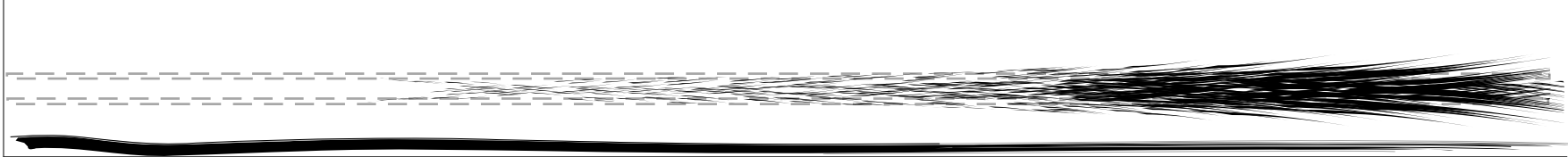
o	note of long duration	[θ] [ɪ]	International Phonetic Alphabet (see chart provided)
●	note of short duration	→	hold first sound for majority of note's duration. Move to second sound quickly toward end of note duration
×	note of short duration spoken, sprechstimme, or half spoken half whispered as indicated	→ → →	gradually change from one sound to another
⊗	note of long duration spoken, sprechstimme, or half spoken half whispered as indicated	→ → → or → → →	
+	note of short duration, whispered or force-whispered as indicated	▼	cue for required alignment of note with electroacoustic part
⊕	note of long duration, whispered or force-whispered as indicated	▽	cue for optional alignment of note with electroacoustic part and/or informative cue
>	accented		
>.	accented but short		
♪ or ♫	end of note or phrase		
	glissando as indicated		

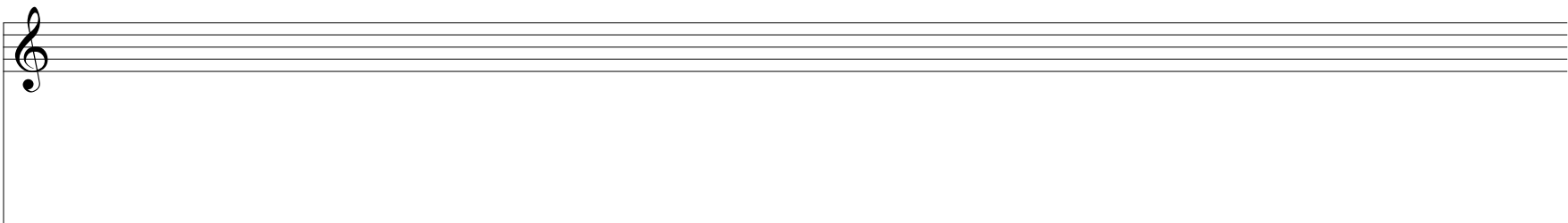
I. Earth-body, Light-body



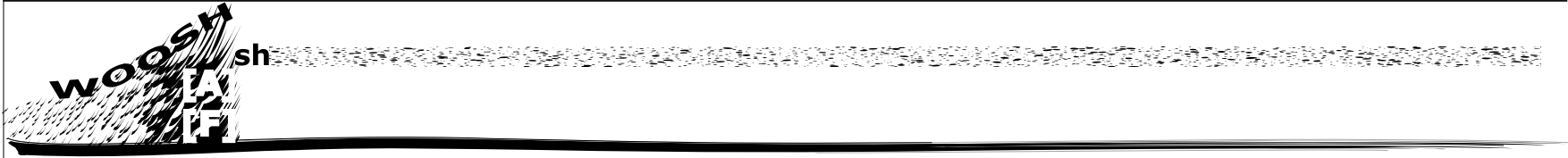
Voice 

Time **0:20** **0:25**

Elec. Music 

Voice 

Time **0:30** **0:35**

Elec. Music 

p ————— *mp*

Voice

I have an earth[θ] bo - dy that is

Time **0:40** **0:45**

Elec. Music

mp

Voice

wa - ter and[æ] blood[Λ] →[d] cur - rents[s] that

Time **0:50** **0:55**

Elec. Music

mf mp

Voice

flut - ter in nerve and stir, cells that

Time **1:00** **1:05**

Elec. Music

f mf mp

Voice

thrum[m] with wings.[ŋ] → [z] I have a - no - ther

Time **1:10** **1:15**

Elec. Music

VE T ooh

mf

Voice

bo - dy as real, [i] → [l] bo - dy of

Time **1:20** **1:25**

Elec. Music

eh ooh

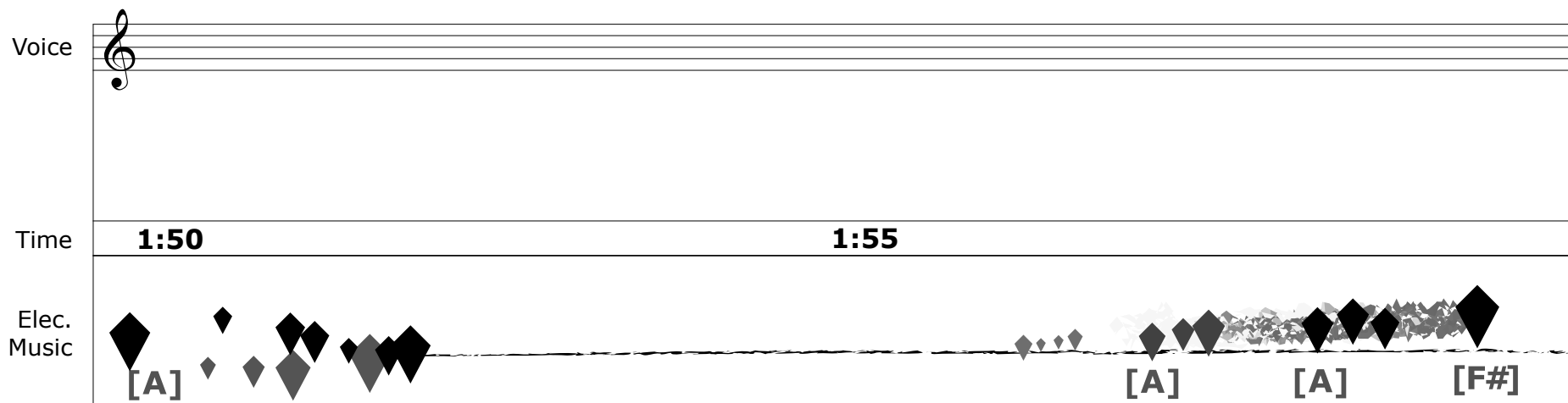
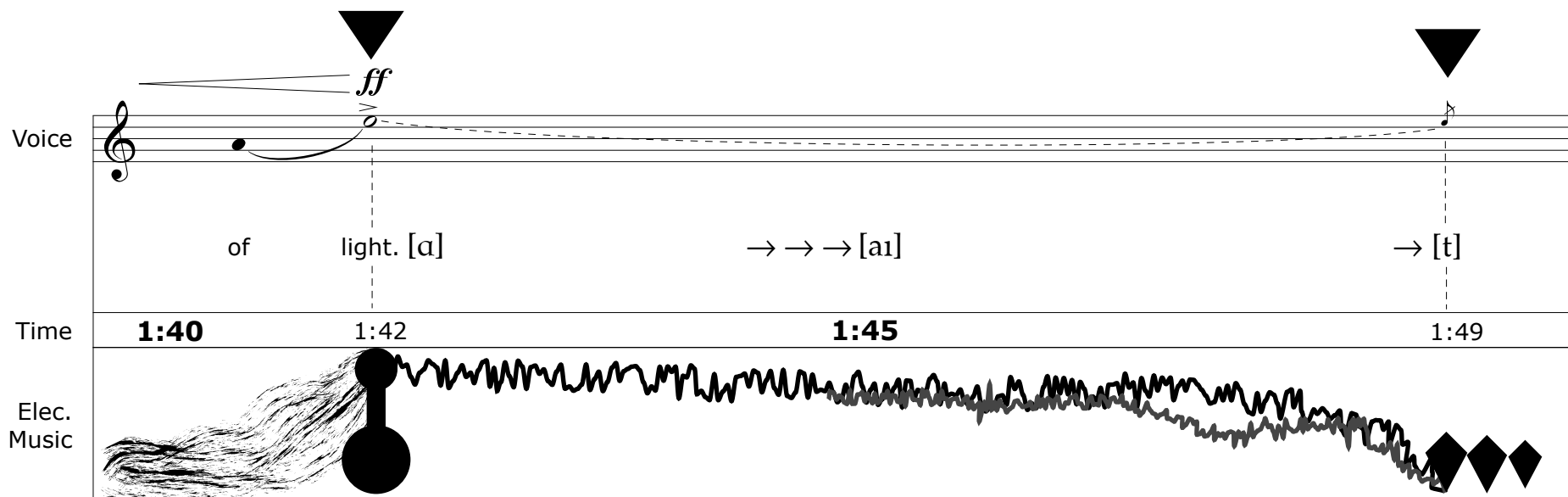
f

Voice

rain [e] → → → [n] of wind [n] → [d] a bo - dy

Time **1:30** **1:35**

Elec. Music



Voice: *mp* ————— *mf*
 It is my sun[n] bo -
 Time: **2:00** ————— **2:05**
 Elec. Music: [F#] ————— [B]

Voice: ————— *mp* ————— *mf*
 dy[i] my light [a1] → [t]
 Time: **2:10** ————— **2:15** ————— 2:17
 Elec. Music: [B] ————— [A]

Voice: *mf*
 bo - - dy. [i] It moves like a wa -
 Time: 2:20 2:21 2:25 2:28
 Elec. Music: [F#] [A] [A] [A] [B]

Voice: *mp* *sprech.* *sfz* *sprech. mp*
 ter fall, [ɔ] → → → [l] o - ver the rocks[s] of me,
 Time: 2:30 2:35
 Elec. Music: [A] [C#] [A] [F#] [A]

(sung) *mf* *mf*

Voice

run - ning o - ver the tum - - - ble of stones, [ou] → [z]

Time **2:40** **2:45**

Elec. Music

[B] [F#] [F#] [A] [F#] [B] [F#]

Voice

and up the cliffs [s] of me, [i]

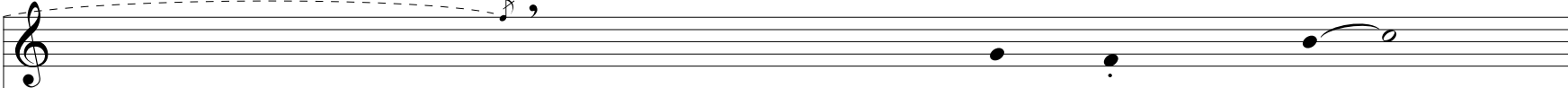
Time **2:50** **2:55**

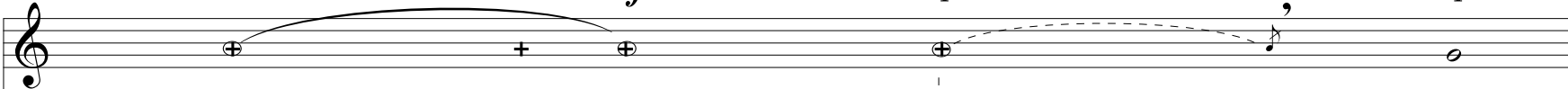
Elec. Music

[A] [B] [F#] [A] [C#] [F#] [B] [A] [B] [B]

Voice *f* *mf* *f*
 my earth bo - dy,[i] out - side me,[i] a -
 Time **3:00** **3:05**
 Elec. Music [A] [F#] [texture of pitches - A, B, F#, C#] [F#]

Voice *ff* *fff*
 round me,[i] shi - ning and stream - ing with light.[a] → → → [a1]
 Time **3:10** **3:15** 3:17
 Elec. Music [B] [F#] [B] [A] [F#]

Voice *p* *p* *mp*

 → [t] My light bo - dy, [i]
 Time **3:20** **3:25**
 Elec. Music [G] [G] [G]

Voice *forced whisper* *mf* *mp* *(sung) mp*

 Ta[æ] - - - rot Ish [ʃ] - - - tar, [ɑ] → → → [r] in [n] -
 Time **3:30** **3:35** 3:36
 Elec. Music [B, G, F drone] li - - - ght-t-t-t- [C-D-C]

Voice *mf*
gliss.
 side and out[au] - - -[t]side [a] [d] my earth

Time **3:40** **3:45**

Elec. Music
 [C-D-C] [F] [A]

Voice *sprech.* *mp* *mf* (sung)
gliss.
 bo - dy flow[ou] - - s[z] be[i] - tween[i] us[s] like a

Time **3:50** **3:55**

Elec. Music
 ha - ve
 [A]

mf *gliss.* *mp*

Voice

Time **4:00** **4:05**

Elec. Music

[A] [B] [A] [C] [D] [B] [C] [A] [B] [A] [C] [D] [C]

f *mp* *forced whisper*

freely from 4:15 through 4:28

Voice

Time **4:10** **4:15**

Elec. Music

[B] [C] [A] [F] [A] [D] [A]

Voice

centre [r] to your [o] heart [t] centre [r] and through

Time **4:20** **4:25**

Elec. Music **[D]** **[alternating D A F#]**

Voice

eyes and our fin [ɪ] - gers, [ə] → [z] weav [i] - ing its pat-tern

Time **4:30** **4:35** 4:36

Elec. Music **[A]** **[A]** **[A]**

Voice *p* *n*
 in air. [a] → → → [r]
 Time **4:40** 4:42 **4:45** 4:48
 Elec. Music [F]

II. Wringcliff Beach

sprech. mp **▼** *sfz* *spoken mf*

Voice

Rain sheen[i] →[n] on co - balt - blue, [s]

Time **0:04** **0:05**

Electroacoustic Music

▼

Voice

salt blue boulders shine of slate grey sea brink pebbles, [z] grind[a1] ing

Time **0:10** **0:15**

Elec. Music

[alternating D, A, F#]

growled; quasi vocal fry

(sung) *mp* *mf* *mf* exaggerate consonants, as if spitting

Voice

and roun - ding to sand ground un - der tum - bled mon - o - li - thons piled and pit - ted,

Time **0:20** **0:25**

Elec. Music

(sung) *mp* *f* *mf* spoken freely, completed before :45

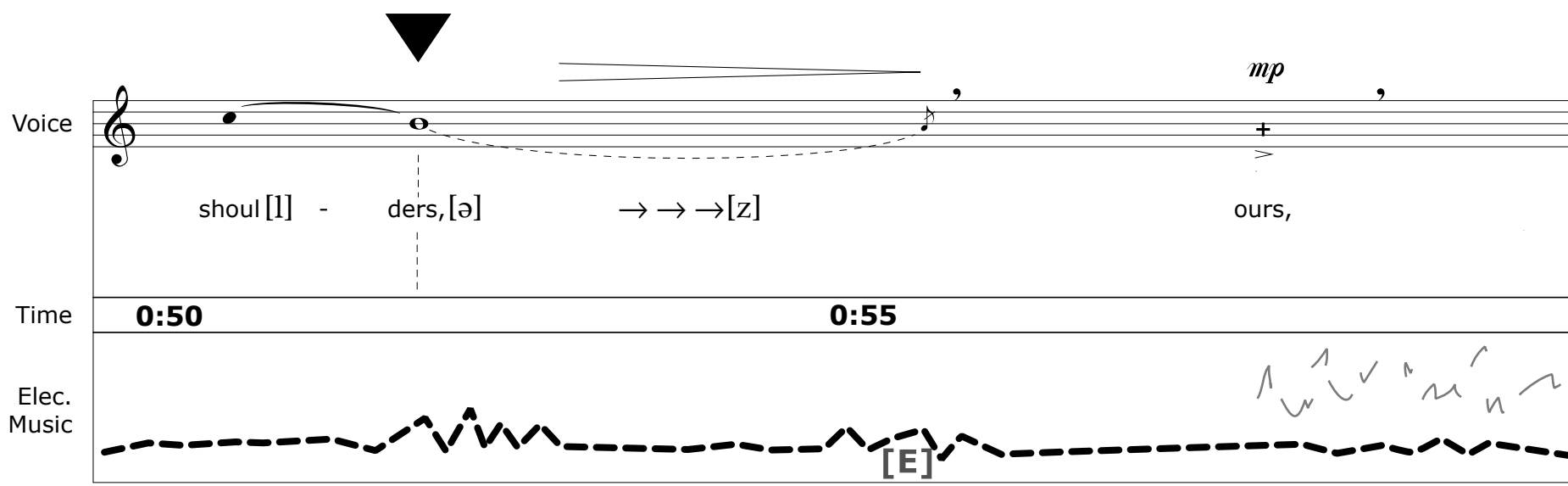
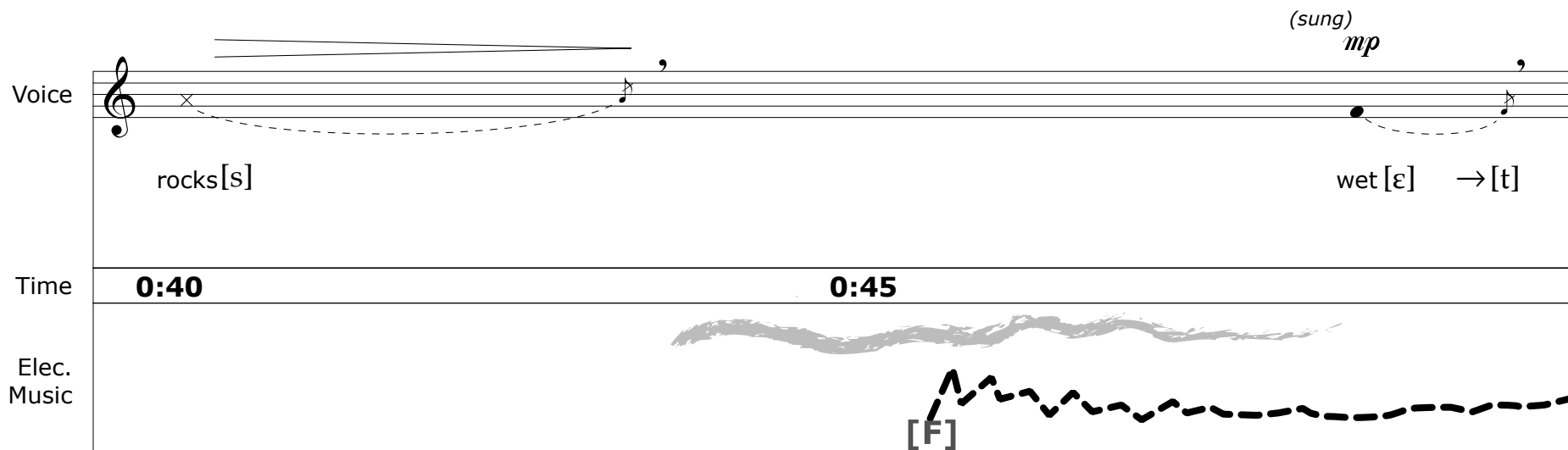
Voice

slipped in to rain[n] pocked pools and stacked,[t] fallen[n] back

Time **0:30** **0:35**

Elec. Music

[D]



intoned, as if chanting ∇
mp

Voice

we [i] name[n] → → → [e] → → → [m]

Time **1:00** **1:05**

Elec. Music

[F]

Voice

the [ð] → → → [ʌ] name[n] → → → [e] → → → [m] less [l] → → → [ɛ] → → → [s] mo[m] → → → [ʌ] thers [ð] → → →

Time **1:10** **1:15**

Elec. Music

[E]

Voice

[ə] → → → [z] of [v] stone [ou] → → → [n] and sub[Λ] - → → → [b] stance, [ɪ] → → → [s]

Time **1:20** **1:25**

Elec. Music

Voice

(sung) *mf*

up from the un[n] - der song, [ɔ] → → → [ŋ] un[n] - *gliss.*

Time **1:30** **1:35**

Elec. Music

[F] [F/C#]

▽
,

*intoned, as if chanting
exaggerate vowels, filter as desired
mp*

Voice

der[r] tow,[ou]

long [l] → [ɔ] → → → [ŋ] slow [s] → → → [l] → → → [o]

Time **1:40** **1:45**

Elec. Music

[E]

pp ▽
,

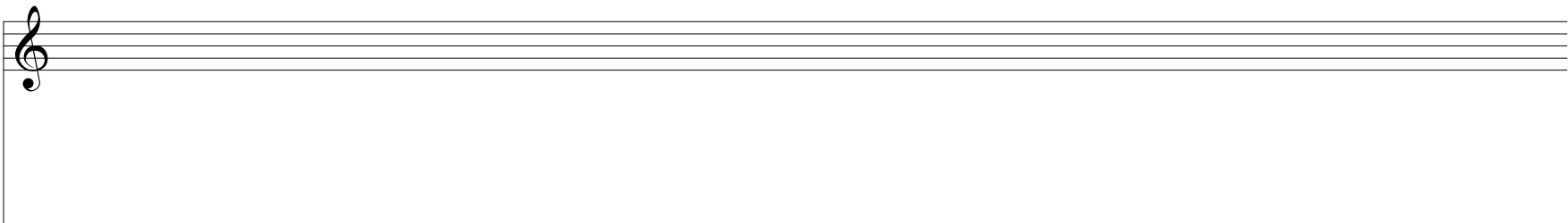
Voice

un[n] - der tones[o] → → → [n] → → → [z] of things..[ɪ] → → → [ŋ] → → → [z]

Time **1:50** **1:55**

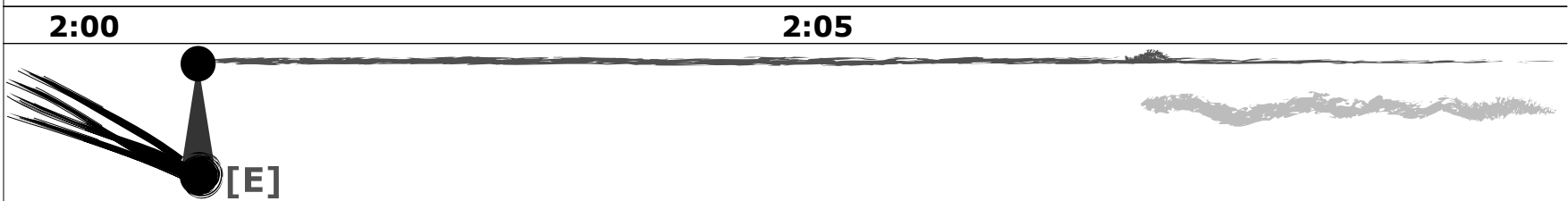
Elec. Music

Voice




Time **2:00** **2:05**

Elec. Music



[E]

Voice

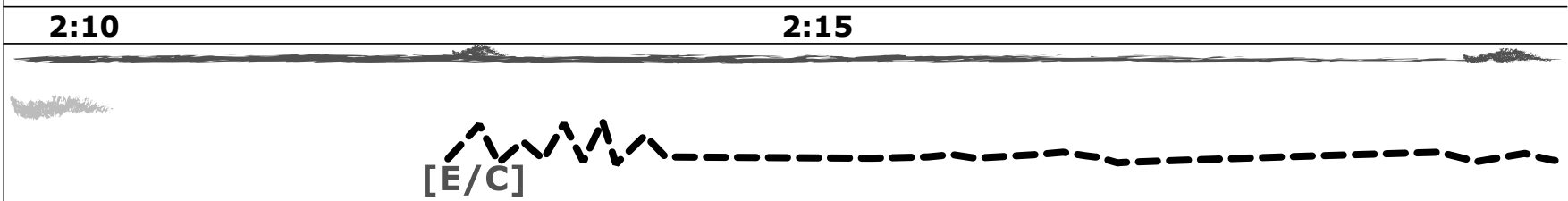


mf *mp* *mf* *sfz*

we, [i] whom you do not [t] see [i] but sense

Time **2:10** **2:15**

Elec. Music



[E/C]

Voice *f* *pp* *mp*
 in the blood tide ri [a₁] - - sing [z] → → → [i] → → → [ɪ] we, [i] in the wide
 Time **2:20** **2:25**
 Elec. Music

Voice *mf* *mp*
 of the bay [e] cloud, grey in sweep [i] - ing with the sea [i] rain,
 Time **2:30** **2:35**
 Elec. Music

Voice *mf* *mp* *mf*
 up see[i] - thing in the dim[m]brown surge salt wave,[e] → → → [v]

Time **2:40** **2:45**

Elec. Music

Voice *f* *sprech. mf* *f* *mp* *(sung) f*
 con-verge[3] →[dʒ]on shin - gle, as - cend - ing in-to char black, blue black

Time **2:50** **2:55**

Elec. Music [E]

Voice *mf* *f*
 swart rock cliff, drop up - wards to the nest-ing lev - els of the white wing borne light
 Time **3:00** **3:05**
 Elec. Music *gliss.* [F/C#]

Voice *ff*
 gull rid - ers of the vor - ti - cal wind towers
 Time **3:10** **3:15**
 Elec. Music [C]

forced whisper *mf* *mp*

Voice

here [i] → → → [r] rest - ing in your

Time **3:20** **3:25**

Elec. Music

[C#/F]

mf *spoken; quasi whispered mf* *sprech.* *(sung)*

Voice

se - cret led - ges we speak your fledg - ling name, [e] kin - dling un - der wind wea - ry brood

Time **3:30** **3:35**

Elec. Music

spoken; quasi whispered *sfz* *f*

feath - ers the pas - sion that will burn[u] → → → [rn] your char[ɑ] → → → [r]dark - ness[s]

Time **3:40** **3:45**


Elec. Music [C#]

mf *mp* *mf*

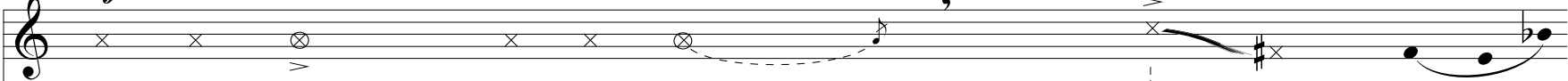
pur - ple [l] and warm red a - gain[ε] → [n] warm - ing to your - self,[ε]

Time **3:50** **3:55**

Elec. Music [E/C#/A#]

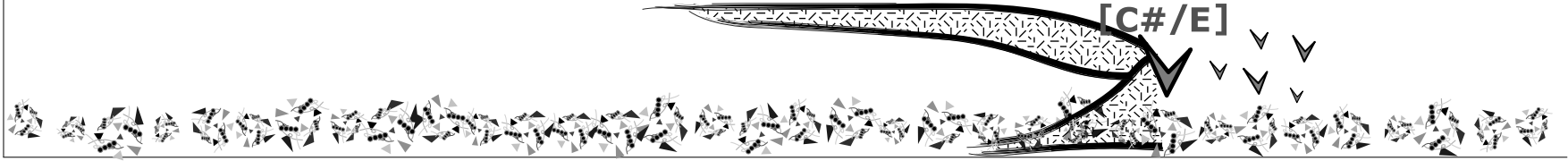
spoken; quasi whispered *sprech.*  *(sung)*

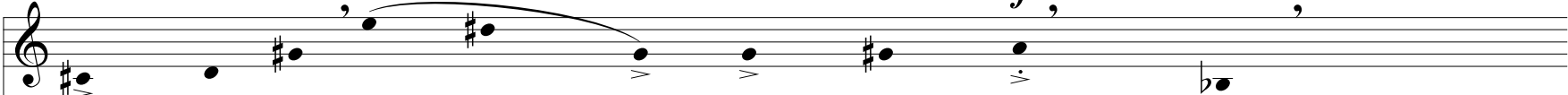
mf

Voice 

your name new[u] on your tongue[ʌ] → [ŋ] feel[i] us[s] flood - ing up

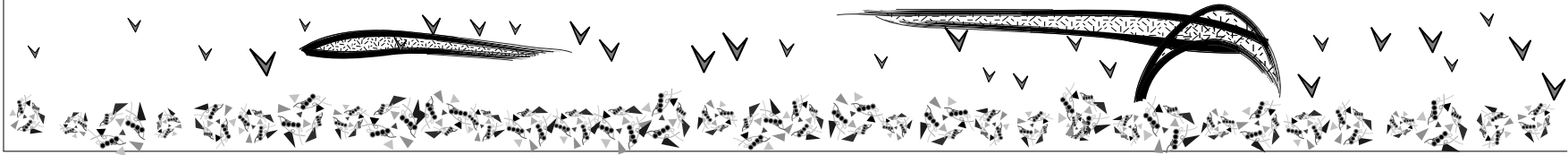
Time **4:00** **4:05**

Elec. Music 

Voice 

earth[θ] blood brown, ris[a1] ing[ŋ] in you through grit[t] spark,[k] - - -

Time **4:10** **4:15**

Elec. Music 

mf *gliss.* *spoken forcefully* **f**

sheer [ʃt] → [i] → → → [r] [s] → sand [æ] → [d] glint, [t] heave [i] → [v]

Time **4:20** **4:25**

Elec. Music

sprech. *(sung)*

gliss. *gliss.*

and roll o [ou] - - ver and [n] → [d] up on - to rich cliff grass, [a] → → → [s]

Time **4:30** **4:35**

Elec. Music

spoken; quasi whispered (sung)

f

Voice

brilliant moist [m] → → → [ɔɪ] → [st] moss [m] → → → [s] shine green, in the mist rain [e] → → → [n] then

Time **4:40** **4:45**

Elec. Music

Voice

ff *mp* *mf*

burst - - - [t]ing, [ŋ] burst [ʒ] → → → [st]ing [ŋ] in [n] to

Time **4:50** **4:55**

Elec. Music

mf *f*

Voice

wild[a1] →[d]brack-en[n] flame[e] o-range and pale[a1]→→→[l] gold[ou] →[d] bush[u]

Time **5:00** **5:05**

Elec. Music

[C/A/G]

spoken mf

Voice

→→→[ʃt] fire wide[a1] →[d]warm [or] →→→[m] wild fire [ɔ1] →→→[r]

Time **5:10** **5:15**

Elec. Music

spoken; quasi whispered *mf* , , , , , , , forced whisper *f*

Voice

fire we are burn - ing in you fireself [a1] → [r] → → [s] → → → [ε] → [l] → → → [f]

Time **5:20** **5:25**

Elec. Music

lightly *mp*

Voice

Bea [i] - - - - - con [Λ]

Time **5:30** **5:35**

Elec. Music

Voice

([Δ])

→ → →

Time

5:40 **5:45**

Elec. Music

Voice

→ → → [n]

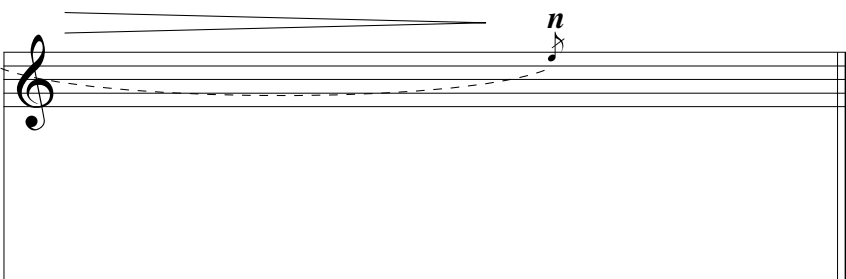
Time

5:50 **5:55**

Elec. Music


[C#]

Voice



Time **6:00**

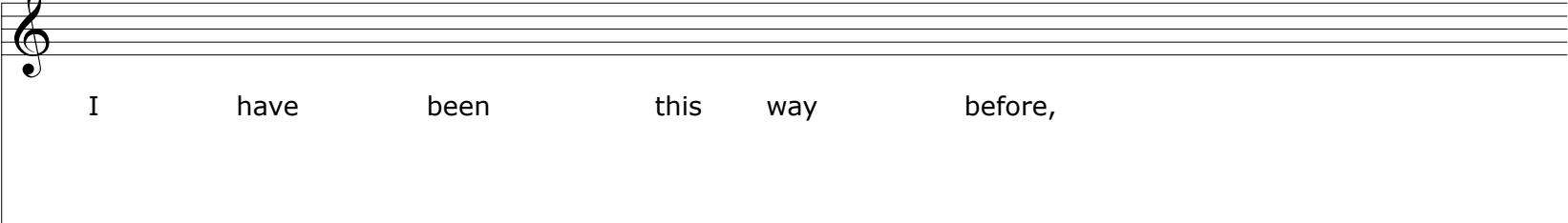
Elec.
Music



III. Pool

Speak freely; you may overlap with the beginning of the tape part
mp

Voice




I have been this way before,

Time

Electroacoustic Music

Voice



Time

0:00 **0:05**

Elec. Music

I ----- **HA**
[A] ----- **[Ab/A]**

T

Voice

Time **0:10** **0:15**

Elec. Music

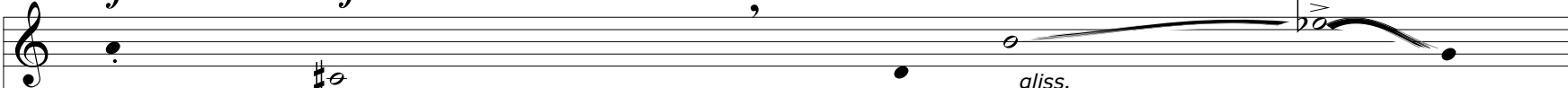
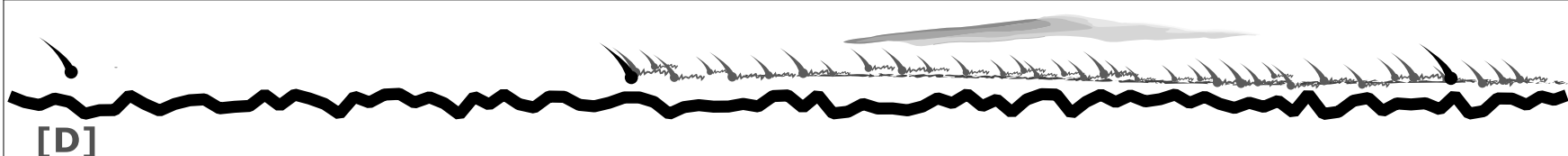
[A]



Voice

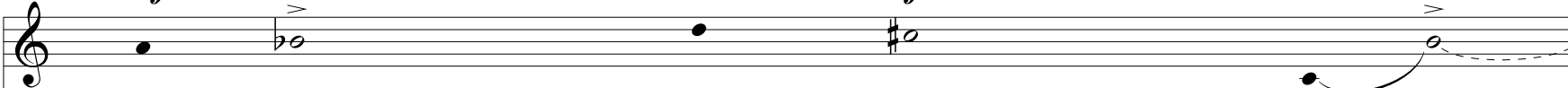
The path [θ] jar - ring a - cross [s]

Time **0:20** **0:25**


Elec. Music

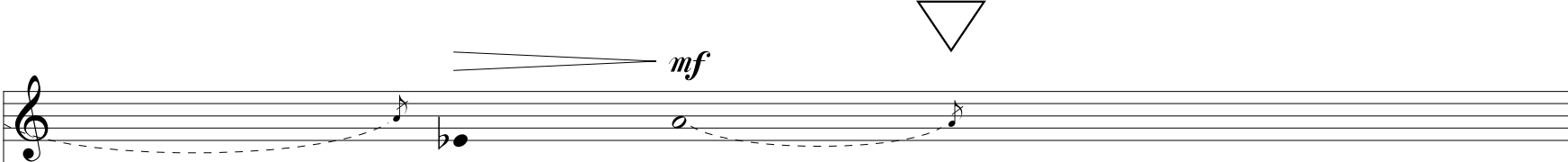
f *mf* ,
 Voice 
 hot rocks,[s] ed - ges [z] fal - ling
 Time **0:30** **0:35**
 Elec. Music 

sprech. *f* *spoken; quasi whispered*
 Voice 
 in a dus[s] - - - - - ty scam [m] - - - - - ble,
 Time **0:40** **0:45**
 Elec. Music 

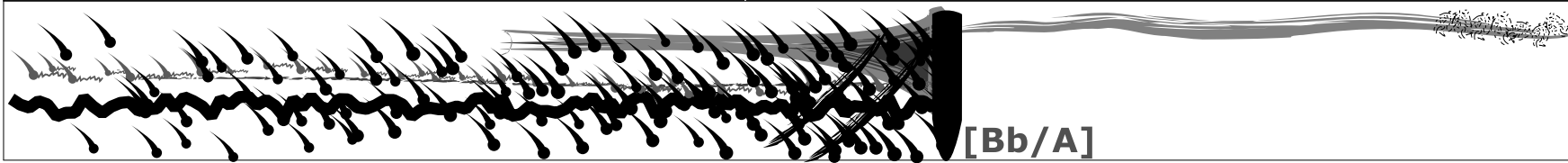
mf ————— *f*
 Voice 
 high cracks [s] hung [ŋ] dry [a1] with rasps [æ]

Time **0:50** **0:55**

Elec. Music 

Voice 
 → → → [s] → [ps] of plant; [æ] → [t]

Time **1:00** **1:05**

Elec. Music 

[Bb/A]

mf f mp

the light [a1] →[t] too bright, [a1] → [t]

1:10 1:15

Elec. Music

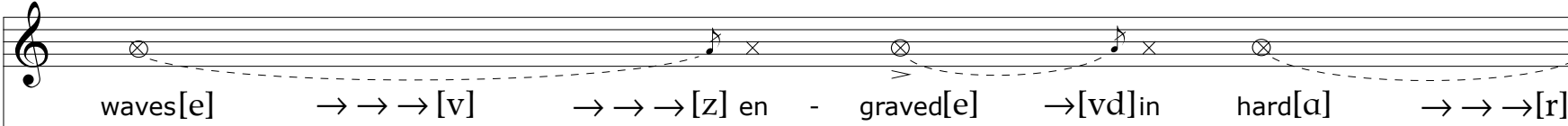
spoken; quasi whispered mf

memory [i] of yesterday's[e] →[z]

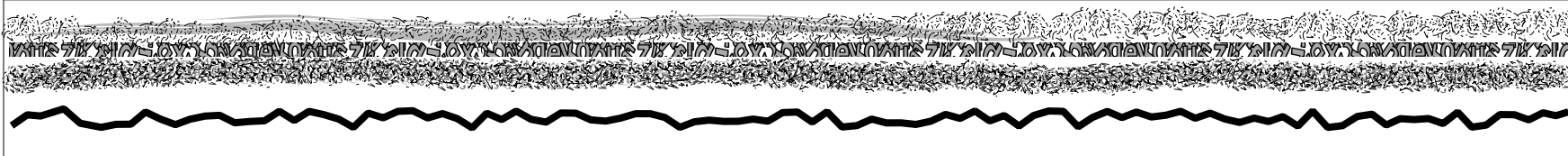
1:20 1:25

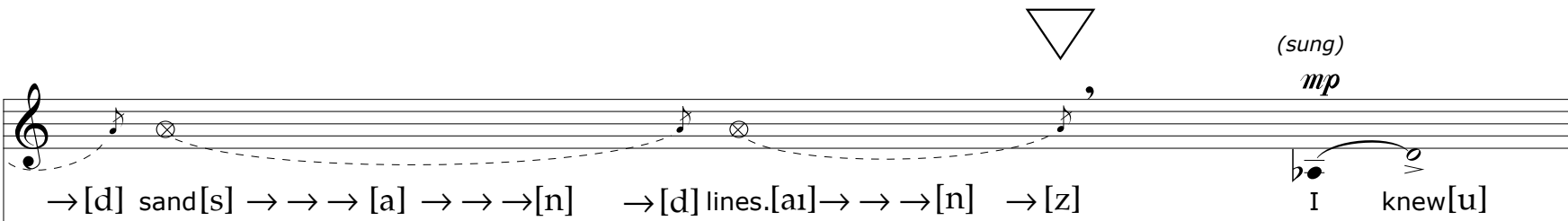
Elec. Music

[chord-B/G/C/Ab]

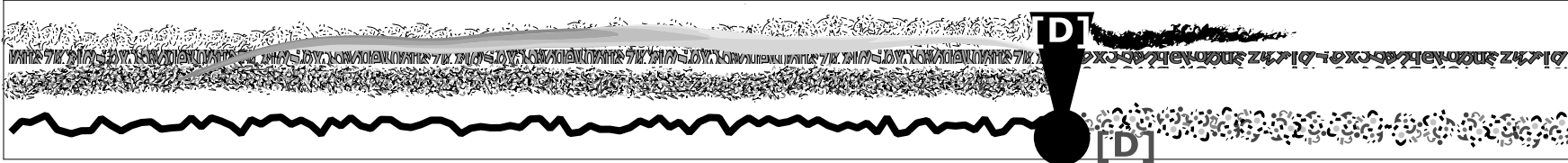
Voice 

 Time **1:30** **1:35**

 Elec. Music 

Voice 

 Time **1:40** **1:45**

 Elec. Music 

Voice *mf* *mp* *sprech.*

the mid - day tricks[s] of sun[n] light,[a1] → [t] spar -

Time **1:50** **1:55**

Elec. Music [D/F#]

Voice *(sung)* *f* *p*

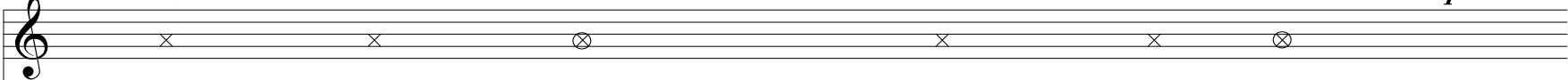
kling a glint of wa - ter out of air.[a] → → → [r]

Time **2:00** **2:05**

Elec. Music [D/F#] [A]

Speak freely, completing sentence no later than 2:22

mf *mp*

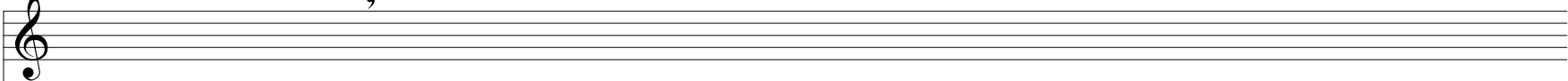
Voice 

I have been this way before.

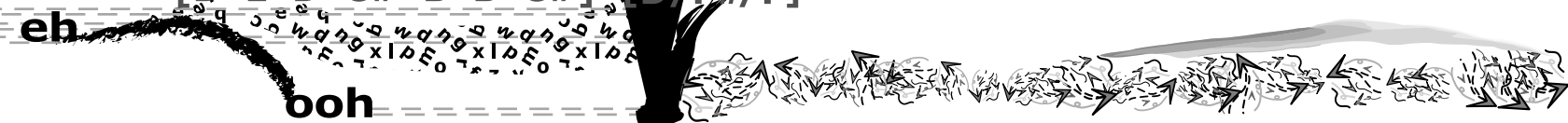
Time **2:10** **2:15**

Elec. Music **I** **ehh**

[A/Bb]

Voice 

Time **2:20** **2:25**

Elec. Music **eh**  **oooh**

[D E D C# B B C#] [D/F#/F]

spoken; quasi whispered
mf

Voice

To-day[e] the hard[a] → → → [r]

Time **2:30** **2:35**

Elec. Music

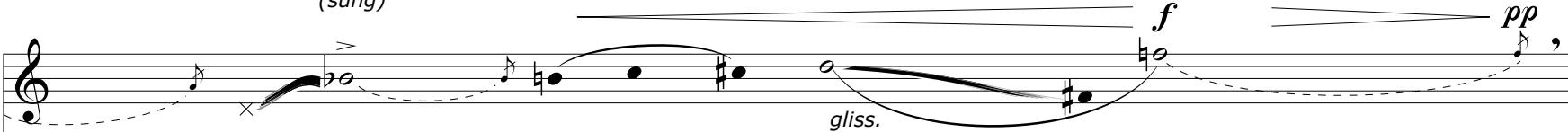
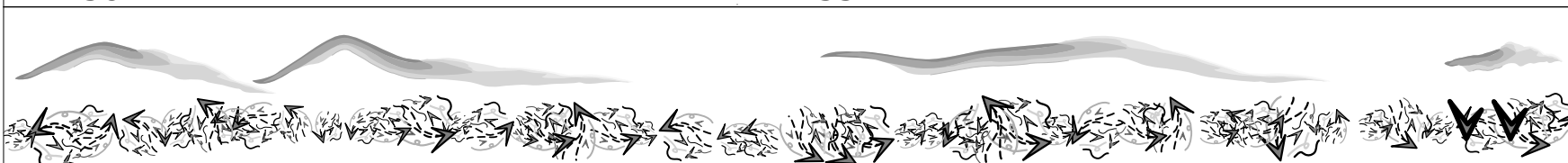
sprech. *(sung)* *f* *p* *spoken; quasi whispered*
mf

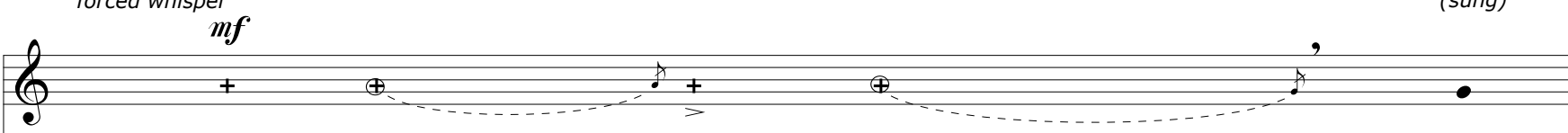
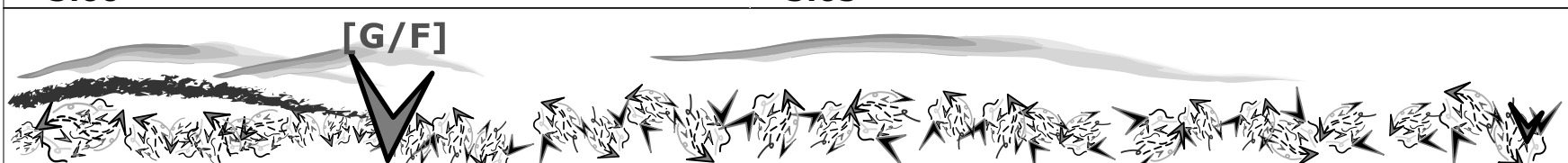
Voice

[d] rocks[s] o[ou] pened → [nd] on a pool[u] → → → [l] salt [s] → [t] green [i] → → →

Time **2:40** **2:45**

Elec. Music

Voice *(sung)*

 [n] and deep[i] →[p] as a - ny fan[n] - - ta - sy.[i]
 Time **2:50** **2:55**
 Elec. Music


Voice *forced whisper*
mf

 The water [r] fits[s] close.[o] → → → [s] The
 Time **3:00** **3:05**
 Elec. Music

[G/F]

f *pp* , *forced whisper* *mf*

Voice

weed fronds cling [ŋ] fea - ther - ing [ŋ] a - gainst bare [a] → → → [r] skin. [1]

Time **3:10** **3:15**

[G/F alternating throughout] **[A]** ehh-----

Elec. Music

(sung) *mp* *mf*

Voice

→ → → [n] The light floats [ou] → → → [s] sil - ver

Time **3:20** **3:25**

Elec. Music

Voice *mp* *f*

 wet [ɛ] → [t] as the o - pal silk [l] → → → [l] → [k] of oy [ɔɪ] - ster
gliss.

Time **3:30** **3:35**

Elec. Music

Voice *mf* *mp* *forced whisper mp* *(sung) mf*

 shells. [ɛ] → → → [l] → → → [z] This [s] is the touch my

Time **3:40** **3:45**

Elec. Music **(eeh/i)**

Voice *f* *mp* *spoken; quasi whispered mp*

 skin was ach[e]- ing for, this[s] is the place[e] → → → [s] I

Time **3:50** **3:55**

Elec. Music

Voice *freely* *n*

 never [r] dared [a] → → → [r] → [d] to dream.[i] → → → [m]

Time **4:00** **4:05**

Elec. Music

Voice

The image shows a musical score layout with three staves. The top staff is labeled 'Voice' and contains a treble clef. The middle staff is labeled 'Time' and contains the text '4:10'. The bottom staff is labeled 'Elec. Music' and contains a series of small, repeating musical notes. A horizontal line with a dashed center line is positioned between the 'Time' and 'Elec. Music' staves. A thick vertical line is on the right side of the staves.

Time **4:10**

Elec. Music