Synchresis

Exploring gestural relationships between musical-sound and visual-gesture on film: Synchresis as a unifying concept for exploring and creating effective multimedia relationships

By

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Abstract

This investigation looks at the nature of synchresis in filmic contexts, with a particular focus on film-dance. I have discussed language that can be useful in this exploration, and have attempted to define terms in order to better develop a means of conceptualizing what synchresis is, and how it functions in establishing and shaping connections between media. This theoretical work is the background for my investigation of synchresis in the three contrasting works that make up my creative portfolio.

A better understanding of the complexity of synchresis in cross-media interactions provides a useful tool to unify and shape these interactions. The marriage of movement and sound is a central part of human experience and our experiences of music are potently transformed through visual gesture. Likewise film is transformed by music's vitality and meaning-shaping role. In other words, synchresis emerges from the primary experience of intermodality. An enhanced understanding of it provides a platform for possible further explorations of the different ways in which different media can be combined. It is hoped that composers might be able to usefully apply ideas from this investigation to intermedia works of their own.

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Introducing synchresis

Preliminary remarks

This is an intermedia examination of music and film, with a focus on synchresis. Film-sound theorist Michel Chion (1994:224) defines *synchresis* as 'the forging of an immediate and necessary relationship between something one sees and something one hears at the same time'. Focussing on *synchresis*, this exegesis will examine three original intermedia works I have created with the intention of binding music and film.

In the last few years my growing interest in how music can be used to enhance visual media has led me to explore the synergetic relationships that underlie successful multimedia interaction. Thus this investigation is motivated by a desire to better understand how film and music interact. I wish to examine synchresis, not as the limited concept of synchronicity (or sync points), but as a multifaceted concept underpinning the interaction of media.[1] Through better understanding the complexity of synchresis in interactions between sound and vision this investigation seeks to define and explore the usefulness of an informed awareness of synchresis in approaching intermedia composition. Underlying the investigation is my confidence that a heightened understanding of synchresis can greatly aid in constructing successful interactions between musical-sound and visual-gesture.

This exegesis specifically focuses on visual material as seen in film, and purposely avoids on-screen dialogue. Despite the absence of speech-based

[1] S*ync point* (or *'point of synchronization'*): this is a term used frequently in film for an audio-visually salient synchronous meeting of a sound event and a sight event.

drama in this investigation, it is notable that narrativity, which shapes art over time and across media, transcends the absence of speech, and that films of the silent era, 1895-1924 (Marks, 1997), had to work within similar constraints. The giving of life to 'ghostly' moving images through music was commonplace before the *talkies* and posed similar challenges to those that are the subject of this investigation.[2]

Preliminary to an exegesis of my works, this investigation will proceed by discussing ideas underpinning synchresis, including gesture and texture as binding elements. Following this discussion of broader concepts, specific terminology, useful in understanding how vision and sound interact, will be introduced. The works I have created are designed to investigate how instrumental composition, when composed for film, can combine such different roles for sound as Foley, *musical sound indices (MSI),* and sound design, whilst fulfilling the typical roles of diegetic and non-diegetic film music.[3,4]

While an investigation of dance is not the focal point of this examination, its gestural messaging, and deep relationship to music and sound, makes it ideal for an investigation of synchresis. However, while dance is used throughout this investigation to facilitate a heightened focus on gesture, this examination limits itself to the interaction between sound and dance in *filmic media* (an examination of live dance and music is not the focus of this investigation).

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[2] The end of the silent film era came during the mid to late 1920s as *synchronized sound*, sound technology coupled with image, was introduced. These early films were known as 'talking pictures' or as 'talkies' (Crafton, 1999).

[3] *Musical sound indices* (MSI) is a term used by Chion (1994) to describe the combining of music and sound design as one sonic expression. MSI fuses image and sound, bringing them off the screen into the physical domain. An example is matching the sound of a door closing with the image of the door closing, enhancing a perception that the onscreen door has weight and solidity.

[4] *Diegesis* is a narrative or plot, typically in a film; ("Diegesis"; Oxford, 2011).

General comments

The power of music

The influence music has over visual media, drama and dance is inarguable. Music has the power to change the meaning of a narrative from funny to morose, from the unexceptional to the exceptional, and has the power to engage listeners in a multitude of ways (Jordan, 1994:217-221).[5] For example, Nicholas Cook (1998) discusses music's power in advertising to create a message that influences subconsciously, while still transferring its own emotional attributes onto the product. Such is the power of music to influence perceptions that are extrinsic to the musical sounding source.[6] Likewise, that music can create a sense of momentum, of rushing or pulling back, and can make almost any listener (active or passive) move involuntarily, demonstrates a neurological, *proprioceptive* relationship between physical action and sound (Godøy, 2009).[7] This close interrelationship confirms the validity, and indeed the necessity, of adopting a synchretic approach to composing in intermedia contexts. However, while the concept of synchresis can be applied quite broadly, this exegesis will focus on the analysis of the relationship between visual gesture and musical sound as experienced primarily in film. While dramaturgical aspects, such as acting and dialogue, are not excluded from synchresis, they are peripheral to this exploration, which focuses on gesture as heard and seen on screen.

[5] Jordan comments on the scientific evidence that audiences, when viewing the same contemporary dance with different musical accompaniments, respond differently to the meaning of the work.
[6] I am using the word 'extrinsic' to identify how a behaviour can influence things that are distinctly outside the behaviour source.
[7] *Proprioceptive* feedback from the muscles is concerned with the tension and relaxation of muscles that relate to sensorimotor and psychological experiences.

Music in the context of film

> *I feel that music on screen can seek out and intensify the inner thoughts of characters. It can invest a scene with terror, grandeur, gaiety, or misery. It can propel narrative swiftly forward or slow it down. It often lifts mere dialogue into the realm of poetry. Finally it is the communicating link between the screen and the audience, reaching out and enveloping all into one single experience" (Hermann, in Thomas, 1979:47).*

In the context of film, sound and music contribute strongly towards unifying both diegetic and non-diegetic elements. Typically, as Hermann observes, sound and music fulfil multiple roles in film, including aiding narrative 'flow', allowing the audience to access the hidden thoughts and feelings of characters, linking discrete elements, harmonizing cuts between shots or masking alternating character perspectives. Gorbman (1987:59) comments that music 'masks contradictions', and draws the spectator into the 'diegetic illusion'. Thus, despite the apparent dominance of visual media in film, it is sound and music that are the fundamental 'communicating link between the screen and the audience' (Thomas, 1979:47).

Dealing with the ubiquity of sound and vision

A Gesamtkunstwerk perspective and a common language[8]

Our primary communication from birth is through gesture and sound exercised within the rhythms and cycles of our bodies and the natural world around us. Our fundamental neurological linkages between what we see and what we hear are bound up in the most primal aspect of our beings. Indeed, as Reznikoff (2004) considered, in the most profound manner:

> The first consciousness of space is given by sound. The child doesn't see but hears the voice of the mother high or low in her body... and the sounds or noises in various locations coming from internal or external surroundings. This sense of space is important for the child to position itself in the right way, head down, in preparation for the moment of birth. It has been shown that children whose mothers sing are in general better positioned for this major event.

Goethe (Boyle, 1986:1; cited in Cook, 1998:46) succinctly said of the relationship between colour and sound that "they are like two rivers that have their source in one and the same mountain, but subsequently pursue their way, under totally different conditions." This is echoed in Smalley's observation that hearing is always influenced by what we know about the world in visual and physical terms, and that there is thus a close linking of senses. This is born out in much recent research in the cognitive sciences (see essays in *Handbook of music and emotion: theory, research applications* by Juslin and Sloboda, 2009; and *Music and Consciousness* by Clarke and Clarke, 2011). Smalley's viewpoint, like Gorbman's, is that combined media can not be separated and understood as monomodal experiences, but must be viewed in multimodal terms. In fact Smalley goes further than this to emphasize that we must always be aware of the multimodal implications of monomedia experience and objects. Sound and vision are often separated into autonomous parts in the examination of

[8] A gesamtkunstwerk is a word of German origin that translates as "a total work of art", or an "ideal work of art", a "synthesis of the arts", or a "total artwork" (Millington, 2006). In this case I am using it to describe my holistic perspective of the synthesizing of multiple media.

multimedia forms such as film. However, this frequently demonstrates a blind spot in the analysis of multimedia. It overlooks sound and vision's ability to *render* information otherwise not conveyable when the two media are separated, and so devalues the potential for "mutual enhancement" (Gorbman, 1987:15; Jordan, 2011:43).[9] More than this, it ignores the natural perceptual binding of sound and vision that Smalley refers to, and which film-sound theorist Michel Chion (1994) defines as the *audiovisual contract*. I will return to this key concept shortly.

Thus in this investigation I adopt a holistic approach, building on the notion that all experience is inherently multimodal, and cannot be looked at separately. The marrying of sound and vision creates something distinct, which must be considered to be a new form, the potency of which is anchored in synchresis.

Embodied cognition

Traditionally, musicians perform music using the gestures ordained by their instruments, and even when the music is unseen, listeners imagine these movements (Godøy, 2009:ix-xi).[10] Musicians use *sound-facilitating gestures*, such as forcefully plucking a string in an outward motion, to elicit sound from an instrument. Once someone has viewed a performance by the band *The Who* it is hard not to visualize Pete Townshend's windmill arm movements with the sound of the crashing guitar chord that it produces upon later listening to one of their albums. That sound is implicit in movement, action and the environment, signals deep-seated links between what we hear and see.

[9] Chion (1994) uses *'rendering'* to describe the highlighting of a visual action through sound that generally translates an agglomerate of sensations associated with the image. That the sound that frequently accompanies a punch on film is much louder than would be heard in reality reveals that *rendering* is not so much about a faithful reproduction of a sound but more about conveying added weight and consequence related to the visual action onscreen. Thus *rendering* tries to convey something that is not necessarily going to be conveyable through the image or the sound alone.

[10] "The listeners' experience of listening to instruments is a cultural conditioning process based on years of (unconscious) audio-visual training. A knowledge of sounding gesture is therefore culturally very strongly embedded" (Smalley, 1997:112)

Smalley (2007) suggests that sound is an *intermodal* experience, and essentially everything we hear produces *transmodal linking,* automatically generating associated visual experiences that carry also an implied physicality. Thus a deep interconnectedness exists between sound, vision and tactility. That music is so interlinked with movement, and is expressive independently of words, suggests that we might understand much of reality through body movement, or through what Godøy calls *embodied cognition* (Godøy, 2009; Smalley, 1996). Godøy's view, which is borne out by empirical research, is that our perception of the world, and our mental activity in general, is a process of incessant stimulation of various body movements, both of other people and ourselves. This is exemplified in learning languages, when engaging in the body language behind the meaning powerfully assists understanding (Godøy, 2009). Cognitive linguists describe *mirror neurons* that instinctively mirror and imitate actions in the world around us to predict and prepare for dangerous upcoming events such as hunting and fighting (Keysers, 2003; Wilson and Knoblich, 2005; Godøy, 2009). In this regard sounds are linked cognitively to a network of associations and experiences that concern causality and ultimately survival (Smalley, 1996). These cognitive aspects of sound also inform our experience of sound and music in the context of the arts (Clarke and Clarke, 2011).

The necessity of defining a terminology to discuss synchresis

It might be concluded that the ubiquity of synchresis in our day-to-day experience is the reason for the lack of literature on the phenomenon, for our lives are so fundamentally bound to sound and vision that the relationship is an existential norm.[11] Godøy (2009) points out that part of the problem is that a vocabulary to discuss intermedia relationships has not been firmly established, and so a usable conceptual apparatus for observing sound-gesture relationships will be pivotal in developing an exegesis of my work. A language is needed that can be accessed by both musicians and non-musicians alike.[12]

[11] Godøy (2009), Cook (1998) and Chion (1994) also observe this lack of academic literature in music and film, and dance and music relationships.
[12] There is a necessary "forging of a common language and theoretical framework for all musical multimedia" (Gorbman, 2004:17).

An exploration of synchresis relies on a unique set of observational approaches concerning discrete aspects of sound and vision. While recognizing the deficit in scholarly analysis, Smalley (2007, 1997, 1996) and Chion (1994) have provided valuable ways to discuss the interrelationship between different media, in particular audio and visual media, and much of their conceptual vocabulary has been adopted for this investigation. The neutral discourse afforded by Chion and Smalley allows linkages to be made between sound and vision employing non media-specific terminology. Smalley's work is often concerned with intermodality; it is frequently rooted in the human being as the central reference point, particularly for gesture, and provides an ideal cornerstone for aspects of this investigation. Chion's work is concerned with media, especially music in television and filmic contexts. His approach to audiovisual relationships often deals with how music mediates itself with other media, including translating its own innate values and qualities into how another 'thing' is perceived. Gorbman (2004, 1987) and Cook (1998) have also created useful resources, particularly dealing with audiovisual relationships.

Core concepts: Gesture and texture

Gesture and its interconnectedness

Gesture, a term central to this discussion of synchresis, has far-reaching meaning, with application across numerous facets of human behaviour. Because of gesture's centrality in this examination of synchresis it is important to address the diversity of gesture's meaning.

Gesture is concerned with time and energy, particularly linear time, and a basic definition is that it is an *articulation of energy over time* (Paynter, 1992:84). Smalley's concept of "energy motion trajectory", which correlates to *sonic gesture*, implies that visualization derives from sound.[13] He suggests "vision is at the very basis of the gesture-field": that the sound of a door slamming spontaneously generates the image of the event in our mind's eye. Likewise, if we hear an instrument being played we can, to varying degrees of specificity, depending on our experience, visualize the energy-motion of a bow on a string, or the strum of a chord. The audible energy-motion trajectory has direct visual correlations (Smalley, 1996: 90; Acitores, 2011: 217). We are constantly creating spontaneous visual definitions of sounds produced, informed by our accumulated day-to-day experiences of relationships between sound and vision, facilitated by gesture. This has underpinned our understanding of different types of *spectromorphological* consequence as we cognitively "decode" the audible world around us.[14] An acoustic instrument has the power to suggest movement and gesture because of this capacity to infer human activity behind the *spectromorphologies* we hear. Tension and resistance are parts of movement, but also concern emotional and psychological experiences. Thus the sounds of musical instruments are *spectromorphologically* explicit and have a strong link to a psychological apprehension of sounding contexts (Paynter,

[13] When a "human agent [uses] the sense of touch or an implement to apply energy to a sounding body"

[14] *Spectromorphology* is a word coined by Smalley (1986; 1997) describing the perceived sonic footprint of a sound spectrum as it manifests in time. The two parts of the term refer to the interaction between sound spectra (spectro-), and the ways these change and are shaped through time (-morphology).

1992:84). This is regardless of whether physical gesture is visually present.

In dance and music, gesture is often concerned with propelling time forwards, with moving away from one goal and moving towards the next goal in the structure (Smalley, 1997:113). Gesture concerns anything that changes over time. It applies to natural environments such as the changing of the tides. It includes any observed transition such as colour changes from neon to black. It is bound up with temporality. Gestures can be sudden, such as in the striking of a hammer, or proceed slowly, such as in the dissipation of the smoke from a campfire (Paynter, 1992).

A key aspect of gesture is that it occurs on a bodily scale. Gesture is typically body-derived and body-focussed. It is most often concerned with movements of the body for a wide variety of practical and expressive reasons. Gestures may denote deliberate actions, such as making a gesture of farewell, or a policeman's directing of traffic, or can be spontaneous, as in the unconscious fidgeting of a shy person prior to public speaking. Gestures are frequently understood as 'non-verbal' signalling communication (Graham and Argyle, 1975).

Gesture can be perceived in multiple domains, and correspondences between gestures can be perceived between domains. Gesture has a strong relationship to the proprioceptive perception of body tensions, and with effort and resistance, and has clear interpretive links to dance and music. Godøy and Lemen (2009) describe gesture as a category, or structural feature of our perception-action system, and suggest that such a quality is experienced by both the producer and the observer as both a mental and corporeal phenomenon.

Musical gesture

Traditionally musical gesture involves a human agent who, sometimes using mediatory implements, acts physically on sounding bodies by fingering, plucking, hitting, scraping and blowing. These gesture-types harness energy and motion through time: a controlled, physical motion results in the excitation of a sounding body and the shaping of a spectromorphology (Paynter, 1992:84).

We witness how, in the case of live performance, the physical actions of the musician constitute a type of dance, and the physicality of playing an instrument is a network of gestures in itself. We can observe two types of gesture. In *sound-producing gestures* musicians construct bodily movements such as striking, blowing and bowing. As Smalley (1997:110) puts it, "a gesture… excites the sounding body creating spectromorphological life". *Sound-accompanying gestures* are performer gestures that facilitate communication in musical contexts. These do not necessarily affect the sound produced, but impart vital information in the context of the live experience of music. These gestures include the raising of eyebrows and swaying of shoulders, and the stance of a performer. All of these movements impart information about the sound produced, highlighting details of musical structure and intent, anticipations of section, and the myriad logic systems underpinning the sounding-music produced (Godøy, 2009). A good example of these two gestural functions in musical performance can be witnessed in Karlheinz Stockhausen's *Harlequin for Clarinet, Nr. 42* (1975) that defines both a sense of the necessary overt performance gesture, that constitutes a dance in itself, as well as facilitating the communication of musical ideas.

Thus musical gesture contains a wealth of 'other' information that is not necessarily audible, but inferred. This leads us to understand how music and sound always convey gestural information, and are always intermodal, and thus have inherent qualities of synchresis, even without being combined with vision. That sound and music already have the blueprints of synchresis within them of course greatly aids their close interaction with the visual and kinetic.

Texture

While understanding gesture as core to this exploration, its close relationship to texture needs to be defined. Because one can relate the visual and physical behaviour of a *textural event* to musical or sonic behaviour, synchresis can be perceived at the textural level. Many of the composer John Cage's works, such as "Bird Cage" (1972) and "HPSCHD" (1967-1969), provide examples of how music, when it is very slow or texturally complex, ceases to be perceived as 'music', and becomes an 'environment' in spatial and temporal terms (Fogelsanger, 2000). Merce Cunningham's choreography, on the other hand, at times becomes so intricate and layered, and so filled with independently moving dancers employing contrasting gestures, that a kind of 'flocking' or 'shoaling' occurs, reminiscent of birds or fish moving together, and thus individual gestures or dancers disappear.[15] In such choreography one stops perceiving individual gestures, but instead experiences the larger shape of an ensemble making the experience a *textural* one.[16] Thus, while texture and gesture can inhabit two isolated domains, they can also traverse into one another, such as when human gesture or sound is deliberately slowed down through technological or other means, or becomes too complex, passing a liminal point as it enters a non-human domain. That gesture can pass into texture, and texture into gesture, is an example of a principle that can be harnessed to aesthetically powerful ends when applied to music and dance. Sonic gesture-field transitions, when human scale gesture passes into gesture on an environmental and textural scale, are often not intended, but can be observed, for example, in field recordings when the recordist approaches or recedes from the performance space of the subject. A textural sound-element can furthermore intervene in a recording and occurs throughout the music-anthropological videos of 'African Guitar' (Grossman and Kubik, Gerhard, 2003), such as when the sounds of aeroplanes disturb the acoustic performance of Mwenda Jean

[15] Merce Cunningham (1919-2009) was an influential avant-gard American choreographer and dancer. His collaboration with John Cage, that began in the 1940s and lasted until Cage's death in 1992, created numerous unique and challenging works such as 'Beach Birds' (1991) and 'Variations V' (1965), and pioneered new perspectives on how music and movement can interact.

[16] Textural techniques in dance are also applied by renowned Berlin based choreographer, Sasha Waltz, such as in her works 'Continu' (2010) and 'noBody' (2002)

Bosco, thereby introducing an environmental/textural scale event into the recording (Bosco, 2007).

Exploring terminology

An explanation of specific vocabulary is appropriate. Through the chapters of analysis in this exegesis I employ terms defined by Chion and Smalley in discussing my creative work, particularly in respect of gesture and texture, and other elements central to working creatively with synchresis.

The audiovisual contract

Foundational to this discussion is what Chion (1994) describes as the *audiovisual contract*, which he defines as a 'symbolic pact to which the audio-spectator agrees when she or he considers the elements of sound and image to be participating in one and the same entity or world'. Perceiving the interaction between sound and vision on screen, or their mutual implicitness, is not a 'natural' or 'genuine' interaction, but is based on what can be described as a 'guided misapprehension'. This natural tendency to relate sounds to supposed sources and causes is what Smalley (2007:36) calls *source bonding,* and underpins why we perceive sounds as if arising from visual events, even when the sound is clearly not analogous. Source bonding evokes a spatial zone, or mental image, inferred from a sounding source. This inference of a sonic reaction from a visual event is also referred to by Chion (1994:72) as *visualized sound*.

Consonance and dissonance

That sound and vision can work analogously, or also against each other, is an idea Chion (1994) discusses in observing that two media can purposely ignore each other, or work very closely together. Media can mirror each other, interact, contrast or contradict, and can be seen as the interplay of convergences (consonances) and divergences (dissonances)**.** Ideas of media ignoring or serving, pushing against or pulling apart, are essentially analogous to relationship prototypes that provide a simple and fundamental way of

perceiving interaction between media and relate closely to Smalley's (1997) notion of sonic behaviour (which I discuss below).

Intentional conflict or harmony between media, as expanded notions of dissonance and consonance, have been the subject of considerable discussion. Indeed, Hanns Eisler, a pioneering composer and film music theorist, explored media dissonance as a narrative tool to enhance the filmic experience. That a dissonant meeting point between media, through juxtaposed emotive elements, can create 'shock and then resistance', underpinned Eisler's belief that audiovisual dissonance could generate supercharged sentiments, and activate a sense of moral duty within the viewer. Eisler's scoring of the slum squalor, in *Kühle Wampe*'s introductory sequence, with jiving optimistic music to consciously enhance the thematic disparity between the living standards of the rich and the poor, exemplifies an effort to use media-dissonance to assist hidden meanings *(Brecht and Ottwalt, 1932).*

External logic

Two forms of media are not necessarily always going to work in parallel with each other. For various reasons sometimes an *external logic* requires different media to diverge from one another. Chion (1994) describes the introductory sequence of Ingmar Bergman's *Persona* (1965) as "a kind of pedagogical limit-case of sound-image experimentation", and it provides a useful example of external logic. That the jagged cuts in *Persona* do not synchronize with the bold 'pointillistic' intrusions of the music reflects an external logic in disallowing the media to synchronize. The effect of the two media working against each other creates discomfort, and added tension, and imparts a sense of abstraction. However, at the end of the sequence, as the nail is hammered into the hand, the sudden synchronizing of the sound and vision amplifies the brutality of the gesture. Thus through divergences and convergences of media an external logic can manipulate the audience's understanding of, and relationship to, diegetic events.

The resolution of dissonance between media to consonance can provide enhanced drama, and *add value* to a resynchronization of narrative, or other forms of media trajectory, as well as support a changed interpretation of the events taking place.[17] Exemplified in the use of dark horns that precede the entry of Darth Vader, the protagonist from *Star Wars* (Lucas, 1977), an anticipation of a formal change can enable one media, in this case the musical media, to move to the next 'station' of a narrative, while the other, the visual media, remains constant to the previous station. Thus, through the superimposition of external logic on the '*audiovisual counterpoint*' of dissonance and consonance, formal tensions between media streams can set up anticipation and arouse questions for the viewer.

Shared properties and mutual implication

When observing the relationship between visual gesture and sound one needs to move from the different vantage points in which *shared* properties might be present. It seems appropriate, when discussing the relationship between sound and vision, to recognise the psychological aspect of sounds that we hear daily. Viewed deterministically, every interaction between vision and sound we have ever experienced supports our understanding of a gestural correspondence, and is framed by our own cultural and physical environment. The idea of 'mutual implication', as introduced by Gorbman (1987:15), acknowledges that when different art-forms come together, such as poetry, music or painting, the joining of their currents means that they are not disparate singularities but must be understood holistically, as a culmination of interaction and interdependence.

[17] *Added value* is an alchemic process that promotes the idea that marrying sound and vision *render* information not conveyable when each is working alone. Chion (1994) describes this as "the expressive and /or informative value with which a sound enriches a given image, so as to create the definite impression (either immediate or remembered) that this meaning emanates "naturally" from the image itself."

Intermodality, behaviour fields and causality

Intermodality is part of synchresis and deals with how one sense relates to another. In the case of a person stamping her feet the physical/visual gesture provides a sense of *causality* that 'explains' a change in music. Thus change is initiated by gesture in one sense/mode which leads to a change in another sense/mode.

Just as synchresis is about the fundamental connection between vision and sound, the specialized terminology required to discuss synchresis constitutes ways to express relationships which deal with interconnectedness, and the subtleties of such relationships. Smalley's (2007) concepts of behaviour and "behaviour fields", which he applies to the perceived interaction and relationships between sound, can be applied to the behaviour of what we see, and how it influences what we expect to hear, and vice versa. Such ideas of 'implied' relationships within sound and sound's extrinsic influence on media are also pursued by Godøy and Lemen (2009).

Along with the concept of behavioural fields, Smalley (1996:88) discusses *causality,* or how sounds act upon other sounds, and how combinations of sound cause secondary events, and can also influence further, ongoing sounds. The idea of *causality* need not stop with just sounds affecting sounds, but can extend to sound affecting visual media, whereby innate features including volume, expressivity, timbre, harmony, and melody 'push' and 'rub' against the visual media to effect a changed interpretation.

Mutual enhancement, interpenetration and added value

Gorbman (1987) discusses the coming together of sound and vision, using the terms *mutual enhancement* and *interpenetration,* that indicate a complete new entity that cannot be broken down once the two are joined. This alchemic process, which Chion describes as *added value,* promotes the idea that marrying sound and vision generates information not conveyable when each is working

alone. In the context of *added value,* music can illustrate the emotional significance of an event that occurs onscreen; for example, music does not need to focus on the visual event of a car collision that occurs onscreen, but can add *value* by illustrating the possible implications of this event in relationship to its narrative context, thereby adding affective dimensions that greatly enhance the experience for the viewer.

Environments and reverb

An example of the interlinking between sound and vision can be observed in the role of reverb in creating a sense of spatial depth, and its helpfulness in rendering sound in terms that relate to image.[18] Reverb subliminally tells us about our environment, of the materials it is made of, its shape, and what is behind us or above us (Blesser and Salter, 2007). Cage (2009) expressed a similar idea more enigmatically when he said, "I think people are far more involved with their eyes than they are really with their ears but the interesting thing with the ears is that you can hear things that are behind you."

Because reverb is an everyday part of our sonic experience an absence of reverb makes sound unnatural and uncomfortable for our senses. In environments lacking reverb, where sonic objects seem near, like a person whispering in our ear, their close proximity within our personal space may instinctually evoke a sense of danger. Whatever the case, human experience is almost never separated from a reverberant world. Likewise, on a visual level, establishing an environment, or 'space', on the two-dimensional rectangle of film is fundamental in making the diegetic action more persuasive. Thus ideas of environment and space have direct and metaphorical significance in the setting up of coherent musical worlds, and are pertinent to this examination.

[18] *Rendering* describes highlighting a visual action while generally translating an agglomerate of sensations associated with the image. That the sound that frequently accompanies a punch on film is much louder than would be heard in reality reveals that *rendering* is not so much about a faithful reproduction of a sound but more about conveying added weight and consequence related to the visual action onscreen. Thus *rendering* conveys something that is not necessarily going to be just conveyable through the image or the sound alone.

Territories, zone spaces, signal spaces and circumspace

There are various spaces and zones, both sonically and visually, that are relevant to an investigation of synchresis as they provide a primary 'canvas' on which other aspects of media can operate. Smalley (2007) describes *enacted spaces* as spaces produced by human activity, and he divides them into two primary types: *utterance spaces* which are articulated by vocal sound, and *agential spaces*, where sounds of human interaction with an environment or things within an environment occur (such as opening a bag of crisps). Ideas of space include *internal sounds,* which Chion (1994) describes as sounds that have a diegetic aspect corresponding to the mental interior of a character (for example, heartbeats or voices imagined or recollected by a character). That sounds can infiltrate and reveal a character so intrusively extends from Hermann's idea that sound can access behind vision and bring the hidden to light.

Smalley (2007:36) discusses *territory sounds,* which give definition to a space such as church-bells or waves lapping. Territories can include different specific *zone spaces* such as a cicada on a leaf, or a group of people chatting on the corner: these zones can also be described as *signal spaces.* Linking to ideas of *behavioural space*, a signal space defines a space where sounds and calls of participants are produced, either to communicate with each other, or to communicate their presence to other inhabitants, such as frogs in a pond (Smalley, 2007). *Circumspace* is much like 'surround-sound', except that it allows for sound to move within *perspectival space* around the listener and through or across egocentric space (Smalley, 2007).[19],[20]

[19] *Egocentric space* is the personal space (within arm's reach) surrounding the listener. The *egocentric space* is a type of behavioural space that can be mobile in practice.
[20] *Perspectival space* deals with the relations of spatial position, movement and scale among spectromorphologies, viewed from the listener's vantage point. It deals also with the prospective space (what is likely to happen within the future of a space) as well as the panoramic space (the full 360° circumference of the space experienced).

Vectorial space

The idea that a sound source, or *signal space*, can move through *proximate space* is described by Smalley (2007:37) as travelling through *vectorial space.*[21] This idea includes the *signal space* moving around the listener, or crossing, or temporarily blocking another territorial zone's *distal image* by travelling between it and the *egocentric space* of the listener.[22] An example of this is a motorcycle passing between pedestrians on opposite sides of the street, cancelling audibility for a brief period of time, or the smoother, less disruptive sweep of a skateboarder rolling past. That a signal space can move within a territory is featured within my works, both in the use of sound such as the *performed space* of an orchestra, or the visual implications of events taking place on the left or right side of the screen.[23]

MSI and visualized sounds

Chion's (1994) idea of the *audiovisual contract* highlights the necessity for sound gesture to link with visual gesture.[24] Through interactions with visual objects onscreen, as I will discuss in analyzing my works, in varying degrees the use of materializing sound indices (MSI) and visualized sounds bring visual elements into the quasi-physical domain. An example of MSI can be seen in many science-fiction movies when 'epic' musical ideas are combined with numerous sound effects. The combining of music and Foley, or sound-effect elements, means that solid correlations between media must normally be organized with concretely coordinated plans. MSI would seem to be something difficult to achieve otherwise, as separate media, with their different modes, need to correlate.

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[21] *Proximate space* describes the listener's immediate locative, present space.
[22] *Distal image* deals with the perception of a space that is situated outside the immediate space of the listener's body.
[23] *Performed space:* Spaces produced by intentional sound-making, such as a musical performance (Smalley, 2007).
[24] *Audiovisual contract*. Chion (1994) describes the audiovisual relationship, as created in film, not as a natural coming together but instead a sort of 'symbolic pact to which the audio-spectator agrees'. The *audiovisual contract* is about the convincingness of the interaction and participation between sound and image as if in the same world.

Gestural surrogacy

Gestural surrogacy is a concept developed by Smalley (1997) dealing with the process of "increased remoteness", whereby a sound-source and/or the audible gesture used in creating it, becomes disguised to different degrees, and can be categorized as *first-order*, *second-order* or *third-order* surrogacies. A *first-order surrogacy* can be defined as a sound that is not designed for musical use, but represents an environmental texture-field within a musical context, and includes recordings of sound material. A *second-order surrogacy* can be seen when the spectromorphological basis of a sound is further extended through 'other' techniques, such as post-production, to dislocate the 'real' sound from its source. A *third-order surrogacy* occurs in the complete disguising of sound-sources. Finally, *remote surrogacy* removes all human action from behind the sound-source. Like a seesaw, it could be said that often, if not always, the diminishing audibility of gesture from a spectromorphology means that the textural nature of gesture becomes more apparent. Thus ideas regarding gestural surrogacy apply readily to the concepts in the earlier chapter on gesture and texture, and are useful conceptual tools to mediate across the two domains. These ideas will be looked at in application to my works in the following chapter.

In conclusion

This section has introduced and discussed key terminologies that I will proceed to apply in the following chapters. Ideas of space, environments and territories have been addressed, together with concepts of gestural relationships between media. Shared qualities, including potential mutual enhancement and *added value* have been discussed, as well as ideas of causality. In the next chapter these ideas will be applied to my three works, together with an exploration of the creative methods used.

The portfolio

Having discussed synchresis, and introduced key terminology, the discussion will now proceed to an examination of three works that make up my portfolio, and particularly to an analysis of the pieces in terms of synchresis.

Sound and visual gesture work in tandem, and synchresis offers a strong conceptual and analytical means to explain them, but in practice how can such intermodal bonds and interactions be created? I have composed three interdisciplinary works that focus closely on movement, gesture and physicality, as well as a sense of 'affect' and 'spatial-trajectory experience' (Hoffman, 2005). I will use the concepts of synchresis to explore what renders these works more, or less successful. I will also seek to extend my concentration upon synchresis in discussing the creative concerns and methods employed in developing the works.

The three intermedia works have been developed within different methodological constraints in order to observe variations in the creative process and to allow synchresis to be explored in different ways. In other words, as I focus on different levels of the relationship between sound and vision that emerge and change from moment to moment, each piece will demonstrate synchresis, albeit in contrasting ways.

The three works

I. Pretty Feet

Process: The music was composed first and the dance choreographed after.
I composed this orchestral work, with the compositional process directed towards dance, and then conceptually choreographed it with two professional dancers, graduates from the New Zealand School of Dance: Sacha Copeland (in the grey dress) and Emma Fay Coppersmith (in the red dress). *Pretty Feet* was filmed and edited by Boofa Michael Hobbs, and features the *New Zealand School of Music's Orchestra* and sample orchestral instruments from the Vienna Symphony Library.

Collaborating on this work was a chance to have my own ideas of gesture challenged, and to observe my own reactions and processes in working through the creative and developmental stages toward an outcome. Synchretically *Pretty Feet* deals with unifying different environmental locations through the continuity of music and physical gesture. It also deals with the *egocentric space* of the camera that sometimes interacts with the two dancers.

II. Salome's Dance

Process: The visual material was sourced first and then the music scored to it.
This is a piece of vintage footage from "*Salome"*, created in 1923, and directed by Charles Bryant and adapted by Natasha Nazimova from Oscar Wilde's account of the beheading of Saint John the Baptist.[25] The scene I have scored depicts Salome's dance for King Herod to rouse him to do her bidding. My role was to compose music for the film without, however, being able to influence the making of decisions about visual material. I designed this work around a non-tonal concept of acoustic instruments, using *extended techniques* that were later

[25] The excerpt from *Salome* used in *Salome's Dance* is an entire unedited sequence from the original movie. The opening and closing credits were added, and the final frame of the selected sequence was faded to black by William Sklenars and myself.

also digitally effected using various signal processing plug-ins.[26] I aimed to render physical gestures seen on screen as 'alive' through ideas of MSI. Beyond this, I regarded the screen's frame itself as a complete field of visual gesture with my attention not only directed to characters' gestures, and the visually-conveyed narrative, but also to the filmic medium itself, with the old-stock film's defects, as well as other, textural, non-human visual details within the frame.

III. Kannabi

Process: The music and visual material were developed together.

Kannabi is dedicated to the victims of the 2011 earthquakes in Christchurch and Japan. It was performed by *The Firefly Collaboration Project*, which was an ensemble I assembled, featuring nine performers from Australia, Japan and New Zealand. The line-up included dancer Shala Ueda and sitar player Aki Ueda from Japan, percussionist Tunji Beier from New Guinea/Australia, as well as local musicians Ricky Prebble on taonga puoro, Charley Davenport and Tristan Carter on cello and violin, Wil Sklenars on double bass and myself on various guitars.

The dance and structure of *Kannabi* was developed collaboratively over ten days of live performances during the New Year's period 2011-2012. I composed the theme that begins and ends *Kannabi* and the middle section, where the rhythmic percussion enters, was an improvisation that was developed collaboratively by the ensemble. The music was then tracked at *Mana Meditation Retreat* in the Coromandel and edited in Wellington before being sent to Shala some months later to film the dance at her family's shrine in Japan.[27]

Kannabi, a Japanese word that describes magical spirits who live amongst waterfalls and rivulets, deals with environments. The piece explores locations

[26] *Extended techniques* are instrumental techniques that are normally beyond the conventional playing methods of an instrument. These techniques access unstable elements of the instrument that often require expertise to control.

[27] *Tracking* is a word used in the process of recording music. It is a word that has evolved from the use of magnetic reel-to-reel audio-tapes to record single layers of music. In the case of *Kannabi* we recorded each instrument separately with a metronome into Pro Tools (a digital audio workstation).

and *acousmatic* textures.[28] Having edited both the music and the film (together with Will Sklenars) this piece gave me the opportunity to investigate different applications of filmic editing, and to work intimately with synchresis points.

[28] *Acousmatic* is a word of Greek origin that describes sounds one hears without seeing their originating cause. Radio and telephone are acousmatic media. In film, an offscreen sound is acousmatic. Acousmatic is the opposite of *visualized sound*.

Observing synchresis in the three portfolio works

In this chapter analysis will be made of the three portfolio pieces using the language and terminology I have discussed in the introduction. Commonalities between the portfolio works will be discussed before each is examined separately.

Binding concepts used in the creative process

The three works were approached using different compositional methods, with consequently contrasting artistic outcomes. Binding points and conceptual tools used to isolate and explore synchresis were consciously chosen and applied during the creative process and planning of all the works. The following elements, predominantly visual, establish unity across the three works:

- Spinning, "dervishing" movements.
- A focus on costume fabrics: how fabrics move and how they have an impact of their own independently of the dancer.
- A conscious differentiation between extroverted outward gestures and introverted, inward, bodily gestures.
- A focus on locations, environments and surroundings and the dancer's interaction with them.
- Ideas of 'travelling' between locations, including earthly and spiritual dimensions.
- A conscious contrasting of spatiality and density, such as rapid *iterative* bodily movements on the miniature scale, and *sustained* 'outward' expressive gestures on the larger scale.[29]
- Ideas of gifts, offerings and sacred treasures.

Sonically, the pieces are composed using a range of different methods but are linked by a tendency towards consonant audiovisual relationships and the

[29] *Sustained gestures* are continuous movements such as bowing a violin.

absence of verbal-dialogue (apart from the recitation in *Pretty Feet*). As Meyer (1998) observes, "texts with narrative messages tend to be coupled with highly redundant music so the story can be easily followed". Accordingly, eliminating dialogue helps to maintain a more distinct focus on the relationships between sound and vision, without the distraction of text.

Dance as a prism to explore visual gesture

That contemporary dance is often performed without scenic support, but with music, and thus reduced to the bare essence of synchresis, highlights its pertinence to this investigation. For this reason all three works use the prism of dance, as experienced *on screen*, to more effectively explore synchresis. Dance brings attention to visual elements, particularly gestural ones, onscreen and helps unify concepts explored *across* the works. While dance has been explored on film by numerous artists and chorographers, such as Maya Deren and Merce Cunningham, it should be clear that dance, when mediated on film, is of a significantly different order from live dance. While live performance of dance is embedded in the transitory moment, and in real physical space, with the numerous potential fluctuations that characterise live performance, it differs significantly from the temporal 'solidity' and spatial 'flatness' of dance in film-media.

Shared qualities between dance and music

One of the numerous shared qualities between dance and music is that they are structured in and through time. The close relationship between dance and music is demonstrated in many traditional cultures, such as in Africa or Indonesia, where music and dance is a single form of expression both in performance and linguistically (Besson and Schön, 2001; Blacking and Kealiinohomoku, 1979; Fogelsanger and Afanador, 2006; Sanger, 1989).[30] However, despite their closeness, dance and music manifest themselves very

[30] "…[in Africa] music and dance can never be isolated since they are intelligible only as parts of multi-media events" (Sanger 1989:59)

differently, and affect us differently, thus making the task of discussing their interrelationship challenging (Duerden, 2007:73).

That synchresis is an intermodal phenomenon means it works within relationship structures. The diverse ways that visual material and sonic material can interact means there is opportunity for a myriad of possible outcomes. In creating these works I am investigating how synchresis can allow the composer to cross between and interlink sound and vision, and how a consciousness of synchresis can afford a means to maximise the synergy between the two art forms.

I am interested, too, in discovering a continuity between the elements of synchresis discussed in my introduction. With the binding points in mind, the following section will proceed to investigate common outcomes in the works.

Unifying points between the works

Materializing sound indices (MSI) and visualized sounds

MSI and visualized sound brings Foley and sound effect elements together with music. In realizing MSI elements in my works specific planning was necessary to coordinate the binding of media. In the case of *Pretty Feet* I had to organize the dancers to match the pre-composed music and design specific locations in which a musical element became a *materialized* sound. The crotale that accompanies Sacha's finger touching the water (3.03) enhances and physicalizes her interaction with the environment, albeit in a fairytale-like manner as she makes visual the pre-composed sound by superimposing a definite action to it.

In *Salome's Dance* I had to compose the music for the already established visual material. The digitally effected sound of a piano lid being lifted and closed is materialized by the vision of the guards lining up (1.10): in this case the sound adds weight to the movements of their feet and weapons. That the placement of the sound is panned to the left, corresponding to the guard's location onscreen, additionally enhances the MSI impact by correlating more specifically to the perceived location of the visual action onscreen.

That the footsteps of the guards entering the frame in the opening sequence (0.35-0.53) is neither sonically accurate, sounding more like reverb 'drenched' fabric being shaken, nor in perfect synchronicity, reflects our deep-seated habit of binding a visual gesture to a corresponding audio element. That the same rustling sound is used in the following shot, to materialize the motion of large-feathered fans, shows how flexibly sound can transition between different visual elements and highlights the perceptual imperative to bind sounds to visual gesture (and vice versa) no matter how inaccurate the sound actually is.

Environments

All three pieces use environmental sound, if not of real-life recordings then at least sonic simulations of environments, that represent or amplify source-bonding connections to render an enhanced sense of location and *immersive space*.[31] *Pretty Feet* begins with the sounds of the natural environment and real location within the cable car depicted. The recognizable sound of the railway-tracks is audible, as are the mingling voices of people chatting and the real ambiences and reverberant acoustics of the location viewed. These diegetic sounds *add value* to the normality of the depicted space. The entry of the orchestra instigates a dimension shift from the 'real world' to a 'parallel reality'; this change is supported by the change of visual environment as the dancers leap into it. The bold entry of the orchestra is significant in accentuating the sustained change of dimension that the music reflects in the piece.

Salome's Dance does not use any 'real' natural environmental sounds yet renders a sense of environment through digital effects and processed reverberations. These superimposed sounds connote a space for the continuation of filmic narrative, while adding grandeur to the story by the implied largeness of scale through reverberation.

Kannabi begins by enveloping the listener in a sonic world filled with an intricate tapestry of mysterious textural sounds made up of juxtaposing territories, electronic sound-worlds and taonga puoro, devised to connote both familiar and unfamiliar locations. These sonic locations include field recordings of the New Zealand bush and a creek, a corporeally suggestive heartbeat, as well as various abstract electronic sounds. The real-life recordings in *Kannabi* are of the circumspace of the Otari Bush Reserve's dawn chorus. The Rode NT-6 condenser microphones were positioned in an *ORTF near-coincident pairing* and diverse spatial fields were captured within the stereo image of a distinctively

[31] *Immersive space* (Smalley, 2007:51) is the filling of spectral and *perspectival space* in *circumspace* so that the listener feels immersed in the image.

New Zealand bush environment.[32] Filling the acousmatic section of *Kannabi* is also a *pianissimo possibile molto sul ponticello* bowed double bass, combined with a pre-sampled bowed piano that together create an unstable and fragile atmosphere, and a consonant drone similar to an Indian *shruti box* or *tambura.*[33] Additionally, layers of unstable electrical atmospheres, such as buzzes, hums and miniscule *glitches*, created in a randomized sound-generator within *Reaktor* software, as well the bird-like cuckoo of a *poiawhiowhio,* also contribute to the textural-environmental quality of this section by their acousmatic qualities.[34,35,36] The distinctively Japanese visual location, within a sonic world source-bonded with uniquely New Zealand sounds remains nevertheless an abstract force within this intermedia work. That tuis and kereru are seemingly planted in a distinctively Japanese landscape would probably raise eyebrows amongst ornithologists; however, it once again reveals sound's flexibility in its capacity to infiltrate and adapt itself to visual material.

Intermodality

Definitive *intermodal* points shape perception in each of the three works. Especially noticeable are the changes caused when different media react to each other, creating a sense of *causal* alteration that is evident in all three works. At the beginning of *Pretty Feet* (0.20) the entry of the orchestra severs the territory sound of the tram and causes the dancers to jump into a forested location: in

[32] The ORTF stereo microphone method is a microphone technique used to record stereo sound. It was devised around 1960 at the Office de Radiodifussion Television Francaise in France. The ORTF near-coincident pairing is also known as close coincident pairing has microphones spaced at 17cm and 110degree angle to create an extremely accurate stereo image in addition to good localization of sources. (Bartlett and Bartlett, 2002:129)

[33] *Tambura* and *shruti box* are drone instruments used in traditional Indian music. The tambura is a string instrument with a long neck and the shruti box is traditionally a wooden box that works with a system of bellows.

[34] *Reaktor* is a modular software music studio designed by Native Instruments. It can be used to design and build virtual instruments, samplers and effects and sound design tools (Scott, 2005).

[35] A *glitch* is a short-lived fault in a system associated with computing and electronics. Tim Exile, who has created numerous virtual instruments within Reaktor has designed excellent platforms that use *glitching* to musical effect such as in his '*the finger*' live performance remix effect. ("Native Instruments The Finger," n.d.)

[36] *Poiawhiowhio* is a taonga puoro that was traditionally used by Maori to lure the kereru for hunting. The Poiawhiowhio is played by spinning a gourd on a piece of flax-string to create a soft breathy oscillating high-pitched note that quickly forms and then deforms as air passes the blow-hole of the gourd.

this case musical gesture is a prompter and participant in the change from a world of normality to a magical world, and thus interacts directly with the reality witnessed onscreen.

In *Kannabi* the sudden appearance of Shala in red shrouds (0.42) emphasizes the entry of the musical theme by the sitar and guitar, supporting their associating the musical focus with 'searching'. The combination of Shala's poignant gestures and the long spaces between melody notes aids in intensifying the impact of the aperiodic timing. The combination of unpredictability in temporal space combined with the angularity of pitch and timbre, seems not to allow the listener to 'relax into' the music but directs attention to the angularity of the visual material. That Shala's dance begins in mid-motion hauntingly implies that she has 'always been there' while the contrast between Shala's sudden energetic and colourfully bright appearance with the previous shots enhances the tension prevalent in the visual material.

The bizarrely attired executioner in *Salome's Dance* (4.25) is scored for a *flutter-tongued* flute and coincides with a sudden reduction of other sonic material. That multiple layers of sound are reduced to a single, intensely focussed spectromorphological gesture, gives poignancy to the appearance of the executioner and functions to highlight his significance in the narrative. The adding of digital effects helps extend the flute's sonic gesture into the perceived location as the dissipation and sonic transition of the flute's recognizable sound-source into a non-defined environmental sound exemplifies a blurring between gestural and textural dimensions. That the sound defining the executioner merges with the environment represents his ongoing and ominous non-diegetic presence in the scene, and also exemplifies how the liminal zone between gesture and texture can be effectively applied sonically.

Resynthesizing **of sounds and Smalley's ideas of surrogacy**

Transformation of instrumental sounds, both by applying extended performance techniques and/or using digital enhancement in post-production, bring into play Smalley's (1997) concepts of *gestural surrogacy.* The morning chorus used in *Kannabi* is a *first-order surrogacy* as it is not designed for musical use but represents an environmental texture-field within a musical context. The sounds of the birds add a sense of 'time location' to the scene that represents the morning, as well as geographical location information. Thus sound is used to provide a 'real' sense of space through a first-order gestural surrogacy.

The aforementioned *flutter-tongue* flute that accompanies the appearance of the executioner in *Salome* is very much a *second-order surrogacy* as it transforms and masks the natural spectromorphology of the performed musical gesture. That the digital effects bind the sound into the 'psychological wallpaper' of the image exemplifies how the traversing of the liminal space between sonic-gesture into sonic-texture can be usefully applied as a tool of synchresis.

Third-order surrogacy, the complete disguising of sound-sources, is employed in *Salome's Dance* with the thunderous sound that accompanies Salome's backward arching (2.57-3.08). This 'thunder' was originally a bowed violin played at the *frog* with a lot of pressure, rendered unrecognizable through digital filters and being slowed on tape to a lower and stretched pitch. The dark sound of thunder intensifies a sense of doom to Salome's presence in the arena space by evoking a sense of monumentality as implied in nature's forces dwarfing the human scale; the implied scale of thunder is also metaphorical of the power that Salome is about to embody in the unleashing of her spell upon Herod.

Remote surrogacy, that removes all human action from behind the sound-source, is used in *Kannabi's* acousmatic introduction in the use of 'pure chance' sonic

filters that work within sonic parameters within *Kontakt's* software processors.[38]

Drone

Musical drones create a sense of 'ground' and provide a consistent reference point that is often found in textural and environmental sounds. A drone is a stable fixture that other musical elements, as well as visual elements, can be anchored to. The acousmatic elements in *Kannabi* create what Smalley describes as a *generalized ground* analogous to the sound of a river (in which numerous sonic 'particles' combine to create an unpitched consistency). Together with the pitched drone elements of double bass and bowed piano the composition has a coherent tonal reference point that is a cornerstone of the sitar's modal tradition. Drone elements also occur in *Salome's Dance*, such as the deep textural drone at (0.57) when the fanning sound stops and a constant pitch replaces them. In this case the drone functions to set up a sense of suspense in the visual drama, because it defines a clear change of sonic trajectory in the musical design thus far, and creates a new anchor point in the sonic field. In *Pretty Feet* the musical drone underneath the poetry recitation adds a sense that the dancers are 'floating in a bubble' above the drone as the playful and changeable musical logic that has been established before this point in the composition 'stagnates'. Matching this anchoring of musical movement (through drone) the dancers perform gestures from spatially fixed points instead of moving freely. I will also discuss *Pretty Feet's* drone in more detail in the chapter dedicated to this work.

Internal sounds

Internal sound is sound that has a diegetic aspect corresponding to the mental interior of a character (for example, heartbeats or voices imagined or

[38] *Kontakt* is a computer plug-in that supports and hosts various sonic software, and interfaces either as a stand-alone tool or within a designated recording program (Das, 2005).

recollected by a character). Internal sounds are present in *Salome's Dance* in the superimposition of a scraping unpitched bowed violin, synchronised to Herod's wheezing gestures while he ogles Salome. This internal sound physicalizes and enhances the sense of Herod's sleaziness during this scene. *Internal sounds* are also present in the upwardly rippling harmonic overtone series that poignantly scores the first close-up of Phasaelis (0.59-1.01), identifying and making explicit her horror at the sight of Salome. The rising trajectory of the sonic material brings attention to the upper part of the screen *adding value* to Phasaelis's bubbled headpiece, while also demonstrating how sound can highlight visual locations onscreen. The sounds of the pumping mechanism of the human heart used in *Kannabi* (0.08-0.40, 8.02-8.26) identify a corporeal zone amidst the acousmatic and non-human territory sounds of this section, thus physicalizing the scene through sound.

Spatiality

All three works share the common theme of moving from an initial location to a secondary, and sometimes a tertiary location. Smalley describes the *autocentric space* as the "me" space, and *allocentric space* as that of the outside world stretching in all directions outwards from the autocentric space.[39,40] As the figures in *Salome's Dance's* introductory sequence (0.35-0.53) move towards the highlighted centre of the frame, from the vignetted periphery, they move towards the *enacted space,* directing attention to where the drama will play out. Scoring this scene is simply the sonic representation of the figure's footsteps, amidst a bare and barren sound world, making their entry the focal point of the scene. *Pretty Feet* begins and ends in the *agential space* of the Wellington Cable Car with the associated sounds that exist in that *territory space.*[41] The everydayness of this space is emphasized by the accompaniment of the field-recorded sounds of the vehicle, and the cable car's motion is evident in the

[39] *Allocentric space* is that of the outside world that expands out in all directions from the autocentric space.
[40] *Autocentricity* (Smalley, 1996:80) focuses on subject-centred responses of pleasure or displeasure that compares to a child's first relationships with the world.
[41] *Agential spaces* (Smalley, 2007) are where sounds of human interaction with an environment or things within an environment occur (such as opening a bag of crisps).

miniscule *iterative* movements of the camera, created by the movement of the cable car, focussing on discreet details of the seated dancers. Thus the naturalness of this scene is enhanced by sonic and visual details making more dramatic the change from 'normal' to the 'unworldly' dimension that the two dancers enter when the dance and music begins.[42]

Sonically, *Kannabi* travels from aperiodic and diverse *acousmatic territorie*s, which audibly depict *allocentric spaces,* to markedly human rhythms (performed by the dancers), before returning to allocentricity for the aperiodic resolution of the piece. Visually, the piece travels from a focus on objects and structures and a dancer shrouded in mystery, to a focus on her corporeal space as she moves dynamically to the percussion, before returning to a focus on static objects. This audiovisual journey mirrors travelling from an exterior world toward an interior world, analogous of journeying from the physical world to the spirit world.

Spinning

> *"When I am spinning I feel a deep passion for the spirit, I really want to see them but I cannot! I am looking for them!" (Ueda, 2012)*

All three pieces develop toward spiralling movements during their climax, and in all cases the spinning functions to direct and compress the audience's visual attention to a narrowed focus on the dancer's body movements. That these climax points rely on a converging of energetic intensity from both the musicians and dancer creates a solid point of synchresis as the viewer's attention becomes drawn to the gestural field of *autocentric space.* Spinning, with its upward and outward momentum around a central point, creates a heightened sense of energy and a sense of rising. There is in the gesture of spinning an embracing of life and a refutation of ideas associated with earthly gravitational limitation and falling. Indeed, negative phrases such as 'I feel

[42] *Iterative (gesture)* is the rapid repetition of small movements to create a whole movement (Godøy, 2009).

flattened' and 'he sank into himself', or positive expressions, such as 'she's soaring' and 'I'm on top of it' reflect our human relationship to the forces of gravity (Larson, 2012). Salome's dervish whirl that ends the film clip (5.59-6.26) is metaphoric of her seductive power, and the musical accompaniment reflects this by an increasingly intense conglomeration of prolonged sounds. In *Kannabi* Shala's spinning embodies the climax of her search for the spirit world, and the necessary madness required in letting go of rational cognition to move beyond human limitations. Musically this climax is accompanied by a single repeated note on the sitar and a crescendo in the percussion, violin and cello. The decay of the musical climax accompanies Shala's descent to the ground as acousmatic sonic textures and dissonant *iterative* violin and cello gestures signal her exhaustion. A sense of resolution is depicted in her resting body as the main theme returns. The final crescendo of *Pretty Feet* depicts rapid cuts between the two dancers as they spiral and, despite the different locations and irregular alternation between the dancers, an audiovisual coherency is maintained through the spinning movement. The dancers are viewed within their *egocentric spaces,* and the relationship between them is communicated through their facial expressions and near out-of-control motions. As the dance becomes more outward and expressive, and the dancers more closely entwined, they merge into a single shared gesture as the orchestra comes together with multiple layers of instruments playing polyrhythmically and in crescendo and rising register. This is the 'marrying point' of the piece where all elements come together as one in a 'frenzy' of synchresis.

Colours and fabrics

The fabrics used by *Salome* play strongly with ideas of sensuality and have been musically scored to bring out their shiny glittering details, and the sense of mystery and seduction that she evokes through them. During the close-up detailed filming of *Pretty Feet* the fabrics visually amplify the fragile unstable qualities of the otherwise static drone. During their dance around the Bucket Fountain the breeze, flowing through the garments, binds with the nostalgic

musical qualities and highlights the gracefulness of the dancers' movements. The use of black fabric in *Kannabi* reflects Shala's feeling of the piece being a 'requiem' where she travels 'through the earth to search [for] friends, [her] family spirit'. Black is a colour that very often represents death, destruction and mourning in many cultures and is often worn at funerals for this reason. Her changing of the colourful shroud during the dance to black represents a deepening immersion into the spirit world at that point, while the sudden lessening of colour diminishes her *egocentric space,* as if hiding her personality. At another level, the silkiness of Shala's fabrics also evoke sensual physicality and the corporeal relationships of sliding and stealthy smoothness as the texture of these fabrics links with the clear and smooth tone of the taongo pūoro and the long decaying notes of the sitar and guitar.

Summarizing the linkings between works

Having discussed the links between the works the next section will proceed to discuss each individually focussing on discrete details pertinent to synchresis.

Work I: Pretty Feet

Goal points and the inspiration of Maya Deren

Pretty Feet was choreographed around *goal points* in the music that aided planning and structuring the film shoot.[43] Specific gestural roles, based on balancing, were choreographed for the two dancers: Sacha, in the grey dress, was given weaving actions while crouching on one leg; and Emma, in the red dress, was to stretch aspiringly upwards while seemingly tottering on her toes. During the choreographing process the dancers and I debated as to whether we wanted to create a narrative, or a more abstract representation of the music. As I sensed, the dancers were reluctant to be confined within a narrative structure, but because I wished to tie the musical scenery together coherently through vision, we devised conceptual elements, based on *goal points* in the music. This would enable us to create logical connections between scenes. These goal points aided greatly in the planning for the shoot, and in making sense of such bold location changes, as when the forest cuts to Wellington's Bucket Fountain in Cuba Mall (2.11), and during the rapidly cut sequence that alternates between dancers and locations in the spinning climax of the composition (5.56-6.04). Thus *Pretty Feet* was created through changing perspectives and environments, using gestural signals as unifying points, to create continuity between locations. This idea was inspired by Maya Deren's 1945 *A Study in Choreography for the Camera,* which she described as "an effort to isolate and celebrate the principle of the power of movement" (Kay and Peary, 1977). By focusing on the continuity of physical movement through abrupt edits, and changes of location, Deren's solo dancer, Talley Beatty, defies abstract filmic cuts as the gravity of his physical gesture centres the frame.

[43] *Goal points* (Godøy, 2009) are structural goals in linear time similar to thumbnails in video data retrieval. Goal points aid the planning of large passages of sound and gesture

The recitation of *Endymion*

Pretty Feet features the recitation of the first stanza of John Keats' *Endymion* (1818), recited by Miranda Harcourt.

> A thing of beauty is a joy for ever:
> Its loveliness increases; it will never
> Pass into nothingness;
> but still will keep
> A bower quiet for us, and a sleep
> Full of sweet dreams, and health, and quiet breathing.
> Therefore, on every morrow, are we wreathing
> A flowery band to bind us to the earth,
> Spite of despondence, of the inhuman dearth
> Of noble natures, of the gloomy days,
> Of all the unhealthy and o'er-darkened ways
> Made for our searching: yes, in spite of all,
> Some shape of beauty moves away the pall
> From our dark spirits. Such the sun, the moon,
> Trees old and young, sprouting a shady boon
> For simple sheep; and such are daffodils
> With the green world they live in; and clear rills
> That for themselves a cooling covert make
> 'Gainst the hot season; the mid forest brake,
> Rich with a sprinkling of fair musk-rose blooms:
> And such too is the grandeur of the dooms
> We have imagined for the mighty dead;
> All lovely tales that we have heard or read:
> An endless fountain of immortal drink,
> Pouring unto us from the heaven's brink.

This recitation supports the underlying *kaupapa* of the work during the drone section of the musical narrative. It is reduced from a romantic, and large, bold orchestral theme to a pianissimo drone between strings and vibraphone. The poetry itself deals with the 'essence' of beauty; it could be interpreted that reaching beauty's core affords man an opportunity to share in eternal, magical

and unearthly realms (Miller, 1965:40).[44] Visually this theme is portrayed using balancing gestures, and reaching aspiringly upwards. The dancers suggest childishness and naivety, which enhances their purity amidst the human struggle presented in the poetry's use of words like 'dearth', 'pall, 'gloomy days', 'despondence'. Indeed this tottering balancing reflects the idea of a 'flowery band… bind[ing] us to the earth' mirroring the fragility of our connection to beauty. As the final statement of the verse speaks of the importance that hope affords us, exemplified in the retelling of inspiring legends, the orchestra sustains a new harmonic tension. The stone plucked from the water is passed as a gift between the dancers, before the music proceeds exultantly. The release of harmonic tension, together with a changed visual location, and set of outwardly orientated gestures, pushes the music into the next section of the film. The propulsive energy of the rhythmically driving piano and horn melody has the *intermodal* effect of releasing the hovering and abstract dance gestures of the *Endymion* section. It *causes* the dancers to run and use heightened energetic and interactive motions together, while their playfulness is enhanced and freer physical gestures are expressed.

The forest sequence

As the full tutti entry of the orchestra decays, the dancers appear bewildered and lost in a forest while bowed strings and woodwinds extend the orchestra's initial sonic impulse. The dancers' apparent confusion is sustained as the clustered chord portrays an internal state of perplexed wonderment. As the dancers slowly rise up from crouching, narrow aleatoric patterns of multilayered microtonal pitches aid the visual depiction of suspense. The entry of the piano releases the dancers from their disoriented, suspended state, and spurs them into frolicking childish action. Their game of hide-and-seek is accompanied by a simple Eb major triad, that *adds value* to their playful

[44] 'A thing of beauty is a joy forever because it contains in itself the "leaven" or "essence" which makes it lovely, some part of the supernatural life, and affords to man an opportunity through intense union to share in that life. In addition to unification with beautiful natural objects the lines suggest a slightly higher form of communion- the imaginative creation of myths and legends, presumably heuristic.' (Miller, 1965)

interactions, while the continuous semiquavers of the piano's right hand are intruded upon, between long pauses, by the left hand's playful and unpredictable articulations. From here the scene unfolds around the piano's evolving chordal harmony, based on timings corresponding to the Fibonacci sequence (1,1,2,3,5,8,13…) (Howat, 1986) which assists in subtly depicting a sense of nature when dealing with sound (such as the quantities of repetitions in the right-hand's ostinato).[45]

As the scene develops the piano is accompanied by more frequent pointillistic gestures from the orchestra that are carefully panned to the *circumspace* of the orchestral pit's *ensemble space*. The orchestration begins minimally but steadily expands throughout the forest scene. Exploring the idea of ambiguity and surprise the dancers can be seen amongst the trees, leaping and hiding. As the complexity of the orchestration develops, so to do the sync points between sound gesture and visual gesture, such as at 1.42 when the tenor drum roll is released by *spiccato* strings and is synced to the leftward leap of Sacha, and also at 1.22 as the minor 6th interval, between the violins and flutes, sustains until the piano cuts them of with a sforzando staccato cluster. As this discussion shows, the visual edits during the forest scene are informed by implied *sonic motions* reflected in the cuts that frequently snap to the musical gesture.[46] At 2.06, a changed dancing intent, towards intrigue, is synchronized to the piano's swift downward descent. This is accompanied by percussion and forte low-pitched instruments, as the dancers leave their playful game to focus upward at a mysterious object above.

Empathetic relationship between sound and vision

The relationship between the visual and sonic information in *Pretty Feet* is *empathetic* and the mood and rhythm between media is consonant. The dancers

[45] The Fibonacci sequence is also known as the 'golden ratio', the 'divine section' and the 'golden mean'. Its mathematical value is $\phi = \frac{1+\sqrt{5}}{2} = 1.6180339887\ldots$

[46] *Sonic motion* can suggest real or imagined motions of shapes in free space.

playing in the forest (0.35-1.52) match the playfulness of the accompanying music, with its miniature sonic surprises and twists. During the static poetry section the dancers are confined to limited *behavioural spaces* mirroring the flat pianissimo dynamic of the music. The visual focus of the poetry is directed to more abstract, less emotionally explicit details, such as the fabric moving in the wind, or the subtle movements of hands. As the *Endymion* section resolves (4.54) and transitions to the following rhythmically propulsive section, so too are the dancers released from their confined set of gestures into expressive and expansive gestural activity. As the dancers move around the marble monument the melodic line, orchestrated boldly, is matched by the dauntless and resolute movements of the dancers as they express themselves through a more formal set of dance expressions. Thus *empathy* between what is happening sonically and visually is continuously present in *Pretty Feet*.

The power of a drone and elements of auditory setting

The *Endymion* section of *Pretty Feet* (3.03 to 4.40) reduces the orchestration to a continuous static drone between the vibraphone and bowed strings as a sustained musical gesture creates a ground beneath the recitation. The stationary musical atmosphere contrasts with the rest of the musical content of the work, and enhances the sense that the dancers are hovering in a form of limbo. The camera focuses on fabrics and the abstract elements of glass reflections as they stretch and totter in fixed positions. Through this section the drone aids in unifying the disparate locations depicted, of the natural lit greenery, and the artificially lit subway-station viewed through partially reflective windows. Thus disjointed environments are coaxed together by the use of drone pervading the scene.

As the tree comes into frame (4.00) an environmental sound of a flowing river enters with its generalized sound functioning to release the tension built during the prolonged pause. The added sound of the river pushes the visual and musical momentum forward and signals a push in the sonic trajectory as the

dancers are released from their inertia to move more rapidly as they return to a state of innocence while they explore the tree. This sound of a running river, added in post-production as an *element of auditory setting (E.A.S.),* makes coherent the upcoming shot of the 'gift-stone' in the water, and thus without this E.A.S. the following river shot and passing of the gift-stone would be incongruent to the filmic narrative.[47] Thus E.A.S. in this case releases the tension from the scene by 'freeing' the dancers from their previous confined gestures, while also supporting causal understanding and sonic congruence of the location depicted.[49]

Flash mobs and contrasts

Transitioning from the forest scene, the scene of the Cuba Street Bucket Fountain begins (2.10-2.50) with the dancers' arms reaching upward while sustained clarinets and strings hold a harmonic suspension, blurring and homogenizing the location change, and making it fluid. As the music swells at the cadence and releases to a major sonority, the dancers begin to dance more formally, while the orchestration becomes warmer with a cello-led melody. Whimsical and romantic, it supports the visual focus on the dancers' movements, which possess added openness as their breeze-blown dresses support a feeling of freedom. That the dancers were previously alone in the woods, with playful unpredictable music, and are now on public display, dancing to emotionally driven music, is part of the driving concept of this work. There is a tension between the openness of the dancers and the baffled expressions of the passers-by, who do not know how to react to the unconventional behavior of Sacha and Emma. Different parts of our human experience are evoked, and there is a sense of challenge to the 'normal order of things' *encoded* in *Pretty Feet* that ties to the *kaupapa* of Keats's poetry. Supporting this challenge to the status quo is the sense that the Cuba Mall and the subway tunnel scenes (3.26-3.56), that integrate the performed space with

[47] *Elements of auditory setting (E.A.S.)* are localized sounds that "flesh out" a scene's setting.
[49] *Causal listening:* listening for the purpose of gaining information about the sound's source.

the *arena* and *agential spaces*, are reminiscent of mini *flash mobs.*[51],[52] A resistance to 'tall-poppy' societal limitations is needed to access the essence of beauty as explored by Keats. This also ties in with *Kannabi*'s themes, whereby a type of 'madness' is required to commune with the spirit-world.

[51] *Flash mob:* A phenomenon of the recent ten years that involves the sudden assembly of a group of people who give a coordinated performance in a public space. These performances normally last only a brief time.
[52] *Arena space:* according to Smalley (2007) the arena space is a sub-category of performed space. It is the whole public space inhabited by both the performers and listeners.

Work II: Salome's Dance

Compositional methods and preliminary thoughts

I purposely avoided using tonal and melodic materials when scoring *Salome's Dance* as I wished to depict the visual footage independently of standard instrumental content. I began by creating a sample library of non-pitch-based instrumental techniques performed on violin, cello, viola, flute, guitar and piano, all played unorthodoxly and often *pianissimo,* using close-microphoning to capture as much definition as possible from the seemingly uncontrollable and frequently fragile sounds. The instrumental techniques I used included various methods of *col legno batutto* and *tratto*, *flautando* across the bridge, completely dampened strings, and instrument-body, levering the piano pedals slowly so they squeaked and hummed, scraping along the serrated lower-strings of the guitar at various speeds, and *flutter-tonguing* through the pipe of the flute (not the mouth-piece).

In moving away from the standard palette of musical sounds my initial scoring endeavours were surprisingly challenging and my efforts seemed to merely superficially depict the visual material without rendering it alive. The dry recorded sounds I was using refused to embed themselves in the visual field and a resultant sense of *mickey mousing*, to the detriment of the seriousness of the work, was difficult to avoid. I felt that the sound accompaniment was distracting from the visual material, rather than enhancing it, by amplifying a sense of absurd ghostly pantomime.[55] The sounds seemed unwilling to enter the world of the movie, and despite numerous efforts remained on the surface without *adding value* to the work. It became clear to me that nothing in the real world is unaffected by an acoustical environment, and that the dryness of my sound-set felt foreign primarily because it lacked natural resonance and decay. It was during this struggle that I began experimenting with a palette of digital tools to

[55] 'Mickey mousing' is a term used to describe music that caricatures the visual information of a cartoon. It indicates a 'non-serious music' musical accompaniment to moving image following the visual material without adding other attributes or *audiovisual counterpoint.*

extend my set of resources and explore how the sounds I was using could better implant themselves into the visual footage. I felt that the application of these digital transformations and enhancements, which included reverbs and delays, the slowing down and repitching of musical gestures, stretching of attacks and decay envelopes, and extreme equalization, *added value* to the visual material. The brittle sounds of my sample library became malleable sounds that extended into visual gestures onscreen; thus digital rendering of my acoustic sound-set hugely improved the creative scope for successful *source bonding* between media. Perhaps this is because the real-world provenance of the original sounds was made less dominant, and therefore more malleable in terms of identity, and thus more readily bonded to the visual elements. The overall aim of the work quickly became to make the sonic information as difficult to recognize as possible to divert the listener, especially the *technological listener,* from sound-source recognition: thus my compositional goal became that of focussing listeners' attention toward the media interaction *within* the work.[56]

Opening sequence

The footage begins with a shot of the poster (used to promote the movie in 1923) that is slowly panned from top to bottom with the title credits. This opening sequence is sonically accompanied by numerous layers of sound that introduce the sound palette of the composition, including a non-pitched tremolo bowed violin, extremely high-pitch violins bowing dissonant minor 2nds, echoes of the lid of a piano being dropped, the digitally slowed sound of a coffee-machine's steamer that became transmuted into a breathy/airy quality, and sampled voices through digital filters. A feature of this section is the dramatic entry of the choir, synchronized to the appearance of the film title musically accentuating the 'holiness' of the story through a Gregorian chant-like chordal harmony that contrasts with the acousmatic sonic-field preceding it. The diverse layers of sounds are then slowly thinned to a single layer of tremolo violin as the screen fades to black before the movie reel begins to roll 'proper'.

[56] *Technological listening* (Smalley, 1997:109): when the listener perceives, or is distracted by their knowledge, of the technology used to create music.

Media intrusions through damaged film-stock

A unique aspect of *Salome's Dance* is the role damaged analogue film-stock plays, with its visual *glitches* and defects that bring attention to the transmitting-media itself (Fogelsanger, 1998). These deteriorations of media emphasize the role time has played in the film and can be considered semantically analogous to the story of human history and the passage of time itself. Thus, for semantic as well as visual reasons, film-stock anomalies are features of the score. That the actual footage begins rolling, after the title sequence, with a distinctly damaged film, that obscures the figures entering the *performed space*, is representative of the glitch in history that is about to occur in the narrative, and is scored with harsh *white noise.*[57] The transition from the slow opening sequence, that has relaxed into blackness, into the abrupt juxtaposing flash of white visual distortion combined with jagged sound, means attention is 'magnetized', in Chion's terminology, to the film-stock defects to come.[58]

Reverb and blackness

The long reverbs used in the scoring of *Salome's Dance* reflect the importance of time in the narrative. It is as if the viewer is looking through a long tunnel, back to the time-period of the story. Not only are the footage, and the people who acted in the movie lost to time, but the life and story of King Herod further extends two millennium, to a bygone era in a far away place. This conceptual 'distance' from the here and now is what enables reverb to sit so well with the moving images, in contrast to dry close-proximity sounds that I was initially composing without success. Viewed without sound, the movie has the quality of a surreal pantomime, but dark ominous qualities underlying the story's premise

[57] *White noise* is noise containing many frequencies with equal intensities

[58] *Magnetization (spatial)*: the psychological process of locating a sound's source in the space of the image. Using the general point of the sounds origin in the viewing space, the viewer/listener mentally 'places' the sound, for example a voice to the left off the screen in tandem with visual indications seems to emanate from on the left of the screen even though the sound might really emanate from a speaker behind the center of the screen. (Chion, 1994)

are now supported by the long decaying envelope of sounds embedded in the score. The reverb reflects the vignetted movie frame that constantly surrounds the vision onscreen, combining with and *adding value* to the blackness. Thematically the black frame extends outward to eternity. The illuminated film-set becomes an allegorical island afloat in eternity's dark space.

En creux and the band in the wings

Herod's court-band of dwarves and midgets was difficult to score because the *iterative* diegetic actions of *sound facilitating* and *sound accompanying gestures* connoted that a great deal of banging and crashing should extend throughout this scene. As the band's ruckus would have smothered the detailed sonic depictions I was seeking, the idea of *negative sound*, or Chion's (1994) *en creux,* was useful in bringing the band into the diegetic without compromising other sonic minutiae.[60] *Negative sound* metaphorically describes the indentations, or spaces, created by a chisel in the sculptor's block: through intensified reverbs, echoes and heavy equalization-automations, that submerged or swamped the implied percussive sounds of Herod's court-band, I was able to smudge them into the broader diegetic environment using what Chion (1994) describes as an "*in-the-wings-effect".* Thus, technically, the *performance space* of the band was morphed into the depicted *arena space* allowing the impression that they remained in the scene without dominating a sonic depiction of other visual elements.[61]

Rendering John the Baptist

The shot of John the Baptist reaching up with his arms and crying out (5.39) was *rendered* with a focus on his associated divinity and biblical significance, rather

[60] *Negative sound* is also known as "phantom sound" and is metaphoric of the spaces created by a chisel in the sculptor's block. Chion (1994) uses the French term "en creux", which translates as "negative space".
[61] *In-the-wings effect* (Chion, 1994): this is used in cinema where the sound lingers in lateral speakers after the exit of a character from the screen, or pre-empts the characters appearance onscreen.

than on his fury. Thus, a media dissonance of tonal harmony *adds value* through depicting the conflict between John's 'godliness', juxtaposed against the slovenly *encoded messages* of Herod's parlour. While the scene musically depicts John's purity, it negatively treats the visual statement of his righteous yelling *anempathetically* as mute. This sonic disregarding of John enhances both the film's original 'strangled' silent quality, and emphasizes the desperation of John's predicament in a manner reminiscent of the commonly experienced nightmare of not being able to scream.[62]

[62] *Anempathetic sound* (Chion, 1994) is sound that seems to exhibit indifference to what is going on in the film's plot.

Work III: Kannabi

Mugen Nō and the kaupapa of Kannabi

Shala (Ueda, 2012) considers *Kannabi* to be a requiem for the people who lost their lives in the Japanese and Christchurch earthquakes of 2011, and her dance is dedicated to the 'spirits' of those people. *Nō* is a traditional Japanese performance that often deals with the supernatural world and spirits (Takahashi, 2010; Zeami, 2006). Although the movement vocabulary used by Shala in her dance mostly references non-Japanese traditions, such as belly dance, the inner spirit and intent of the choreography for *Kannabi* primarily references *nō*. For Shala *nō* represents an opportunity to search for deceased spirits, and she portrays this search as 'almost like going insane'. She believes that the frenzied state that *nō* produces is a chance to eventually reach acceptance of a traumatic separation.

An important characteristic of *nō* is its relationship to the *jo-ha-kyu* form that is common feature of many Japanese traditional arts, including the traditional tea ceremony and gagaku court music, as well as martial arts such as Kendō (Shirane, 2007). The classic pacing of *jo-ha-kyu* goes through a sequence of "beginning, break, rapid", which essentially means "slowly, speed up, end swiftly". We can see the *diachronic flow* of *jo-ha-kyu* in *Kannabi,* which *begins* with atmospheric sound textures, combined with long shots of candles and static dance postures. The music gradually *speeds up* sonically and rhythmically upon the sitar's melodic line, while Shala's dance movements evolve into more overt, bolder gestures and the film-cuts quicken. The rhythmic power reaches its summit and the expressive dance movements reach a climax, both *ending swiftly* as Shala falls to the ground, as if cocooned or dead, while the long shots of the candles re-enter together. In this final episode of the piece the percussion also "dies", and is replaced by the rhythmically free sitar improvisation, accompanied by the textural sounds of the violin and cello, before returning to the pre-composed theme.

Choreographing *Kannabi* and the collaborative process

An important aspect of The Firefly Collaboration Project was finding and binding unifying threads between diverse cultures. This intent to work consonantly is reflected in the choreography. Despite numerous Skype conversations it was not until the five days of rehearsals in New Zealand that the works could be properly choreographed as Shala's approach is very intuitive and connected to 'energies' (Ueda, 2012). Although she posseses a quiet and neutral energy, Shala's presence and exploration of physical ideas stimulated a sense of coherence and magic during rehearsals and enhanced the creative process for the entire ensemble involved in the project. During rehearsals she would explore various gestures and costumes to understand how she could embody the music and the *encoded messages therein (Ueda, 2012)*.[64] Shala's technique of 'feeling' into a work to find its 'essence' is similar to Israeli choreographer and musician, Hofesh Shechter's approach (Throsby, 2010): Shechter allows his dancers to initially explore relationships and themes without the intrusion of verbal concepts as he believes that working directly with the "energies and qualities" of a work are of utmost importance (Engler and Guillore, 2012).

The improvisational process, as heard in the final recorded rendition of the work, was not notated or pre-planned. The improvisation, centred primarily between the sitar and percussion, is based on a simple succession of notes that incrementally escalate in intensity to support the ever-increasing physically outward motion of the dance. The forward-motion of the improvisation-section is musically led by the increasing rhythmic complexity and dynamic of the percussion which is performed on South Indian kanjeera, Persian zarb, Korean buk drum, and Tibetan singing bowls (suzu gongs). This method of generating excitement and energy is derived from the South Indian Carnatic musical tradition, which is a major part of Tunji Beier's background.

[64] The way that Hofesh Shechter describes his developmental phase is similar to this (Throsby, 2010)

A loosely coordinated synchresis

Kannabi seldom deals with *analogical motion* whereby *gestures* in one media cause an event to occur in the other: it is not a work where the dancer stamps her feet and the musicians play a gong. Instead, *Kannabi* works with discreet and subtle synchretic elements that occur over blurred transition periods. Although a reactive relationship does not exist, sound and vision still engage intimately in the same realm together and *Kannabi* makes a useful case study of synchresis at more abstract levels. While this *loose coordination* between media may seem reminiscent of the *Cage and Cunningham* model, whereby the dance does not react to specific gestures within the music but instead underlays a rhythmic and narrative consistency of its own (*Chance Conversations*, 2009), the media in *Kannabi* very much *co-inhabits* the same space and *mutual implication* is shared. The narrative formula of *Kannabi*, based on mugen *nō* theatre, assists in binding media together and supports joint migrations from one section to the next.

The candles

Kannabi begins and ends with short interspersed clips of Shala holding a candle. In Japan, as in many other cultures, candles are sacred and used to support prayer and spiritual union, and also call attention to the passing of time as well as the eternal quality of time (the latter as fire has ancient connotations for humanity). Semantically, the use of a candle in *Kannabi* is significant in focussing the spiritual aspects of the piece, and Shala (Ueda, 2012) supports this in saying that she focuses on 'souls' in conveying the themes of *Kannabi,* adding that it evokes being in a cemetery. Thus the visual use of the candle has significance on numerous levels of the work, and its presence permeates the overall *kaupapa* of the piece.

Conflict and dominance

It could be said that the *Kannabi* consists of shared gestural trajectories and a harmony of intent between musical and visual aspects. *Kannabi* does not reveal a hierarchy of dominance, or subordination between media, with both the sound and visual material interacting at the same level. Shala is a dancer who seeks to creatively blend with her surroundings. She compares the combining of colours in a painting to create a coherent whole with the relationship between dance and music. Thus she seeks a fluency with the soundworld she immerses in rather than challenging or resisting it, "I need harmony between music and dance like a painting, I need to be part of the music" (Ueda, 2012). This is reflected in how the sound and visual aspects predominantly co-exist in *Kannabi* without conflict.

However, through the editing process, a sense of audiovisual dissonance was achieved in a few discrete moments, the most obvious being Shala's first appearance in the frame with the red fabric shrouding her head (0.43). Here her bold sudden gestures do not align rhythmically with the melody. Instead her movements reveal their own dynamic and rhythm and define a distinct 'dual' temporality within the scene. This creates a sense of multiple layers of time and heightens the strength of her presence. Through the temporal dissonance between vision and music a greater sense of mystery and 'wildness' is created.

Taonga pūoro, randomized sound-generators and ririrangi

Pūtōrino-matai and *poiawhiowhio* are the taongo pūoro used in *Kannabi* and they contribute a uniquely New Zealand atmosphere as well as a strong element of spirituality to the work. Richard Nunns (2005) describes taongo pūoro as a "cellphone to the divine world, used for dialing up spiritual aid," and it is this sense of tapping into other dimensions that underlies the intent, both in dance

and in composition, of the piece.[65] Unpredictability, undesired in Western instruments, is a valued part of traditional Maori music and uncontrollable characteristics of instruments are referred to as *ororua, ririrangi* and *rangi rua.* Putorino, due to its shape, has a significant amount of sonic unpredictability and is thus traditionally regarded as a spiritually potent instrument. Its unworldly characteristics of ririrangi, as well as its warm tone and capacity to fill silences without taking 'space' away, offers various levels of *added value* to *Kannabi*.[66,67] I believe that the reason that taongo pūoro can fill in gaps in the music, without taking space away, is because of its seemingly close relationship to the natural world and strong textural and environmental dominance. Ririrangi also exists in the selected randomized chance-based parameters within *Alchemy*, *Kontakt* and *Reaktor* (such as *Clementine Dream, Slippery Knots, Suhn,* and *Haha),* that connects it with the otherwise contrasting nature of putorino.

Poiawhiowhio is a taongo pūoro that emulates the soft cooing of the kereru by spinning a gourd on a flax string. In *Kannabi* it affects a spectromorphological sense of motion because of its convexing sound-envelope created by its spinning trajectory through space. The ORTF stereo-imaging recording technique captures this well due to its accurately panned nature and its being recorded directly in front of the vectoral motion of the instrument. In the context of the acousmatic sound-world the poiawhiowhio establishes a 'gateway' between the

[65] Taonga Puoro, the traditional instruments of the Maori, are often built with particular stories embalmed into them and the instruments of the pūtōrino family represent, both in moth's cacoon form, and its sound, the goddess of instrumental music, Hine Raukatauri (Nunns and Thomas, 2005:72). Hine Raukatauri, the goddess of instrumental music, at one time breathed music from her flute, the long cocoon now seen on Manuka [bushes]; but left the air and made her flute her home. In this she still abides and makes her presence known by strange aerial noises (Andersen, 2000:143).

[66] *Ririrangi,* like *ororua* and *rangi rua,* represents a territory of Maori music that is often misunderstood, such as "rangi rua" being translated simply as "mistake". According to the research of Nunns and Thomas "unexpected sounds" were however valuable and desired in traditional Maori music. That Raukatauri's voice in mythology is described as 'inarticulate and mysterious' indicates that such sounds are an intended part of the music, and that the instrument had a role in replicating such spirit voices. (Nunns and Thomas, 2005)

[67] The shape of the pūtōrino, especially its inner cavities, means that its 'voice' creates unexpected notes. It was initially thought by the revival players that this instability was a defect as they unconsciously tried to fit the instrument to a European standard. (Nunns and Thomas, 2005).

human world and the spirit world.[70] Through its sonic emulation of the kereru's call it defines a 'space' of nature, and as is evident in its spectromorphological regularity, it also defines a 'human space'.[71] It can also be observed that the putorino's spectromorphological nature, in *perspectival space,* seems to disembody from its source during the textural introduction to Kannabi, as it fluidly integrates the various acousmatic and environmental domains.

Cuts and edits

Kannabi is visually edited using slow cuts for the allocentric sections and faster cuts in the energized corporeally focused sections. Even though the shots are of slow movements during the climax of the piece, energy is nonetheless created. It seems to me that the energy comes from the sense that these are from different times and places, and therefore parallel situations are taking place simultaneously. Thus a play on time occurs and the viewers are made unsure of the depth of their reference points within it. The shrine seems to make past and present indistinct, while the candle represents the present moment, whilst simultaneously evoking a sense of human history. That the footage begins simply with the shrine creates the feeling of a blank canvas and when Shala suddenly appears in mid-gesture it seems as if she was always there. Enhanced by the bookends of the work, of shots of the candle at dusk, is a sense that the dance enacts a memory of non-linear time, established by the cuts and the various angles that are like fragments that become smaller as the music becomes more intense. This creates the sense that the dance is a memory, and outside time or place. Everything that ever happened can happen in an instant and our perception is influenced by many dimensions.

[70] The poiawhiowhio is a hollow gourd on a string (of about 80cm) that is spun vertically to create a soft breathy oscillating high-pitched note.
[71] *Kereru:* New Zealand Native Wood Pigeon

Extreme registers and intentionally encoded messages

The *external logic* of *Kannabi* uses intentionally encoded messages of human striving amidst life's fragility, and the vulnerability of impermanence, as the melody seeks an invisible fine-line between earthly existence and a 'spirit-world'.[72] The idea of 'fracturing a divide' between heaven and earth is played out by the melody's use of extreme instrumental registers on a custom-built 35-string guitar and a sitar, with its usual compliment of 18 strings, and their sound-roles are compositionally *resynthesized* to harsh and fragile timbres suggestive of shattering glass.[73] The rapid decay of the plucked melody notes at extreme register, due to the shortness and tightness of string length, creates a pained melodic quality, while the sitar's *chikari* strings, that normally enhance and sustain the warmth of the sitar's tone, emphasize the broken fragility by creating a momentary envelope of sustain before a rapid strangled decay.[74],[75] Set amidst the densely populated sound-world of the introduction, that mixes acousmatic textures with 'real world' environments, the piercing and strangled melody notes cut through and contrast with the sonic backdrop. Thus the *intrinsic* relationship of the sitar and guitar's melody notes together with the *extrinsic* sound-environment represents the physical world within an ethereal world.[76]

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[72] *External logic (Chion, 1994)* is the logic by which the flow of sound is affected by non-diegetic interventions. It often represents a discontinuity or change that is induced by a force outside the sound.

[73] The 35-string guitar that *Kannabi* is performed on is very similar a normal guitar but with adaptations based upon the design of a sitar. It has six main playing strings that, for *Kannabi*, are tuned to standard drop-D guitar tuning (D,A,D,G,B,E). It has 3 *chikari* strings that are tuned to the tonic and fifth of the given hirajōshi mode in D. The 26 *tarafdar* strings are tuned at random to the hirajōshi scale.

[74] *Chikari* are two important drone strings on the sitar that are periodically struck to provide a tonic base. The chikari are not to be confused with the *tarafdar* that are the thirteen sympathetic strings that are never strummed but vibrate whenever the corresponding note is played on the fretted 'playing' string.

[75] *Resynthesized* means that a standardly used sound is altered, by extended performance techniques or in post-production. An example of this is the orchestra music of Xenakis, such as "*Metastaseis",* which employs architectural ideas applied to sound.

[76] *Intrinsic:* In this case I am looking at sound as autonomous in its surroundings such as environment or culture.

Note relationships and aperiodic influence

Anchored in the Japanese hirajōshi pentatonic scale (Abraham and von Hornbostel, 1903) a stringent use of note-relationships harmonizes the melody in two voices, supporting an *internal logic* of fragility using primarily intervals of a major or minor 9th or a major 10th (see below).[77,78,79] The stark and dissonant dominance of the minor 9th, and the relaxed and open nature of the major 10th create a perfect contrast of qualities, while the unworldly and detached atmosphere of the major 9th 'hovers' more neutrally. Aided by the large empty spaces of aperiodic time between melody notes an added sense of bareness and sternness is evoked, while sonic qualities of beauty and angularity push together to capture the conceptual motifs embedded in the composition.

Notes separated by seven degrees in the hirajōshi scale:

Hirajōshi scale	D	E	F	A	Bb	D
Scale degree	1	2	3	4	5	6
Relationship to the Ionian scale	1st	2nd	m3rd	5th	m6th	8ve

Predominant intervals used in Kannabi:

D1 – E2	Major 9th
E1 – F2	Minor 9th
F1 – A2	Major 10th
A1 – Bb2	Minor 9th
Bb1 – D2	Major 10th

[77] When we talk about the idea of a '9th' we are referring to the scale-degree of a 6th of the Hirajōshi scale.
[78] *Internal logic*. Chion (1994:222) describes this as "the logic by which the sound flow is apparently born out of the narrative situation itself.
[79] It must be noted that the flute-like pitches used by the taonga pūoro that accompany the theme of *Kannabi* are not part of the Hirajōshi scale. Rather, these pitches are just played freely as is the nature of the taonga pūoro. Likewise the pitches used by the sitar in the improvisation section (2.43-5.19) are not based on the Hirajoshi scale but instead upon the Indian Asavari Thaat scale (similar to the Aeolian scale: 1, 2, b3, 4, 5, b6, b7). However, there is an additional 4th degree and minor 7th degree added to the Hirajōshi scale during the improvisation. This is because the improvisation section was collectively developed during rehearsals.

The timing of *Kannabi's* theme is aperiodic which means that it has a level of unpredictability and irregularity making it awkward for a second media to coordinate with it. Aperiodic timing also imbues the temporal field simultaneously with both an eternal sense, and fragility, and in *Kannabi* is manifested as an ethereal quality. Slow movements are combined with the aperiodic, widely spaced melody notes, creating a *context-field* where ethereal space is grounded through human gesture. The contrast of this aperiodic time-field comes in the middle improvisation section of the piece, which uses earthly primal rhythms. It could be concluded that Shala's dance is what anchors the music in the aperiodic opening section, and vice versa, that it is the music that earths Shala's wild out-of-body dancing in the middle section.

Concluding remarks

This investigation has looked at the nature of synchresis in filmic contexts, with a particular focus on film-dance. I have discussed language that can be useful in this exploration, and have attempted to define terms in order to better develop a means of conceptualizing what synchresis means, and how it takes place in connections between media. This theoretical work is the background for my investigation of synchresis in the three contrasting works that make up my creative portfolio.

While there is vast scope concerning the shaping of an imagined compositional outcome, it is evident that understanding synchresis can productively inform a composer's decisions when working with multimedia, and provide strategies that can assist artistic method and outcomes. This investigation has illuminated for me the potential for enhancement of the audiovisual contract. It has clarified such areas as the proprioceptive relationship human beings have with sound, and how, as a composer for film, understanding the spectromorphological consequences of synchresis is of special importance in one's work. It has shown that there are numerous elements involved in the binding of media, and numerous possible interlinkages between film-vision and sound, and sound and film-vision.

In this investigation of synchresis I have shown how in *Pretty Feet* music can be used to create continuity between different locations and abrupt changes of visual material. In *Salome's Dance* the application of *negative sound* to blend the presence of various characters into the 'wings' (or periphery) has demonstrated how diegetic visual information can, through sound, be coaxed into the non-diegetic realm to impart a greater sense of 'presence' for characters not in view. In *Kannabi* I have demonstrated how encoded messages residing in the kaupapa of the piece influence synchretically both the sonic and the visual elements. Finally, I have shown, through the unifying points between the very different works, that synchresis is not limited to any particular style or method. On the contrary, that synchresis transcends the dissimilarities between the three

works is testimony to its usefulness as a binding concept, demonstrating how it can be applied widely in understanding and creating audiovisual works.

It is hoped that composers might be able to usefully apply ideas from this work to intermedia works of their own. A better understanding of the complexity of synchresis in cross-media interactions can provide useful insight into how to unify and shape such interactions. The intermodal marriage of movement and sound is a primary human experience. Our experiences of music are potently transformed through visual gesture. Likewise film is transformed by music's vitality and meaning-shaping role. In other words, synchresis emerges from the primary experience of intermodality. An enhanced understanding of synchresis provides also a platform for possible further explorations of the different ways in which different media can be combined.

Glossary

Added value is an alchemic process that promotes the idea that marrying sound and vision *render* information not conveyable when each is working alone. Chion (1994) describes this as “the expressive and /or informative value with which a sound enriches a given image, so as to create the definite impression (either immediate or remembered) that this meaning emanates "naturally" from the image itself.”

Acousmatic is a word of Greek origin that describes sounds one hears without seeing their originating cause. Radio and telephone are acousmatic media. In film, an offscreen sound is acousmatic. Acousmatic is the opposite of *visualized sound*.

Agential spaces (Smalley, 2007) are spaces where sounds of human interaction with an environment or things within an environment occur (such as opening a bag of crisps).

Allocentric space is that of the outside world that expands out in all directions from the autocentric space.

Anempathetic sound (Chion, 1994) is sound that seems to exhibit indifference to what is going on in the film's plot. This is often used for dramatic affect such as a sad song accompanying a happy person dancing that belies the emotional weight that is not evident visually.

Arena space: for Smalley (2007) the arena space is a sub-category of performed space. It is the whole public space inhabited by both the performers and listeners.

Audiovisual contract. Chion (1994) describes the audiovisual relationship, as created in film, not as a natural coming together, but instead as a ‘symbolic pact to which the audio-spectator agrees’. The *audiovisual contract* is about the

believability of the interaction and participation between sound and image as if existent in the same world.

Audiovisual counterpoint is based on the idea that sound and vision in film constitutes two parallel tracks related to, yet independent from one another. The term *counterpoint* is borrowed from Western classical music that deals with the parallel relationship of more than one musical voice over time.

Autocentric space and *autocentricity* "focuses on subject-centred responses of pleasure or displeasure" (Smalley, 1996:80). It is similar to a child's first relationships with the world.

Behaviour is a notion that Smalley (1996a) applies in various ways to the perceived interaction and relationships between sound. These ideas can be extended to apply to the behaviour of what we see, and how it affects what we expect to hear and vice versa.

Causality deals with how sounds act upon other sounds, and how combinations of sound cause secondary events, and can also influence further, ongoing sounds. The idea of *causality* need not stop with just sounds affecting sounds, but can extend to sounds affecting visual media, whereby innate features including volume, expressivity, timbre, harmony, and melody 'push' and 'rub' against the visual media to effect a changed interpretation.

Causal listening: listening for the purpose of gaining information about the sound's source.

Circumspace is much like 'surround-sound', except that it allows for sound to move within *perspectival space* around the listener and through or across egocentric space (Smalley, 2007).

Consonance implies a shared trajectory and sense of harmony and support between media, while dissonance implies a tension and conflict.

Diachronic flow (Gorbman, 1987:22) is used to describe something happening over time.

Diegesis is a narrative or plot, typically in a film.

Distal image deals with the perception of a space that is situated outside the immediate space of the listener's body.

Dissonance implies a tension and conflict between media, while consonance implies a shared trajectory and sense of harmony and support

Elements of auditory setting (E.A.S.) are localized sounds that "flesh out" a scene's setting (Chion, 1994).

Egocentric space is the personal space (within arm's reach) surrounding the listener. The *egocentric space* is a type of behavioural space that can be mobile in practice.

Embodied cognition is the idea that our perception of the world and our mental activity is informed by body movements, made both by other people and by ourselves. This is exemplified in learning languages when we engage in the body language behind the meanings.

Empathetic music is music whose mood or rhythm matches with the mood or rhythm of the action onscreen.

Enacted spaces: Smalley (2007) describes enacted spaces as spaces produced by human activity and he divides them into two primary types: *utterance spaces* which are articulated by vocal sound, and *agential spaces*, where space is produced by human interaction with an environment such as opening a bag of crisps.

External logic (Chion, 1994) is the logic by which the flow of sound is affected by non-diegetic interventions. It often represents a discontinuity or change that is induced by a force outside the sound.

Generalised ground is a continuous nose made of many small particles such as a river that create a 'permanent' sonic texture (Smalley, 2007).

Gestural surrogacy in a concept developed by Smalley (1997) dealing with the process of "increased remoteness" whereby a sound-source and/or the audible gesture used in creating it, becomes disguised to different degrees categorized as *first-order*, *second-order* and *third-order* surrogacies. For example, an instrumental sound-gesture can be transformed both by applying extended performance techniques and/or using digital enhancement in post-production to mask its spectromorphology. The degrees of surrogacy are as follows:

I. *First order surrogacy* includes recordings of sound material not intended for musical use;
II. *Second-order surrogacy* is when the spectromorphological basis of a sound is further extended through 'other' techniques, such as post-production, to dislocate the 'real' sound from its source;
III. *Third order surrogacy is* the complete disguising of sound-sources*;*
IV. *Remote surrogacy* removes all human action from behind the sound-source.

Glitch: a *glitch* is a short-lived fault in a system associated with computing and electronics. Tim Exile, who has created numerous virtual instruments within Reaktor has designed excellent platforms that use *glitching* to musical effect such as in his '*the finger*' live performance remix effect. (Jackson, 2009

Goal points are structural goals in linear time similar to thumbnails in video data retrieval. Goal points enable large passages of sound and gesture to be planned.

Immersive space (Smalley, 2007:51) is the filling of spectral and *perspectival* space in circumspace so that the listener feels immersed in the image.

Impulsive (gesture): A rapid movement. Like a quick strum of a chord on a guitar.

In-the-wings effect (Chion, 1994): this is used in cinema where the sound lingers in lateral speakers after the exit of a character from the screen, or pre-empts the appearance of a character onscreen.

Intermodality is how once sense relates to another. In the case of a person stamping his/her feet the physical/visual gesture provides a sense of *causality* that "explains" a change in music. Thus change is initiated by gesture in one sense/mode which leads to a change in another sense/mode.

Internal logic. Chion (1994:222) describes this as “the logic by which the sound flow is apparently born out of the narrative situation itself”.

Internal sound (Chion, 1994:222) is sound that has a diegetic aspect, corresponding to the interiority of a character (for example, heartbeats or voices imagined or recollected by a character).

Intrinsic: In this case I am looking at sound as autonomous in its surroundings such as environment or culture.

Irirangi, like *ororua* and *rangi rua,* represents a territory of Maori music that is often misunderstood such as “rangi rua” being translated simply as “mistake”. According to the research of Nunns and Thomas “unexpected sounds” were however valuable and desired in traditional Maori music. That Raukatauri's voice in mythology is described as 'inarticulate and mysterious' indicates that such sounds are an intended part of the music, and that the instrument had a role in replicating such spirit voices (Nunns and Thomas, 2005).

Iterative (gesture) is the rapid repetition of small movements to create a whole movement (Godøy, 2009).

Magnetization (spatial): the psychological process of locating a sound's source in the space of the image. Using the general point of the sound's origin in the viewing space, the viewer/listener mentally 'places' the sound, for example a voice, to the left of the screen in tandem with visual indications seeming to emanate from the left of the screen, even though the sound might really emanate from a speaker behind the center of the screen (Chion, 1994).

Musical sound indices (MSI) is the combining of music and sound design as one sonic expression. Chion (1994) describes how MSI forges image and sound together, bringing them off the screen into the physical domain: an example is matching the sound of a door closing with the image of the door closing, enhancing a perception that the onscreen door has weight and solidity.

Negative sound is also known as "phantom sound" and is metaphoric of the spaces created by a chisel in the sculptor's block. Chion (1994) uses the French term "en creux", which translates as "negative space".

Panoramic space deals with the full 360° circumference of the space experienced (Smalley, 2007)..

Performed space: Spaces produced by intentional sound-making, such as a musical performance (Smalley, 2007).

Perspectival space is the extension of *prospective* and *panoramic space* and describes relations of spatial position, movement and scale among spectromorphologies, viewed from the listener's vantage point (Smalley, 2007).

Prospective space deals with what, to the witness's viewpoint, is likely to happen within the future of a space (Smalley, 2007).

Proprioceptive feedback from the muscles is concerned with the tension and relaxation of muscles that relate to sensorimotor and psychological experiences *Rendering* describes highlighting a visual action while generally translating an agglomerate of sensations associated with the image. That the sound that frequently accompanies a punch on film is much louder than would be heard in reality reveals that *rendering* is not so much about a faithful reproduction of a sound but more about conveying added weight and consequence related to the visual action onscreen. Thus *rendering* conveys something that is not necessarily going to be just conveyable through the image or the sound alone.

Proximate space describes the listener's immediate locative, present space (Smalley, 2007).

Resynthesized means that a standard use of sound is altered, by extended performance techniques or in post-production. An example of this is the orchestra music of Xenakis, such as "*Metastaseis",* which employs architectural ideas applied to sound.

Sonic motion can suggest real or imagined motions of shapes in free space.

Signal spaces define a space where sounds and calls of participants are produced, either to communicate with each other, or to communicate their presence to other inhabitants such as frogs in a pond (Smalley, 2007). A signal space could also be called a "sound-source".

Sound facilitating gestures are musician gestures, such as forcefully plucking a string in an outward motion, to elicit diverse and particular sounds from an instrument.

Sound-accompanying gestures (Godøy, 2009) are performer gestures that facilitate expression and communication but do not necessarily affect the sound produced. These gestures include the raising of eyebrows and the shaking of the head. Such gestures can highlight invisible features of the music including

hidden beat structures that assist the audible sound as well as influence dramatic impact.

Sound-producing gestures are the bodily movements of musicians such as striking, blowing, bowing. As Smalley (1997:110) puts it, "a gesture is [an] energy-motion trajectory which excites the sounding body creating spectromorphological life".

Source bonding evokes a spatial zone, or mental picture, that can be inferred from a sounding source, and carries with it an image of the activity that produces it. It derives from the natural tendency to relate sounds to supposed sources and causes, and to relate sounds to each other because they appear to have shared or associated origins (Smalley, 1997).

Spectromorphology is a word coined by Smalley (1986; 1997) that describes the perceived sonic footprint of a sound spectrum as it manifests in time. The two parts of the term refer to the interaction between sound spectra (spectro-) and the ways they change and are shaped through time (-morphology).

Sustained gesture is a continuous movement like bowing (Godøy, 2009).

S*ync point* (or *'point of synchronization'*): this is a term used frequently in film for an audio-visually salient synchronous meeting of a sound event and a sight event.

Synchresis is a term used by Chion (1994) derived from 'synchronism' and 'synthesis' . It means "the forging of an immediate and necessary relationship between something one sees and something one hears at the same time". The psychological phenomenon of synchresis is what makes dubbing and many other aspects of post-production sound-mixing possible.

Technological listening (Smalley, 1997:109): when the listener perceives, or is

distracted by their knowledge of the technology used to create music.

Territory sounds give definition to a space such as church-bells or waves lapping and include ambient sounds whose pervasive presence gives definition to a space, e.g., bird songs, church-bells.

Vectorial space deals with sound sources, or *signal space*, that can move through *proximate space.* This idea includes the *signal space* moving around the listener, or crossing, or temporarily blocking, another territorial zone's distal image by travelling between it and the *egocentric space* of the listener.

Visualized sound deals with sonic reactions from a visual event.

Zone spaces exist within *territory spaces.* An example would be a cicada on a leaf, or a group of people chatting on the corner. These zones can also be described as *signal spaces.*

Bibliography

Abraham, Otto, and von Hornbostel, Erich Moritz. "Studien Über Das Tonsystem Und Die Musik Der Japaner." *Leipzig: Sammelbände der Internationalen Musikgesellschaft*, 1903: 302-360.

Acitores, Alicia P. *Towards a Theory of Proprioception as a Bodily Basis for Consciousness in Music.* Oxford University Press, 2011.

Andersen, Johannes Carl. *Maori Life in Ao-ṫea*. Christchurch: Cadsonbury Publications, 2000.

Bartlett, Bruce, and Bartlett, Jenny. *Practical Recording Techniques*. 3rd ed. Oxford: Butterworth Heinemann, 2002.

Bergman, Ingmar. *Persona.* 1965. Film.

Besson, M, and Schön, D. "Comparison Between Language and Music". *Annals of the New York Academy of Sciences*, 930 (2001): 232-258.

Blacking, John, and Kealiinohomoku, Joann W. *The Performing Arts: Music and Dance*. Berlin: Walter de Gruyter, 1979.

Blesser, Barry, and Salter, Ruth. *Spaces Speak, Are You Listening? Experiencing Aural Architecture*. Cambridge: Massachusetts Institute of Technology Press, 2007.

Boyle, Nicholas. *Goethe: Faust Part One*. Cambridge University Press Archive, 1986.

Brecht, Bertolt, and Ottwalt, Ernst. *Kuhle Wampe oder Wem gehört die Welt?*. 1932. Film.

Bryant, Charles. *Salome.* 1923. Film.

Cage, John. *Bird Cage (1972)*. Video Recording. Available at: http://www.youtube.com/watch?v=aq6BrQrCajY&feature=youtube_gdata_player. Accessed 30 August 2011.

Cage, John. *HPSCHD* (1969) Video Recording. Available at: http://www.youtube.com/watch?v=t_hTxJpWITw&feature=youtube_gdata_player. Accessed 30 August 2012.

Chion, Michel. *Audio-Vision, Sound on Screen*. New York: Columbia University Press, 1994.

Clarke, David, and Clarke, Eric. *Music and Consciousness: Philosophical, Psychological, and Cultural Perspectives: Philosophical, Psychological, and Cultural Perspectives*. Oxford University Press, 2011.

Cook, Nicholas. *Analysing Musical Multimedia*. Clarendon Press, 1998.

Crafton, Donald. *The Talkies: American Cinema's Transition to Sound, 1926-1931*. University of California Press, 1999.

Cunningham, Merce, and Cage, John. *Chance Conversations: An Interview with Merce Cunningham and John Cage.* 1981. Video Recording. Available at: http://www.youtube.com/watch?v=ZNGpjXZovgk&feature=youtube_gdata_player. Accessed 20 March 2012.

Cunningham, M, and Cage, J. *Variations V* (1965). Video Recording. Available at: http://www.youtube.com/watch?v=Ca2iVll-_-N0g&feature=youtube_gdata_player. Accessed 17 July 2012.

Cunningham, M. *Beach Birds* (1991) Video Recording. Available at:

http://www.youtube.com/watch?v=Lhg_Z3nt674. Accessed 15 August 2012.
Das, David. *Kontakt 2 Power!: The Comprehensive Guide*. Thomson Course Technology, 2005.
Deren, Maya. *A Study In Choreography For Camera* (1945). Film. Available at: http://www.youtube.com/watch?v=eKAOs400ReY&feature=youtube_gdata_player. Accessed 15 August 2012.
Duerden, Rachel S. Chamberlain. "Dancing in the Imagined Space of Music." *Dance Research Journal* 25.1 (2007): 73-81.
Engler, Yaron, and Guillore, Bruno. "Hofesh Shecter Workshop." New Zealand School of Dance, Wellington. March 2012. Public lecture.
Fogelsanger, A, and Afanador, K. "Parameters of Perception: Vision, Audition, and Twentieth-century Music and Dance." *38th Congress on Research in Dance, Tempe, Arizona* (2006).
Fogelsanger, Allen. "Dancing to the Music between Balanchine and Cunningham." *Dornell Dance Program Newsletter* (2000).
Fogelsanger, Allen. "Music Composition for Dance in the Twenty-First Century: Questions about the Dance/Music Relationship." Stockholm, 1998. Conference Paper.
Godøy, Rolf Inge, and Leman, Marc, eds. *Musical Gestures: Sound, Movement, and Meaning*. 1st ed. London: Routledge, 2009.
Gorbman, Claudia. "Aesthetics and Rhetoric." *American Music* 22.1 (2004): 14-26.
Gorbman, Claudia. *Unheard Melodies: Narrative Film Music*. Indiana University Press, 1987.
Graham, Jean Ann, and Argyle, Michael. "A Cross-Cultural Study of the Communication of Extra-Verbal Meaning by Gesture." *International Journal of Psychology* 10.1 (1975): 57-67.
Grossman, Stefan, and Kubik, Gerhard. *African Guitar*. Vestapol, 2003. Field Recordings.
Hoffman, Elizabeth. "Microsound." *Music Theory Spectrum* 27.2 (2005): 328-335.
Howat, Roy. *Debussy in Proportion: A Musical Analysis*. Cambridge University Press, 1986.
Jackson, Matthew. *The Finger, Operation Manual.* Los Angeles: Native Instruments North America, Inc., 2009.
Jordan, Stephanie. "Choreomusical Conversations: Facing a Double Challenge." *Dance Research Journal* 43.01 (2011): 43-64.
Jordan, Stephanie. "Matching Music and Dance." *Dance Chronicle* 17.2 (1994): 217-221.
Juslin, Patrik N., and Sloboda, John, eds. *Handbook of Music and Emotion: Theory, Research, Applications*. Oxford: Oxford University Press. 2009.
Kay, Karyn, and Peary, Gerald. *Women and the cinema a critical anthology*. New York: Dutton, 1977.
Keats, John. *Endymion: A Poetic Romance.* London: Taylor and Hessey, 1818.
Keysers, Christian. "Audiovisual Mirror Neurons and Action Recognition." *Experimental Brain Research, 154.4* (2003): 628-636.
Larson, Steve. *Musical Forces: Motion, Metaphor, and Meaning in Music*. Indiana University Press, 2012.
Lucas, George. *Star Wars*. 1977. Film.

Marks, Martin Miller. *Music and the Silent Film: Contexts and Case Studies, 1895-1924*. USA: Oxford University Press, 1997.
Meyer, Leonard B. "A Universe of Universals." *Journal of Musicology* 16.1 (1998): 3-25.
Miller, Bruce E. "The Meaning of Keats's 'Endymion'." *Keats-Shelley Journal* 14 (1965): 33-54.
Millington, Barry. *The New Grove Guide to Wagner and His Operas*. Oxford University Press, 2006.
Motokiyo, Zeami. *Zeami*: *Classic Teachings on the Art of* Nō, trans. William Scott Wilson. Tokyo: Kodansha International Ltd, 2006.
Nunns, Richard, and Thomas, Allan. "The Search for the Sound of the Pūtōrino: 'Me te wai e utuutu ana'." *Yearbook for Traditional Music* 37 (2005): 69-79.
Oxford Dictionary. 2011. "Diegesis". Available at: http://oxforddictionaries.com/definition/diegesis. Accessed 20 August 2011.
Paynter, John. *Companion to Contemporary Musical Thought*. London: Routledge, 1992.
Reznikoff, Iegor. "On Primitive Elements of Contemporary Musical Thought." *The Journal of Musical Meaning* 3 (2004).
Sanger, Annette. "Music and Musicians, Dance and Dancers: Socio-Musical Interrelationships in Balinese Performance." *Yearbook for Traditional Music* 21 (1989): 57-69.
Scott, R. *Reaktor 5 Operation Manual*. Berlin: Native Instruments Gmbh, 2005.
Shirane, Haruo. *Traditional Japanese Literature: An Anthology, Beginnings to 1600*, ed. Haruo Shirane. New York: Columbia University Press, 2007.
Smalley, Denis. "The Listening Imagination: Listening in the Electroacoustic Era." *Companion to Contemporary Music Thought.* Vol. 1, Paynter, J, and Orton, R, eds. et al. London: Routledge, 1992: 514-554. Republished in *Contemporary Music Review*, Vol 13, Part 2, 77-107, Harwood Academic Publishers (1996).
Smalley, Denis. "Space-form and the acousmatic image." *Organised Sound* 12.1 Cambridge University Press (2007): 35-58.
Smalley, Denis. Spectromorphology: Explaining Sound-shapes." *Organised Sound* 2.2. Cambridge University Press (1997) 107-126.
Stockhausen, Karlheinz. *Harlequin for Clarinet, Nr. 42* (1975). Kurten: Stockhausen Verlag.
Takahashi, Mutsuo. *Noh: Classical Japanese Performing Art*. Tokyo: PIE Books, 2010.
Thomas, Tony. *Film Score: The View from the Podium*. A. S. Barnes, 1979. Throsby, Margaret. "Hofesh Shecter." *Mornings*. ABC Classic FM, 7 October 2011. Podcast. Available at: http://www.abc.net.au/classic/content/2011/10/07/3332130.htm. Accessed 27 February 2012.
Ueda, Shala. 8 June 2012. Interview with Justin Clarke.
Waltz, Sasha. *noBody (*2002). Choreographed dance.
Waltz, Sasha. *Continu (*2010). Choreographed dance.
Wilson, Margaret, and Knoblich, Günther. "The Case for Motor Involvement in Perceiving Conspecifics." *Psychological Bulletin* 131.3 (2005): 460-473.

Supporting Materials

神奈備

K a n n a b i

Main theme extract

by

Justin Firefly Clarke

(2011)

For:

Taongo puoro
Sitar
Guitar
6 Flutes
Computer
Percussion
Violin
Cello
Double Bass

神奈備

Ｋａｎｎａｂｉ

Dedicated to the people who lost their lives in the Japanese and Christchurch earthquakes that occurred in 2011.

神奈備
K a n n a b i

Note to performers

The melody of Kannabi should be played as if it were an improvisation
and performed with a strong contemplation about the fragility of existence.

The melody written within these pages is to bookend the piece.
There is no tempo or pulse for the melody:
all musicians are to follow the guitarist's signals for the timing of the melody.

Form and structure

1. Introduction
Improvise with textural atmospheres within the consonance of a Dm drone.

2. Written theme
Sections: A - B - C.
Taonga Puoro improvises with counter "calls" to the melody.

3. Percussion and sitar improvisation
A tempo.
All other instruments are welcome to add textures and colours to the improvisation.

4. Written theme
sections: A - B - C.
Taonga Puoro improvises with counter "calls" to the melody.

5. Outro
Improvise with textural atmospheres within the consonance of a Dm drone.

神奈備

K a n n a b i

Main theme extract

Justin Firefly Clarke

Introduction
approximate duration:
2 minutes
No Time ♩= X

Very Free Time ♩ = 52 (approx)

Taongo Puoro feature: Putorino
improvise freely

leave more space:
(fill in the gaps during melody) **A**
koauau featured

koauau featured **B**

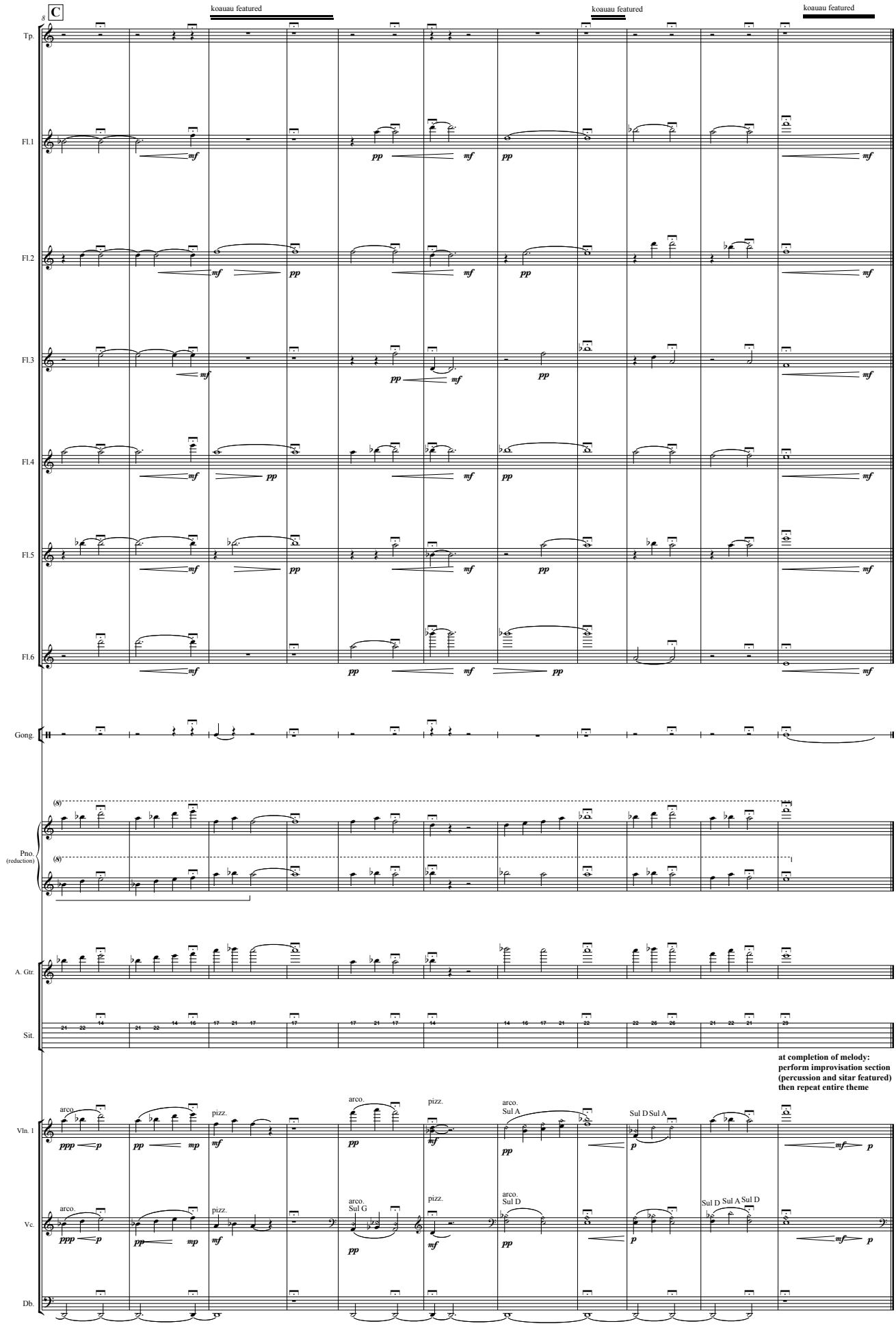
Taonga Puoro
Flute 1
Flute 2
Flute 3
Flute 4
Flute 5
Flute 6
Kontakt sound: "Haha"
Heartbeat
Computer Sample Bowed piano
Bird sounds
Pre-recorded Poiawhiowhio
Reaktor sound: "Clementine Dream"
Kontakt sound: "Slippery Knots"
Reaktor sound: "Suhn"
Gong
Original Piano (Reduction)
Acoustic Guitar
Sitar
Violin 1 idea 1
Violoncello idea 1
Double Bass

plays throughout

plays until rhythmic section begins then fades out over 10 seconds

molto sul pont.
sul A
sul D
pizz.

at completion of melody:
perform improvisation section
(percussion and sitar featured)
then repeat entire theme



Pretty Feet

Composed & Orchestrated by
Justin "Firefly" Clarke

with an extract from "Endymion" by John Keats

for Piano, Orchestra and One Voice

2012

Pretty Feet

This score is designed for a recording session based on the methods used by Hollywood film orchestras. The extra rehearsal letters relate to different orchestral sections which are to be performed and recorded separately.

An in-ear metronome will be used by the conductor for the recording session.

Instrumentation

1 Piccolo
2 flutes
1 oboe
2 clarinets A, Bb
1 bassoon
2 horns in F
2 trumpets (with cup mutes)
1 trombone (with plunger)
1 tuba
1 timpanist
3 timpani
1 vibraphone (with bow)
3 percussionists
1 snare
1 suspended cymbal
1 bass drum
tubular bells
1 tam-tam
1 tenor drum
1 set of crotales
1 whistle
1 gamelan slentam pitches: E, G *(preferably not exactly A440 pitch)*
1 gamelan kengong pitch: B *(preferably not exactly A440 pitch)*
note: if gamelan kengong and slentam are unavailable then replace with tubular bells
1 whip
note: If whip is unavailable then replace with a flam rimshot on a snare
1 piano
1 harp
1 voice (narration)
violin I
violin II
violas
cellos
contrabass

Sumbitted as supplementary material
with Justin Clarke's investigation of "Synchresis".
as part of his Master in Musical Arts submission

Student id: 300031263
Victoria University & Massey University

Te Kōkī The New Zealand School of Music

Pretty Feet

Transposed score

For recording session

composed by Justin Firefly Clarke
lyrical content by John Keats (1795-1821)

Record A - C
allow for decay of reverberances
solo individual sections as follows:
1. Fl, Cl, Bsn
2. Hn, Tp, Tbn, Tba
3. Timp, S.d, B.d, Gong, Pno
4. All strings
5. Full tutti

A ♩ = 160

B **flowing and relaxed**

Fl.1
Fl.2 & Picc.
Cl.1 Bb
Cl. 2 Bb
Bsn.
Hn. 1
Hn. 2
C Tpt.1
C Tpt.2
Tbn.
Tba.
Timp.
S. D.
B. D.
Gong
Vib.
Pno.
Vln. 1 div 1a
Vln. 1 div 1b
Vln. II
Vla.
Vc. div1
Vc. div2
Cb1.
Cb2.

microtonal lip bends

take microbreaths as necessary to sustain the note

alternate fingerings in a rhythmically free manner

tongue slap

Timp in G, Ab, Eb, F

rim

div.

pizz.

C *Do not record C - D*

12 Change to Piccolo

Fl.1

Fl.2 & Picc.

Cl.1 Bb

Cl. 2 Bb

Bsn.

Hn. 1

Hn. 2

C Tpt.1

C Tpt.2

Tbn.

Tba.

Timp.

Vib.

sim.

Pno.

p

Independent dynamics for left and right hands until marked

mp

rhythmically free in left hand:
staccato notes to be performed crisply (despite the pedal)

f

C

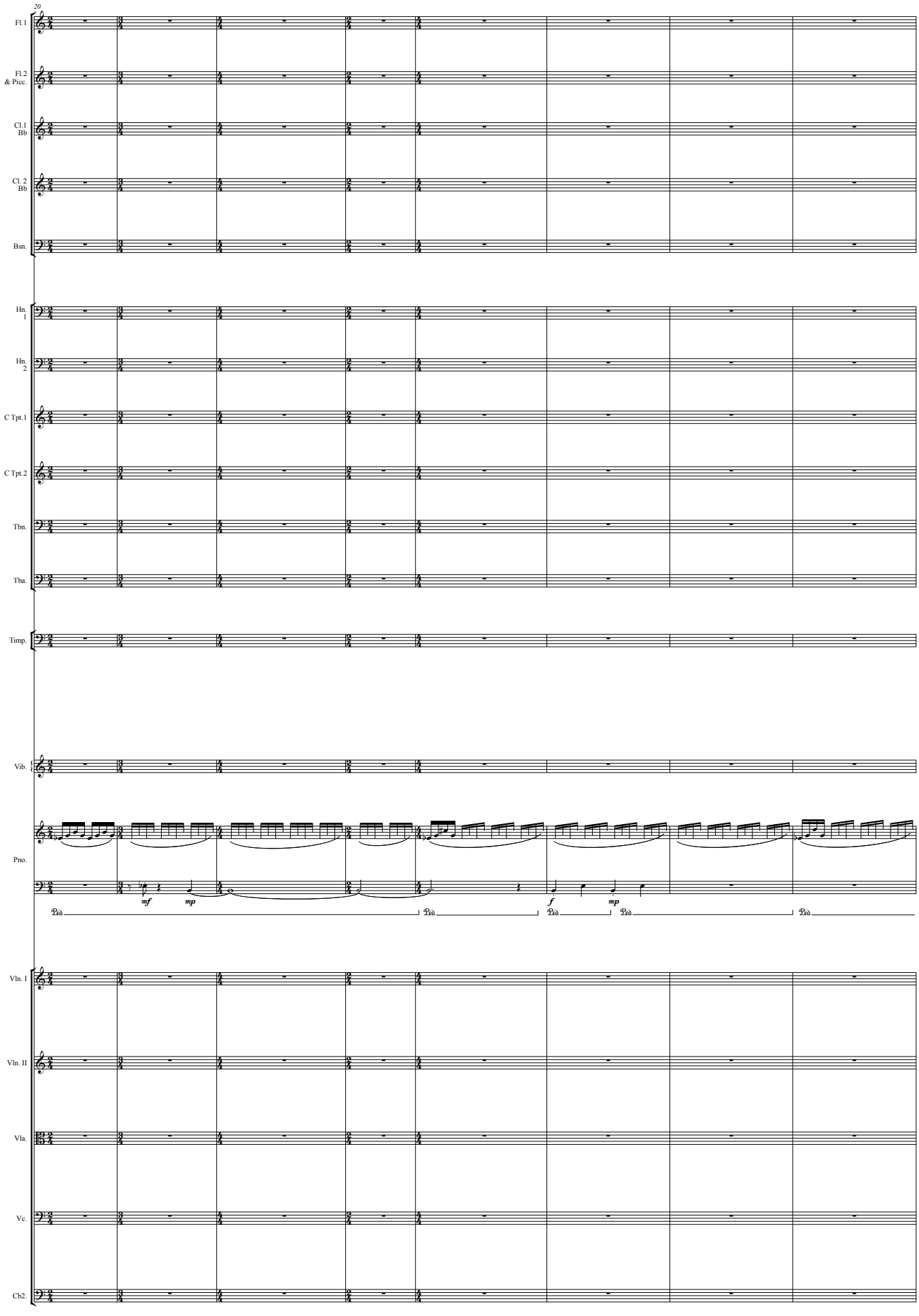
Vln. I

Vln. II

Vla.

Vc.

Cb1.


20
Fl.1
Fl.2
& Picc.
Cl.1
Bb
Cl. 2
Bb
Bsn.
Hn.
1
Hn.
2
C Tpt.1
C Tpt.2
Tbn.
Tba.
Timp.
Vib.
Pno.
mf
mp
f
mp
Ped.
Ped.
Ped.
Ped.
Ped.
Vln. I
Vln. II
Vla.
Vc.
Cb2.

Record D - I
1. Woodwinds

Record D - E
1. Percussion

28

D

Fl.1

Fl.2 & Picc.

Cl.1 Bb

Cl. 2 Bb

Bsn.

Hn. 1

Hn. 2

C Tpt.1

C Tpt.2

Tbn.

Tba.

Timp.

Cym.

Gong

Whist.

Vib.

Pno.

Vln. I

Vln. II

Vla.

Vc.

Cb1.

mf piccolo

pp

mp

soft mallets

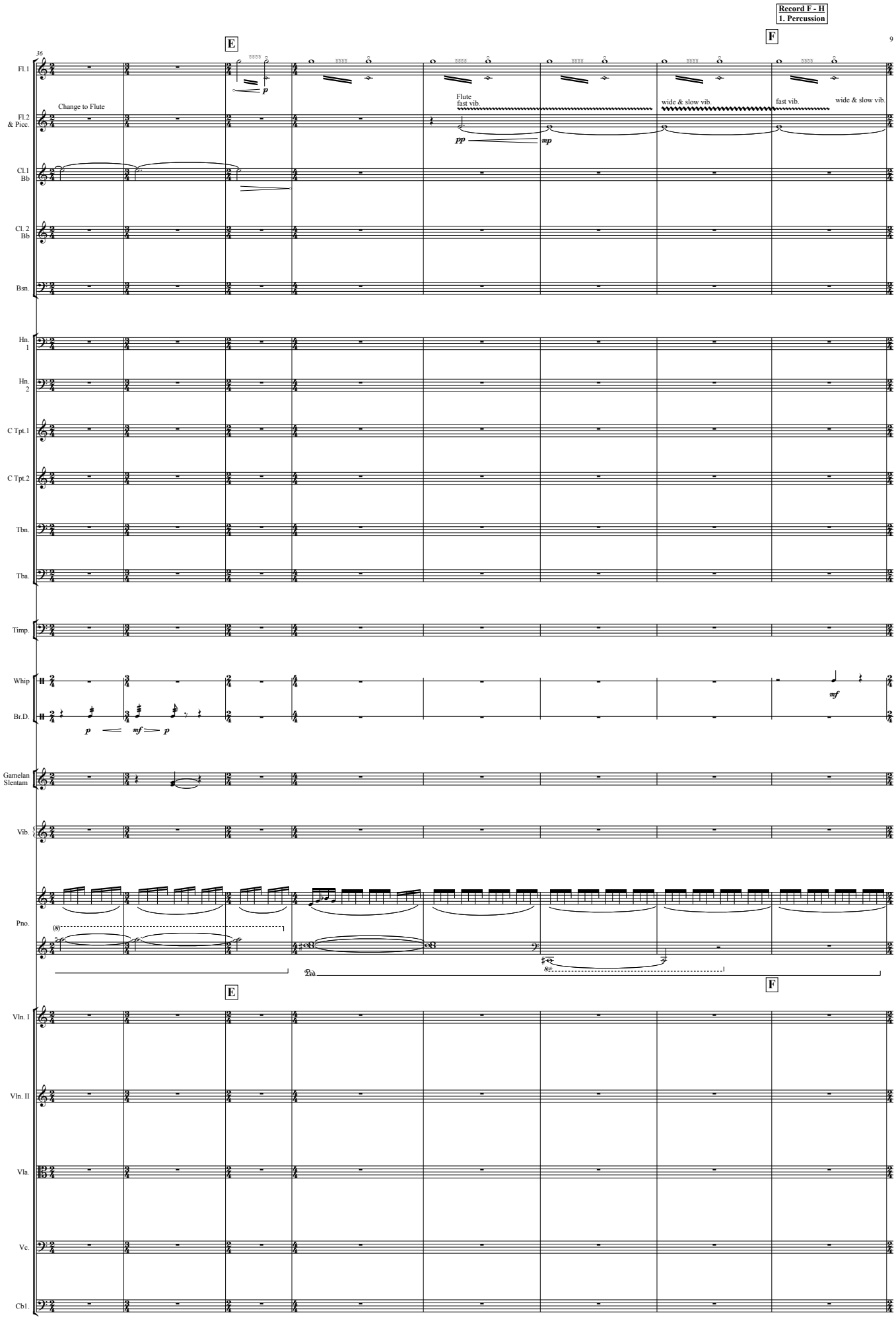
p

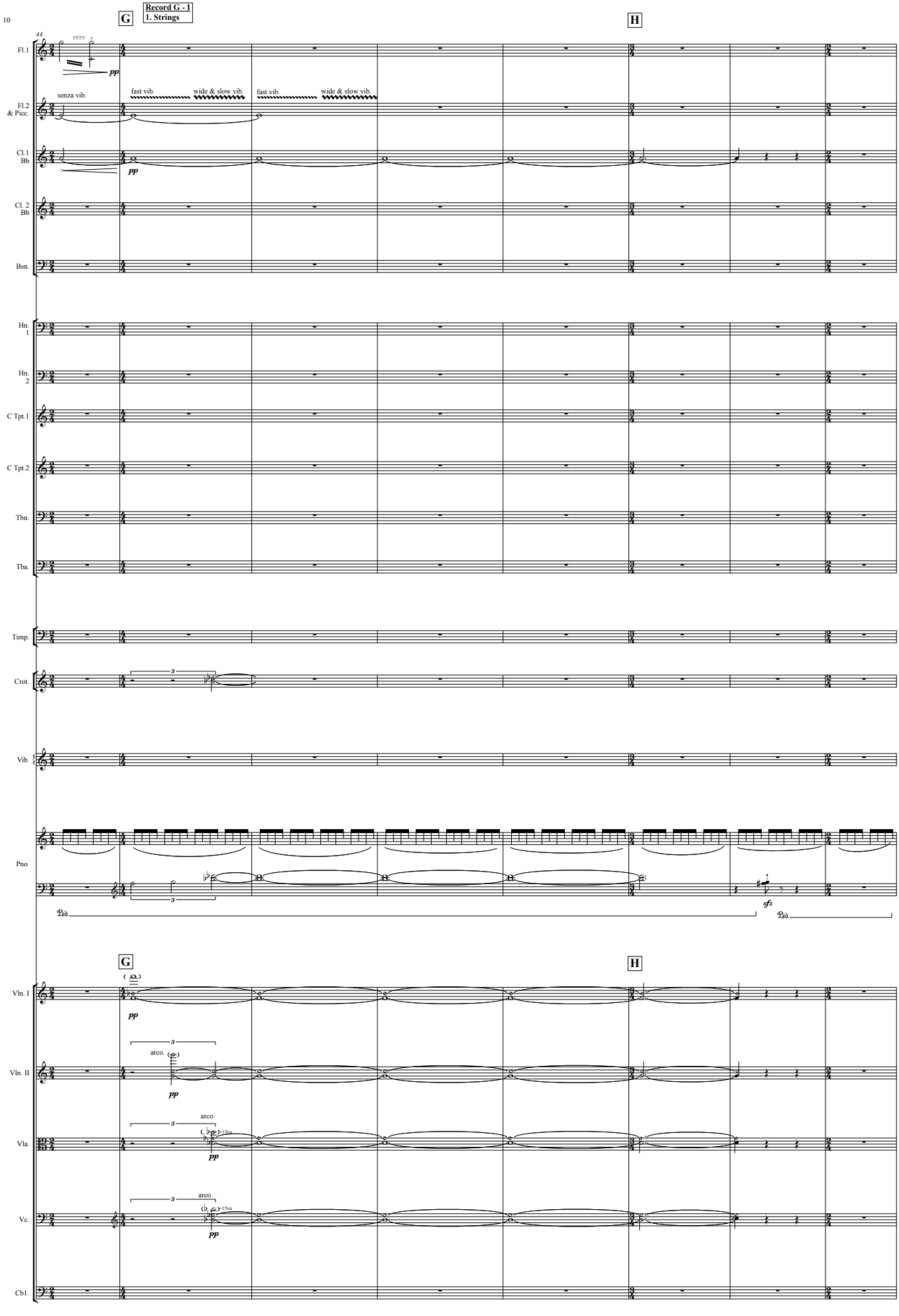
mf

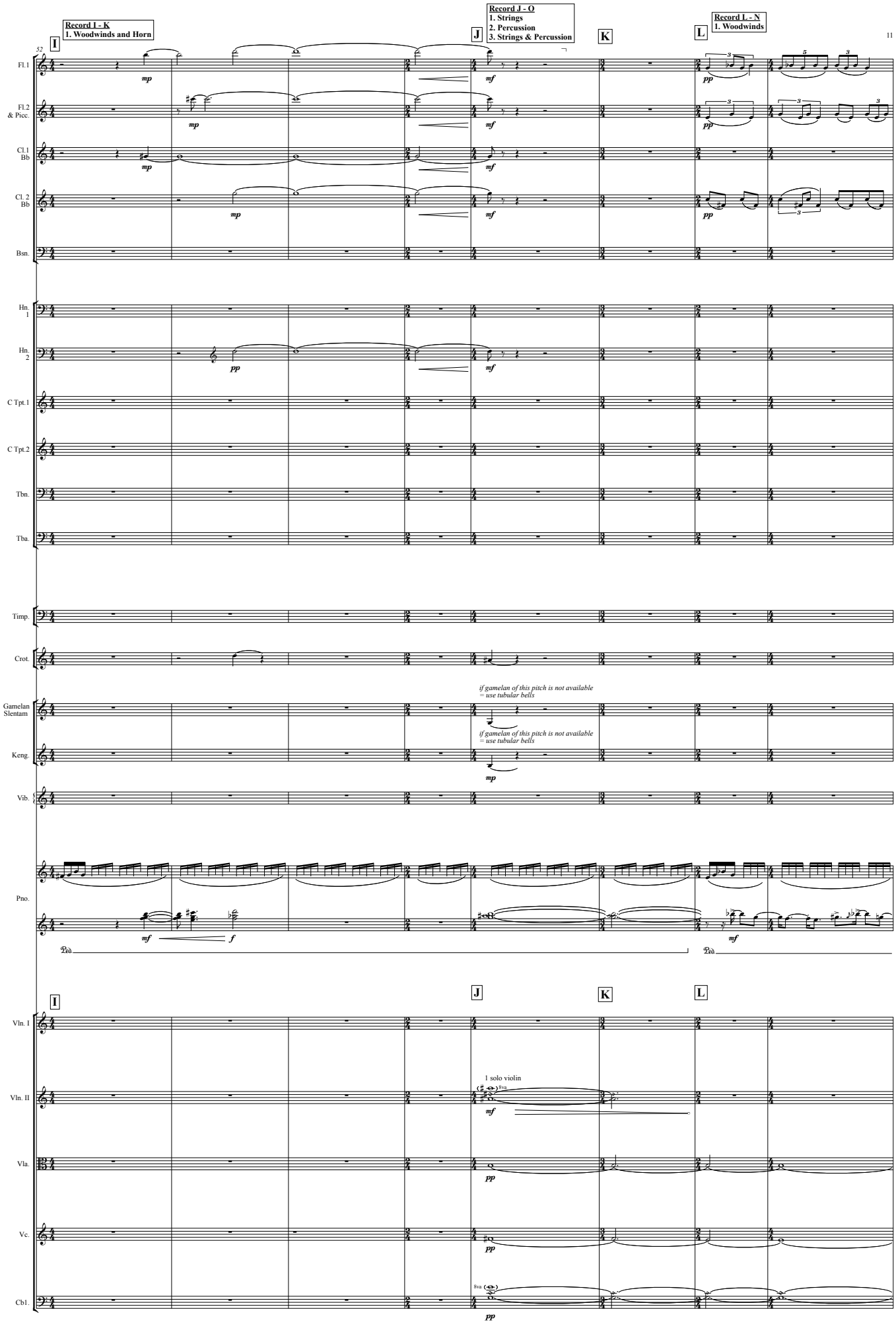
ff

ff

D


36
E
F
Fl.1
Change to Flute
Fl.2 & Picc.
Flute
fast vib.
wide & slow vib.
fast vib.
wide & slow vib.
Cl.1 Bb
Cl. 2 Bb
Bsn.
Hn. 1
Hn. 2
C Tpt.1
C Tpt.2
Tbn.
Tba.
Timp.
Whip
Br.D.
Gamelan Slentam
Vib. 1
Pno.
Ped.
Vln. I
Vln. II
Vla.
Vc.
Cb1.


Record G - 1
1. Strings
G
H
Fl.1
Fl.2 & Picc.
Cl.1 Bb
Cl. 2 Bb
Bsn.
Hn. 1
Hn. 2
C Tpt.1
C Tpt.2
Tbn.
Tba.
Timp.
Crot.
Vib.
Pno.
Vln. I
Vln. II
Vla.
Vc.
Cb1.
senza vib.
fast vib.
wide & slow vib.
fast vib.
wide & slow vib.
pp
arco.
15va
sfz


Record I - K
1. Woodwinds and Horn
Record J - O
1. Strings
2. Percussion
3. Strings & Percussion
Record L - N
1. Woodwinds
I
J
K
L
52
Fl.1
Fl.2 & Picc.
Cl.1 Bb
Cl. 2 Bb
Bsn.
Hn. 1
Hn. 2
C Tpt.1
C Tpt.2
Tbn.
Tba.
Timp.
Crot.
Gamelan Slentam
Keng.
Vib.
Pno.
Vln. I
Vln. II
Vla.
Vc.
Cb1.
mp
mf
pp
f
if gamelan of this pitch is not available = use tubular bells
1 solo violin
8va

Record O - R
1. Strings
2. Percussion (including vibes)

M N O

60

Fl.1
Fl.2 & Picc.
Cl.1 Bb
Cl. 2 Bb
Bsn.
Hn. 1
Hn. 2
C Tpt.1
C Tpt.2
Tbn.
Tba.
Timp.
T. D.
Crot.
Vib.
Pno.
Vln. I
Vln. II
Vla.
Vc.
Cb1.

soft mallet

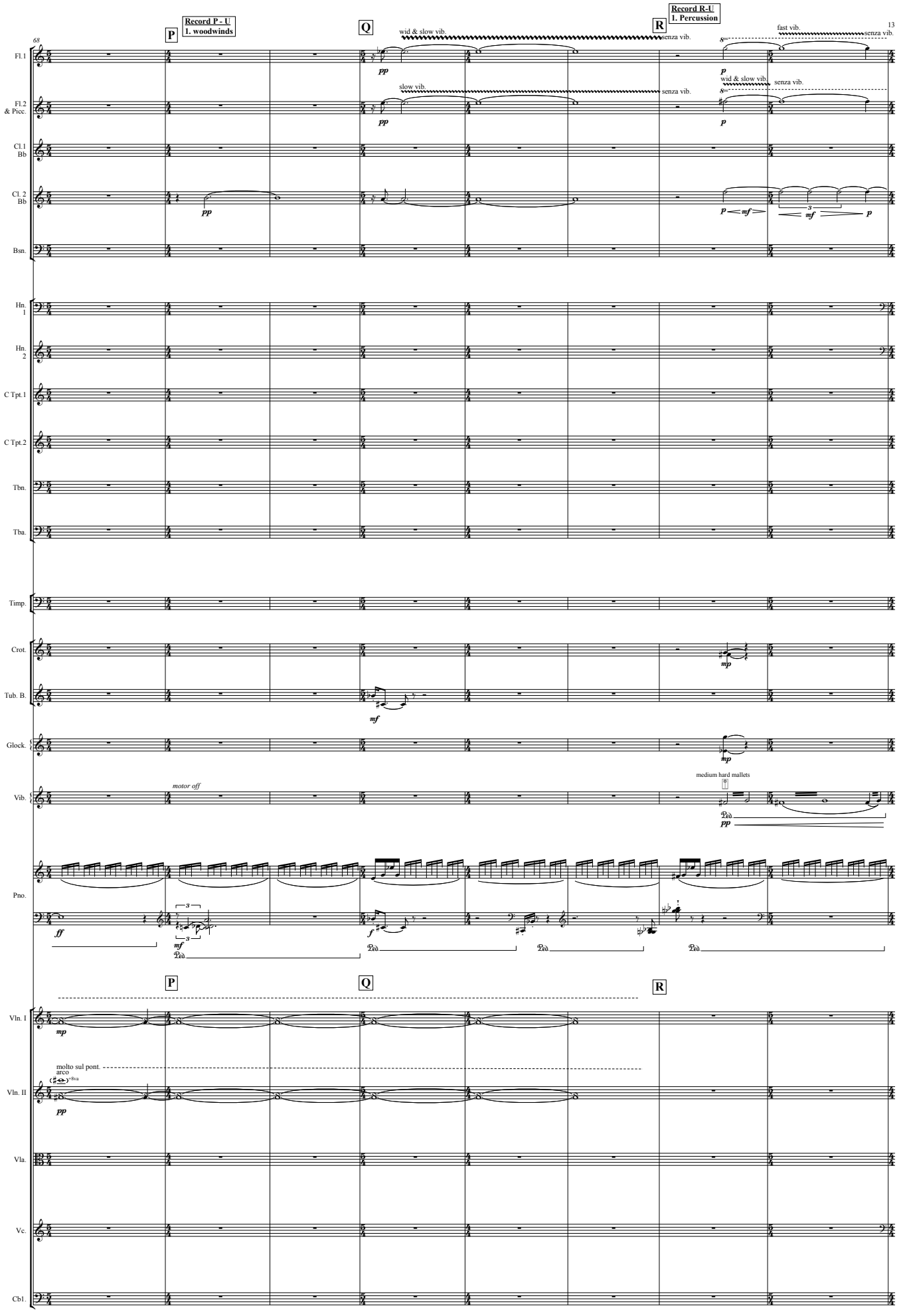
motor on slow: as close as possible to quaver triplets

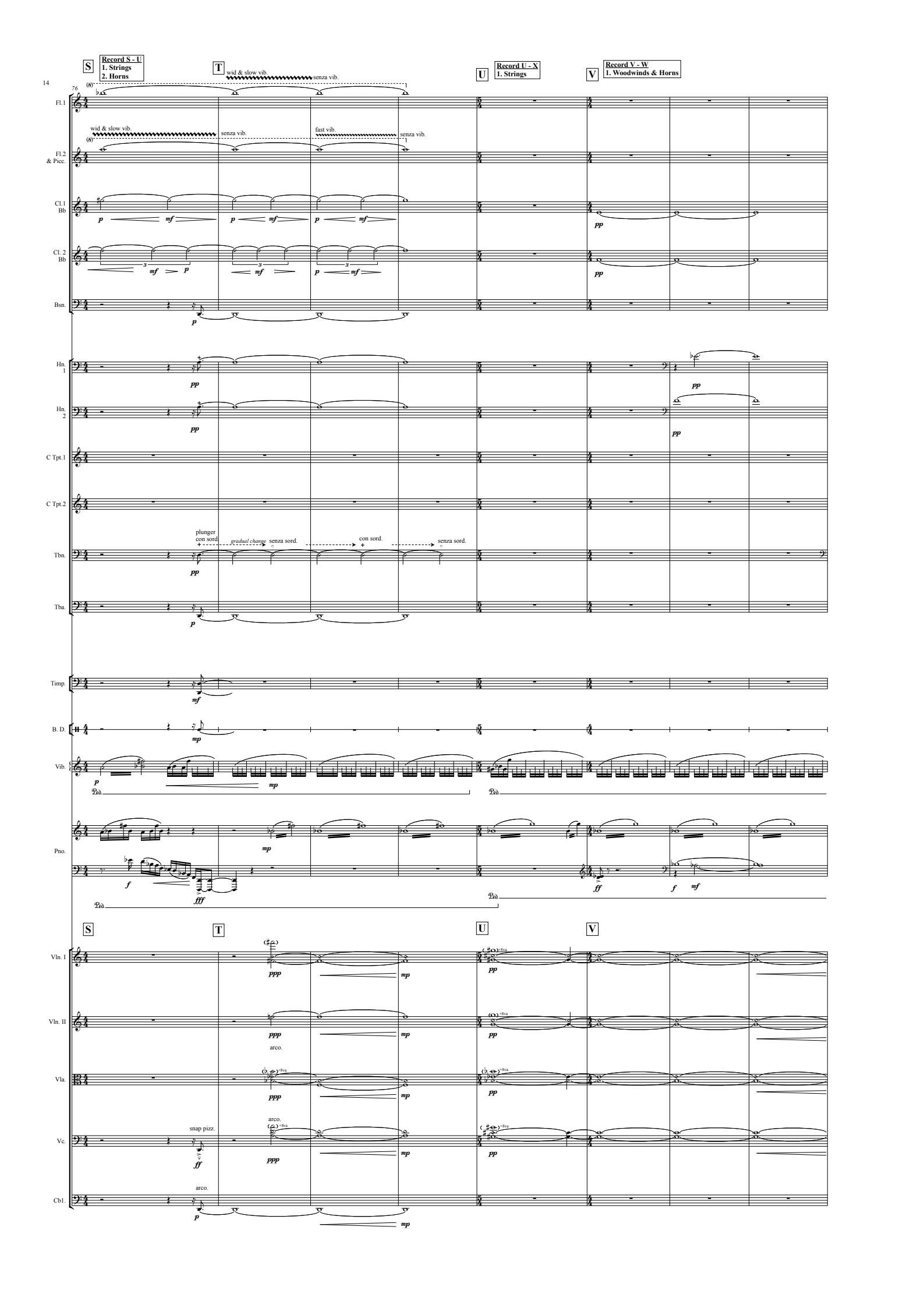
arco.

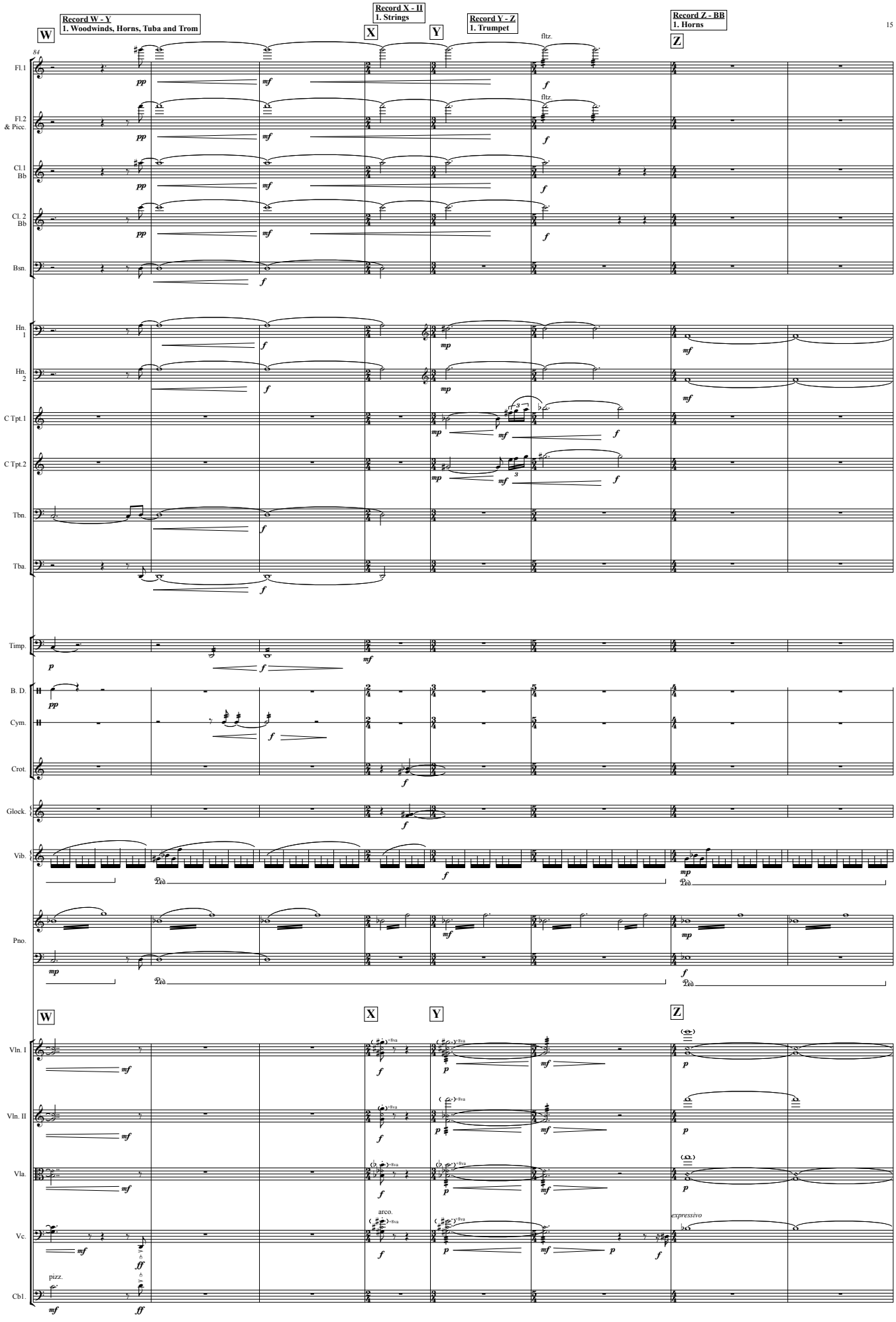
molto sul pont.
arco

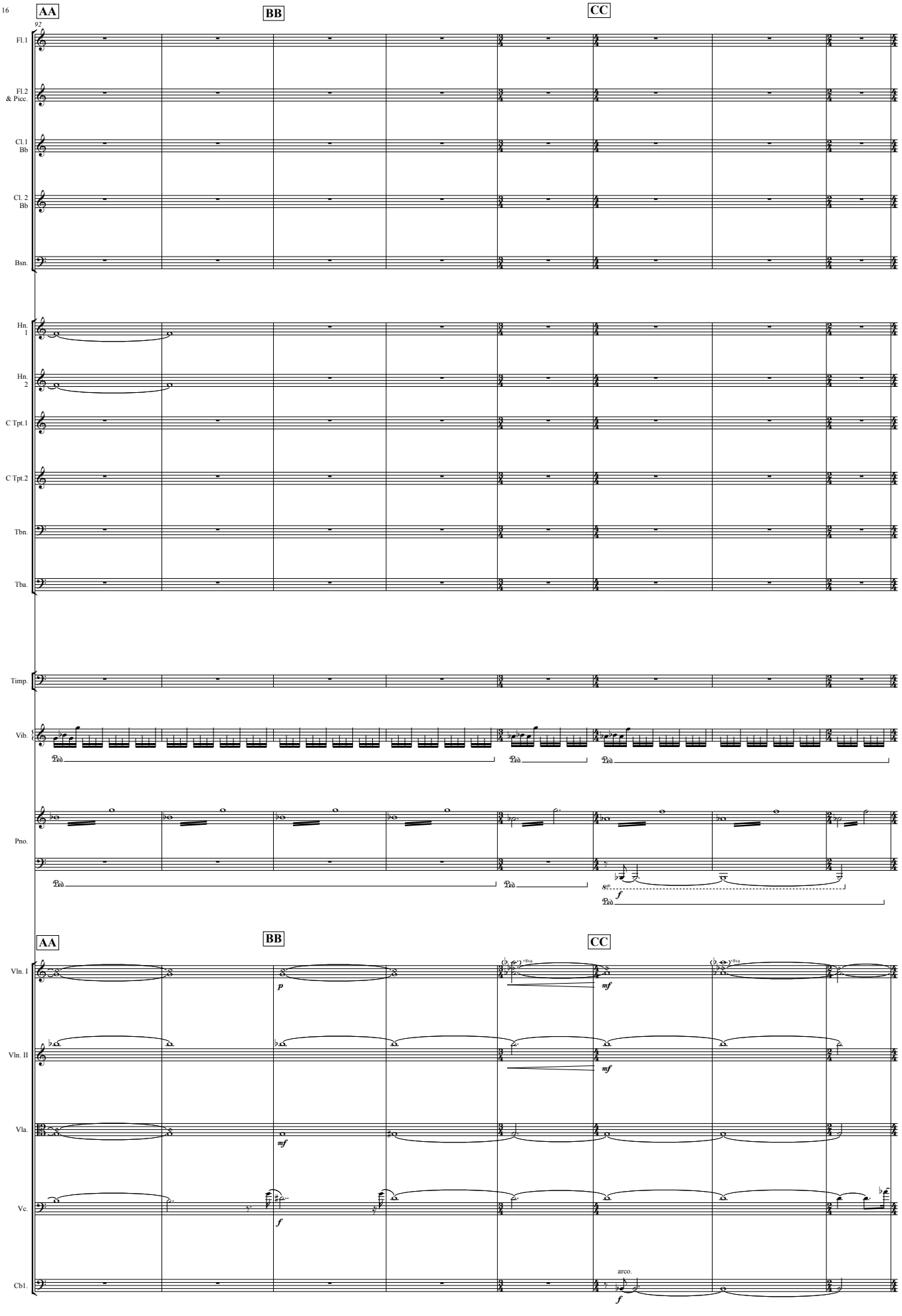
Entire Vn. II section

pizz.


68
P
Record P - U
1. woodwinds
Q
R
Record R-U
1. Percussion
wid & slow vib.
senza vib.
fast vib.
slow vib.
Fl.1
Fl.2 & Picc.
Cl.1 Bb
Cl. 2 Bb
Bsn.
Hn. 1
Hn. 2
C Tpt.1
C Tpt.2
Tbn.
Tba.
Timp.
Crot.
Tub. B.
Glock.
Vib.
motor off
medium hard mallets
Pno.
Vln. I
Vln. II
molto sul pont.
arco
Vla.
Vc.
Cb1.


14
76
S
Record S - U
1. Strings
2. Horns
T
wid & slow vib.
senza vib.
U
Record U - X
1. Strings
V
Record V - W
1. Woodwinds & Horns
Fl.1
Fl.2 & Picc.
wid & slow vib.
senza vib.
fast vib.
senza vib.
Cl.1 Bb
Cl. 2 Bb
Bsn.
Hn. 1
Hn. 2
C Tpt.1
C Tpt.2
plunger
con sord.
gradual change
senza sord.
con sord.
senza sord.
Tbn.
Tba.
Timp.
B. D.
Vib.
Pno.
Vln. I
Vln. II
arco.
Vla.
arco.
snap pizz.
Vc.
arco.
Cb1.


Record W - Y
1. Woodwinds, Horns, Tuba and Trom
Record X - II
1. Strings
Record Y - Z
1. Trumpet
Record Z - BB
1. Horns
W
X
Y
Z
84
Fl.1
Fl.2 & Picc.
Cl.1 Bb
Cl. 2 Bb
Bsn.
Hn. 1
Hn. 2
C Tpt.1
C Tpt.2
Tbn.
Tba.
Timp.
B. D.
Cym.
Crot.
Glock.
Vib.
Pno.
Vln. I
Vln. II
Vla.
Vc.
Cb1.
fltz.
arco.
pizz.
expressivo


AA
BB
CC
92
Fl.1
Fl.2 & Picc.
Cl.1 Bb
Cl. 2 Bb
Bsn.
Hn. 1
Hn. 2
C Tpt.1
C Tpt.2
Tbn.
Tba.
Timp.
Vib.
Pno.
AA
BB
CC
Vln. I
Vln. II
Vla.
Vc.
Cb1.
p
mf
f
arco.

Record DD - FF
1. Brass

Record DD - JJ
1. Percussion/timp

DD **EE**

100

Fl.1
Fl.2 & Picc.
Cl.1 Bb
Cl. 2 Bb
Bsn.
Hn. 1
Hn. 2
C Tpt.1
C Tpt.2
Tbn.
Tba.
Timp.
B. D.
Gong
Vib.
Pno.

mp *mf* *f*

soft mallet

DD **EE**

Vln. I
Vln. II
Vla.
Vc.
Cb1.

alternate between stopped note and harmonic

slow vib.
IV

108

FF

GG

Record GG - JJ
1. Woodwind, Horn & Brass

HH

Record HH - II
1. Strings

Fl.1

Fl.2 & Picc.

Cl.1 Bb

Cl. 2 Bb

Bsn.

Hn. 1

Hn. 2

C Tpt.1

C Tpt.2

Tbn.

Tba.

Timp.

S. D.

T. D.

B. D.

Cym.

A. Cym.

Vib.

Pno.

Vln. I

Vln. II

Vla.

Vc.

Cb1.

II Record II - MM
1. Strings

JJ

KK

116

Fl.1

Fl.2
& Picc.

Cl.1
Bb

Cl. 2
Bb

Bsn.

f

Hn.
1

Hn.
2

f

C Tpt.1

C Tpt.2

Tbn.

f

Tba.

f

Timp.

f

B. D.

mf

A. Cym.

Vib.

mp

Pno.

spoken
word

spoken:
A thing of beauty is a joy forever: It's loveliness increases; it will never , Pass into nothingness:

II

JJ

KK

Vln. I

f

pp

Vln. 1
div 1a

pizz.

mf

Vln. 1
div 1b

(pp)

Vln. II

f

pp

Vln. 2
div 2a

pizz.

mf

Vln. 2
div 2b

(pp)

Vla.

f

pp

Vc.

f

pp

Vc.
div1

pizz.

mf

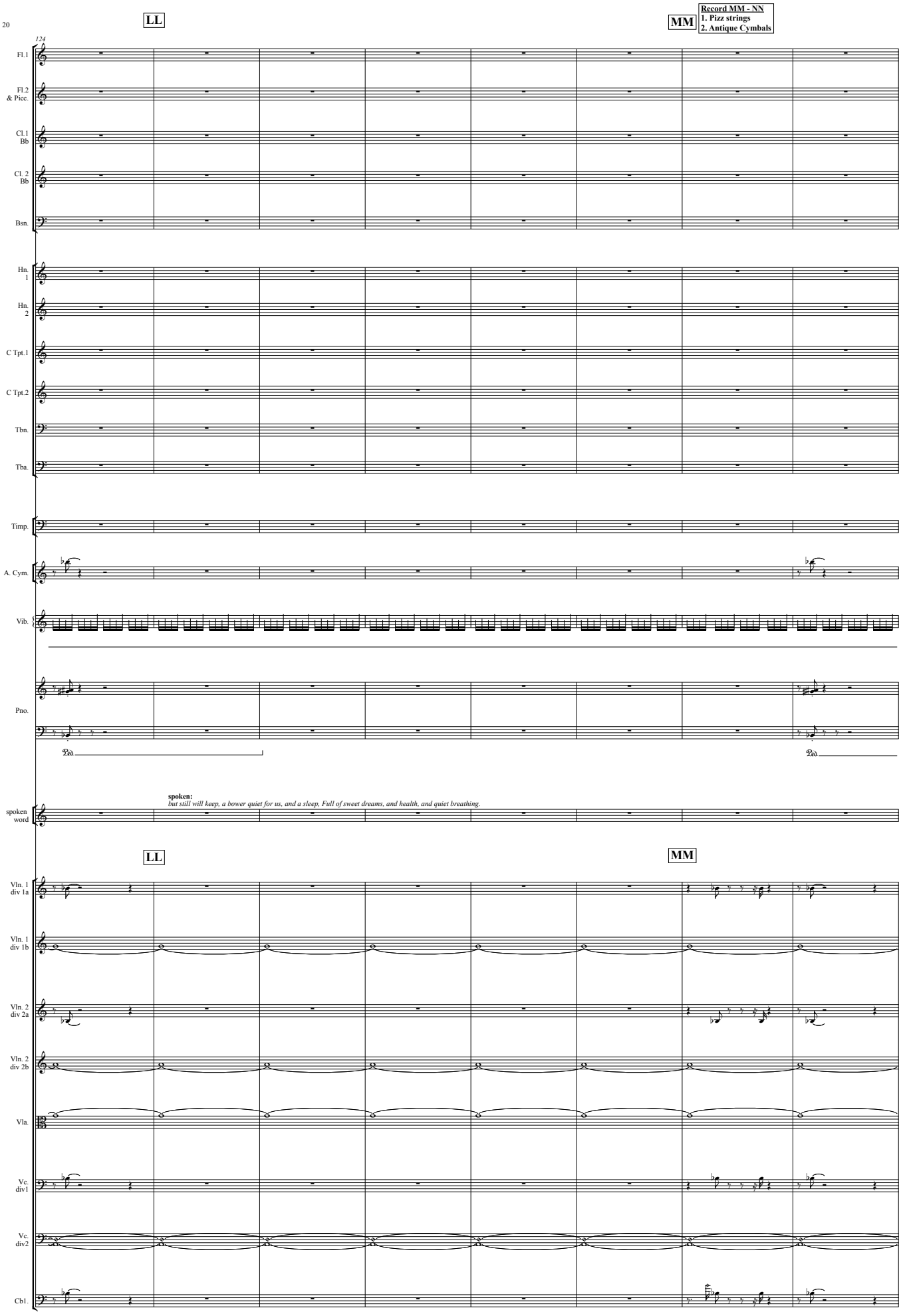
Vc.
div2

(pp)

Cb1.

pizz.

f


LL
MM
Record MM - NN
1. Pizz strings
2. Antique Cymbals
124
Fl.1
Fl.2 & Picc.
Cl.1 Bb
Cl. 2 Bb
Bsn.
Hn. 1
Hn. 2
C Tpt.1
C Tpt.2
Tbn.
Tba.
Timp.
A. Cym.
Vib.
Pno.
spoken word
spoken:
but still will keep, a bower quiet for us, and a sleep, Full of sweet dreams, and health, and quiet breathing.
LL
MM
Vln. 1 div 1a
Vln. 1 div 1b
Vln. 2 div 2a
Vln. 2 div 2b
Vla.
Vc. div1
Vc. div2
Cb1.

These sections can be looped
recording recommences at TT

NN **OO**

132

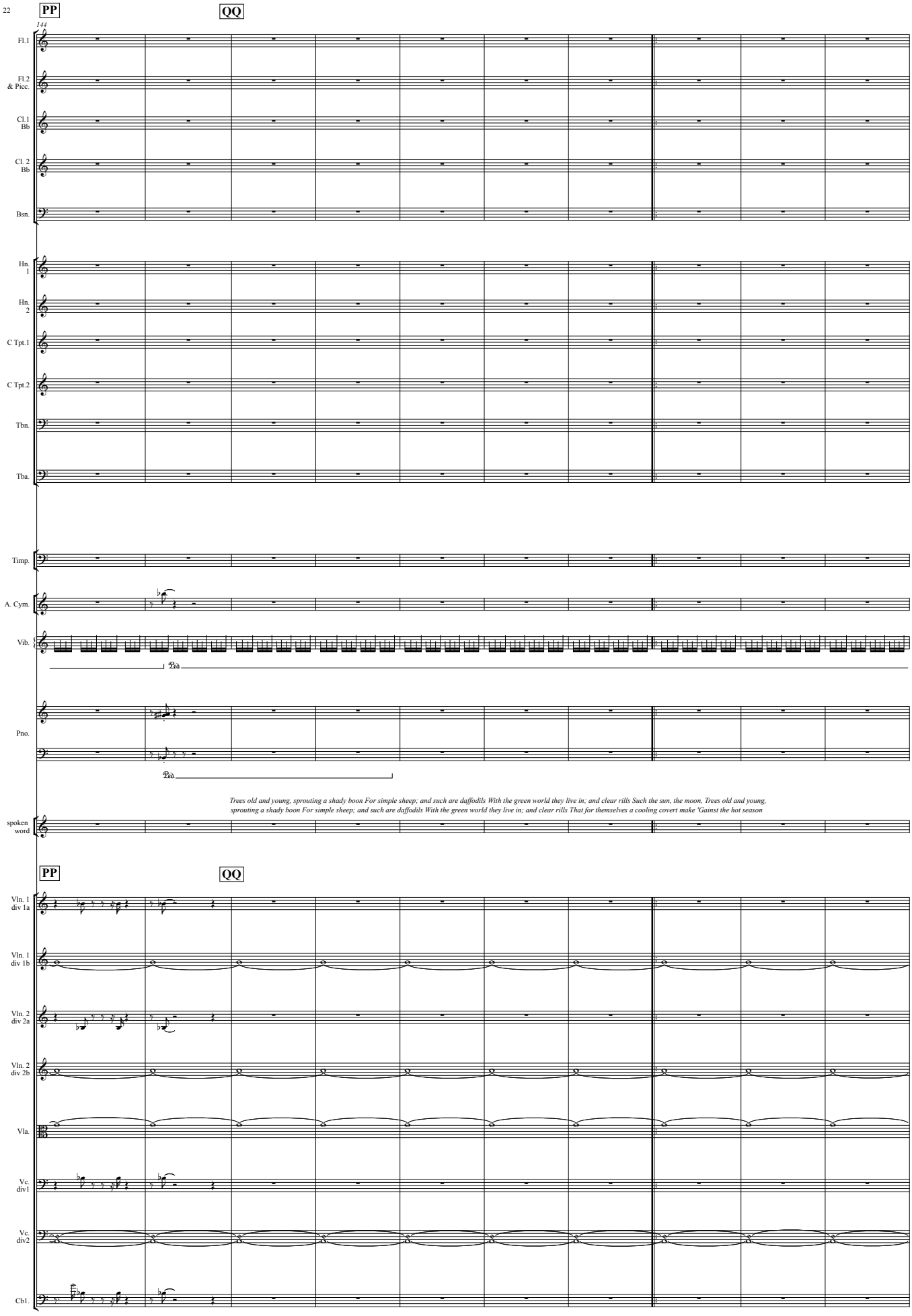
Fl.1
Fl.2 & Picc.
Cl.1 Bb
Cl. 2 Bb
Bsn.
Hn. 1
Hn. 2
C Tpt.1
C Tpt.2
Tbn.
Tba.
Timp.
A. Cym.
Vib.
Pno.

spoken:
Therefore, on every morrow, are we wreathing, A flowery band to bind us to the earth, Spite of despondence, of the inhuman dearth Of noble natures, of the gloomy days, Of the unhealthy and o'er darken'd ways Made for our searching: Yes, in spite of all, Some shape of beauty moves away the pall From our dark spirits.

spoken word

NN **OO**

Vln. 1 div 1a
Vln. 1 div 1b
Vln. 2 div 2a
Vln. 2 div 2b
Vla.
Vc. div1
Vc. div2
Cb1.


PP
144
QQ
Fl.1
Fl.2 & Picc.
Cl.1 Bb
Cl. 2 Bb
Bsn.
Hn. 1
Hn. 2
C Tpt.1
C Tpt.2
Tbn.
Tba.
Timp.
A. Cym.
Vib.
Pno.
Trees old and young, sprouting a shady boon For simple sheep; and such are daffodils With the green world they live in; and clear rills Such the sun, the moon, Trees old and young, sprouting a shady boon For simple sheep; and such are daffodils With the green world they live in; and clear rills That for themselves a cooling covert make 'Gainst the hot season
spoken word
PP
QQ
Vln. 1 div 1a
Vln. 1 div 1b
Vln. 2 div 2a
Vln. 2 div 2b
Vla.
Vc. div1
Vc. div2
Cb1.

154

RR SS

Fl.1
Fl.2 & Picc.
Cl.1 Bb
Cl. 2 Bb
Bsn.
Hn. 1
Hn. 2
C Tpt.1
C Tpt.2
Tbn.
Tba.
Timp.
A. Cym.
Vib.
Pno.

the mid forest brake, Rich with a sprinkling of fair musk-rose blooms: And such too is the grandeur of dooms
We have imagined for the mighty dead; All lovely tales that we have heard or read:
An endless fountain of immortal drink, Pouring unto us from heaven's brink.

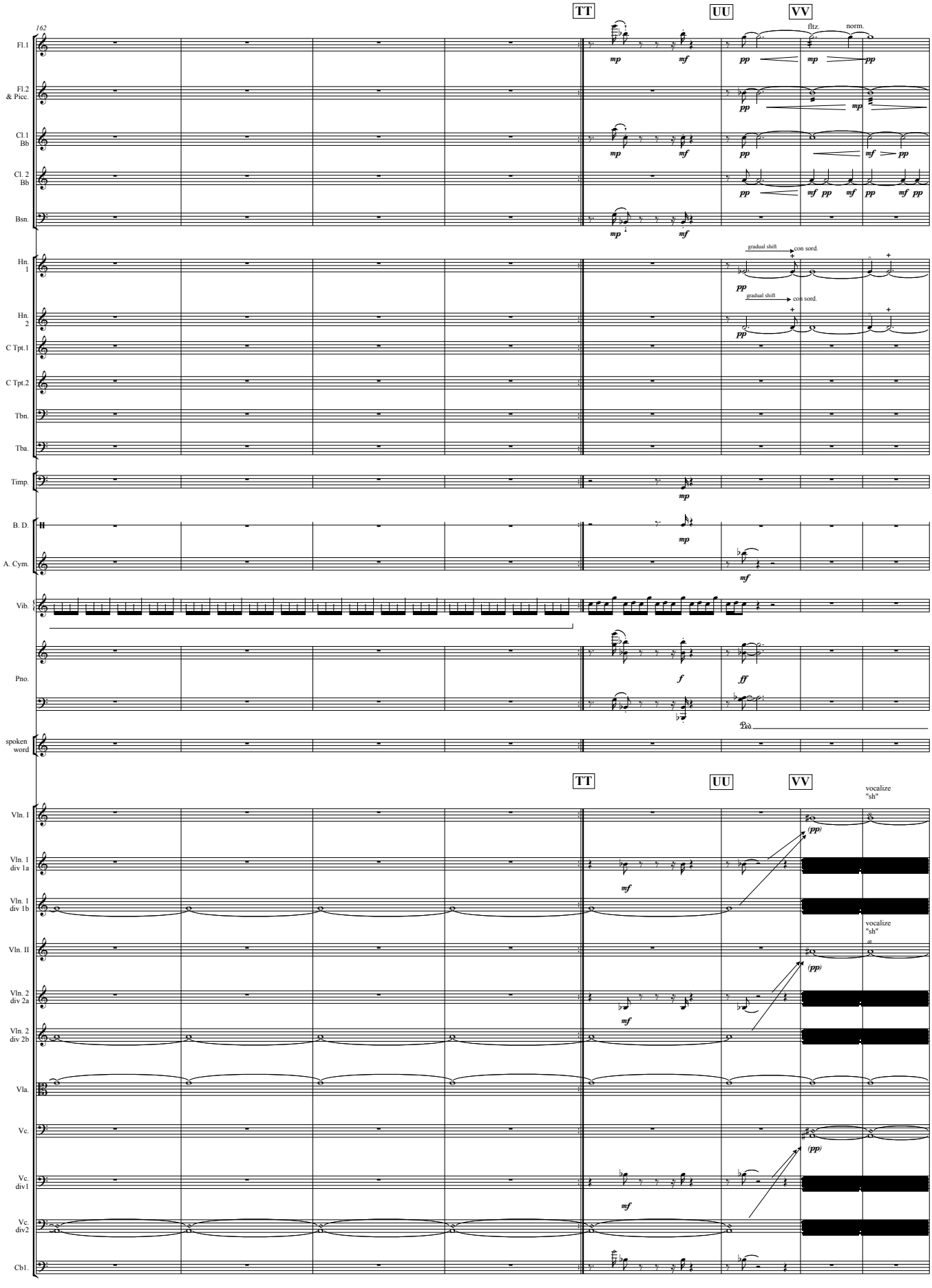
spoken word

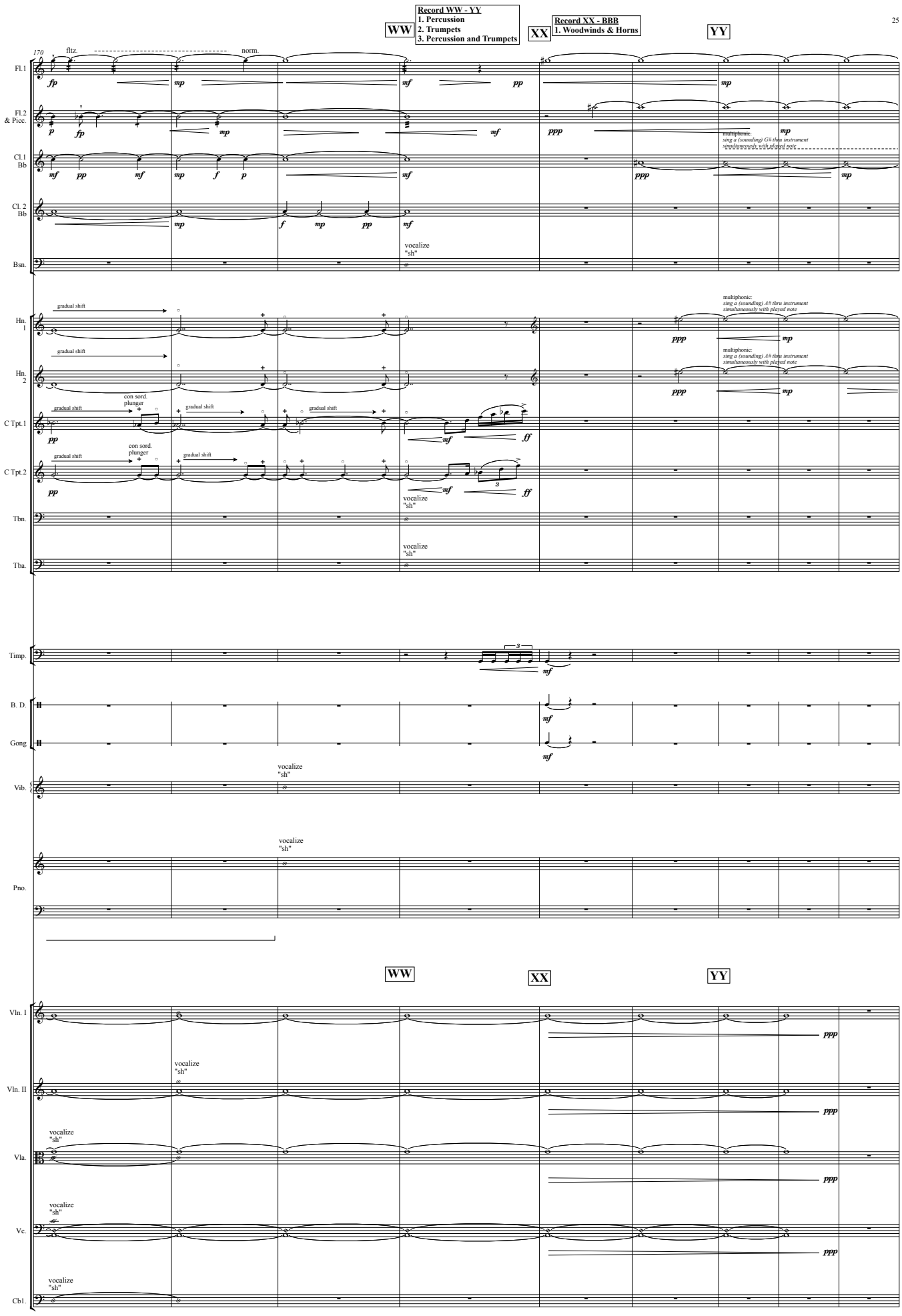
RR SS

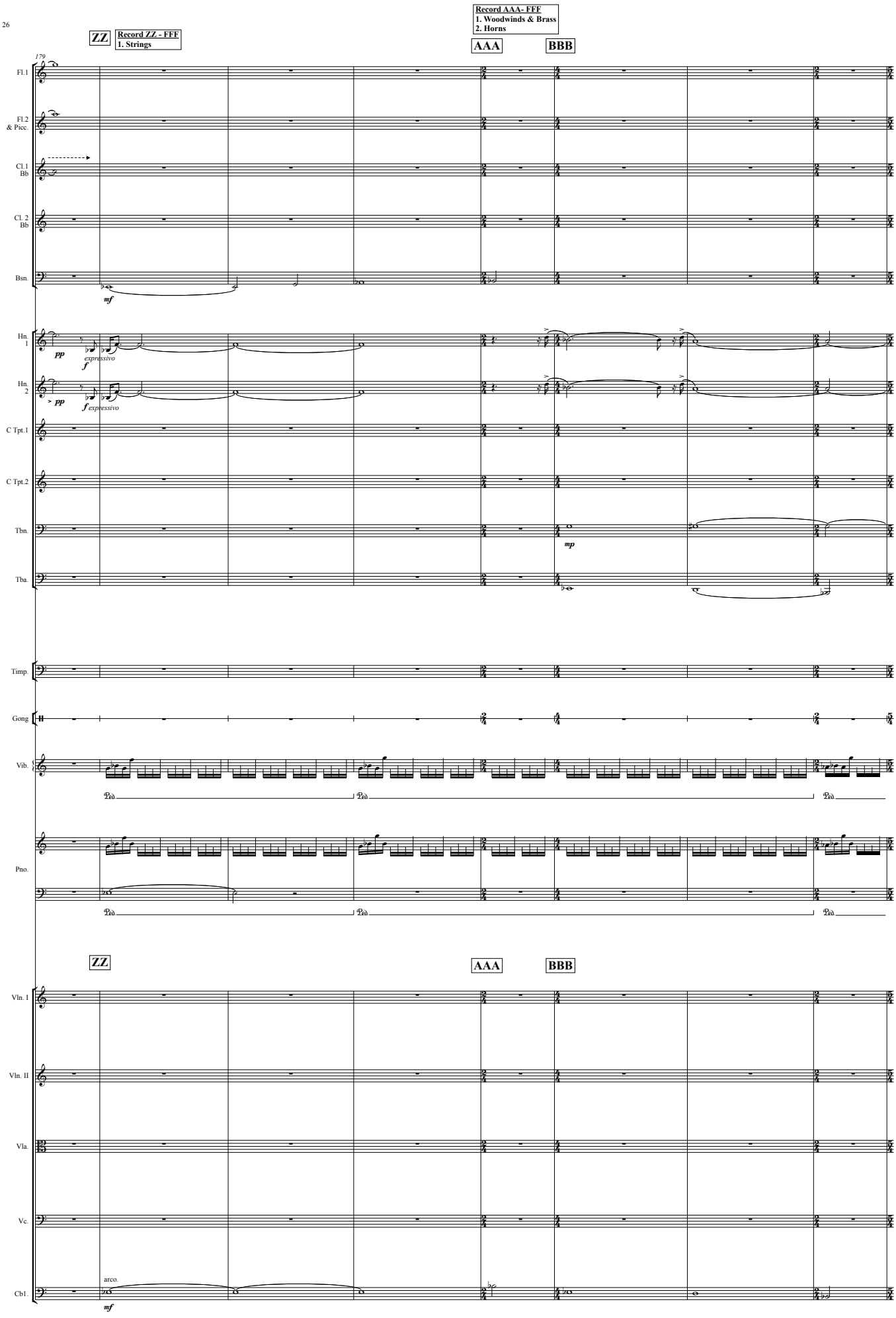
Vln. 1 div 1a
Vln. 1 div 1b
Vln. II
Vln. 2 div 2a
Vln. 2 div 2b
Vla.
Vc. div1
Vc. div2
Cb1.

Record TT - XX
1. Flutes
2. Clarinets
3. Horns
4. Brass
5. Percussion
6. Tutti (without pizz strings, piano or vibes)

Record VV - ZZ
1. Strings




Record WW - YY
1. Percussion
2. Trumpets
3. Percussion and Trumpets
WW
Record XX - BBB
1. Woodwinds & Horns
XX
YY
170
fltz.
norm.
Fl.1
Fl.2 & Picc.
Cl.1 Bb
Cl. 2 Bb
Bsn.
vocalize "sh"
multiphonic: sing a (sounding) G# thru instrument simultaneously with played note
multiphonic: sing a (sounding) A# thru instrument simultaneously with played note
Hn. 1
Hn. 2
gradual shift
con sord. plunger
C Tpt.1
C Tpt.2
Tbn.
Tba.
Timp.
B. D.
Gong
Vib.
Pno.
Vln. I
Vln. II
Vla.
Vc.
Cb1.


ZZ
Record ZZ - FFF
1. Strings
Record AAA- FFF
1. Woodwinds & Brass
2. Horns
AAA
BBB
179
Fl.1
Fl.2 & Picc.
Cl.1 Bb
Cl. 2 Bb
Bsn.
mf
Hn. 1
pp
f
expressivo
Hn. 2
pp
f expressivo
C Tpt.1
C Tpt.2
Tbn.
mp
Tba.
Timp.
Gong
Vib.
Pno.
ZZ
AAA
BBB
Vln. I
Vln. II
Vla.
Vc.
Cb1.
arco.
mf

CCC

Record CCC - DDD
1. Woodwinds & Brass
2. Strings

187

Fl.1

Fl.2 & Picc.

Cl.1 Bb

Cl. 2 Bb

Bsn.

Hn. 1

Hn. 2

C Tpt.1

C Tpt.2

Tbn.

Tba.

Timp.

T. D.

ppp *mf* *ppp*

Vib.

Pno.

CCC

Vln. I

arco.

f

Vln. II

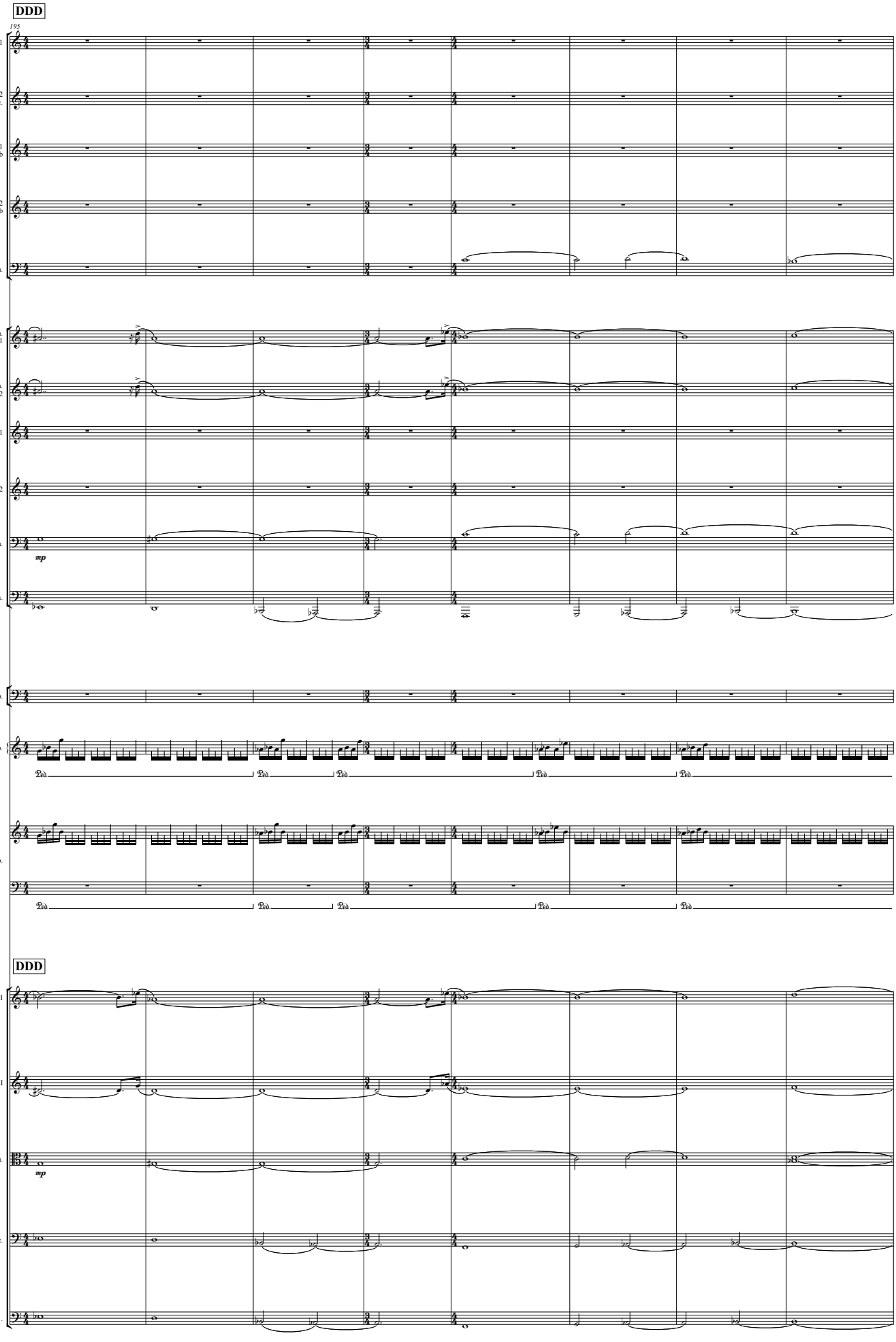
arco.

f

Vla.

Vc.

Cb.


DDD
195
Fl.1
Fl.2
& Picc.
Cl.1
Bb
Cl. 2
Bb
Bsn.
Hn.
1
Hn.
2
C Tpt.1
C Tpt.2
Tbn.
mp
Tba.
Timp.
Vib.
Ped
Pno.
DDD
Vln. I
Vln. II
Vla.
mp
Vc.
Cb1.

EEE Record EEE - GGG
1. Percussion

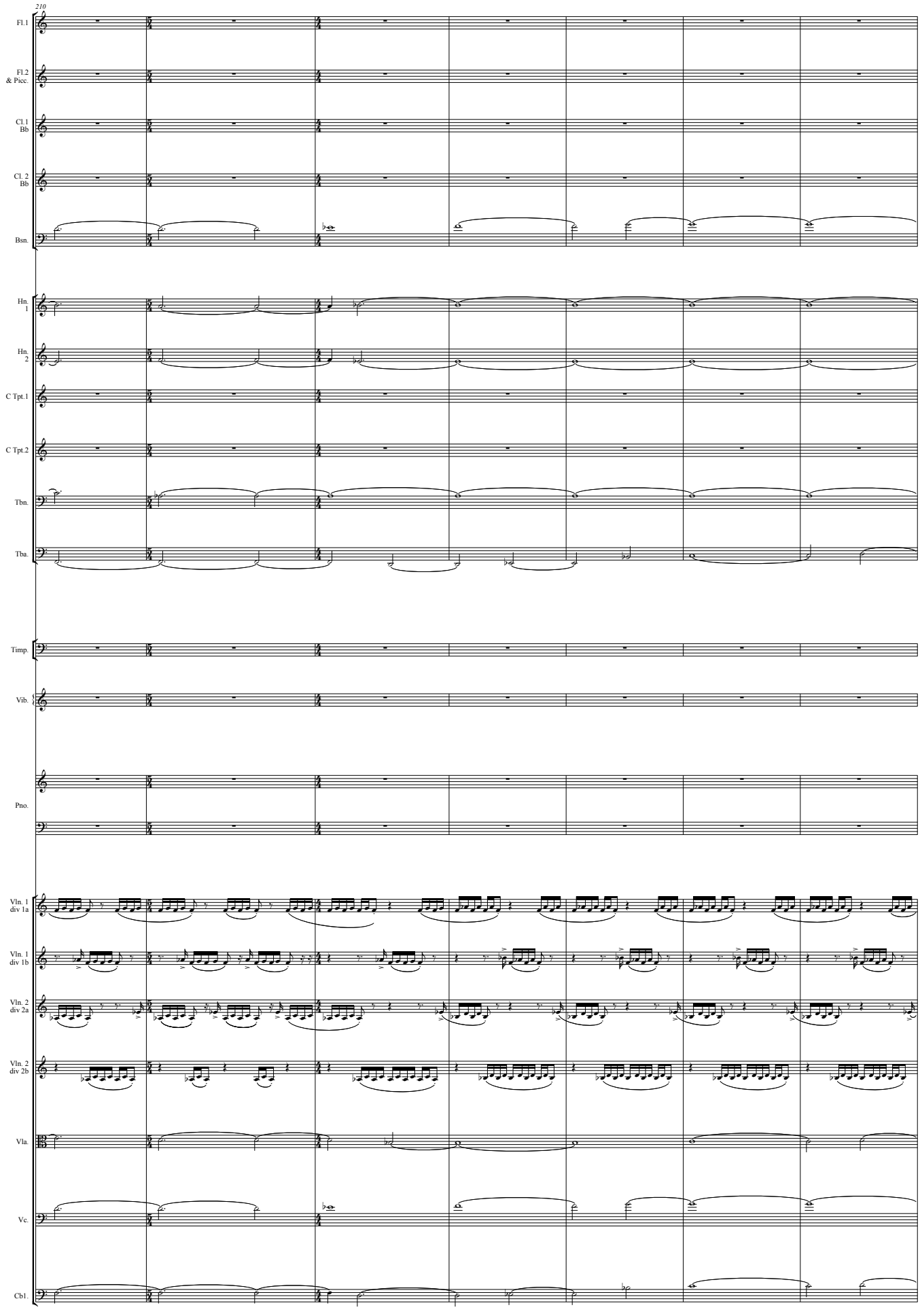
FFF Record FFF - JJJ
1. Bassoon
2. Horns & Brass
3. Violins I&II
4. Viola, Cello & Bass
5. Horns, Brass, Strings

GGG

203

Fl.1
Fl.2 & Picc.
Cl.1 Bb
Cl. 2 Bb
Bsn.
Hn. 1
Hn. 2
C Tpt.1
C Tpt.2
Tbn.
Tba.
Timp.
T. D.
Gong
Vib.
Pno.
Vln. I
Vln. 1 div 1a
Vln. 1 div 1b
Vln. II
Vln. 2 div 2a
Vln. 2 div 2b
Vla.
Vc.
Cb1.

ppp *mf* *ppp* *mf* *f* *p* *arco.* *mp*


210
Fl.1
Fl.2 & Picc.
Cl.1 Bb.
Cl. 2 Bb.
Bsn.
Hn. 1
Hn. 2
C Tpt.1
C Tpt.2
Tbn.
Tba.
Timp.
Vib.
Pno.
Vln. 1 div 1a
Vln. 1 div 1b
Vln. 2 div 2a
Vln. 2 div 2b
Vla.
Vc.
Cb1.

Record HHH - JJJ
1. Flutes
2. Clarinets
3. Bassoon & Brass
4. Percussion

217

HHH

III

Fl.1

Fl.2 & Picc.

Cl.1 Bb

Cl. 2 Bb

Bsn.

Hn. 1

Hn. 2

C Tpt.1

C Tpt.2

Tbn.

Tba.

Timp.

B. D.

Vib.

Pno.

HHH

III

Vln. 1 div 1a

Vln. 1 div 1b

Vln. 2 div 2a

Vln. 2 div 2b

Vla.

Vc.

Cb1.

Record JJJ - KKK
tutti

JJJ long pause ca 15 seconds

223

Fl.1
Fl.2 & Picc.
Cl.1 Bb
Cl. 2 Bb
Bsn.
Hn. 1
Hn. 2
C Tpt.1
C Tpt.2
Tbn.
Tba.
Timp.
T. D.
B. D.
Gong
Whist.
Vib.
Pno.
Vln. 1 div 1a
Vln. 1 div 1b
Vln. 2 div 2a
Vln. 2 div 2b
Vla.
Vc.
Cb1.

JJJ long pause ca 15 seconds

For recording: Skip this section
continue from LLL

Record LLL
1. Tutti

229

KKK ♩ = 70
molto rubato
very floaty

LLL
hold for
ca 12 seconds

Fl.1
Fl.2 & Picc.
Cl.1 Bb
Cl. 2 Bb
Bsn.
Hn. 1
Hn. 2
C Tpt.1
C Tpt.2
Tbn.
Tba.
Timp.
Vib.
Pno.

bell-like
wait 6 seconds
wait 5 seconds
wait 5 seconds
wait 6 seconds
wait 5 seconds

mf
mp

KKK ♩ = 70
molto rubato
very floaty

LLL
hold for
ca 12 seconds

Vln. I
Vln. II
Vla.
Vc.
Cb1.

ppp