

# **BEYOND NARRATIVE: A CROSS-MODAL APPROACH TO SOUNDTRACK COMPOSITION**

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## **ABSTRACT**

This research project addresses the problem of scoring non-narrative film work. Deprived of a narrative content to follow, the composer faces the fundamental problem of deciding what other elements should be considered for establishing a meaningful relationship between the screened events and the music soundtrack. In order to mitigate the problem, this research project investigates the possibility of applying cross-modal principles to soundtrack composition, and systematically exploits the human ability to experience or interpret the information channeled through one sense modality in terms of another.

After the Introduction which explains the research aims and methods, the thesis is structured into subsequent chapters. Chapter two considers cross-modal relationships in music and other expressive arts along with a brief consideration of Reception Theory and its relation to my work. Chapter three provides a set of four case studies of contemporary compositional approaches to non-narrative film. Chapter four demonstrates a new and systematic approach to soundtrack composition through a specially devised Table of Audio-Visual Correspondences, mapping parameters from one domain to another. This method is then applied in Chapter five in relation to a portfolio of original composed soundtracks. A detailed analysis is provided of each piece and the application of cross-modal logic to the scoring of non-narrative video is discussed and evaluated. Finally, Chapter six offers conclusions, recommendations, and outlines the scope for further research. An explanation is given of how work on this thesis has affected my own practice and compositional voice. A suggestion is also provided on how this thesis can benefit the wider film music academic and practitioner community.

# CHAPTER ONE: INTRODUCTION

## 1.1 - The Research Method

My research considers cross-modal perception in the expressive arts, and comprises a review of literature and key works in this area. It reviews the synaesthetic multimedia experiments of Scriabin (*Prometheus*), Schoenberg (*Die Glückliche Hand*), and Messiaen (*Couleurs de la Cité Céleste*), as the first deliberate artistic attempts at linking sense modalities for expressive purposes. These are evaluated in the light of the critical writings of film theorists Eisenstein (Eisenstein 1968) and Eisler (Eisler 1973), who rejected synaesthetic correspondence as an effective model for cross-media interaction. Eisenstein's and Eisler's critiques, in turn, are reviewed in the light of the work of Marshall & Cohen (1988), Lakoff & Johnson (1980), and Cook (1998) who show how synaesthesia in the narrow sense suffers from a similarity problem where the information conveyed from each modality is duplicated, resulting in excessive overlap and redundancy of information.

The focus then shifts to what may be called evaluating and applying Cook's (1988), 'quasi-synaesthesia', - the more general ability to experience or interpret the information channeled through one sense modality in terms of another. The three basic models of multimedia theorized by Cook, 'conformance, complementation, and contest' are reviewed, and their potential to inform strategies for establishing a compositionally controlled way of mapping cross-modal parameters in the specific context of scoring non-narrative filmwork is assessed.

## 1.2 - The Research Output

Whilst drawing from theoretical work and literature, my research is intended to be primarily practice-based in approach and scope. The output consists of a portfolio of original soundtracks complemented by a written thesis discussing and evaluating,

through a detailed analysis of each finished soundtrack the application of cross-modal logic to the scoring of non-narrative video. This not only provides a new framework for my own practice but also an original contribution to the knowledge and understanding of this area for both composers and scholars in search of a general theory of audio-visual interaction and alignment of media in multimedia work.

# CHAPTER TWO: PERCEPTIONS AND RECEPTIONS

## 2.1 - The Non-Narrative Context

It is necessary first to consider the differences between narrative and non-narrative film and how music is woven through each. Narrative film tells a story, and the accompanying musical composition supports and facilitates that (often events-based) narration, usually conforming to genre etc. and cinematic conventions. A narrative generally comprises, first, the story itself, and secondly, the process of delivering the story via various representations and discursive cues. Generally a narrative film seeks to make a point, or derive a moral lesson from the story, indicating whether choices or actions depicted were good or bad, including the reasons that led up to them.

In the non-narrative context, 'plot' in the conventional sense is dispensed with because 1) sometimes surreal events contradict natural laws, confusing the understanding of time and space, cause and effect and, 2) often the film's rationale, the 'meaning' of the action, is oblique or at least not immediately apparent.

However, 'in order for a film to be truly non-narrative, it would need to be nonrepresentational so the viewer would not recognize anything in the image or perceive temporal, sequential or cause-and-effect relations between the elements of the image.' Such a film is not possible as the spectator would still have a tendency to 'inject narrative where it does not exist.' (Aumont 1992: 71)

In other words, non-narrative is not non-meaning, as there is always a context from which meaning arises. It may be something as simple as the visual exploration of the flow of liquid; or it may entail the exploration of abstract concepts, such as 'entrapment', 'sexual tension', or other psychologically based themes. Whichever the case, the composer's role becomes one of establishing a structural link between sound and screen

images, as the dominance of the visual narrative is absent. The role of the composition shifts from underscoring to one of illumination and revelation.

Therefore, while a non-narrative film avoids certain characteristics of the narrative, it may produce the same result such as seeking to persuade the viewer to adopt an opinion or perception of the subject matter.

### **2.1.1 – Diegetic/Non-Diegetic Fallacy**

Winters (2010) stated that the terms 'diegetic–non-diegetic' have been used in film music theory for more than twenty years to depict sound and music's narrative source in film.

Diegetic sound or music exists within the narrative's time and space which means that the source is visible on screen or has a source which is intimated in the scene. Examples include the voices of characters speaking, sounds made by objects such as a jukebox playing where the scene is in a diner, or where music is the source of instruments in the story which is counted as source music. On the other hand, non-diegetic music or sound is not visible on the screen and it is not implied in the action on the screen. An example of this would be a narrator's commentary, sound effects to add dramatic effect, and mood music.

Although the use of the term 'non-diegetic' is widely accepted for most of the underscoring in films, it can cause a problem in the minds of many when considering film music that seems to lie in an intermediate stage between diegetic and non-diegetic.

Winters (2010) seeks to question current film music theory by insisting on the crucial role music plays in creating narrative space. In this way he promotes a cinematic idea of diegesis and stresses the fact that a film is by nature, artificial. In this instance we might consider the musical score as 'intra-diegetic' as the creation of music creates narrative space in a non-narrative context.

### **2.1.2 - The Research Aim**

The purpose of this research is to seek to establish an effective approach to musical composition for the non-narrative context, and the thesis has two arcs of action. The main objective is to first ascertain what other elements might be considered in order to meaningfully associate the screened events and the music tracks, and second, to investigate critically how these elements may be most effectively scored. This means that I will be investigating the different ways to interpret screen events and create appropriate musical scores for these visual events.

## **2.2 - Multimedia and Cross-Modal Perception**

Multi-media or several media working together, refers to the combined use of media such as movies, music, lighting, sound, text and graphics. It is a new word for an ancient concept with an example of multimedia being the earliest Greek dramas where various elements were combined.

Within media there is common cognitive ground meaning that in the expressive arts, such as music, dance, film, and musical theatre, concepts can be communicated using a shared referential framework. Sometimes one discipline complements another: music is written for dance, animation for music (and vice versa); sometimes their function is collaborative: such as the music, dance and drama that together give us musical theatre, or the dramatic, active element that is a prime ingredient of performance art.

In multimedia, the sense modalities which elicit a particular response or perception are interchangeable. An easily recognizable example may be found in film in the mainstream horror genre, where visual events often cause us to feel fear, but only after preparation for a frightening event by a musical prelude in which anxiety and tension is built. This interchangeability, where a perception or reaction can be elicited from various or a combination of media, is described as cross-modality.

As music and film share the same fundamental building blocks as time-based arts, examples of cross-modal audio-visual expressions abound: pitch is experienced as being high or low, melody lines as ascending or descending, textures as thickening or thinning. In the audio as well as the visual realm, we perceive gestures, movement, rhythm, pace, and so on. In music and film these parameters can be mapped from one domain onto the other. For example, in an age of multi-channel audio surround, spatial relationships can actually be translated sonically in a most literal way.

Nicholas Cook observes that the way people think and talk about music differs from how they experience it. The way music is structured formally, does not necessarily correlate to the way people hear or interpret that piece of music. Instead, Cook asserts that music is often experienced in relation to other media, and its meaning only truly emerges in its relation to and through other media, and this interaction or 'multimedia' is inevitable. Cook's stance is well summarized by his claim that we 'never experience music alone'.

In film, Cook suggests that music adds its own attributes to a story or visual image, creating coherence and making connections that are not present in the spoken word or the pictures on the screen. It is the concern of my research enquiry to explore just how the musical contribution to non-narrative film might best be effected.

## **2.3 - Cross-Modal Relationships in Music and Other Expressive Arts**

### **2.3.1 - Sound and Vision: Synaesthesia and Experiments in Visualizing the Sonic**

Each person sees the world differently including sound and colour, and it is this individuality which creates such a variety in the art and music world. When describing coloured hearing, Vladimir Nabokov, the Russian writer, says:

'the colour sensation seems to be produced by the very act of my orally forming a given letter while I imagine its outline. The long a of the English alphabet has for

me the tint of weathered wood, but a French a evokes polished ebony. This black group also includes hard g (vulcanized rubber) and r (a sooty rag being ripped). Oatmeal n, noodle-limp l, and the ivory-backed hand mirror of o take care of the whites . . . Since a subtle interaction exists between sound and shape, I see q as browner than k, while s is not the light blue of c, but a curious mixture of azure and mother-of-pearl.' (Nabokov 2006: 34).

Nabokov's coloured hearing is now defined as synaesthesia where at least two of the senses awaken a combination of emotions, feelings and impressions.

It is well known that the composer Messiaen, had the neurological condition of synaesthesia which induced cross-modal sensory responses which he used in his music. As the condition was not one which could be stopped and started voluntarily, most of Messiaen's music involves this. Messiaen stated that he could hear in colours which meant that he often described his music as 'colour progressions' by linking key signatures and collections of pitches to specific colours. According to Messiaen (cited in Cook 1998: 29) the form of his work depended entirely on colours and he even goes to the extent of making sure the music conductor is aware by writing notes on the musical score indicating the names of the colours, e.g. 'the bass plays red' or 'the woodwind plays blue'. He felt that the music which we hear is only a part of the multi-media experience as we should, as an audience, be seeing the colours as well as hearing the music. Messiaen's work will be discussed further later. (2.3.2.1)

Recently, Sanchez and Kapuscinski (2010) conducted three introductory studies for an inter-media performance, Counterlines - a duet for Disklavier and Wacom Cintiq, in which both performers generated audiovisual material that related to each other contrapuntally. In this work the keyboard player generated graphic lines while playing music and the graphic performer generated piano lines by drawing. To reinforce the clarity of the relationship between visual contours, all graphic elements were projected on a single

screen. This approach to audio-visual collaboration addresses interfacing and inter-media composition.

With such projects in mind, the starting point for this search for a method of effective collaboration between visuals and sound began with the idea of correspondence between the modalities, and a review of the earlier synaesthetic multimedia experiments of Skriabin (*Prometheus*), Schoenberg (*Die Glückliche Hand*), and Messiaen (*Couleurs de la Cité Céleste*), as the first deliberate artistic attempts at linking sense modalities for expressive purposes.

Synaesthesia comes from the ancient Greek [σύν](#) (syn), 'together,' and [αἴσθησις](#) (aisthesis), sensation. One definition of synaesthesia is: "The production of a sense impression relating to one sense or part of the body by stimulation of another sense or part of the body." (Oxford Dictionaries, n.d.) Waterworth (1992) defines synaesthesia as the experience of perceiving information in a radically different form to the way it is normally perceived. Synaesthesia can take many forms (such as perceiving letters or numbers as having a characteristic colour), and has long been recognised as a medical condition linked to creativity.

Synaesthetics typically perceive sounds as colours, graphics or patterns, and conversely, they experience visual events as sounds. This can therefore be utilised within a musical score to enhance the visual, on screen movement, with sounds. Many people can experience hearing in colour, which means that in their minds they perceive the musical notes in colour, i.e. it is as if they hear in colour. This 'coloured hearing' is defined as synaesthesia and is part of the spectrum of music psychology.

The idea of colour and timbre within musical composition and the psychology of music and its relationship to coloured hearing is an essential element in the study of audio visual media as it is also closely associated with electronic audio equipment, usually

computer controlled, where the subjects in the stimulus-response experiments are asked to visualize the sounds. Within media there is a diversity which can often overlap.

### **2.3.2 - Messiaen**

Such was the experience of sound for composer Messiaen, who talked of the 'dazzlement' of his music-'blue, red, violet, orange, green spirals which move and turn with the sounds, at the same speed as the sounds' (cited in Cook 1998: 33).

For Messiaen, colour was an integral part of the musical experience, and therefore of his compositional work. He described his music as 'colour progressions', and linked key signatures and collections of pitches to specific colours. Messiaen's subsequent works (most famously *Coleurs de la cité Celeste* in which musical themes, melodic or rhythmic, and the complexes of sounds and timbres all reference the colour Messiaen himself assigned to various biblical quotations) consistently feature the same sound-colour relationships.

### **2.3.3 - Schoenberg and Scriabin**

Schoenberg's *Die Glückliche Hand* (1913)<sup>1</sup> is a one-act drama of four scenes, in which the action on-stage is accompanied by music, mime, costume and various lighting effects. Lighting and musical accompaniment play key, co-ordinated roles in highlighting the psychological moods of the piece, with man being represented by the colour red and the cello, while the woman is represented by multiple colours and the solo violin.

The abstraction of the music<sup>2</sup> fits well with the colours of the lighting and the intricacy of the scene changes.

Before composing *Die Glückliche Hand*, Schoenberg had seen a production of Mahler's *Tristan* which had used variously coloured lights as representative of the moods

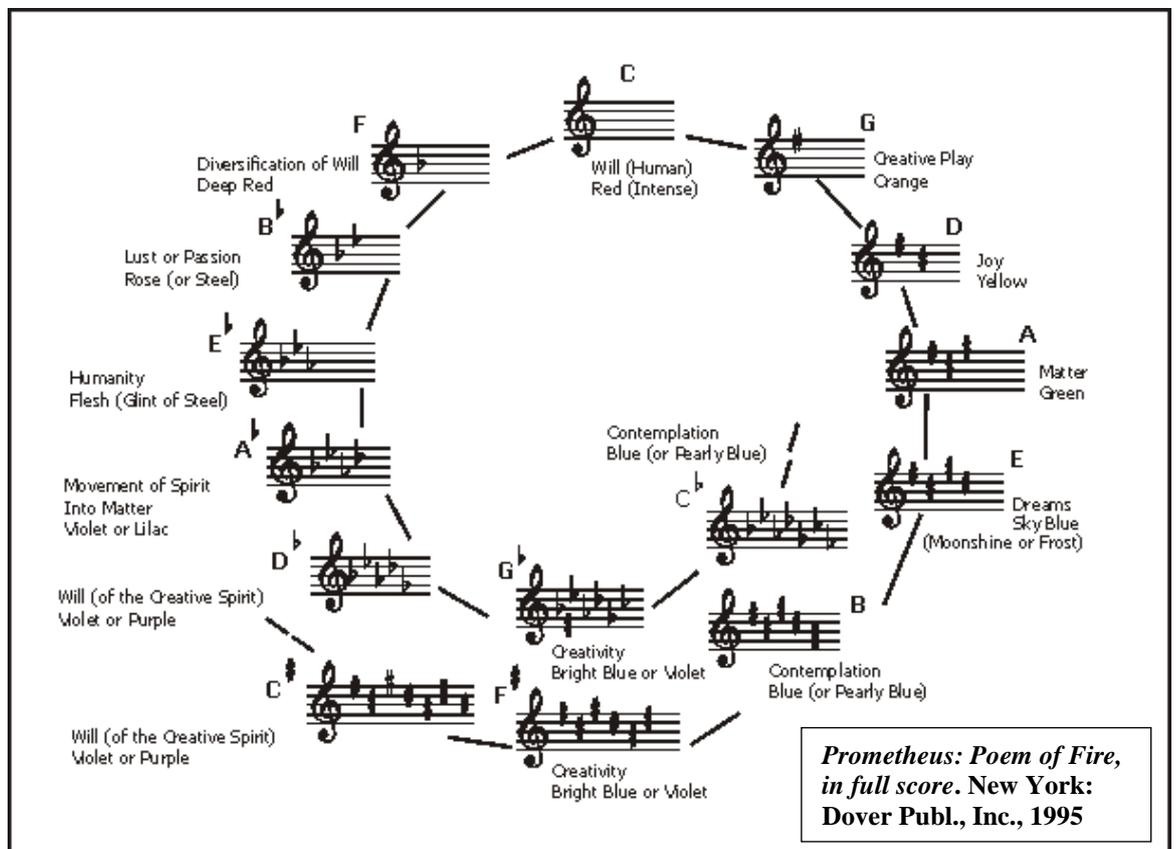
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<sup>1</sup> First performed in 1924

<sup>2</sup> The varied musical score includes piccolo, flutes, oboes, horns, clarinets, trombones, drums, timpani, tubular bells and harps.

discernable in the music. Schoenberg applied the idea slightly differently: the music is written for a play, and so the association of music and colour is not a direct one, but one that focuses on the drama itself.

In early twentieth century Russia, Rimsky-Korsakov (who had the condition of synaesthesia) had already published a colour 'vision' of tonalities. His contemporary, Alexander Scriabin, was also experimenting with sound and colour and was often involved in the lighting specifications of musical works. His interest in colour greatly influenced his work, particularly in *Prometheus*, a full orchestral work in which the musical keys are given colour associations. He included a colour keyboard as one of the instruments for part of *Prometheus* (although such a keyboard did not actually exist), and in 1978 a printed score of *Prometheus* was found which included a table of colours (cited in Cook 1998: 34).



He characterized his colours (red being the colour of abandon, while blue and violet were colours of reason and spirituality) and stated that colour draws attention to the tonality, giving it more emphasis.

Analysis of Scriabin's work by Leonid Sabaneev found that for Scriabin the keys rather than the individual notes or timbres held the colours - he mapped the colour wheel on to the cycle of fifths so C major was red; G major orange; D major yellow, etc., though he did not associate colours with the minor keys. As can be seen in the comparison overleaf, his colour associations (as published by Sabaneev in 1911) show some similarities but are not entirely concordant with those of Rimsky-Korsakov, as explained below.

Synaesthesia is a neurological phenomenon in which two or more of the body's senses are joined together. Normally there are specific areas in the brain which are dedicated to a specific function. However, when there is a cross over of these regions, synaesthesia will occur. In this instance one form of synaesthesia is when sounds, especially musical, are heard and the listener sees different colours for different sounds or musical notes.

Synaesthesia is defined as a neurological state, which does not interfere with a synaesthete's daily life or cognitive abilities. Five typical types of synaesthesia are: (1) grapheme-color, (2) lexical-gustatory, (3) ordinal-linguistic personification, (4) musical-color, and (5) number form. Grapheme-color is the most common form of synaesthesia, where an individual sees distinct letters and numbers as having definite colours or tones. However, one person with synaesthesia will not associate exactly the same color for a letter or number as another person who experiences synaesthesia. (De Oliveira 2006)

<b>Table of colour–sound correspondences published by Sabaneev, 1911 <sup>3</sup></b>	<b>Rimski-Korsakov's 'Colour Vision'</b>
C. - Red G. - Orange-pink D. - Yellow A. - Green E. - Whitish-blue H. - Similar to E Fis. - Blue, bright Dis. - Violet As. - Purplish-violet Es. - Steel colours with metal shine B. - Steel colours with metal shine F. - Red, dark	C-dur - white G-dur - brownish-gold, light D-dur - daylight, yellowish, royal A-dur - clear, pink E-dur - blue, sapphire, bright H-dur - gloomy, dark blue with steel shine Fis-dur - greyish-green Dis-dur - darkish, warm As-dur - greyish-violet Es-dur - dark, gloomy, grey-bluish B-dur - darkish F-dur - green, clear (colour of greenery).

Unlike Rimskly-Korsakov (and Messiaen and Schoenberg, also discussed here), Skriabin probably did not 'see' music in colour (Galeyev, & Vanechkina 1968) (consider evidence from my previous example), though he wrote as if he did, firmly believing in the synaesthetic nature of art. He sets an example for other composers who, whether they hear in colour or not, are inclined to explore this aspect of the sound-vision relationship.

In any case, it would seem that the authentic condition of synaesthesia is a subjective one. While Rimskly-Korsakov associated colours with keys rather than notes, Messiaen associated colour with pitch, and Schoenberg associated it with the dramatic nature or the mood of the music. Messiaen himself admitted that there was no scientific way to confirm the validity of his personal scheme, although a study of his music by Jonathan Bernard in the 1960s appears to confirm that his colours were consistent no matter what

<sup>3</sup> Sabaneev, Leonid. 1911. 'O zvuko-tsvetovom sootvetstyi' [On sound-color correspondence]. *Muzyka* 9 (January 29): 196–200

the context and content of the music. Bernard found that each colour was associated with modes and each transposition of the mode had a different colour associated with it, colour therefore being, for Messiaen at least, associated with absolute pitch.

Coloured hearing or musical-colour synaesthesia is a condition where people who experience synaesthesia (synaesthetes) see colours when they listen to music, or when they hear various tones. Variations in pitch can determine a particular sound's hue or colour. While experiencing these various manifestations of synaesthesia, a synaesthete's recognition of a colour will not change. For example, if an A is perceived as red, an A will always be red, although their personal experience and how this perception affects them may vary from person to person. [UK Synaesthesia Association (2006)].

There is research, too, in support of this. Ward (1990) agrees with Block (1983) that coloured hearing differs greatly from one individual to another. However, when two people associate the same note with the same colour such as C=white and A=red, it is often noteworthy. (Carrol & Greenberg 1961). Deutsch (2008) found that people can differ strikingly in their perception of very simple musical patterns and this could even be associated with being a right or left handed. A number of psychological perceptions were discovered such as musical illusions, and paradoxes including octave illusion, the scale illusion, the glissando illusion, the tritone paradox and cambiata.<sup>4</sup>

### **2.3.4 - Eisenstein and Eisler**

It is far from the case that a direct and straightforward correlation between two or more perceptual domains automatically yields results of artistic worth.

Eisenstein (1968) and Eisler (1973) rejected synaesthetic correspondence as an effective model for cross-media interaction, stating that synaesthesia in the narrow sense

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<sup>4</sup> Additionally, Deutsch researched various ways the memory stores musical information and how people connect speech with musical sounds.

suffers from the similarity problem and, due to excessive overlap, results in redundancy of information.

This being the case, and as Marshall & Cohen (1988) suggest, it is the sharing of a limited set of attributes, rather than either total coincidence or total divergence, that constitutes the precondition for meaningful interaction between media. Nicholas Cook (1998) takes this idea much further. He contextualizes Marshall & Cohen's findings in terms of Lakoff & Johnson's work on metaphor (1988), concluding that: 'metaphor may be seen as a viable model of cross-media interaction in general' (Cook 1998: 70), and on this basis he then proceeds to build a general theory of multimedia which recognizes three basic models: 'conformance, complementation, and contest'. These correspond to the degree of congruency with which media may be aligned, from a relationship of similarity at one end, through one of contrariety, to one of contradiction at the other end.

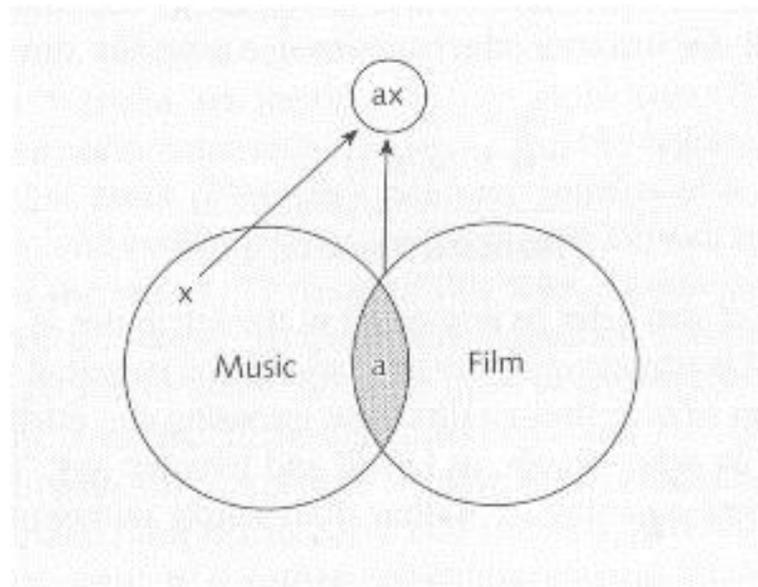
## **2.4 - Cook's Theories: Quasi-Synaesthesia**

Inter-aural differences in sound volume and timing, and variations in how the sound spectrum is perceived can affect the perception of the sound's position. An individual who perceives a sound and an image as being in the same place will conclude they are coming from the same source or object. As a result, it will appear as if the source or object is a combination of data derived from both visual and audio domains. (Ploeger n.d.). Having identified the limits of purely synaesthetic relationships, Nicholas Cook (1998) in 'Analysing Musical Multimedia', introduces 'quasi-synaesthesia', which is the more general ability to experience or interpret the information channeled through one sense modality in terms of another. He believes it is the most enabling mechanism of multimedia (ibid: 29), but he is critical of other composers in the past who have claimed to use synaesthesia. For example, he claims that Messiaen was using his imagination rather than his perception, but he does accept that Scriabin's musical key colour association was an example of synaesthesia, but not necessarily a good example of

multimedia. He compliments Schoenberg whom he describes as understanding multimedia and the way different media can carry different information. Cook states that 'Multimedia lies in the perceived interaction of media' (ibid: 33) but that it is necessary to reduce the interaction to its basic levels and essentials (ibid: 67).

In a subsequent chapter Cook theorized about how the visual and audio domains relate to each other in the context of multimedia art. He coined the term 'metaphor model' to describe this concept, based on Marshall and Cohen's (1988) research, two music psychologists. They combined a short abstract animated film with various soundtracks to study how it could be perceived and the effect a musical soundtrack can have on a viewer when watching a film. After acknowledging the characteristics in one medium compared to the other and the way they interact, Marshall and Cohen formulated their model, based on their findings from monitoring the way sound and film together influence a viewer's perception (see diagram 1 below).

Diagram 1



(c)1988 by the Regents of University of California. Reprinted from Music Perception, Volume 6 (1988), Figure 8b.

In the diagram above, feature 'a' is common to both music and film, while music has an additional feature marked 'x'. Since the film shares feature 'a' with music and music contains the additional feature 'x', characteristics of feature 'x' will also be credited to the film. According to Cook, this diagram of Marshall and Cohen's model of interaction between sound and film is comparable to a structural portrayal of metaphor. Cook uses the expression 'enabling similarity', in other words, a similarity that allows for characteristics of one medium to transfer to the other resulting in a sharing of these characteristics. However, he adds that the metaphor's meaning is not found in the enabling similarity, but rather in what the similarity enables, namely the transfer of attributes from one term of the metaphor to another (Cook 1998: 70).

Cook's definition of quasi-synaesthesia is based on Lawrence Marks' study: *The Unity of the Senses: Interrelations Among the Modalities* in which Marks suggests there is a connection between the sound frequency of a vowel and the intensity of the colour associated with it which can be measured on a scale from black to white. Further, Cook

establishes a connection between quasi-synaesthesia and kinesis and defines quasi-synaesthesia as the congruity between pitch or sound-colour and visual brightness. This stands in contrast with pure synaesthesia in which there is a direct link between pitch and colour. Cook believed that the correspondence between 'the kinesis that results from the combination of rhythm, harmony, dynamics and other musical elements' and the visible movement of objects was the most important form of kinetic correspondence (Ploeger n.d.).

Artist and theorist, Daniel Ploeger suggests that if Cook's metaphor model is applied to moving sound objects further criteria must be met as Cook's original application of his model was limited to soundtrack and film. For there to be a cross-media interaction involving a moving sound object, the object would need to produce sound as well as be seen. For example, when a loudspeaker emitting a sine wave is moved, the sound of the sine wave and the way the loudspeaker is visually perceived changes. He explains that there is a difference between the case of a moving sound object and the kinetic relationships discussed by Cook because 'the corresponding attributes actually are features of the same object that is expressed both visually and audibly' (Ploeger n.d.) One problem is noted however. When a sound is predominantly made up of components that quasi-synaesthetically and kinetically correspond with an image, the potential to add separate features which can be accredited to the object is greatly reduced.

## **2.5 - Conformance, Complementation and Contest**

For Cook, conformance is when the relationship between music and other media is consistent; complementation is when the music and the other media complement each other, whilst contest is when the music and the other media directly contradict each other.

The three reception theory models, Dominant, Negotiated and Oppositional, correspond with Cook's Conformance, Complementation and Contest. In turn, my Table of Audio-

Visual Correspondences uses acknowledging events by Similarity, Not Acknowledging, and acknowledging events by Opposition.

For example, when the music acknowledges events in the visuals by similarity, the conformant relationship between the music and the visuals encourages the viewer to accept the meaning portrayed, the dominant reading (Conformance). Where events are not acknowledged, a compromise is created between the similarity and opposition strategies which leads to a negotiated reading and alternative meanings become equally valid (Complementation). Finally, when events in the visuals are acknowledged by opposition, the contest between the audio and visual elements suggests an oppositional or contradictory viewpoint (Contest).

Cook holds that synaesthesia can provide clues as to what multimedia is but more significantly it brings into focus what multimedia is not. He believes it is better to look at the elements, differences and interactions in multimedia to gain a full understanding rather than rely on similarity, duplication and translation, the characteristics of synaesthesia. However, synaesthesia can provide an enabling condition for multimedia, even if it is incomplete.

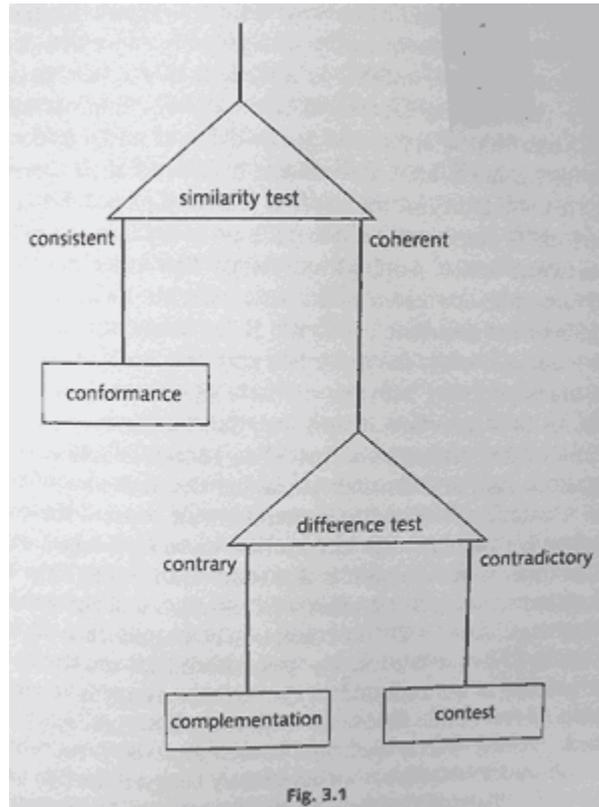


Fig. 3.1

On the one hand there is the idea of interaction, and then there is also the idea of multimedia as a metaphor. Cook believes that within media interaction there is the potential for a combined whole that is more than the sum of its parts, and believes that the metaphor model uses similarity as a means to an end, not the end itself.

The next distinction which Cook acknowledges is that media forms have the potential to move between classifications:

'Conformance begins with ordinary meaning, whether located within one medium or diffused between all; contest, on the other hand, ends in meaning. And the association of conformant models with synaesthetic and metaphysical speculation demonstrates, conformance tends towards the static and the essentialized, whereas contest is intrinsically dynamic and contextual. (Cook 1998: 103)

Cook elaborates on the use of the word 'contest' here by explaining that the different media want to occupy the same space and therefore try to stamp their particular characteristics on the other.

Cook explains that the third model of multimedia, Complementation, represents the midpoint between the two extremes. Complementation is represented in negative terms as 'that which exhibits neither consistency nor contradiction... complementation is readily associated with the successive phases of multimedia production.' As an example, a regular Hollywood film is given to the composer for scoring when it is almost complete because of the belief that a composer's job is simply to provide complementation. (Cook 1998: 105).

Cook shows that when the music and the images simultaneously share the same sensory level characteristics, such as temporal and intensity, then the enabling similarity can be 'at a semantic and non-iconic level' (ibid: 77). Cook gives an example of a TV advert for a car where the music is electronic and matches the type of car which is iconic, the music then changes to woodwind instruments and the car is shown with a family which then matches the symbolic family values. He indicates that there are three inter-related theoretical models of relations between media which are a distinctive combination of similarity, difference or the two combined (ibid: 98). The two types of similarity are consistency and coherence. He explains this as two expressions, A and B, which are coherent when they are expressing concept C. If both A and B express an identical meaning they are consistent and according to Cook they are conformant. Conformance is the first of Cook's models of multimedia which he sub-categorized into unitary conformance, which is the dominance of one medium to which a second one conforms; dyadic conformance which relates to the equality of one medium to another; and finally triadic conformance, which is when two domains express identical meaning to a third. Cook theorized that conformance is totally lacking in multimedia and so the relationship between the information in the two media is coherent.

When it comes to complementation, Cook suggests that the visual aspect of a film/animation provides the denoted information whilst the music conveys emotive, connotative information. Cook's final model is contest, where there is a collision between the music and the visual (ibid: 106), he uses as an example a TV advert for insurance where classical music is used with the visual images of an ambitious pop musician, the two are juxtaposed to create a state of 'contest'.

When analyzing multimedia, Cook highlights the 'plurality of relationships' (ibid: 114) and theorizes that only pairs should be examined at each point, using inversion where a less dominant medium is considered instead of the primary one. He suggests distributional analysis with an inventory of oppositions within the medium such as tonal and atonal and technological and human. He investigates how these line-up simultaneously across the media which in turn highlights contest. Cook also suggests that analysis should be from the 'bottom-up' rather than 'top-down' (ibid: 146), meaning that the musician/composer needs to become familiar with the piece before starting to analyze it.

What seems to follow logically from Cook's work is that the highest degree of interaction (hence, supposedly, the most artistically interesting result), is given by a relationship that achieves a high degree of attribute transfer (between the media concerned) through a low degree of (structural) similarity. In that light, the second phase of my research aims at devising strategies for maximizing attribute transfer between audio-visual stimuli whilst minimizing - or, more accurately, controlling- the duplication of information (similarity) across perceptual domains.

### **2.5.1 - Lipscombe - Musical Attributes and Perceptions**

Lipscombe (1995: 7) suggests that one of the most effective ways of using music to achieve a perceptual response to visual stimulus is found in film and animation. During his research he theorized that music did not have to line-up precisely with points of emphasis in the visual domain in order to be effective and that there were only a few

fundamental rules that applied when linking auditory and visual components. Lipscombe used musical attributes of pitch, loudness, timbre and rhythm and the visual attributes of size, colour and shape. Staal & Donderi (1983) found that the presence of sound can alter the visual perceptions of viewers, and Tannenbaum (1956: 96 cited in Lipscombe 1997: 12) found that the influence of music was more pronounced in relation to perceived Potency and Activity. Marshall & Cohen (1998) used an animated film to determine the effect of a musical soundtrack on the personality attributes assigned by subjects to each of three geometric shapes that featured as characters in the film.

At its most basic level this strategy entails deciding, for any screened event, between the following options:

- a) acknowledge (events) by similarity
- b) acknowledge (events) by opposition
- c) non acknowledgement

The first two options should be seen as the two poles of a continuum, offering virtually limitless possibilities of nuancing that relationship one way or the other. And all becomes exponentially more complex when a relationship set up in one direction shifts over time to a different degree, or even 'morphs' into the opposite direction; and furthermore when several structural levels are each dealt in different ways, thus presenting (simultaneously) similarity at one level and opposition at another.

The scope for the composer to 'play' with the network of possible relationships is considerable.

## **2.5.2 - Laban and Delacroze - Movement and Gestures**

As well as incorporating Cook's theories into multimedia and synaesthesia, I have drawn directly from the work of Laban and Delacroze in the design of my Table of Audio-Visual

Correspondences. The theories and techniques of Laban and Delacroze were explored in relation to movement and gestures which use space, time, effort, and shape in dance. Even though their work was based on dance, their findings about movement and gestures were valuable and relevant to my research, since music, dance and film share the same ground as time-based art forms. In music, film, as well as dance, parameters such as pitch (high or low), melody lines (ascending or descending), and textures (thickening or thinning), give a perception of gesture, movement, rhythm, pace, etc. which can be mapped from one domain to another.

As movement and gestures are part of music-dance integration I can make application of this to music-film integration, with particular reference to non narrative films.

The work of Laban and Delacroze helped in improving the music composition in this project through analysis, exploration and investigation of their work. Two of the parameters within my Table of Audio-Visual Correspondences (see 4.3) are the same as those used by Laban. However, for Laban they were very much associated with the expressions, feelings and emotions involved with music and movement. In my research project I took the decision not to include expressions and feelings as one of my key parameters due to the subjective nature of this approach, and in order to achieve a consistent outcome. My study concentrates on translating the parameters that are applied equally to the aural and visual domain in a systematic formula for non-narrative films.

Laban's model uses a similar technique but covers fewer parameters than my table which is ideal for the freedom of dance and movement. Composition techniques for film need more parameters using both visual and audio domains.

The similarity between the movements and gestures in Laban's Movement Analysis as a progression in dance is reflected in my study through the use of video film excerpts for non-narrative films. Laban uses a model of 4 parameters which are body, effort, shape

and space, and he regards effort and space as being the most important. Two of his parameters has been used for the purpose of my research and explored and extended in more depth. The chosen parameters from his model are shape and space.

- i. Body
- ii. Effort
- iii. Shape
- iv. Space

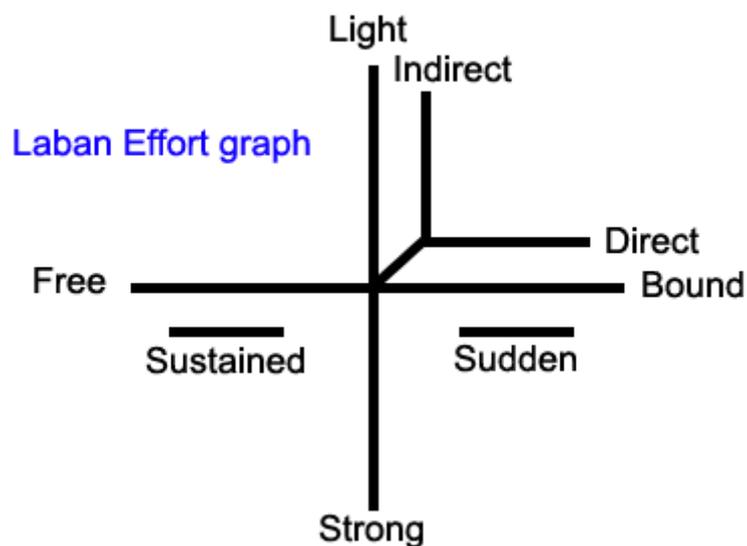
Laban's Effort category has four subcategories or motion factors, each of which has two opposite polarities. The opposites of space are directness or flexibility; the opposites of weight are strength or lightness; the opposites of time are suddenness or sustainment and the opposites of flow are entrapment or freedom.

Using a similar approach my spatial parameters included opposite ends of the spectrum. This is observed by contrasting up with down, left with right, the foreground with the background, ascending with descending, panning, advancing and receding etc. The movements are translated into the music composition using the similarity or opposition strategies.

Laban used an Effort Graph to present the relationship between pairs of contrasting efforts, e.g. floating and punching or gliding and slashing, which can only be accomplished by modifying the use of Space, Weight and Time motion factors. Bishko (1991) studied Laban's movement analysis when investigating movement within computer animation for film and video. The computer animation Balloon Guy by Chris Wedge was used by Bishko to show the movement and space focusing on an animated dog's ears and tongue.

In Laban's Effort Graph, effort represents the qualitative energy of movement. While the graph is helpful when analyzing modern dance work as it shows the effort needed for each movement, it is also useful in my own study as it shows the effort needed for each of my parameters.

### Laban's Effort Graph



'Labanotation' as Laban's written technique is classed, uses abstract symbols to 'record in vividly legible form all possible movements of the body in space and time (and in a dimension heretofore unattempted - dynamics); it overcomes the obstacles which had impeded progress of all earlier systems' (Hutchinson 2005). See Appendix G.

Laban noted that shapes and rhythms expressed by the body of a dancer portray mental and emotional feelings. However, my research concentrates on translating shapes/elements and spatial parameters into music whilst meeting the parameters of the Table of Audio-Visual Correspondences and ignoring any emotional attachment.

Another influential innovator in movement, gesture and dance relevant to my work is Emile Jaques Dalcroze who devised Dalcroze Eurythmics, a widely known method of music education. This provides a way to learn music through body movements that is

used extensively with young children who delve into musical concepts such as beat, tempo, rhythm patterns, dynamics, ear-training, and musical form through movement. Older children and adults learn in slightly different ways using listening and singing games with the help of solfège syllables (doh, re, mi). Solfège is a traditional way of musical ear training and sight singing to develop an understanding of pitch, scale, and tonality and contributes to a student developing more sensitivity in music (Abramson 1978).

The Dalcroze method stimulates students to feel the rhythm, such as time, metrics, pitch and pulsation and introduce them into their personal rhythmic expression during dance. Eurhythmics shares the same ground as all of the time based art categories which are dance, music and film, which means that they have the same parameters in common. As my own work uses parameters in the Table of Audio-Video Correspondences (see 4.4) the fact that other artists and composers have successfully used similar tables further motivates me to use them in my own sound track composition. My Table of Audio-Video Correspondences has the advantage of adding value as it gives more interesting results to the composition piece but it has the disadvantage of narrowing and restricting the freedom of the composition.

### **2.5.3 - Alsop - The Concept of Polymedia**

Alsop (2008) suggested that the word poly-media can replace multi media but acknowledged that the concept was slightly different as it involves all the composers, video artists, choreographers, actors and writers interacting and collaborating during the stages of development to produce the final product. He suggested that music and dance share major attributes expressed over time, including gestures which are one of their fundamental processes, a sonic gesture in music and a visual gesture in dance. The conductor of an orchestra is a prime example as visual gestures are converted into sonic gestures. Alsop developed the sound score for *Playback 2002* by looking at dance

routines as they developed and using the resulting audio during rehearsals which then went through various transformations to accommodate the needs of the choreographer and dancers as their routines evolved. There were no structural timings or attempts to influence or relate to the dancers' actions. His charts (Appendix H) show the collaboration between music, gestures, dance, movement and music. The research graphs also show the collaboration with music, shape, movement and space.

## 2.6 - Chion - Michel Chion's Audio-Vision

French composer Michel Chion, in his influential book *Audio-Vision: Sound on Screen* (1994), provides an illuminating assessment of the relationship between sound and vision in audio-visual perception. One of his main arguments is that viewers do not separate the visual and aural domains into two separate entities, but rather perceive it as an audio-visual trans-sensory whole. Therefore, sound film produces a new form of perception, rather than seeing or hearing images and sounds as separate channels.

From Chion's theories I found a key point that is highly relevant to my work in the form of a question Chion faced, namely, "How do sound and vision transform one another in a filmgoer's perception?"

I related Chion's theories and discoveries about sound and vision to my research and raised my own questions and identified points of interest to investigate to address the problem of scoring non-narrative filmwork, considering the fact that music and filmwork occupy the same terrain as time-based arts. As a composer I face the fundamental challenge of considering what other elements should be considered to create a meaningful relationship between the events on screen and the soundtrack, seeing the film is deprived of narrative content. To successfully meet this challenge, I investigated the possibility of applying cross-modal principles to soundtrack composition to fully utilize the human capability to interpret information received through one sense modality in relation to another, so the audio-visual domains are experienced as a trans-sensory whole. To this end I developed my own strategies and techniques for composing music for non-narrative films, culminating in the Table of Audio-Visual Correspondences, much of which was drawn from Chion's theories and the methods he used to investigate a filmgoer's perception of the visual and audio domains.

Chion (1994) created a specific vocabulary that enables us to form concepts to make sense of the simultaneous use of sound and images. One concept which influenced my work is his theory that music 'adds value' to the image.

Chion explains what he means by saying music gives 'added value' to an image in these words:

"By *added value* I mean the expressive and informative value with which sound enriches a given image so as to create the definite impression, in the immediate or remembered experience one has of it, that this information or expression "naturally" comes from what is seen, and is already contained in the image itself."

(Chion 1994: 5)

According to Chion therefore, music adds value to an image because the combining of sound with vision in a synchronous relationship affects a viewer in such a way that their interpretation or rendering of the image is changed. Hence the connection between sound and image is not just an association but rather a harmonious union so that the viewer sees them as if in an alliance with each other. (Phillips n.d.)

Although Chion addresses the problems inherent in simultaneous sound and vision with regard to narrative films and cinema while my research is related to the challenge of scoring non-narrative films, I took the idea from Chion to conceptualize sound. Whereas he created a specific vocabulary, I formulated 6 main parameters in my Table of Audio-Visual Correspondences which are used equally for both the visual and aural domains in conjunction with 3 strategies applied simultaneously, involving similarity, opposition, and no acknowledgement. My opposition technique parallels what Chion refers to as 'discrepancies between it [sound] and the image'. This enabled me to highlight or create a significance for parts of a film which could have gone unnoticed or which might have been ignored. Through a systematic application of my table, I sought to create added

value by enriching the images in a way that makes the viewer feel the expression of sound of music is intrinsic to the image.

Another key point from Chion's research which had an impact on my own investigation is what he terms Empathetic and Anempathetic Effects. (1994: 8) An empathetic effect is when the music expresses the feeling of a scene, or in other words, shows empathy, by reflecting a scene's rhythm or tone. An anempathetic effect is just the opposite. The music in this case is indifferent to what is happening in the scene, appearing to not even notice the emotions or feelings of the characters or events being portrayed. This identification influenced my research and corresponds to what I call acknowledge (events) by similarity, (Chion's empathetic effect), and acknowledge (events) by opposition, (Chion's anempathetic effect).

Further, Chion's explanation of synchronization and synch points made a significant contribution to the way I scored music for the film excerpts which form part of my study. It helped me to look for places where I could create a synch point, a place where a sound event coincides or meets with a visual event in synchrony. These synch points give the audiovisual flow its phrasing and contribute to the dynamics of the film. (Chion 1994: 59)

## **2.7 - Reception Theory**

Reception theory originated from the work of German academic Hans Robert Jauss in the late 1960's. It seeks to analyze how media is experienced by the spectator based on the premise that the media form has no intrinsic meaning of itself. The meaning develops for the spectator as the media is watched and listened to, influenced by various social identities and subjective experiences the spectator has accumulated up to that point in life.

Griffiths considers the role of the self in research and her observations can equally be applied to the spectator. The model of self which Griffiths uses "is one in which the self

continually creates itself . . . Each self is unique and its response to circumstance is not determined. Further, the process is continuing: we are always in a state of becoming, always unfinished." (Griffiths 2007: 167) Therefore, the way a spectator experiences a film will depend on how they see themselves at that particular time. The goal of reception theory is to try and identify the range of reactions, perceptions and interpretations that could be evoked.

However, it is not possible for reception theory to provide an exhaustive list of possible reactions and interpretations as spectators are constrained by their environment and social, cultural and historical factors all exert limitations on how the media will be viewed and understood.

Cultural theorist Stuart Hall proposed three reception models. First, the *preferred* or *dominant* reading which reinforces the status quo. The reader accepts and shares the view of the author. Second, *negotiated* reading is where a reader might disagree with some aspects and form an alternative meaning which differs from the dominant reading. Third, *oppositional* decoding is where the reader rejects the dominant code because of using an alternative frame of reference possibly due to a social situation which is in direct opposition to the dominant code. (Baran & Davis 2011: 258)

These three reception models have a strong affinity with Cook's general theory of multimedia, viewed from different angles: Cook is mainly concerned with how meaning is constructed, while reception theory is concerned with how meaning is interpreted.

## **CHAPTER THREE: CONTEMPORARY COMPOSERS: SOME NEW APPROACHES**

I have explored the work of several contemporary composers in order to gain an overview of contemporary compositional approaches to non-narrative film.

### **3.1 - Holzer - Use of Machines**

Derek Holzer's composition was very interesting to explore as he uses a great deal of computer and electronic music, and his approach helped me in this study, especially his use of sound machines enhanced by lights. His music is vivid, and in *Tonewheels* he demonstrates 'electronic sound with transparent tone wheels spun over light sensitive electronic circuitry to produce sound and light' without the use of computers. Holzer used the 'ANS Synthesizer, the Variophone and the Oramics system, to produce graphical systems for playing light on an overhead projector' (Holzer: 2008).

He demonstrates a novel approach by using electronic instruments, sounds and lighting, creating exciting music with frequent climaxes. I was inspired by him also due to his enlightening conference presentations on the topic of synaesthesia which relates to my study.

### **3.2 - Musgrave - Space, Perception and Cognition**

Chris Musgrave uses a similar technique to Holzer by using natural sounds. Situations are fabricated where the audience's senses are filled with sounds. 'Oscilloclast is a growing body of work which includes Gyre, Moiré, Pulsed, Dynamo and Reverberating Furnace. Electricity is shaped into audio wave forms of harmonic oscillation and noise, which then create video visuals of colour, tone and rhythm' (Musgrave 2002-2004). He attempts to push the musical boundaries and find all that is radical in everyday mundane areas and associate them with the extreme. I found the restrictions in his work interesting in considering the restrictions in my own study.

Moreover, the investigation into Musgrave's techniques has shown what is possible if there is no set table of parameters. The use of a synaesthetic signal which produces 'driving energy using the perceptual phenomena of the motion after effect and chromatic afterimage' has some parallels with my own work (Musgrave 2002-2004).

### **3.3 - Grierson - Use of Opposition**

Another artist composer who uses audio-vision is Grierson who I have included due to his enthralling conferences and written correspondence with me about musical composition. He has also used similar techniques in exploring audiovision and cognition. He tries through synaesthesia to use sound and moving image simultaneously to present an enhanced impression to the visuals. This again is relevant to my study of synaesthesia as Grierson uses the opposite technique to me, which is translating some parameters of visual from the aural. He uses 'opposition'. This is due to the fact that he presents the visual as static and demonstrates the use of opposition to the music or sound resulting in different impressions to the audience, where they perceive a static visual illusion due to an opposing aural domain. An example of Grierson's work uses a small stationary dot on the screen without any sound but when he adds sound, the dot appears to move.

This demonstrates the exciting potential of sound and music which is to change the audience's perception of reality. Opposition which creates illusion has changed my perspective of composition, and it can be used to achieve interesting results by applying 'acknowledge event by opposition'.

### **3.4 - Chrysakis - Combination Creates Separate Entities**

Thanos Chrysakis (2008) suggested that sound and image are totally different entities when they are used in combination as opposed to existing in isolation. Their relationship is intricate enough to create a specific mode of perception, named audio-vision by Michel

Chion. Grierson and others explore this in their live performances and compositions (Grierson 2008). This notion of audio-vision is crucial to my own work and is explored in the next chapter: Methodology of Cross-Modal Composition.

# CHAPTER FOUR: METHODOLOGY OF CROSS-MODAL COMPOSITION

## 4.1 - The Emotion Debate

'I consider by its very nature that music is powerless to express anything at all, whether it is feelings, an attitude of mind, a psychological mood...'

Stravinsky (1936, p.91)

Such comment is unsurprising, perhaps, coming from the composer whose *Rite of Spring* (1913) is seen as a landmark of the early 20th century modernist movement, a time of great experimentation in structure and form across all arts, characterized by the 'art for art's sake' fervour whose philosophy was to separate art from life. But there is also a more contemporary academic argument purporting that music cannot evoke emotion. Hanslick (1986), investigating music's content and form, argues:

1. 'The content of music is tonally moving forms' (ibid: 29). Since musical 'form and content cannot be separated' (ibid: 81), to represent a 'subject matter' requires an extra-musical element (song lyrics, for example) (ibid: 78). Music itself cannot represent extra-musical objects, and therefore cannot represent objects that people react to emotionally.
2. There is no agreement between listeners about what emotion they hear in music.
3. It is unthinkable that music could be dispositionally emotional, meaning that it could not upset a listener the way an actual event such as an accident could.<sup>5</sup>

However, such a stance is effectively disputed by research which clearly reveals that music does arouse emotion. 'This has been studied in physiological studies of ANS (Autonomic Nervous System) reactions (such as electro dermal response, blood

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<sup>5</sup> The second and third of Hanslick's arguments are easily countered: that there is no concurrence between listeners about what emotion they hear does not mean that none is heard; likewise if music cannot be dispositionally emotional it does not mean that it cannot elicit a 'lesser' emotional response.

pressure, breathing, etc.) as well as in verbal self-reports. There is a correlation of up to 0.80 between subjects on what emotion they identify in an instrumental piece of music' (Vickhoff 2008: 19).

We can perhaps trace out a crude evolutionary path for this phenomenon, from primitive survival mechanisms such as animal calls as signifiers of danger<sup>6</sup>, through more cognitively advanced reactions to prosody (the sound aspect of language), and beyond.

The successful adaptation of Brunswick's model of perception (originally applied in 1956 to the communication of emotion in prosody<sup>7</sup>) for the study of emotional response to music (Juslin, 2001), demonstrates the transference of our inherent sound response tendencies to music.

Indeed it is reasonable to posit that reactions to musical pitch and cadence are natural progressions of those to inflection and cadence in prosody. Positive emotions 'voice' themselves in major, concordant tones, and negative ones in minor, discordant ones. As music critic Deryck Cooke writes:

'Happiness [has] a medium tempo, [and is] loud and concordant ...  
Sadness [is] slow, muted, slightly discordant; anxiety [is] scurrying, low  
pitch, discordant; and anger [is] fast, loud, high pitch and discordant'.

Cooke (1959)

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<sup>6</sup> A brief consideration of Alfred Hitchcock's *Psycho* proves an interesting example of the deep-rootedness of our sound response. Hitchcock had planned to use natural sounds for the murder sequences, but Bernard Hermann (the film's musical composer) had already assembled a sequence of scary shrieks. Hitchcock admitted that the shrieks (evoking the emotion of fear) were much more frightening for the audience (Oatley 2004). Of course, these shrieks were subsequently musically translated, and the 'eeee eeee eee' of *Psycho*'s signature musical scream became the most recognizable of cinema soundbites.

<sup>7</sup> Brunswick's research ratifies Joyce's great abstract experiment, perceived by many of his contemporaries as pure folly. *Finegan's Wake*, which, with constructed, alien language, yet manages to convey meaning, is firmly established in the literary canon as a masterpiece of prose poetics.

Meanwhile, Peretz, Gagnon & Bouchard (1998) found that individual listeners only need a chord or a few musical notes (taking a fraction of a second) to recognize the emotion in a musical excerpt, as to whether it is positive and upbeat, or melancholy.

While it has been suggested that music only evokes the basic emotions of happiness, sadness, anxiety and anger, research has demonstrated that emotions can be consistently discerned from musical elements such as:

1. amplitude - round/sharp
2. articulation - staccato/legato
3. harmony - simple/complex and consonant/dissonant
4. volume and dynamics (range in volume)
5. melody - pitch, range, direction and intervallic steps
6. mode - major/minor
7. rhythm - regular/irregular, smooth/rough, complex/varied/firm, fluent
8. tempo - fast/medium/slow
9. timbre - soft/sharp
10. tonality - tonal/atonal
11. musical form

(Vickhoff 2008: 127)

It is by altering these variables that more sophisticated emotions can be detected with each emotion identifiable through a distinctive profile. Further, emotion in music is not only perceived: those perceived emotions 'are capable of evoking corresponding affective reactions in the listener' (Bruner II 1990).

If the inherent predisposition to react to sound has been demonstrated, the articulation of this response - the consideration of its meaning - remains a matter of debate and depends on the aesthetic paradigm adopted. Meyer identified various philosophical approaches:

- (i) absolutist: 'musical meaning lies exclusively within the context of the work itself ';
- (ii) referentialist: 'musical meanings refer to the extra-musical world of concepts, actions, emotional states, and character';
- (iii) formalist: 'the meaning of music lies in the perception and understanding of the musical relationships set forth in the work of art and that meaning in music is primarily intellectual'; and
- (iv) expressionist: 'these same relationships are in some sense capable of exciting feelings and emotions in the listener'. (Huron n.d.)

In his notes, David Huron (Huron n.d.) states that Meyer (1956: 2) believed musical structure can affect listeners emotionally. So in that sense he was a formalist, subscribing to the view that relationships in the work itself engender feelings and emotions in the listener. Gestalt laws come into effect such as Good Continuation and Closure which create certain expectancies, the fulfillment or non-fulfillment of which produce emotions.

Nevertheless Meyer stated that 'absolute meanings and referential meanings are not mutually exclusive'. The reactive, and sometimes interactive process is a complex one.

This is because there are other linked associations which join emotion to music, and these are acquired. The experience music delivers is a subjective one, and how a piece is perceived depends on a multitude of variables: personal background, musical

exposure, the mood or disposition of the individual, and so on. In other words, some people may not hear the same things others do.

Leonard Meyer was one of the first scholars to examine the relationship between the theory of social situations and music composition. His view was that a musical work could be evaluated by noting how well the complexity of it absorbed the interest of a listener. For example, musical works could be equally unsatisfying in the final analysis whether the expectations of an audience were fulfilled or not.

Meyer's work entitled *Emotion and Meaning in Music* is considered the first major treatise on music by a Western music theorist, which to a great extent depends on psychologically-based insights and arguments in describing music (Huron 2006). Meyer who died in 2008, was attracted to formalist and abstract principles and acknowledged the work of Susanne Langer a formalist aesthetic philosopher.

Meyer's main idea was that musical experience is a part of human psychology, an understanding of which can contribute to music theory. One difficulty that Meyer mentions with regard to an emotional response to music includes the acceptance of the evidence at face value, because there is no general theory for interpretations of emotions and the precise knowledge of the stimulus which created the emotional response cannot be acquired.

According to Meyer (1956) musical experience differs from non-musical experience in three main ways. First, musical stimuli is non-referential. Secondly, 'the aspect of music as an art form is meaningful because the relationship between the inhibition of tendency and its necessary resolution is explicit'. Thirdly, factors in everyday life which prevent a tendency from coming to completion may be different from the factors that originally started the tendency [Ferris 2010].

Hansen (2004: 17) states that when people listen to music, their anticipation is affected by past and present experiences and by the 'law' of Pragnanz. This harmonizes with Meyer who suggested that people listen to music with pre-set ideas drawn from the past, and psychological laws. Tendencies can be formed from a complex combination of factors including the level of sophistication of the listener and the music, 'esthetic beliefs', accumulated knowledge, previous musical experiences, and a piece of music listened to just before the current musical experience.

Meyer (1973: 77) stated that 'knowledge as to the style and form brings about an increased clearness and acuteness in perception'. In his work *Explaining Music* he said that music provides a proficient listener with a whole body experience. He describes the process in this way: 'As tonal stimuli are related to one another by the patterning proclivities and habits of the human mind, every facet of behaviour becomes attuned to and congruent with the process and structure of musical events.' (Meyer 1973: 242 cited in Hansen 2004).

Therefore a listener does not have to be a musician or competent in musical styles or how music is written in order to feel emotion when listening to music. To have an understanding of music it is not necessary to know all the facets of music theory or a glossary of musical terms. 'Listening to music intelligently is more like knowing how to ride a bicycle than knowing why a bicycle is rideable' (Meyer 1973: 16).

Vickoff (2008) carried out an academic exercise in which he removed the piano music from a Buster Keaton silent movie and added a musical composition by Krzysztof Penderecki entitled *Threnody for the Victims of Hiroshima*. He was amazed at the results which emphasized how an understanding of a situation can totally change according to the emotions the music engenders in the viewer. For example, comical characters looked odd and strange and the comedy lost its humour, becoming instead an illustration about the purpose of life. Therefore Vickoff surmises that emotion does not have to come from

either judgment, 'awareness, identification, recognition, coding of signs or reflections on the impression of the music'. In fact, music can create emotions at the subliminal level, directly, which might attach to the music that caused them, but not necessarily.

Furthermore, Vickhoff (2008) proposed the theory that an emotion generated by the music is not necessarily attached by the listener directly to the music being listened to. Rather, an emotion caused by the music can attach itself to whatever a viewer is focused on at that moment, as in the case of film music. Only when the music is solely focused on is the emotion perceived as implicit to the music causing the listener to regard the hearing of the music as an emotional experience. As Vickoff states: 'The problem with music and emotion is not that music may make us think of something that might move us emotionally . . . The problem is that music seems to move us emotionally even if there is no such obvious reason.' (ibid.)

Having considered the various aspects of the debate on emotion in music I decided not to incorporate emotion into my Table of Audio-Visual Correspondences. The complexity and variation of human emotional response cannot readily be quantified in this way and my preference is that emotional responses are allowed to arise spontaneously in those who experience my work, rather than attempting to control or manipulate them directly. In my practice-based composition work, I found myself able to eliminate direct emotional engagement with most of the video extracts, apart from the *Eraserhead* extract where I could not separate myself from the strong emotive content and this is explored further in section 5.5.

Tagg (1979 cited in Vickhoff 2008) suggested that it was not easy to explain the music-emotion phenomenon and said that newer methods including event related potential (ERP) and brain scanning, are better able to show the way music is perceived when an individual is in a lower level of consciousness. The results show that it should not be assumed listeners always scrutinize everything they hear in their everyday listening, but

perceive it directly. Listeners absorb the flow of the music rather than attaching significance to it so music can be recognized and appreciated without making a conscious effort to focus on it.

With regard to my work, emotions do not appear in my parameters in the Table of Audio-Visual Correspondences. This does not mean however that I cannot create emotional content with the application of this table. As a composer I can manipulate to some extent the audio-visual parameters so the similarity strategy produces a feeling of peace and harmony whereas the opposition strategy engenders feelings of agitation, disharmony or even disapproval. So for example, I can use the similarity method when creating the primary theme, and to a lesser degree, the opposition technique for a secondary theme to create an expansive, dynamic, vigorous effect.

## **4.2 - A Method For Creating Meaning**

I centered these investigations around short film sequences for which I composed the music.

They were entitled:

1. 'Triangle' by Erica Russell
2. 'Slap Stick' by Clive Walley
3. 'The Flat' by Jan Svankmajer
4. 'Meshes of the Afternoon' by Maya Deren
5. 'Eraserhead' by David Lynch
6. 'Soup' by Zbig Rybczynski
7. 'Baraka' by Ron Fricke

8. 'The Club of the Laid Off' by Jiri Barta
9. 'A Painful Glimpse Into My Writing Process' by Chel White
10. 'Blooddrop' by Alexei Popogrebsky
11. 'We Have Decided Not To Die' by Daniel Askill

The first two film excerpts are animations, while the remainder are surreal, and involve dream sequences which play with time and space.

I researched the background to each of the film makers, this knowledge being essential to the understanding of the films' composition and concepts. I was then better placed to choose particular sections from each film for which to compose. I then analysed each film excerpt and drew illustrative graphs for them.

Having studied Cook's work (1998: 60) and looked at its relevance to my own, I created a Table of Audio-Visual Correspondences that are applied systematically to music created specifically for non-narrative films.

The six parameters were chosen with consideration of Lipscombe's model. Like Lipscombe, I used as my parameters the musical attributes of pitch, loudness, timbre and rhythm, and the visual attributes of size, colour and shape. I also considered the phenomenon of synaesthesia. As coloured hearing is a part of synaesthesia, colour was used as a main parameter in the composition of the Table of Audio-Visual Correspondences. However I did not follow the colour tables of any given composer, it having been established that the sound-colour relationship is a subjective one.

I took Cook's theory and applied it in practice to music, but with adaptation. This is the principal concept behind the Table of Audio-Visual Correspondences, which I have applied equally to the visual and the aural domains. I translated the visual aspects aurally with musical ideas using appropriate instruments, pitches and rhythms.

To this end the Table of Audio-Visual Correspondences was used in conjunction with the systematic use of strategies of similarity, opposition and non-acknowledgement of screened events. The strategy entailed deciding, for any screened event, between the following options:

- a) acknowledging (events) by similarity
- b) acknowledging (events) by opposition
- c) not acknowledging

The application of these three strategies, after Cook, formed the core of the research method. The first two options should be seen as the two poles of a continuum, offering virtually limitless possibilities of nuancing the relationship one way or the other. The complexity results when a relationship set up in one direction shifts over time to a different degree, or 'morphs' into the opposite direction and when several levels are each dealt with in different ways, with outcomes of similarity at one level and opposition at another. In this way the composer enjoys scope to 'play' with a network of possible relationships.

Using this table I explored the various parameters existent in the visual realm and applied them to the aural realm. The parameters have been mapped from one domain to the other and are translated sonically. The research aim was to devise strategies for maximizing attributes transfer between audio-visual stimuli, while minimizing and controlling the duplication of information (similarity) across perceptual domains.

In this way I used the Table of Audio-Visual Correspondences as a structure. I construct using the six parameters and other sub parameters: the strategies of repetition and contrasts of acknowledging by similarity and opposition; the use of silence and the use of energy as a main parameter to exist equally for both the visual and aural domain.

Once the compositional strategies had been decided upon for each film excerpt, they were implemented in the composition itself, and subsequently mapped onto the graphs. The graphs provide a clear visual analysis of convergence and divergence between the visual and aural domains at any given point in each video sequence. It was then possible to analyse which strategy or combination of strategies had the best artistic outcome.

In discussing the research practice method, Zielinski (2010: 299) makes the following observation: "Intuition/imagination on the one side, and formalizability and calculability/planning capability on the other form the two poles of the *mixtum compositum* between which media art moves." According to Zielinski, advanced artistic research comes from the tension zone which develops between these two end points.

I found myself coming to the same conclusion as Griffiths during her research practice. She observed that although she was not consciously trying to elicit an audience reaction, art can 'annoy, excite, disturb or please' thus provoking an audience response. She further stated: "Audiences were invited to share my personal selections of time and space. The researcher, the audience, the environment and the respondent were becoming inextricably linked to the research." (Griffiths 2007: 171) This was also my experience, especially after composing Version B for the film excerpt The Flat (see page 59). In this version I translated fewer visual events into aural equivalents as opposed to Version A where I translated almost all the visual events. I therefore had to decide which events were of greater importance and had higher visual significance, thereby inviting the viewer to 'share my personal selections of time and space'.

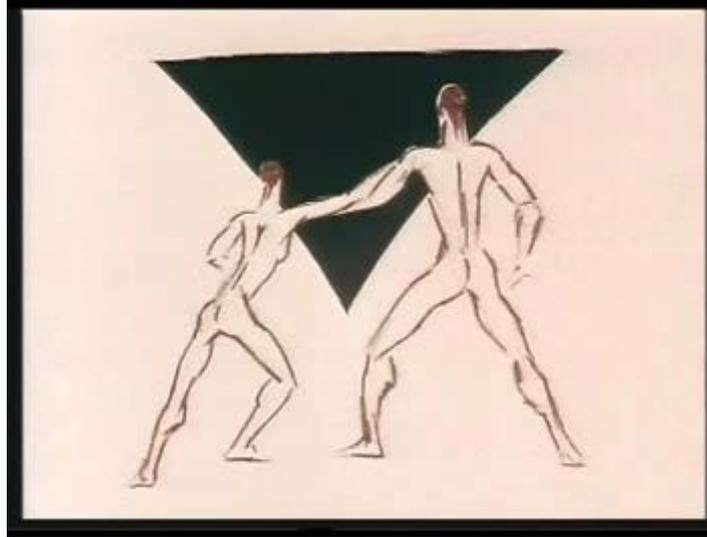
### 4.3 - Table Of Audio-Visual Correspondences

Based on 6 main parameters that apply equally to the aural and the visual domain:  
SPACE–TIME–TEXTURE–LIGHT–COLOUR–ENERGY

PARAMETERS	Static	Dynamic	Quality
<b>SPATIAL</b>	up – down left – right foreground – background	ascending – descending panning advancing – receding zooming	smooth – jerky (motion)
<b>TEMPORAL</b>	rhythm/pace	speeding up – slowing down zooming	regular – irregular
<b>TEXTURE</b>	dense – sparse	getting denser – getting thinner	coarse – fine
<b>LIGHT</b>	dark – bright	brighter – darker fade	contrast: sharp / blurred
<b>COLOUR / TIMBRE</b>	colour / timbre	colour/timbre change fade	hue / saturation / orchestration brightness
<b>ENERGY</b>	N/A	increasing / decreasing high / low	positive / negative / neutral

# CHAPTER FIVE: ANALYSIS OF VIDEOS

## 5.1 - Film Excerpt 1: Triangle



I used an extract from Erica Russell's short animated film, *Triangle* (1992) as a starting point in the application of my research method to non-narrative film. My purpose was to put into practice my strategies and techniques in applying cross-modal principles to soundtrack composition, systematically exploiting the human ability to experience or interpret the information channeled through one sense modality in terms of another.

### The Technique Used

For every action on screen, I needed to choose between the following strategies: a) acknowledging (events) by similarity, b) acknowledging (events) by opposition, c) not acknowledging. The first two options (a & b) should be seen as the two poles of a continuum with a wide range of possibilities in between. It should be pointed out that it is not necessary to use the same parameters for the visual and the aural elements. Each parameter can be expressed and translated sonically with the music using different techniques. For example, for the main theme the technique of acknowledging by similarity was used for the visual events. This means that the screen events were directly

translated into aural equivalents. In order to do this various strategies were used following the Table of Audio Visual Correspondences I created (cf 4.3 above). An example of acknowledging events by similarity is when the screened events show shapes rising, then the music also has to rise and if the shapes move rapidly, the music has to be composed with a matching rapid tempo.

Use is made of the visual aspects as details to compose the music. I chose the video extract from *Triangle* because of its colours, shapes, figures, movements, rhythm and fast and slow tempos. An example of this is the composition of music and sounds for each person or colour in the video film excerpt such as the yellow, red or black figures and the use of similarity for the movement of the figures so that a jump from a figure will use an ascending musical scale, while a visual descent triggers a descending scale. I translate from the visual to the aural by using a specific sound or instrument and a different theme for each character and theme in the video. An example of this is at 2.43-3.00 minutes where a black triangle appears and the music becomes scary and alarming with a faster tempo.

In this way, the music I composed for *Triangle* demonstrates the observation made previously (See 2.2) regarding cross-modal audio-visual expressions where pitch is perceived as high or low, melody lines ascend and descend, textures become thicker or thinner, and gestures and movement are interpreted as rhythm and pace. Hence, these parameters can be mapped from one domain onto the other.

The simplicity of this film is significant as it helps in the application of my research methodology. Each single character or event on screen can easily be translated through my table of correspondences into music.

The 'acknowledge by similarity' technique was used primarily in my music for the *Triangle*, where the visual events could easily be transposed from visual to aural domains i.e. during simple visual events in which the scene contains minimal characters,

elements, actions or movements such as up - down – forward – backwards. This gives a set of parameters which can be translated sonically for each individual element. To give one simple example in the film Triangle, the visual upward movement of the character was translated aurally into an ascending chromatic scale and vice versa. (Appendix K) As the movement parameters increase greater complexity arises in the score. Detailed application of the methodology can be referred to in the Appendix sections K & L, which also contains the graphs I generated to assist me in the application of the Table of Audio Visual Correspondences.

In this first video analysis, I mainly applied the similarity strategy, being influenced by Cook's (1998) general theory of multimedia which recognizes the three basic models of Conformance, Complementation, and Contest. The Table of Audio-Visual Correspondences was used in conjunction with a systematic use of acknowledge by similarity, corresponding to Cook's Conformance model.

Here also my similarity strategy relates to Chion's (1994) 'empathetic effect' where the music expresses the feelings or emotions in the scene by reflecting the rhythm and tone. In this first analysis I sought to acknowledge as many events and characters as possible using the parameters in my table to create an 'empathetic effect' in the aural domain.

Just as Holzer created exciting music using electronic instruments, sound and lighting with frequent climaxes, I sought to do the same. As this was the first example I worked on for this research, using the similarity approach, I created a series of climaxes to inject energy and urgency into the material. I matched colours with electronic sounds to create this effect (see Appendix J).

## 5.2 - Film Excerpt 2: Slap Stick



'Slap Stick,' by Clive Walley, is a high energy video in visual terms with a number of quick events happening on screen involving a range of coloured shapes which are constantly changing.

I performed many experiments on this video, exploring both the acknowledging (events) by similarity technique and the acknowledging (events) by opposition technique. As a result of these experiments, I decided to use only the technique of acknowledging (events) by opposition because the results with this method were more successful. The high energy of the images was more appropriate with the opposition technique so the music could reflect the energy. The similarity technique on the other hand, seemed flat and lifeless in aural translation with regard to density and texture as well as other parameters. Michel Chion's (1994) notion of 'value added by music' moved me to compose music which takes the viewer in a different direction to what they would expect from seeing the images, thus adding to the interest and fascination derived from watching the video. I was also influenced by Cook's (1998) 'Contest' model of general theory of multimedia, as 'Contest' corresponds with my acknowledge events by opposition technique.

In this example use was made of relatively simple melodic lines and acknowledging (events) by opposition gave observers and myself a feeling of satisfaction when experiencing the work, as, paradoxically, it actually aided understanding of what was happening visually. I also found that by this process, the aural as well as the visual could then be remembered more readily due to the distinctive nature of the oppositions.

Also relevant to this film is Cook's definition of quasi-synaesthesia, the correspondence between pitch or sound colour and visual brightness, rather than pure synaesthesia which involves a direct connection between pitch and colour.

In *Slap Stick* I experimented with 'coloured hearing' or synaesthesia where people recognize musical notes by colours, tantamount to hearing in colour. I accomplished this by associating one colour in the film with a specific instrument and musical theme to translate it into the aura so viewers perceive each colour as a particular instrument or sound.

As the visual elements of this film predominantly consist of colours, I took into consideration the views of Rimsky-Korsakov who associated colours with keys rather than notes, Messiaen, who associated colour with pitch, and Schoenberg who associated colour with the mood of the music. I therefore related a specific colour to one instrument and a unique theme (Appendix N). For example, I relate the color yellow to a "steam pad" organic electronic sound and when orange appears in the visual an acoustic guitar is used.

Coloured hearing, as a part of synaesthesia, is relevant to my research as the use of colour appears in my Table of Audio-Visual Correspondences as a main parameter (Appendix A).

Synaesthesia, coloured hearing, or 'quasi-synaesthesia', introduced by Cook (1998) has been applied by other composers in different ways at various levels. This influenced me

to some extent but instead of following their colour tables, (Appendix D, E, F) I used my Table of Audio-Visual Correspondences, combining the use of colour with other parameters such as shape and events. In *Slap Stick* the table was used as a formula to generate specific rhythms and notes.

In this film excerpt I use this formula/model in a more sophisticated manner by using opposition on the aural parameters. The parameters are explored in more detail and the strategy of the three techniques is implemented more systematically (Appendix O). This is expanded further and the techniques are measured on a scale from high to low. The scale is based on how similar or how opposite the correspondence is. This does not mean all the parameters will give the same results as can be seen from the graphs (Appendix N) which show how the parameters differ. For example, energy is a main parameter in the Table of Audio-Visual Correspondences relating to movements of high energy and intense colour, but this does not mean all the parameters such as texture and density will be the same.

In the *Slap Stick* animated film I predominantly used the opposition strategy, corresponding with Cook's (1998) Contest model from his general theory of multimedia and also with Michel Chion's (1994) Anempathetic Effect.

Holzer's use of the ANS Synthesizer to produce graphical systems to coordinate with light (see 3:1) influenced me to introduce computer generated and electronic sounds to correspond with the vivid colours in the visuals. I created a chart matching colours with a specific electronic sound (see Appendix M).

### 5.3 - Film Excerpt 3: The Flat Versions A, B & C



In order to devise strategies for maximizing attribute transfer between audio-visual stimuli whilst minimizing and controlling any similarity, I experimented with a short film, *The Flat*, using the three techniques:

- a) acknowledging (events) by similarity
- b) acknowledging (events) by opposition
- c) not acknowledging events (structural silence)

In practice, this involved composing music which was either similar to the events seen on screen, opposite to the visual images, or by applying structured silence, which involved ignoring the screened events for emphasis. Because of the systematic use of the Table of Audio-Visual Correspondences and the use of specific strategies we were led in this direction. My table of correspondences utilized the following criteria:

- ascending/descending
- colours/timbre;
- movement

- texture and density
- the number and types of characters or shapes
- the chronological time or seasons
- the background/foreground
- scene illumination
- lightness/darkness
- materials/instruments/sounds and speed /rhythm/pace/flow
- smooth or jerky

I composed three different music scores for the same excerpt of *The Flat*, versions A, B and C, in order to explore and assess the various possibilities and outcomes of using different compositional approaches for the same visual material. The Table of Audio-Visual Correspondences was used in conjunction with the three strategies, all leading back to Cook's (1998) general theory of multimedia with the three basic models of Conformance (my similarity strategy), Contest (my opposition strategy), and Complementation (a blending of my similarity and opposition strategies).

#### The Flat - Version A

For the first film excerpt, I analyzed almost all of the extract's visual events and translated them into aural events using a similarity strategy which I then applied to my musical composition.

In version A, I intentionally composed and directly translated all the parameters of the Table of Audio-Visual Correspondences such as space, time, texture, light, colour and energy into aural events, and it was clear from the results that the composition for the

video was not fully satisfactory and the reasons for its shortcomings were blatantly apparent. As Cook (1998) noted, Conformance suffers from duplication of information leading to an undesirable result. By systematically translating every single event of the visual into an aural equivalent, the soundtrack was not given any clear idiom and it lacked any psychological insight and anticipated audience cognition. All the visual events and the levels of the aural parameters of The Audio-Visual Table of Correspondences moved in a line together. The effect of this was that the music was too busy, creating a cinematic, cartoon perspective which in turn made the whole project too literal and events-based. Cook (1998) indicated that the highest level of interaction is achieved through a high degree of attribute transfer and a low degree of similarity. In Version A of *The Flat*, I take attribute transfer to the maximum, while at the same time controlling or minimizing the duplication of information or similarity. Additionally, by using the similarity strategy, when an image and sound are perceived to be in a specific location, the image and sound will be perceived as originating from the same object (Appendix B).

#### The Flat - Version B

In version B I translated fewer visual events into aural equivalents in order to see how the outcome would differ. For this version I used both time similarity and opposition. As can be seen from the final results (Appendix O) of the composition it was more successful than version A. The music in this version benefited from the fact that not all visual events were translated into the aural domain.

I used the Table of Audio-Visual Correspondences with all the main parameters but only utilized the acknowledge by similarity and acknowledge by opposition strategies when it was deemed necessary to give better results to the outcome of the film. To do this, however, it was necessary to decide which events were more important and visually significant.

In Cook's (1998) general theory of multimedia, Conformance is related to similarity and Contest is related to opposition. By blending similarity and opposition, Complementation can be achieved. In this version of the film I apply this idea by treating some elements in the visuals with the similarity strategy, while other elements are scored in opposition. Or a section scored for similarity is contrasted in the next section by opposition (see the graphs for Version B in Appendix O).

#### The Flat - Version C

In version C, I took an entirely different compositional approach, this time making greater reference to the nature of the film itself, using an even stricter and more closely defined set of events than the two previous versions, and giving even greater consideration to the nature of the film that I was composing for and the events deemed significant enough to translate aurally. Here I used the 3 strategies of: a) acknowledging (events) by similarity b) acknowledging by opposition c) not acknowledging (structural silence) so that the important events in the film could be picked out musically and the sound-world would match the visual aspects of the film. I used the Table of Audio-Visual Correspondences systematically with the three strategies for each part that seemed appropriate, creating an idiom which was unique to the film excerpt.

Chion (1999) maintains that sound and image influence and transform each other so that our perception is of a trans-sensory whole rather than two separate mediums. In my case, even though, to the audience, there is one perception, one film, I had to work with two separate domains, visual and aural, using the Table of Audio-Visual Correspondences in a systematic way with the 3 strategies to create complex combinations of the main parameters (see Appendix B).

The final result was achieved by using the most obvious and visually significant events to create a climax, making sure that the chosen parts, either small or large, would work successfully and not be monotonic as in the previous two versions. I deployed the

strategies in combination using the parameters of the Table of Audio-Visual Correspondences such as ascending/descending, colours/timbre, movement; etc.

When analyzing the musical and visual relationship one can see that they flow in different lines and not together in a monotonic manner. The graphs (Appendix O) demonstrate the abstracted changes, which now shows all the parameters of space, time, texture, light, colour and energy and makes it apparent that they are not all the same, as was the case in the first version, where they moved together. Here, in the third version, there are substantial changes derived from the different strategies employed for each parameter.

## 5.4 - Film Excerpt 4: Meshes of the Afternoon



*Meshes of the Afternoon* is a short experimental film directed by Maya Deren and Alexander Hammid in which the plot is circular and uses repetitive psychological symbolic images, including a flower, a key, a knife, a loaf of bread, a phone off the hook and a cloaked figure with a mirror for a face. The film, although appearing to tell a story, is exploring personal inner psychological thoughts and Maya Deren uses specific cinematic devices to make it appear timeless with simple events becoming complex and emotional.

In *Meshes of the Afternoon* there is a lot of repetition and recurring motifs which add complexity and take the viewer into the protagonist's subconscious, where reality and imagination merge and can no longer be separated. It is a dream-fantasy which is considered to be Maya Deren's best art film and a landmark within avant garde cinema.

In the film, the female lead comes home one afternoon and falls asleep, but she sees herself returning home again to find two clones. The viewer is constantly required to pay attention to items which are repeated over and over again, with Deren using one subjective and one objective camera, alternating between showing events from Deren's perspective, and observing her actions from an onlooker's perspective.

As Maya Deren uses techniques such as repetition, reversal of film actions and cloning of characters, dreams and surrealist ideas, I translated the music into the aural domain using themes that reflect the surreal, touching emotions relating to the scary, tragic, and weird.

At the beginning of the film I use the similarity technique. From 0.15 to 0.35 minutes, when the female character is walking, stops to pick up a flower, and continues walking, I use a slow accendic music scale which becomes faster and louder as she continues walking.

At 0.55 to 1.05 minutes, when the key falls to the floor and down the stairs, I represent the key with a specific sound with a piano playing descending scales backwards.

A ghost and black cloths appear at 3.05 and 3.20 minutes creating an atmosphere of death and mystery. I convey the tension to the audience by using scary sounds and music themes with high energy and fast tempo and rhythm. As Chion (1999) says, music adds value to the image, but the audience must see and feel the relevance.

I use acknowledge by opposition at 4.17 to 4.45 minutes to represent the knife as something negative, something different to what is perceived from the visual.

At 4.20 minutes, when the female actor goes up the stairs in slow motion, I use a slow rhythm and tempo with the piano playing calming music to reflect this.

Regarding emotions, I use the similarity approach at the beginning of the film which predominates at the main structural level, but this is tempered by a touch of opposition at a secondary structural level when the knife appears where I compose more lively and dynamic music with harmony. In this way I control the depiction of emotions in the aural domain.

From this example it's clear that even though there are emotions in the visual aspect I don't use the emotions as a main parameter when translating into music. This is the reason I didn't include emotions in my Table of Audio-Visual Correspondences.

I use the Table of Audio-Visual Correspondences systematically as a formula with the six main parameters without including emotions. However, in general terms, a similarity between the audio and visual strands tend to evoke feelings of empathy, harmony, agreement, and peace, whereas opposition suggests distance, indifference, and even disharmony, disagreement and disapproval, depending on how far the opposition strategy is taken. These are basically the seeds for all the other emotions including love, hate, happiness, sadness, fear and terror, etc.

As music and film share the same ground the perception the audience is given has to be relevant, especially as they are both time-based arts and examples of cross-modal audio-visual expressions abound. In such cases we perceive pitch as being high or low, melody lines as ascending or descending, and textures as thick or thin, so these parameters can be mapped from one domain to the other.

I explored in detail the emotional arc of the protagonist, her various psychological states and feelings, and used different instruments and sound effects to depict the various phases and moods of the film excerpt as I thought appropriate. As mentioned in my previous work, energy is a very important parameter that is applied equally to both the visual and aural domains in my Table of Audio-Visual Correspondences. In this case it was evident from the visuals of the film that the film excerpt had an intense energy, so I decided to apply this parameter in an equal measure to the aural domain in order to achieve balance and a sense of unity. For this score I have used similarity-similarity, opposition-opposition-similarity and opposition-similarity for the visual and aural domain. How these techniques are applied is shown in the graphs (Appendix O) and by using the formula and these techniques in combination, the outcome avoids being monotonic, and instead creates a degree of complexity that makes the non-narrative film more engaging

and ultimately more successful in conjunction with the soundtrack. My research-based approach, applied systematically with the strategies and the Table of Audio-Visual Correspondences has enabled me to reflect on the practical elements of non-narrative film and apply this to my own work.

## 5.5 - Film Excerpt 5: Eraserhead



*Eraserhead* is set in an industrial town where massive, noisy machines are constantly operating. This has an effect on all the residents, including Henry Spencer, who lives in what appears to be an abandoned building. It is a surreal horror film depicting the mindless frustrations of a man who hears a 'Lady in the Radiator' singing about finding happiness in heaven. When he learns that his pregnant girlfriend Mary has given birth to a severely deformed baby (who cries endlessly), he marries her, and after a brief and turbulent period living together, Mary leaves Henry to care for the ill baby himself, which slowly drives him insane. The film includes a dream sequence in which Henry's head is used to make pencil erasers, hence the film's title.

For this part of my practice-based research, I chose a non-narrative section of the film which is both disjunctive and frightening, encompassing a wide emotional range of psychological states, and thus ideal for my non-narrative compositional approaches.

I purposefully chose this extract in order to explore in practice the impact of the effects on me as a composer, whilst at the same time strictly and systematically applying my strategies and formula without taking these feelings and emotions into account. I was able to practically and systemically use the strategies and my Table of Audio-Visual

Correspondences to match the visual demands of this non-narrative scene, and work towards achieving the best possible outcome for the film. Upon self-reflection, I found I could not allow myself to be affected emotionally or physiologically, even though the powerfully emotive content of the visuals would naturally affect the viewer.

In general, I used the similarity approach but with complexity in the parameters.

(Appendix B). Even when I used the similarity strategy for texture or density in the visual domain, I could use a different approach for energy, colour, timbre, rhythm and tempo.

So some elements in the visuals are treated with the similarity strategy, while other elements are applied into the aural in opposition, which is clear from the analysis of the graph scales (See Appendix Q).

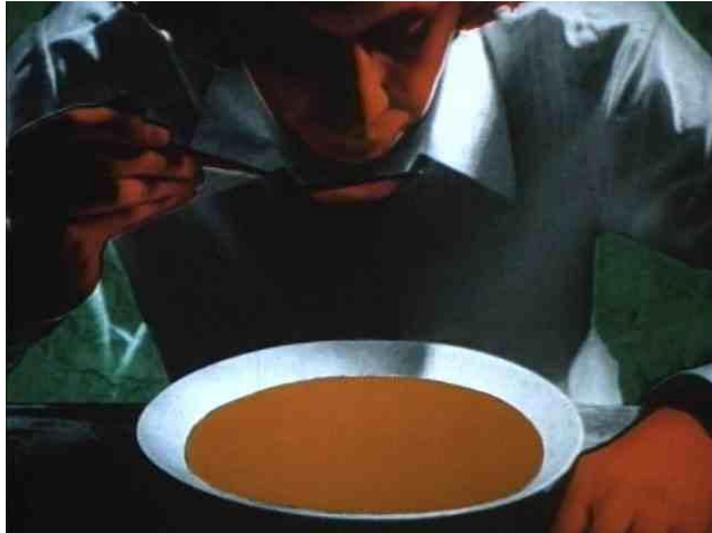
At the end of *Eraserhead* (3.15- 3.32 minutes and 3.32- end) we have two secondary themes with different visual events. Therefore, I also add new themes in my music composition, one for each sub theme. In the first sub theme, to reflect the hard emotions and feeling of the viewers watching the visual events, I composed music that starts quite strong and then becomes more energetic, stronger and louder until the end of the sub theme.

In the final scene, when the girl approaches the man, a white background is used, symbolizing lightness and happiness. This is in stark contrast to the previous section which was black, heavy, and intimidating. As the man represents the hard emotions and continues to the last theme of the video in combination with the girl who represents lightness and happiness, I apply these two elements into the music also. Accordingly, I use the flute which is softer, slower, and smoother, to represent the woman and combine this with an electric guitar playing hard and strong rhythms and tempos to represent the man.

Ultimately, in *Eraserhead*, I used all the strategies in a more sophisticated way than previously, while taking quite a minimalistic approach compositionally. This deliberate

restraint helped me to tread a fine line between the application of method and the emotive demands of the piece. It also strengthened my desire to develop a way of synthesizing, thus avoiding my composition being controlled by psychological factors and emotions through the manipulation of the Table of Audio-Visual Correspondences with its main parameters.

## 5.6 - Film Excerpt 6: Soup



Wishing to broaden my scope further in terms of non-narrative film, I was drawn to the contemporary and experimental nature of *Soup* (1974) by Zbigniew Rybczyński. The film portrays ordinary daily routine but presents it in a way that is unfamiliar to the senses, through a collage of scenes in a domestic setting using surreal sequences. In the film a man wakes up and is seen preparing to go to work. A surrealist dream turns into a horrible reality, shown from an unusual view-point, for instance brushing teeth from the inside of the mouth cavity. The colours used are different from how they normally appear to the human eye. Objects are larger than normal, as if seen through a looking glass, often repulsive, and represent symbolic images reflecting the overwhelming nature of reality.

The extract selected from *Soup* includes a combination of film and animation, and my composition had to reflect Rybczyński's experimental approach to non-narrative film (compared to the other selected film-makers). The key to achieving this was, after analysing the visual aspects in relation to my Table of Audio-Visual Correspondences, the application of a free improvisational/compositional response to gestures and states, as translated through the table. A critical decision in the process was to incorporate non-acknowledgement (silence) or a combination of strategies, in alternation with the free

compositional approach. After much experimentation, this yielded the best outcome in conjunction with the visual domain. Again, detailed moment-by-moment analysis, mapping and graphs are available for reference in Appendix R.

In *Soup* I use electronic sounds for the soundtrack to reflect the surreal theme, animation, and colourful texture of the film. Cook's (1988) views on 'quasi-synaesthesia' suggest an ability to experience or interpret information channeled through one sense modality in terms of another leading to the three relationship models of Conformance, Complementation and Contest.

By taking that further I invented my three strategies: ( a) acknowledging (events) by similarity, b) acknowledging events by opposition, c) not acknowledging (events) and used them in combination. In *Soup* I used those strategies in a more sophisticated manner and also the parameters used in combination (see Appendix B). This is expanded further and the techniques are measured on a scale from high to low. The scale is based on how similar or how opposite the correspondences are (see Appendix R).

In this example of animated film the texture and density can be analyzed in similarity but the energy can be analysed in opposition or not acknowledge. Because of the colorful structure of *Soup* along with the visual events, I used a similarity strategy to translate the texture and density from the visual into the aural domain, whereas the opposition and not acknowledge strategies were used to translate the energy. In some parts the visual events were not translated by the music into the aural domain at exactly the same level (see Appendix R).

What is different about this film is the use of the Energy parameter in my Table of Audio-Visual Correspondences (Appendix A). As some parts of the film convey high energy, I had to choose the level and decide the direction in which I would use the strategies. The direction I chose can be seen in the Energy graphs in Appendix R.

## 5.7 - Film Excerpt 7: Baraka



In the film *Baraka* I used a different approach from the original music composed for this non narrative film. I decided to use electronic sounds with a combination of drums, percussion and other instruments to produce music that matches more closely the natural world depicted in the film.

Again I used the three techniques of similarity, opposition and non-acknowledgement, but in most cases I chose the opposition strategy which proved to be a more successful fit with pictures from the world of nature and colours. My decision to use the opposition strategy was due to the fact the film has no plot or story and consists mainly of pictures, although I didn't use it continually as I wanted to reserve something to give a special effect at the end.

Also, I didn't want to express and translate all the visual events into aural. I also decided to use a different, clear thematic material for each section in the video to indicate a change of direction but at the same time I connected the parts for continuity.

Additionally, a musical climax was only used for parts deemed important. Apart from those instances I didn't use many climaxes in the soundtrack because I wanted to maintain a natural, organic soundworld in keeping with the visual events. The opposition

technique that I used for most of the video helped me to avoid conflict between the visual and aural dimensions due to the video being often very busy with numerous events happening simultaneously. A key purpose of my research is after all to explore the use of these different techniques and strategies.

In his score for *Baraka*, Stearns used a new custom-made instrument called 'the Beam' for his musical score measuring 12 feet (3.7 m) long made of aluminium with 24 piano strings of gauge 19-22. His approach is similar to my research techniques and composition ideas in that he uses some parameters and applies them into his music. On the other hand, my research approach is different through the use of The Audio-Visual Table of Correspondences which creates a composition through this formula where all the parameters have to be equal for both the visual and aural domains and apply equally and systematically with a combination of my 3 strategies, as opposed to the intuitive and instinctive approach used by Stearns.

Stearns' music is very emotive and compelling yet relaxing and calming. Sometimes he uses silence or the natural sounds of the displayed visuals. My research project uses a special formula, strategies and technique to compose always, but Stearns composes more freely without connecting all the events that are happening with specific kinds of music. He builds the music by adding new instruments or new themes in his music but it is still based on the same melody rather than the addition of new material or new instruments, or the concept of totally changing the music as the visual changes. When there is a visual climax, he does not match the music to the visuals and if they do match it is purely coincidental.

The *Baraka* non-narrative film is often compared to *Koyaanisqatsi* which is the first in the *Qatsi* trilogy of films, followed by *Powaqqatsi* (1988) and *Naqoyqatsi* (2002) by Godfrey Reggio which created poetic images that had a huge emotional impact on audiences all around the world. In these films he shows how the modern world has caused

unquantifiable destruction of the natural environment. He is influenced by religion and spiritual ideas and the destructive meeting of two different worlds where city life and technology are often diametrically opposed to the environment. The music is by Philip Glass using repetition throughout the films with slight variations and small changes in the notes or changing them with the addition of a new note or ascending or descending scale or building on the main music theme as it continues. The busy nature of the visuals does not suit a very busy musical score and so the music for the film is mostly background continuous music. The melody (which is repeated using different kinds of instruments) is reminiscent of church music, so the composer makes the images stronger without the need of new musical elements and the use of other techniques or strategies of composition. The composer has made it as simple as possible. The composer does not achieve this systematically or with a formula or with specific techniques in contrast to my research methodology. He is in fact composing in the totally opposite way with no parameters at all and is different also from Stearns. He often leaves the music as background music and does not change the music for each visual aspect or to represent each character with a new musical theme or sound.

## 5.8 - Film Excerpt 8: The Club of the Laid Off



*The Club of the Laid Off* is a long video (over 20 minutes) which uses manikins, rather than actors. I tried to create a different sonic approach to this music as this video has a rich variety of visual timbres.

I endeavored to use instrumental combinations which would remind listeners of the movements of a doll. To help the audience connect with the visual and aural I used either a similarity strategy or an opposition strategy, or when necessary, a combination of both.

My choice of instruments coupled with the similarity strategy produced results different from some of my other compositions. Using vocal sounds with xylophone, metallophone, harp and electronic sounds I produced a thin overall soundworld, which, with the use of similarity, translated most of the events into aural giving the impression of the established Mickey Mousing technique. I did not want this effect in my other compositions, but in this case, due to the appearance of the manikins, I believe it created a good connection, matching the quality of the visual images.

For example, at 2:40 minutes, the sound of a clock is heard ringing and then at 2:45 minutes the male manikin starts moving. To increase the cartoon-like effect, I used a

xylophone playing an ascending and descending scale to coincide with the manikin's movements, especially the head turning from right to left.

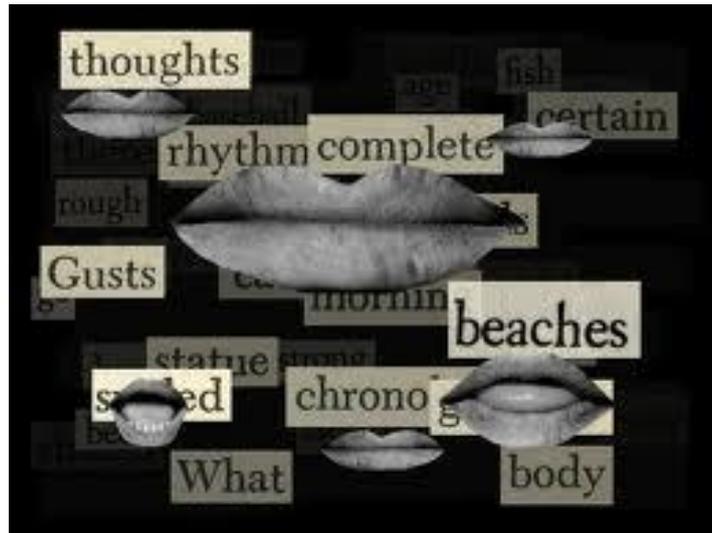
In some parts of the video I use other families of instruments and strategies apart from the similarity technique. For example, after a human appears, the music composition is enriched texturally with the use of the horn at 15:30 minutes to show the difference between the human world, and the world of the manikin.

The instruments also add more detail to what is happening between the visual and aural. For example, at 16:27 minutes when all the manikins are seen grouped together, quick notes are played repeatedly on a harp.

In this video I had to keep the outline of the main events to the fore, so it didn't come to the point where the visual would be over-balanced by excessive use of Mickey Mousing. I avoided emphasizing every single detail of movement as this would take the overall outcome too much in the direction of a standard cartoon approach.

In *The Club of the Laid Off*, I did not create a musical climax in each section but used the similarity and opposition strategies when necessary or in combination. Additionally, there are parts in this sequence where I used a small climax rather than leaving a major climax for the end or using a crescendo. For these reasons this example of my research method distinguishes itself from the approaches in the other examples, and the detailed, step-by-step planning and decision-making can be referenced in the analytical notes and graphs (see Appendix T).

## 5.9 - Film Excerpt 9: A Painful Glimpse Into My Writing Process



*A Painful Glimpse Into My Writing Process* is the title of a short animated film produced by Chel White which lasts less than 60 seconds. It was a challenge to compose music for this less than 60 seconds animation film using the Table of Audio-Visual Correspondences and my three strategies (similarity, opposition and no acknowledgement, in separately or in combination) because it is very short, experimental and fast moving. I had to respond to the challenge of rendering sonically the sheer density of fast changing visual material into aural.

In this video I isolated only the main visual ideas and events happening on the visual and translated them sonically into aural because there was a multitude of ideas and visual events happening at such a speed it was not possible to translate them all with music, and would not have served the artistic purpose of the work if I had. In fact, the results would have been disastrous, leaving the audience in a state of confusion due to the cacophony of sounds and images.

Therefore I applied the "no acknowledgement" strategy to some events and concentrated on using the Table of Audio-Visual Correspondences for the main or necessary events. Examples include the heartbeat (00:10), engine and screeching tyres (00:15), explosion

(00:17), word cloud (00:26), lips (00:28), dropping down a hole (00:42), mirror reflection (00:46), and a car being driven (00:47).

Grierson's use of synaesthesia was an influence on my work here. Having attended his conference I was interested to observe how he employed a static dot visual to make a stationary object appear to move through the music. (See 3.3) As it was impossible to acknowledge each event in my music during this busy, cluttered, short, animated film, I adapted Grierson's use of a static visual and took it further to use the not acknowledge strategy that at times also included silence.

In practice I found it is possible to apply my strategies and the parameters from visual to aural equally even when a video film excerpt is as short and intense as this.

## 5.10 - Film Excerpt 10: Blooddrop Versions A & B



I composed two different themes for this video (Version A & Version B) as I wanted to differentiate between reality and the surreal, for example, when the man passed through the picture on the wall into an unreal world. There is a silent section so I can give emphasis and create a climax in the aural part later when something significant happens in the visual.

### Version A

At the beginning of version A I used African instruments including drums and percussion and some stringed instruments playing piccicato in my synthesis of music to create a sense of mystery when connecting the visual with the aural.

What I am trying to achieve here is to give more emphasis to the change of space and place with the music themes I use. To acknowledge all the visual events in the aural dimension using a systematic approach with the similarity strategy would be too predictable and monotonous. For this reason I decided to use different strategies in combination to achieve a more varied result so the audience would hopefully be captivated.

Mickey Mousing would result if I only used the similarity strategy throughout because whatever you see you would also hear so there would be no climax or difference between the parameters listed in the Table of Audio-Visual Correspondences.

To contrast the two worlds, the real and the surreal, I use musical climax extensively in the aural to a higher level than what corresponds in the visual. The energy is high and I acknowledge most of the parameters in more detail and at a more extreme level than version B of this film.

In the video a man passes into a surreal room through a picture frame. Nothing is real in the environment he enters, not even the furniture. For this reason I used the similarity strategy rather than a dynamic composition and climax in the music, because this was an unreal world and I didn't feel it was important enough to warrant translating from visual into aural.

In some parts of the video I emphasized certain visual events in the aural dimension which the audience might not view as important. However, from my point of view as a composer, I wanted to create a different atmosphere to make the video more interesting and experimental to keep the audience engaged.

For example, at 0.44 - 0.57 minutes I introduce my first dynamic climax using all of the parameters to achieve it.

Later, at 1.16 minutes, a larger climax starts in the aural than is represented in the visual so I can give more emphasis to the transition from reality to the surreal world.

At 2.10 minutes, in the 2<sup>nd</sup> section, the theme of the film changes and everything is different, including the colour of the surreal house inside the frame. For this I used soft music in contrast with what went before so the audience can easily perceive the difference between the two worlds.

At 2:28 minutes the girl bites an apple. Although it is not an important event I used an opposition strategy to translate the visual event into aural. I wanted to take it in a different direction and make it more dynamic by creating a small climax in the music to focus attention on something that is not happening in the visual.

The opposite occurs at 4:15 minutes when the man throws an object at the stairs and they break off and fall to the floor. I didn't want to make this a main event as the stairs were not real. So the music I used was not loud or dramatic, and it didn't have a climax. This allowed me to give more importance to a later scene when the man tries to coerce the girl to go with him.

At 4:40 minutes there is a climax in the music and I created a dynamic composition using the similarity strategy to stress the importance of the video.

Finally, when the man took the girl from the surreal environment into real life, I changed the composition again and the theme of the music to indicate this transition. The composition becomes more dynamic, with a climax, when the girl bites the hand of the man to underscore the fact it is taking place in reality.

Version A of *Bloodrop* uses a different approach from Version B so I can demonstrate that different parameters can be used with different strategies to give different results with the same film. In doing so, I attempted to achieve what Chion strongly recommends, namely, rediscovering a certain freshness in how we understand film, and discarding time-worn concepts which serve to prevent us from seeing and hearing. (Chion 1994: 186)

## Version B

In version B, for the purpose of my research, I used a different approach and dimension from Version A, employing the use of various instruments and orchestration.

I wanted to experiment with the same video, using a different approach and technique each time but still highlighting the main points, using my formula from the Table of Audio-Visual Correspondences and always employing the three strategies: acknowledge by similarity, opposition and not acknowledge, alone or in combination.

In this version I applied one aspect of synaesthesia where people hear in colours or pitch or tempo. I used two themes to represent the real and surreal worlds with two different orchestrations and totally different groups of instruments. I had to decide what elements and events to translate from the visual into the aural domain because of the surreal events happening inside the picture frame, leading back to the idea of synaesthesia.

For example, at the beginning of version B of *Bloodrop*, I used string instruments from a classical orchestra such as cello bass and piccicato on the violin to show that the inside the man's room was real. This was the first theme.

For the second theme, representing the surreal world, I used horns, oboe and brass instruments to depict the surreal room which was accessed through the picture frame on the wall.

At 2:29 minutes, when the girl takes a bite of the apple, I didn't create a musical climax but kept it simpler than version A.

Two separate atmospheres were therefore created by using two different groups of instruments and two difference themes.

Additionally, in version B, I tried a combination of strategies to translate sonically the visual into aural, emphasizing just the key events to make it more interesting to the

audience. This involved treating some elements in the visual domain with the similarity technique, while other elements came under the opposition strategy, or one section scored with the similarity strategy was contrasted with the next section scored by opposition.

For example, at 0.40 seconds, the acknowledgement by similarity strategy is used when the film starts with a significant climax in the music which builds in intensity until 0.55 seconds. Following that there is a smaller climax in the music, not as intense as at the beginning because the visual domain enters the surreal world and the opposition and not acknowledge strategies are used.

## 5.11 - Film Excerpt 11: We Have Decided Not To Die



This video is more contemporary and experimental than the other videos I used for my research. Accordingly I used electro-acoustic sounds and instrumental ideas to connect the contemporary video with contemporary composition.

This video is divided into three sections and each section has a different theme although it is just one movie. Because of this structure I use my three strategies in each section, although in the third and final parts the similarity and opposition strategies work simultaneously at different structural levels in the same section to show the interesting progression that develops.

For this video I tried a different approach to composition from the other videos in my research. In the first section I used simple music ideas including electronic sounds and music and added one small climax to give emphasis to the girl at the beginning of the first section. This suited my purpose so I could develop my ideas for the second section and build up gradually, with a small climax in the middle leading to a grand climax at the third section. After the grand climax at the end of the film, the music fades slowly to correspond with the beginning of the film. This did not mean I only used the similarity strategy however. There are instances in the video where I used the opposition strategy

to give emphasis to different parts so the video doesn't monotonously stay on the same level.

The climax starts to build from the middle of section two when the cars crash but then it slows and returns to normal. The climax increases and decreases gradually until section three. Here there are visual events that can be translated to aural on a higher level to what they are in actuality to give more emphasis. The main climax in the music comes just before the end when a man smashes through a window in a high building with slivers of glass swirling around him. Following this the music intensity decreases again so that it finally ends on a moderate level (see Appendix W).

Using all the parameters systematically and applying them equally to the aural and visual domains by using a formula based on the three strategies inhibits freedom of composition. However, my research and music composition prove they are applicable and the Table of Audio-Visual Correspondences works, as these parameters can be used at various levels due to the three different strategies I am using in going from visual to aural.

From analyzing this film, I came back to Cook's general theory of multimedia with the three base models: Conformance, Complementation and Contest. My strategies and Cook's three base models are almost the same. Acknowledge by similarity I connect with Cook's Conformance, acknowledge by opposition with Contest, and by blending similarity and opposition you can achieve Complementation.

In the same section of a film, some elements in the visuals are treated with the similarity strategy while other elements are scored in opposition. Or, a section scored for similarity stands in contrast with the next section scored by opposition.

In *We Have Decided Not To Die* I tried to use the parameters with different strategies so the visual and aural are not synchronized, to make it more intriguing. By not using the

similarity and acknowledge strategies for every single event, I avoided Mickey Mousing and the risk of reducing the video to a cartoon-like creation. I just kept to the outline and chose what was needed to translate the video sonically to create a climax at the end, where I believed it was necessary. According to Cook (1998), the more interesting relationships lie in the area of Complementation and Contest, while Conformance in general suffers from duplication of information as with my similarity strategy. In other words, too much similarity is not desirable.

Chion's method of analysis was also helpful here, especially in the last scene. He suggests asking the questions "What do I see of what I hear?" and "What do I hear of what I see?" His outline for analysis includes identifying dominant tendencies, spotting important points of synchronization and comparison. (1994: 189-192) He defines a point of synchronization or synch point as "a salient moment of an audiovisual sequence during which a sound event and a visual event meet in synchrony." (1994: 58) I applied this when scoring the music for the man running towards the window and located the primary synch point at the moment of impact when he broke through the window and shards of glass flew in all directions.

## CHAPTER SIX: CONCLUSION

This research addresses the problem of scoring non-narrative filmwork. Deprived of a narrative content to follow, the composer is facing a fundamental problem: what other elements might be considered in order to establish a meaningful relationship between the screened events and the music-track? To answer this problem, this research investigated the possibility of applying cross-modal principles to soundtrack composition, systematically exploiting the human ability to experience or interpret the information channeled through one sense modality in terms of another.

As music and filmwork share the same ground as time-based arts, examples of cross-modal audio-visual expressions abound: we experience pitch as being high or low, melody lines as ascending or descending, textures as thickening or thinning; in music as in film, we perceive gestures, movement, rhythm, pace, and so on. Any of the above mentioned parameters could be mapped from one domain onto the other; (and, in our age of multichannel audio [surround], spatial relationships can actually be translated sonically in a most literal way).

However, it is far from the case that a direct and straightforward correlation between the two domains would automatically yield results of some artistic interest. For the purpose of my research I invented the Table of Audio-Visual Correspondences and applied its formula to my compositions so I could ascertain whether it was applicable.

Discovering points of similarity has been stimulating and it has been interesting to relate these to my own work and explore the varied techniques and approaches of other practitioners. However, none of these artists have made a clear cross-modal approach (as expressed in the Table of Audio-Visual Correspondences) and it is the systematic deployment of this which forms my main contribution to this area.

I have concluded that no one composer uses a similar technique or similar systematic formula in their composition of non-narrative films, although each composer demonstrates an element of the Table of Audio-Visual Correspondences through acknowledgement by events. I, on the other hand, use all of them at one time or another and unlike other composers, I do not use chance or free expression or traditional music to give the audience an affinity with the visuals, unless this has been mediated through the Table. Instead I use three strategies: (1) acknowledge events by similarity; (2) acknowledge events by opposition and (3) not acknowledge. My Table of Audio-Visual Correspondences is based on six main parameters that are to be applied equally to the visual and aural domains of a non-narrative film.

I developed the idea further of using the Table of Audio-Visual Correspondences after studying the work of Cook (particularly his work on quasi-synaesthesia) and experimenting with different versions of videos with the same extract to be able to ascertain the best method of writing the musical soundtrack.

In my research I use the Table of Audio-Visual Correspondences in a more sophisticated way including: (1) a closer translation of the above-mentioned techniques from the visual to the aural domains, (2) building on previous investigations to achieve a synthesis of the surveyed literature and artworks, focusing on considerations of an artistic nature with regard to cross-modal mapping of audio-visual parameters.

At its most basic a strategy for any screened event will entail deciding between the following options: a)-acknowledging (events) by similarity; b)-acknowledging (events) by opposition; c)-not acknowledging (structural silence). The first two options should be seen as the two poles of a continuum, offering virtually limitless possibilities of nuancing that relationship one way or the other. It all becomes exponentially more complex when a relationship set up in one direction shifts over time to a different degree, or even 'morphs' into the opposite direction. Furthermore, several structural levels are each dealt with in

different ways, thus presenting (simultaneously) similarity at one level and opposition at another. The scope for the composer to 'play' with the network of possible relationships is considerable.

I sought to achieve a synthesis of the surveyed literature and artworks, focusing on considerations of an artistic nature with regard to cross-modal mapping of audio-visual parameters. Here, any initial mechanical application of cross-modal correspondence will have given way to an artistically reasoned strategy that integrates several structural levels into a unified audio-visual discourse.

My research is primarily practice-based in approach and scope. The output consists of a portfolio of original soundtracks complemented by a written thesis discussing and evaluating, through a detailed analysis of each finished film excerpt, the application of cross-modal logic to the scoring of non-narrative video. Working on the film excerpts and applying my Table of Audio-Visual Correspondences helped me to develop a stronger compositional voice. Before I started this research, I had a different view of composing, thinking I could throw restraint aside and have complete freedom. However, at times I had difficulty in formulating ideas.

Through the research I learned how to discipline myself to follow a strict criteria without allowing feelings and emotions to affect the composition, which gave consistent results. For example, with I analyzed the first film excerpt, Triangle, it was immediately obvious to me that the similarity strategy was the most appropriate. This was made very clear through the six parameters in the Table of Audio-Visual Correspondences. As I watched the film excerpt I was automatically writing the music, so it became a direct reflection of what I was observing.

My composition for this excerpt and the others still retained a dynamism and high energy which is characteristic of my compositional style, but this was done according to my formula which evolved during my practice. By strictly adhering to my table and not

allowing myself the privilege of free expression, I find I can now observe a film excerpt and know immediately how to go about composing the music for non-narrative films.

This is not only true for my own work, but it is meant to provide an original contribution to the knowledge and understanding of this area for both composers and scholars in search of a general theory of audio-visual interaction and alignment of media in multimedia work. Whenever a composer faces a mental block and finds it difficult to create new ideas in composing, they can simply refer to the Table of Audio-Visual Correspondences as a ready-made formula which can be used as a starting point for a new direction, or a platform for further research in music.

# APPENDIX

## Appendix A: Table Of Audio-Visual Correspondences

Based on 6 main parameters that apply equally to the aural and the visual domain:  
SPACE–TIME–TEXTURE–LIGHT–COLOUR

PARAMETERS	Static	Dynamic	Quality
<b>SPATIAL</b>	up – down left – right foreground – background	ascending – descending panning advancing – receding zooming	smooth – jerky (motion)
<b>TEMPORAL</b>	rhythm/pace	speeding up – slowing down zooming	regular – irregular
<b>TEXTURE</b>	dense – sparse	getting denser – getting thinner	coarse – fine
<b>LIGHT</b>	dark – bright	brighter – darker fade	contrast: sharp / blurred
<b>COLOUR / TIMBRE</b>	colour / timbre	colour/timbre change fade	hue / saturation / orchestration brightness
<b>ENERGY</b>	N/A	increasing / decreasing high / low	positive / negative / neutral

## Appendix B: Examples Of Using The Table Of Audio-Visual Correspondences Systematically With Combinations Of Main Parameters

S: SIMILARITY - O: OPPOSITE

A				
SPACIAL	S	O	S	O
TEMPORAL	S	O	O	S
SPACIAL	S	O	S	O
TEXTURE	S	O	O	S
SPACIAL	S	O	S	O
LIGHT	S	O	O	S
SPACIAL	S	O	S	O
COLOUR /	S	O	O	S
TIMBRE				
SPACIAL	S	O	S	O
ENERGY	S	O	O	S

B				
TEMPORAL	S	O	S	O
TEXTURE	S	O	O	S
TEMPORAL	S	O	S	O
LIGHT	S	O	O	S
TEMPORAL	S	O	S	O
COLOUR /	S	O	O	S
TIMBRE				
TEMPORAL	S	O	S	O
ENERGY	S	O	O	S

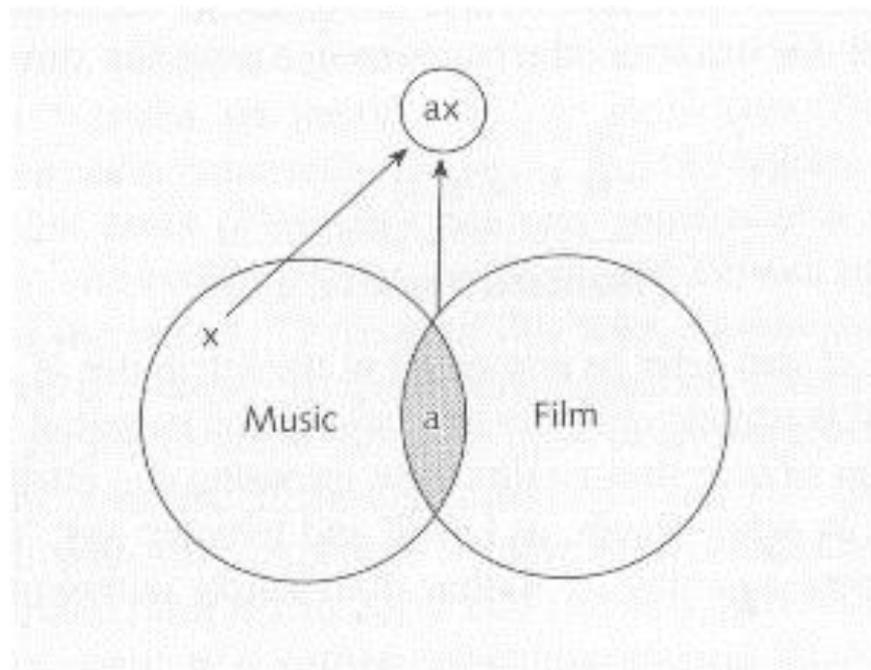
C				
TEXTURE	S	O	S	O
LIGHT	S	O	O	S
TEXTURE	S	O	S	O
COLOUR /	S	O	O	S
TIMBRE				
TEXTURE	S	O	S	O
ENERGY	S	O	O	S

D				
LIGHT	S	O	S	O
COLOUR /	S	O	O	S
TIMBRE				
LIGHT	S	O	S	O
ENERGY	S	O	O	S

E				
ENERGY	S	O	S	O
COLOUR /	S	O	O	S
TIMBRE				

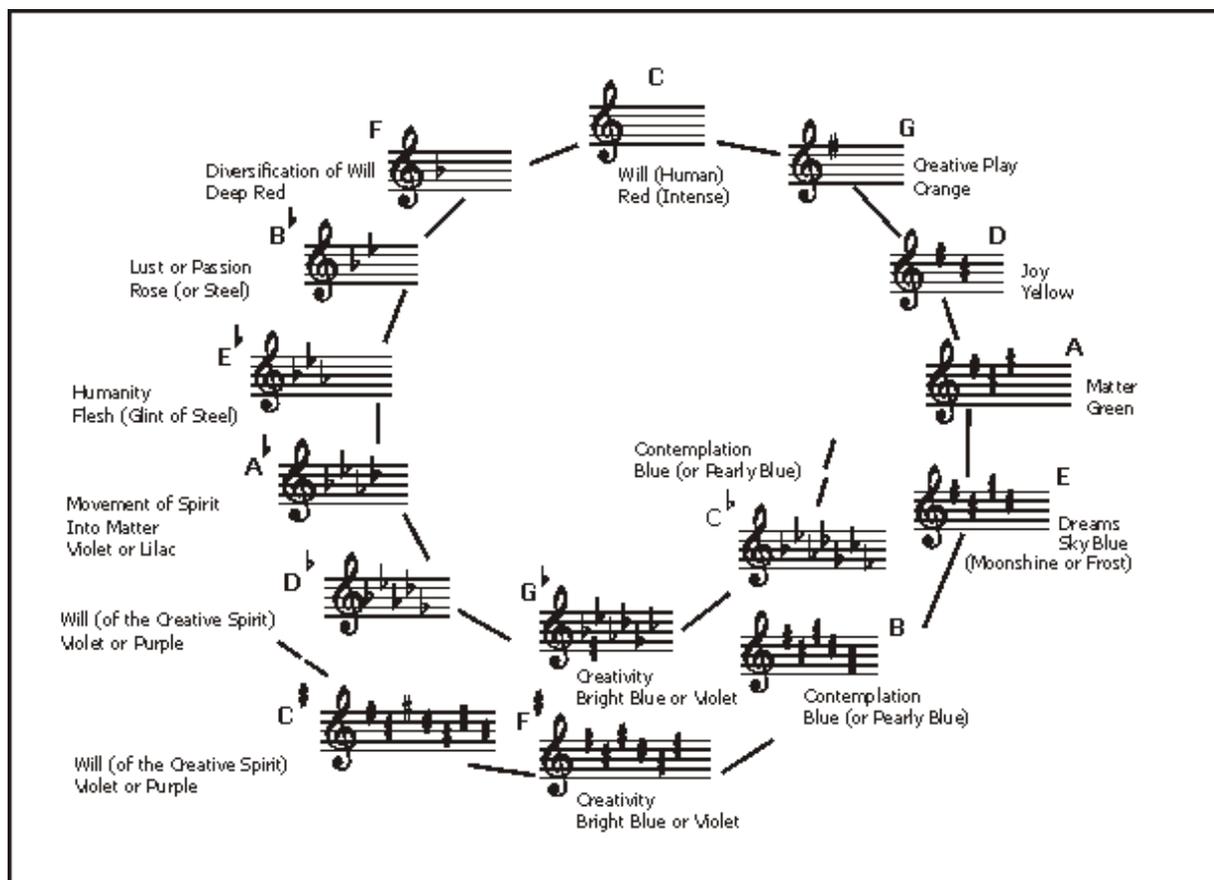
## Appendix C: Diagram 1

Diagram 1



(c)1988 by the Regents of University of California. Reprinted from Music Perception, Volume 6 (1988), Figure 8b.

## Appendix D: Scriabin's Colour Table



Prometheus: Poem of Fire", in full score. New York: Dover Publ., Inc., 1995,

## Appendix E: Skriabin's Colour Notation

This part moves in whole tones from F sharp (blue) to the mid-point C (red), which divides the octave in half through a tri-tone, onto the 'resolution' in F sharp, where the piece concludes on the only true triad of the piece (F sharp, A sharp, C sharp), signifying spirit (in opposition to C=red which signifies material): the move from F# to F #1 represents a complete revolution of the cycle of fifths. He experienced colour. through chordal complexes with spontaneous recognition of C=red, D=yellow and Fsharp=blue.

C	=	Red	F sharp	=	Bright blue
G	=	Orange	D flat	=	Violet
D	=	Yellow	A flat	=	Purple
A	=	Green	E flat	=	Metallic grey/blue
E	=	Pale blue	B flat	=	Blue-grey
B	=	Very pale blue	F	=	Dark red

## Appendix F: Sabaneyev's Colour Table

C. - Red.  
G. - Orange-pink.  
D. - Yellow  
A. - Green  
E. - Whitish-blue.  
H. - Similar to E.

Fis. - Blue, bright.  
Dis. - Violet.  
As. - Purplish-violet.  
Es. - Steel colours with metal shine.  
B. - Steel colors with metal shine.  
F. - Red, dark.

Rimsky-Korsakov's Table of Synaesthesia showed colours in relation to tonalities but differed to that of Sabaneyev as follows:

C-dur - white,  
G-dur - brownish-gold, light,  
D-dur - daylight, yellowish, royal,  
A-dur - clear, pink,  
E-dur - blue, sapphire, bright,  
H-dur - gloomy, dark blue with steel shine,  
Fis-dur - greyish-green,  
Dis-dur - darkish, warm,  
As-dur - greyish-violet,  
Es-dur - dark, gloomy, grey-bluish,  
B-dur - darkish,  
F-dur - green, clear (colour of greenery). (Galeyev, & Vanechkina 1968).

## Appendix G: Labanotation

Labanotation concentrated on four areas:

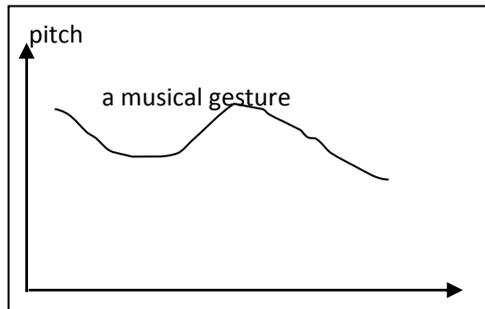
- i. Direction of the movement,
- ii. Part of the body doing the movement,
- iii. Intensity of the movement and
- iv. Time it takes to do the movement

The shapes of the symbols used in Labanotation indicate nine different directions in space and the shading of the symbol specifies the level of the movement.

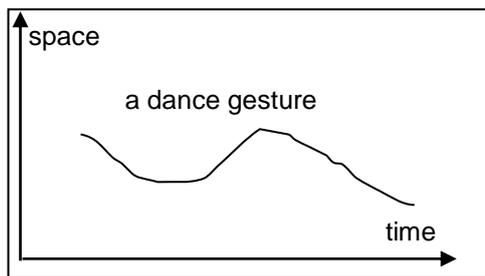
1. spatial distance
2. spatial relationships
3. transference of weight
4. centre of weight
5. jumps
6. turns
7. body parts
8. paths
9. floor plans

## Appendix H: Alsop's Charts

Collaboration between music, gestures, dance, movement and music.



**Figure 1: A Musical Gesture**



**Figure 2: A dance gesture**

## **Appendix I: Visual and Aural Analysis of the Triangle Animated Film**

Detailed Analytical Notes for Reference:

I have included the detailed analytical notes I made with each piece. The analyses are included for reference and to demonstrate the rigour of the research method, but, as working notes, they are not designed to be read in their entirety. The graphs I generated were most helpful to me in the process of composing soundtracks to the film extracts as they provide clear visual snapshots of the parameters from the Table of Audio Visual Correspondences, as well as time-lines for the relationships of musical events to visual events.

The video film excerpt opens with a blurred triangle on its side.

SCENE 1:

Main theme Timeline: 00:00 – 01:15

Two dimensional naked rough figures made by black lines, a woman and a man, are dancing against a white simple background.

AURAL - 00.06-014

The music represents the female form with the panpipes that that are playing a simple melodic line with notes in time with the visual.

For the Pan pipes a soft breathy blow pad is used. Use is made of simple notes for the simple steps that the female makes with a similar technique for the aural with notes up and down with intervals between them to produce the simple melodic line.

The panpipes play note by note ascending or descending to represent the steps so if the step is a large one in the visual then use is made of notes with large intervals. For small steps a semitone between the two notes is played.

## VISUAL

To start with the two figures are holding hands with the woman dancing around the man (0.00-0.02).

Then the man throws the woman in the air from left to right, twisting and swirling (0.02-0.15).

The man sends the woman over his back – back to back (0.16 -0.27).

They continue, re-enacting the same scene once again for a second time (0.27 -0.30).

As they finish this dance the man is dancing alone, while the woman is still visible in the background. He leaps up in the air 3 times higher each time (0.30-31).

The woman disappears from view (0.42-0.44).

The man jumps, leaps and twists his body in the air. (00.44 -0.49).

The woman reappears from the background moving left and to centre (0.50) and the scene now continues with the woman alone whilst the man disappears from the scene (0.51).

The woman twists once (0.51-0.57) and then again (0.58-1.01).

The man reappears (1.03) and the scene now continues with the woman and the man dancing, with the man taking the woman up in the air and placing her on his shoulders (1.03-1.06). The scene finishes with the woman kissing the man whilst on his shoulder (1.06-1.15).

AURAL: 00.06-00.12

For the male figure a sitar is used (a bright metallic sitar with thick phaser) with delays and once again a simple melodic line is created like the panpipes for the female figures. In the same way, the male figures correspond with the music with the visual large steps using greater intervals between the musical notes and the opposite for the small steps or mixing the notes when there is general movement.

0.12-0-15: The sitar-is used again for the male figures performing the large aerial leaps and so with the use of the acknowledging (events) by similarity technique to match the visual there are ascending chromatic scales. When the figure is coming down from the jump in the visual, then the music uses descending quick chromatic scales to show the figure turning in the air until he descends to the ground and falls with the same rhythm and tempo as the visual image. When the figure leaps up, a more rapid tempo and rhythm is used as he is dancing. This increases in tempo to reflect the speed of the jump and the fast fall to the ground.

0.16: Here the pan-pipes make the sound of the woman being turned over the man's back and the use of a small ascending and descending chromatic scale to show this visual image. The rhythm here is not very fast.

0.27: In this part of the film excerpt the male is leaping as before with a sitar playing an ascending scale with arpeggios and as it is fast with small jumps, so the notes for the arpeggios are quick notes with a fast tempo and rhythm as played previously to show the quick jumps in the air and then when he descends from the jump, a quick descending arpeggio is used with fast notes until he reaches the ground and the tempo becomes as before, much slower.

0.30- 0.31: Now the panpipes use repeated Minor 3nds and Major to match the same as is seen in the visual.

0.38-041: The sitar here is playing a quick descending scale (G,F,E,D,C,B,A,G) with a quick rhythm and small notes to represent the quick movement of the visual and quick notes and descending scales and when the man is turning in the air to come down from the jumps so the aural plays descending scales with 7 notes and then these start again from a high note with descending arpeggios several times as he turns in the air until he comes down to the ground. The panpipes are no longer heard in the aural as the woman has disappeared from the visual on screen.

0.44-49: Here the sitar representing the male figure who is making a slow jump in the air, has a glockenspiel played upward and downward glissando. The low and slow turns in the air are the slower visual movements compared to before and so the aural uses a slower rhythm and tempo to show the delay and the slow visual movement. A descending scale was chosen that is longer with more notes sustained for longer.

050-1.02: The Panpipes which represent the female figure who is now alone on the screen use a simple melodic line theme as before with nothing special happening.

1.03-1.15: The sitar reappears with woodblocks sound effects and alarm effects to give emphasis to the appearance of the male and in 1.07 there is a glissando from both panpipes and sitar when in the visual the female figure leans over the male figure's shoulders to kiss him.

1.15: The visual appearance of the black triangle is aurally represented with reverse effects (Reverse Random FM, FX) and an ambient percussion set which include a variety of ambient effects such as: alarm and other suspense sounds in order to give an emphasis to the new visual appearance and the scary new element on the screen.

## SCENE 2

Sub theme No. 1 Timeline: 01:16 – 02:47

VISUAL: The appearance of the black triangle

A black triangle, which is situated at the right side of the white background appears with the black triangle seeming to represent the evil element in the scene and the black colour gives more emphasis to the scene (1.15).

The couple seem afraid and show it in their movements, turning to stare at the shape (1-15-1.17).

While the woman comes down from the man's shoulders the black triangle approaches the couple as they hold hands (1.18-1.20).

The background flashes from white (1.22) to red (1.23) signaling danger and the couple change from white to red alternately with the background as a contrast (1.24-1.25).

The triangle becomes a black line which separates them, dividing the screen (1.25-1.27).

The black shape increases in size and expands to fill the background (1.27-1.28).

AURAL:

1.15-1.27: Musically there is the appearance of the black triangle and the black and red background musically uses a reverse effect (reverse random FX ), and an ambient percussion set which includes a variety of ambient effects such as alarm and other suspense sounds. This is meant to highlight the menacing effect of the visual triangle on screen.

1.14-1.20: Here panpipes together with the sitar are used as the female and male are seen in the visual but they are in 2nd place because the black triangle appears represented in the aural by quick and rapid sound effects coming and going using the alarm and suspense sound-effects in order to give the emphasis to something new occurring visually which is the appearance of the small black triangle.

Sub theme 2 – the black shape becomes a black figure Timeline 1.27- 2.13

## VISUAL

Suddenly the woman comes out of the black background and the black triangle becomes a female figure cloaked in black, fighting together with the shape and dances with the shape which becomes a female figure cloaked in black (1.28-1.30).

There are fast movements which increase with a quick rhythm and tempo until the black figure tries to attack the red person. When the black figure tries to attack, this time the rhythm and movements become even faster (1.31-1.37).

The black figure becomes a black shape again (1.38-1.40).

The black shape becomes a black figure again and dance/fights with the red figure (1.41-1.45).

The two figures merge into a vertical red line in the centre of the screen and then expand into a black pear shape inside which is a red female form (1.46).

The woman's face appears in the foreground momentarily surrounded by the black shape like a headscarf (1.58 -2.00).

The figures continue their dance increasing in size on the screen (2.00-2.10).

A female full frontal nude appears in centre screen (2.10-2.13).

The black shape now becomes a black triangle and increases in size. Inside this there are two persons, one yellow and one red. They are dancing together holding a stick. The cloaked figure and the woman dance again (2.13-2.22).

The two figures become one bigger person inside the black triangle (2.22-2.24).

## AURAL

A black triangle appears which suddenly changes shape to a black figure which starts to fight with the red person. For the red figure a metal percussion instrument is used and for the black triangle rich sounding timpani. These two instruments were chosen for this part of the film excerpt because there is fighting between them in the visual elements so in order to use the acknowledging (events) by similarity technique for the aural the two figures were musically represented with strong and loud instruments with a wide range and also they needed to be equal. These two instruments are in the same category and both are strong and loud enough to make an impact. The timpani and the percussion were used with quite a fast rhythm and tempo with a little louder volume in order to show the dynamism and the energy of this part of the video film excerpt when the visual figures are fighting on screen.

Both instruments are playing and moving together at the same level and rhythm,

In some parts where the black figure is trying to approach and attack the red female a faster and quicker rhythm and tempo is played which was louder to show the visual climax of this visual fight. The music here is for both timpani and percussion as they are playing together in some parts which are lower and slower, and in some parts where there is more energy they are played with a quick rhythm and tempo.

146-1.47: In some parts of this visual section there is a quick shot with a zoom of the face or body of the red figure-female and so quick loud sounds were played in order to give emphasis to the quick appearance of this with Detuned Alarm Effects and altered dive effects. Breathy blow pad and woodblocks and triangle are used for this quick appearance and change on the screen.

2.13-2.22: For this visual section there are the two figures dancing inside the black triangle holding a large stick. It becomes bigger and stronger and so musically the timpani becomes louder and stronger than the metal percussion so there is more emphasis on the timpani that represents the black triangle. For the other two figures, the

red and yellow dancing inside, the volume of the music and the speed is lower than the timpani to show their strength.

In some parts when the black triangle is zooming and taking more space on the screen the music becomes more dynamic and it will be louder than before as the visuals are zooming on screen. There is the use of woodblocks with a lot of reverb that represents the stick that the two figures are holding.

2.22-2-24: During this section, the two figures coloured yellow and red become bigger and stronger in the black triangle so there is emphasis on them and the music uses a climax. The timpani is still used for both but it is louder and more energetic and more prominent musically than the rest. When the visual shows a close up of the figures inside the triangle, the music becomes faster, louder and at high speed with dynamics and a descending scale. From the loud music slowly there is a change and it becomes thin and weak and disappears until the end of the visual with the close up of the figures inside the triangle.

SCENE 3: Timeline : 2.25-2.44

VISUAL:

The female figure is dancing with a stick with the appearance of the black triangle (2.25-2.44).

The woman dances around with simple movements and steps holding a stick inside a white background. (2.25-2.37).

The black figure appears in the background and at the back of the screen a woman is looking. (2.37-2.40).

The black figure becomes a black triangle and increases in size until it takes over all the screen and the female red figure jumps inside to the black screen. (2.40-2.43).

## AURAL

2.25-2.37: For the female figures again the pan-pipes are used with the simple melodic line with notes mixing or moving incrementally step by step. When the visual figure takes large steps and uses big movements there are musically wider intervals between the notes and when the figure takes small steps then there are semitones or small moves in the aural from one note to the other. Here there is the use of woodblocks with a lot of reverb that represents the stick that the female is holding.

2.37-2.43: For this part the panpipes are in the background as they are in the visual because now the main part involves the appearance of the black shape and then it becomes a triangle.

For this appearance a one-shot hit from an ambient kit is very quick to give the emphasis to the black figure and reverse effects and detuned alarm effects are used for the triangle. The woodblocks with reverb are used to represent the stick that the female is holding until she jumps inside the black screen. The mix of these sounds gives the impression of fright to match the visual images. The one-shot hit from the ambient kit gives the emphasis (2.40) for the appearance of the black triangle.

## SCENE 4

Timeline: 02:44 – 3:16

Sub theme 1 – Return of the Black Triangle

## VISUAL

The black shape appears once again in the depth of the white background on the left side of the screen (2.44-3.00).

The woman takes a defensive position as the shape changes again to a triangle and the background becomes black (2.58-3.05).

The woman falls down with her body twisted in the black shape (3.10-3.15).

## AURAL

2.44-3.00: Now the black triangle visually covers all the background and inside there is the female red figure swimming inside a black background and for this very simple visual effect the aural uses the sound of a dream weaver and dive effects with an analogue filter sweep pad with bubble effects to show the visual black background as a sea and the red figure swimming inside this on screen.

2.43-3.00: A single chord, and single notes from the detuned piano are played for this section.

2.58-3.05: As the red person shows no movement and is just sitting and looking around inside the darkness there is more light inside musically which is achieved through simple music and for the darkness there are some spooky sounds using the ambient kit that has various detuned sound effects with a detuned piano and effects of diving and heartbeats.

3.05-3.15: For the appearance of the red light square that changes shape and size again the spooky ambient kit and alarm effects and laser effects are heard aurally mixing them to give a quick and fast change of the visual size and shapes on screen with the reverse effect stretched very quickly upwards and downwards.

## SCENE 5: - 2 – Red square

Timeline: 3:16 – 3.22

Square shapes - Red Shape (square or circle)

## VISUAL

A red square appears, changing shape again using a variety of forms including a glass, a vase which appear and disappear. Black and white squares are in the background and in the middle of this background a black triangle has a red colour inside that is changing shape and size in fast rhythm continuously.

## AURAL

3.16-3.22: Here because of the lighter visual background on screen and the black triangle in the middle with the red shapes which are visually changing size and shape, more energetic sounds are used for the aural background. The same spooky ambient kit sound is used as before with various detuned sound effects and also the effects of tubular bells are louder and mixed timpani and reverse effects are used. There is very fast changing from one sound to the other stretched very quickly upwards and downwards to give the same impression as the visual with the red shapes inside the black triangle changing size and shape as if the triangle has a mouth and can talk.

## SCENE 6

Main Theme – Dancing Figures

Timeline: 3.23 – 4.33

## VISUAL

(3.23-3.24): One red person appears walking inside a black and white square background and starts dancing with slow steps and slow movements.

The red shapes changes into two, one yellow and the other red with the black shape now a square (3.24-3.26).

The two red and yellow figures are dancing and moving and mixing their legs one inside the other and opposite. (3.26- 3.36).

The black background shows a white square which appears to offset the two dancing figures in yellow and red which are dancing and twirling, then merging and flowing from red into yellow shapes as if they are swimming (3.27-3.37).

A white background with zoom shots of the red and yellow figure moving around is seen with the figures appearing as if they are moving in the air with the same tempo and rhythm. (3.36.3.38).

The black background appears as before with the figures, yellow and red, merging into one yellow figure which swims around the screen increasing the rhythm and speed of the movements. The two dancing figures return in red and yellow on the black background with the white square behind them (3.38-3.44).

The white background returns with the two figures, yellow and red, swirling, fighting and swimming inside a white background (3.44-3.45).

The two dancing figures return in red and yellow on the black background with the white square behind them but this time with a slower tempo and slower movements which gradually become faster. They move so fast that we don't see their bodies, only their colour and zig zag yellow and red lines moving fast and mixing like an X again. (3.46-3.54).

The white background returns with the two figures, yellow and red, swirling and swimming (3.50-4.00).

A white background appears again with figures fighting and swimming as before. (3.54-4.00).

The figures merge into one yellow figure (female) which becomes bigger and stronger with an orange colour. The female figure swims around the screen slowly at first and then faster turning around to take her position on the floor with a black outline of her

body appearing to separate it and shadow it. She is swimming in water or floating in the air (4.00-4.20).

The large orange figure separates into a red and yellow shape without gender form with the black shape now a stick figure pushing them apart (4.21-4.24).

They become human shapes again both female with the black stick figure emerging as a male figure (4.25-4.33).

## AURAL

3.23-3.24: In this section a steel harp atmos sound is heard aurally as it has a bright and atmospheric sound and a steel stringed guitar is used for the new visual appearance on the screen. It starts with two broken chords, with the same melody from both sides but the yellow figure's instrument plays a perfect 4th above. The same melody is used because the moves of the two visual figures are identically matched on screen.

3.24- 3.25: The steel harp atmos represents the red figure and for the new appearance of the yellow person another instrument from a totally different group and range is heard, a marimba. This bright percussive marimba sound is mixed with kalimba with a soft chorus.

3.26- 3.36: There is a 5-tuplet and in order to make it more obvious and to give the same impression as the visual, the acknowledging (events) by similarity technique uses the two sounds of the instruments, mixing them as the visual figures move with their legs, one of which is ascending and the other descending in the same rhythm and tempo.

3.36-3.38: With the white background zooming and yellow and red figures moving together in the same tempo and rhythm in the visual around the screen in circles as if they are fighting inside the white background, the same instruments are used aurally

moving together in the same tempo and rhythm with the same melodic lines and pitch as the visual.

However this time the music is quicker and louder than before in order to show this change from the black to white background and the zooming of the visual shapes.

As the figures appear to be fighting and swimming inside water or floating in air the same melodic lines are used as before but faster and louder with more high and thin notes at the end. They start from a low note and ascend up with 2 tones up and then 1 tone down and then 2 or 3 tones up.

3.38-3.44: Here the two instruments start from a slow tempo and rhythm and they become faster and the volume increases step by step. Ascending and descending arpeggios are used as they go faster and faster with the notes starting to become higher and quicker to match the visual on screen.

3.44-3.45: The music is similar but louder to give more emphasis to the zooming of the visual.

3.46-3.50: There are slow movements of the instruments moving around with ascending and descending arpeggios with different intervals to match the screen figures.

3.50-3.54: In this section there is much faster music and rhythm than before.

3.54-4.00: This is similar to before but not as quick or loud with a low ascending and descending chromatic scale. In some parts for fast visual movements on screen there are rapid arpeggios and chromatic scales and in some parts with slow movements on screen, a slow tempo and rhythm is used with ascending arpeggios as the figures are moving in a circle in the air and then when they are turning downwards there are descending arpeggios and a chromatic scale.

4.00-4.11: For the mixing of the two colour visual figures to one orange coloured larger more powerful female which turns around to become a final figure, the music uses a descending chromatic scale with a slow notes tempo and rhythm and the notes are held for more time incrementally step by step, note by note down the descending scale as the figure on screen turns slowly.

4.11-4.12: Then at 4.11, step by step and note by note, the music becomes faster with a descending chromatic scale continuing as before.

4.12 – 4.20: Ascending slow arpeggios are used with the first 4 notes as trills, quick notes and then for the visual descending on screen, the music slows down one note at a time from the first arpeggio.

4.14 - 4.15: An Ascending (Broken) Diminished Chord is used briefly.

4.20-4.33: There are still arpeggios descending until the division of the large visual orange figure on screen into the three other figures and then slowly the music has a slow tempo to give the emphasis on the figures finally taking their shapes

4.27-4.33: The ascending arpeggios are kept high for a long time until the end with detuned alarm effects and a one shot hit from the ambient kit.

SCENE 7: 3

Timeline: 04:34 –4.38

Figures and a Red Triangle

VISUAL

The scene starts with a white background and a red triangle.

In the three corners of the triangle there are two women and a man in black shapes.

Each angle has one person in it.

The man is in the depth of the triangle while the second woman is on the left side, bigger than the man, and the first woman is at the right side bigger than the other two persons.

All the persons are have their hands in the air reaching out (4.34-4.38).

#### AURAL

4.34-4.38: To show something new happening on screen and to show a change of theme, woodblock sound effects are used with a great deal of echo with long chords and other reverse effects.

4.35: For this section, two sounds in the aural are used: 1) single strikes 2) the pad fading in and out and woodblocks are used with a great deal of echo.

Sub theme No 4 (female and male artists' faces)

Timeline (4.38-4.42)

Faces

#### VISUAL

Zoom shot of a female face shape on the right of the screen, hand to lips, drinking (4.38-4.40).

Zoom shot of a male head in black on the left of the screen (4.40-4.42).

#### AURAL

04:38 - 04:4: For the female figure the instruments used are the steel harp atmos and chimes.

04:41 - 04:42: For the male figure on screen the ambient effects are aurally used.

4.38 - 4.39: Upward broken minor 7th chord.

4.39-4.42: To match the appearance of the zoom shots of the faces loud sounds are used. Again the same sounds as before are used but they are louder and more continuous. The sitar and panpipes in the background are also heard playing quite quickly.

SCENE 8: Timeline 4.43-5.24

Main Theme – Dancing Figures

Timeline: 4.43-5.24

VISUAL

The two black triangles momentarily reappear to form a star of David shape (4.43). Three figures holding hands appear, a man in the middle of two women who hold him by his arms. Their shapes are made of black lines (4.43-4.45).

There is a tug of war with red and yellow tugging the black figure in the middle one way and then the other (4.46-4.51).

The figures change into simple black lines that are moving right and left (4.51-4.55).

They become three figures again, dancing and leaping, During the dancing the man is in the middle of the women and is jumping in the air while the women are dancing around him. They change their positions from left to right and from back to front (4.55 -5.00).

Finishing the movements, the two women disappear and the man now is dancing alone. The white square is now smaller leaving more space for the black background (5.02-5.03).

Solo male figure in black leaps (5.03-5.06).

The white square increases in size and an orange-shape woman is jumping in the scene from the middle of the white background. The woman jumps around the man from right to left (5.07-5.10).

Suddenly, the woman separates herself into two orange-shaped women.

The figures are transformed into simple orange lines flying around the man. The man looks surprised, while the camera is zooming in on him (5.11-5.14).

The man is swinging in the middle of the orange lines, which are flying around him, while the white square is changing in size from small to big.

The man swirls inside the cocoon-like shape made by the orange lines (5.14-5.18).

Suddenly the background becomes white and the two women are holding the man from his legs and his arms. Like a spider, the man is swinging in the middle of them trying to get free (5.18-5.24).

## AURAL

4.43 - 4.45: Stretched reverse effect.

4.43-5.24: For the appearance of this theme and the new background - the three black figures are represented by detuned alarm effects in some parts for a few times and then tubular bells with a big bright delayed percussion effect hits, which sounds like church bells. The volume is changed and plays with the sound of stretching. The sound of stretching represents the three figures pulling each other and aurally this pulling is represented from the right by using a stretching sound which is stronger for the first part and then slowly it becomes weaker. When it is stretched from the other side there is the opposite sound of ascending and descending.

4.47 - 4.51: Plain strikes with an altered sound are heard which totally changes the music and with the use of echo and reverb the sound is a very different.

4:54: Coloured noise lead (Degraded Colored Tonal Noise Lead) and the sound is stretched from top to bottom for this section.

4.55-5.00: In the other sub-theme there is the visual zooming shot of the three figures jumping around and the same sound is used except with a louder volume now in the aural background to represent the sound of the jumping effects and laser effects and a stretch of the sounds from top to bottom and bottom to top to make the sound totally different from the original.

There is also a change in the range and the pitch of the sounds up and down.

Sound for the grey figure is represented musically by a coloured tonal noise to stretch the sound and change range. Other quick alarm effects match the quick appearance in the visual of the red light. The volume of the sound is repeated to give emphasis.

5.07-5.10: The use of fade out and in means that the audience can listen to the sound moving backwards and forwards and vice versa by making the first part stronger than the last that becomes weak. Also various Big Detuned Sound FX, ambient effects and random reverse effects as well as swirling effects are used to represent the orange figure.

5.12 - 5.15: A Crescendo mf --> fff from medium volume to extremely loud is heard with the crescendo increasing with the tempo and the rhythm of the music to match the visual using the similarity technique parameters. As the visual on screen shows an increase in the tempo and rhythm of the figures so the music matches this. There are still various big Detuned Sound FX, ambient effects and random reverse effects as well as swirling effects to match the visual speed.

5.14-5.18: The same sounds as before are used with the woodblocks and air sounds but now they are played very fast and the tempo and rhythm is increasing. The range of notes changes all the time with the fast rhythm and tempo using the similarity technique parameters.

5.18-5.24: For this section, the sound stretching is heard with a long chromatic descending and ascending scale until the visual figures break free.

5.20 - 5.25: Upward Chromatic scale with accelerando.

SCENE 9:

Timeline 5.25- 8.01

Sub Theme (Red Shape) Returns

Timeline: 5.25 –6.11

Red Shape With White Figure Suspended And Twirling

VISUAL

The background is black with a red circle on the floor like a spotlight with a white figure suspended by the arms swirling, trying to break free with its black shadow (5.25-5.37).

The male figure breaks free and forms the shape of an X with his hands still held so he cannot escape.

The background is red but narrower with black margins, with the white central figure and his black shadow (5.27-5.42).

The background is red but narrower with black margins, with the white central figure and his black shadow (5.27-5.42).

His shadow becomes black lines which come forward over the front of his figure (5.42-5.47).

The square is turning into a triangle and the man is fighting and swinging with it. At the end he manages to turn the triangle into a red line which he holds and plays with in his hands (5.47-5.56).

Now the man dances with the red line/black line in a red background, twisting it again and again in his hand. Sometimes he holds it and turns it in the air and sometimes he turns it around his body (5.56-6.01).

The background becomes alternately white and then red with the man's figure changing like a negative to positive photo, still twirling the line which changes from red to white to black (6.02-6.07).

From behind the man the woman jumps out over the line he is twirling (6.07-6.08).

A second woman jumps out and the figures change colour to a yellow female on the left, a red female on the right and a black/blue male at the top centre screen. They form a triangle which is shown as a real white triangle in the background (6.09-6.10).

The shapes begin to merge (6.11).

## AURAL

5:25 - 5:37: The male figure swirling across the screen is musically represented by the sitar (Bright Metallic Sitar With Thick Phaser With Delays), heartbeats and reverse effects.

5.26 - 5.39: 1) In this section there are a great deal of dynamics ( p --> f, f --> ff, ff-->fff, fff-->sfz), quiet, loud, very loud, extremely loud, extra loud.

2) The sitar is playing upward chromatic scales until it reaches the Climax in 5.38' and it plays vibrato because the sound appears to be shaking the strings to match the visual. The music can be heard doubling but with different timings from each other because the composer wanted to show the reflection of the body with the black figure reflected back.

5.41 - 5.44: This section uses spooky effects (single strikes).

5.45 - 5.51: The spooky effects continue but there is only one downward broken chord from the glockenspiel (5.47') and another one from the upward broken chord from the same instrument (5.50').

5.52 - 6.06: Three different notes are repeated in different pitches (the notes are descending but the pitch is ascending) which means that the notes from the top to the bottom are descending slowly to reach the climax (6.06').

Sub Theme 5 – Swinging Shapes

Timeline: 06:12 – 07:09

The women and the man are turning into swinging shapes

VISUAL

In this scene there is a white background with three colour shapes: orange, blue and red.

These shapes are twisting, twirling, stretching, pinching and screwing with the same rhythm for a long time. Sometimes the shapes give an impression of a woman's shape.

With the scene finding its end, the shapes are transformed into a red-shaped woman, an orange-shaped woman and a blue-shaped man. The man is holding the women in his right and left arm allowing them to rest on his breast (6.12-6.38).

Figures form a plait and a knot first with 2 red strands then 1 black/blue and finally all red (6.39 -6.52).

Abstract swirling shapes become yellow and red women and a black male figure (6.53-7.09).

## AURAL

6.12-7.01: In this scene there is a mixture of aural sounds with stretching sometimes from the beginning to the end and sometimes vice versa. Fade in and outs are utilized with the stretching. There are dynamics used – once f- loud but changing to p-quiet and later the opposite (p-f , f-p). In this section there is no special tempo and rhythm, as it is constantly changing and not standard. It is totally free. (p-f , f-p). There are some other sounds and heartbeats.

Within this section I wanted to show the similarity with the visual as the colours are mixing together on screen and there is no specific rhythm as it merely matches the visual.

## SCENE 10:

### Line Dancing

Timeline 7.09-8.01

The solo figure becomes 3 figures in line

## VISUAL

Solo figure then 2 figures dancing and gymnastic spins (7.09-7.15) and leaps become 3 figures embracing (7.16-7.19).

3 figures in a line in a knot/plait, shapes change to reflect clothing (7.20- 7.21).

Dancing in line – various dance styles waltz, line dancing, rock etc changing positions in the line constantly – 2 female and 1 male shape (7.22- 7.40).

Central figure changes into red swirling and twirling non stop whilst other 2 dance around using ballet steps with the red figure increasing in size to take over the whole screen whilst other 2 disappear (7.41-7.50).

Solo swirling shape changes from a person to a butterfly to other shapes with a black outline (7.50-8.01).

## AURAL

7.09- 8.01: In this section there is a marimba (bright percussive marimba mixed with kalimba) which opens with a descending scale and then one high note at 7.18.

The vibraphone: a large natural multi velocity vibraphone with soft chorus is also used.

Here the marimba plays accompanying the kalimba playing the melody like a piano played in a duet. The marimba plays the accompaniment and the kalimba plays the melody. They are both playing with the same tempo, rhythm and pitch and they sound as if they are moving from right to left to match the visual. The melodic line uses intervals 4th and 3rd up when they are moving right and when they are coming left they use the opposite at intervals. The vibraphone is also heard in the background with a very soft chorus.

The same instruments are used aurally but with more rapid movements and tempo to match and synchronize with the visual on screen which shows the quick changes of the red figure changing shapes.

## SCENE 11 – Solo figure

Timeline 08.02-08.04

## Final Theme – Shape And Human Figure

### VISUAL

The scene changes briefly into a man in a red circle holding a black line behind his back (8.02).

This changes to 3 overlapping triangles within a red hazy circle in a white background (8.03).

Finally it changes to all the triangles forming a star shape or star of David shape (8.04).

The video ends with credits and a black screen

### AURAL

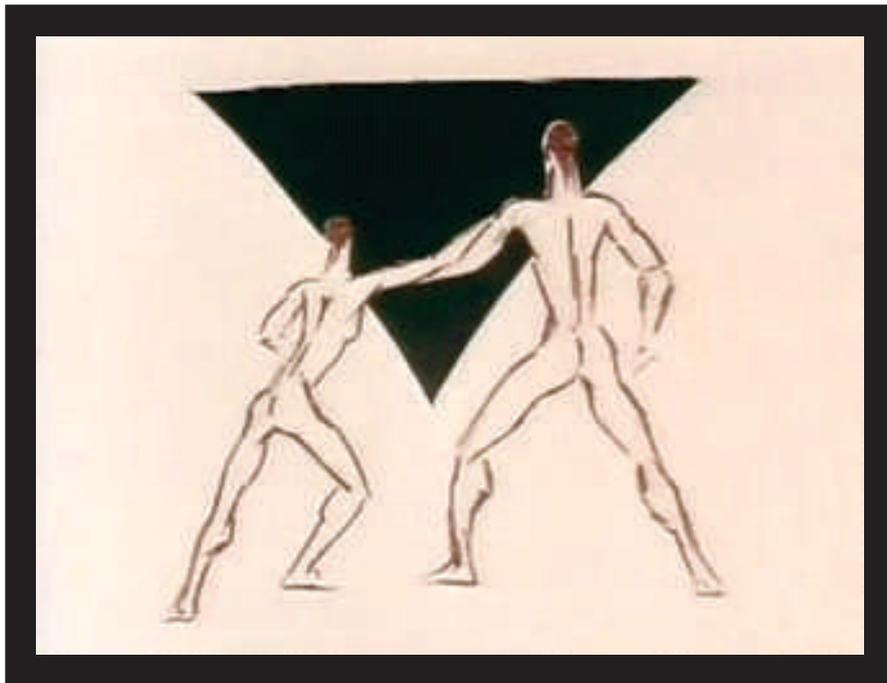
8.02-8.04: For the final section there are rhythmical sounds of heartbeats with upward and downward glissandos from the glockenspiel and finally there is a crescendo from all the instruments until there is a visual climax and a musically strong and dynamic climax.

For the fast rhythm and tempo of the visual a metallic sound was added inside this to show more strength at the end with more powerful volume and the vibraphone sounds becoming stronger playing a quick and high range of notes that are very thin and rapid trills with fast and quick glissandos. Finally a planet – mort was used for the last chord only (8.04').

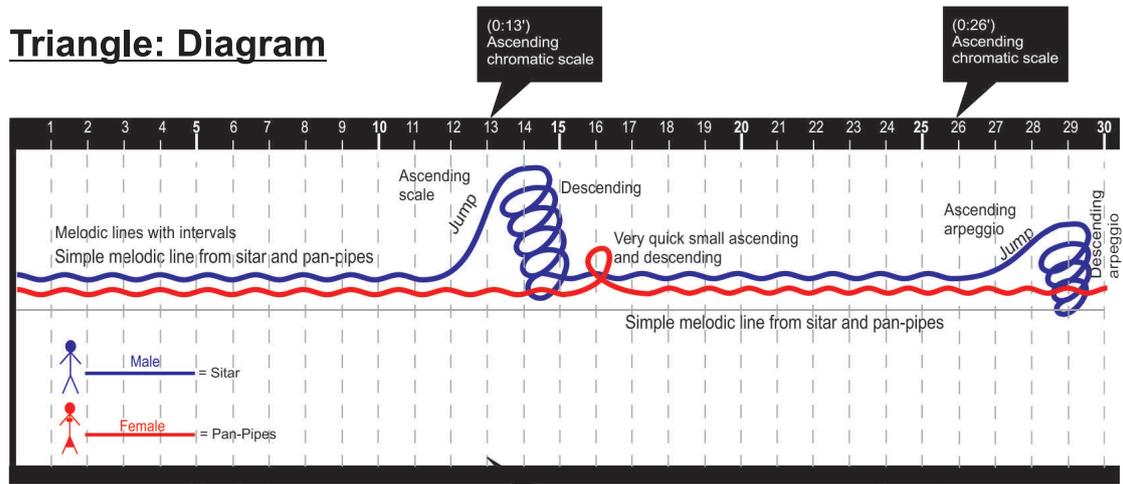
**Appendix J: Graphs of the Triangle Animated Film**

# ***Triangle***

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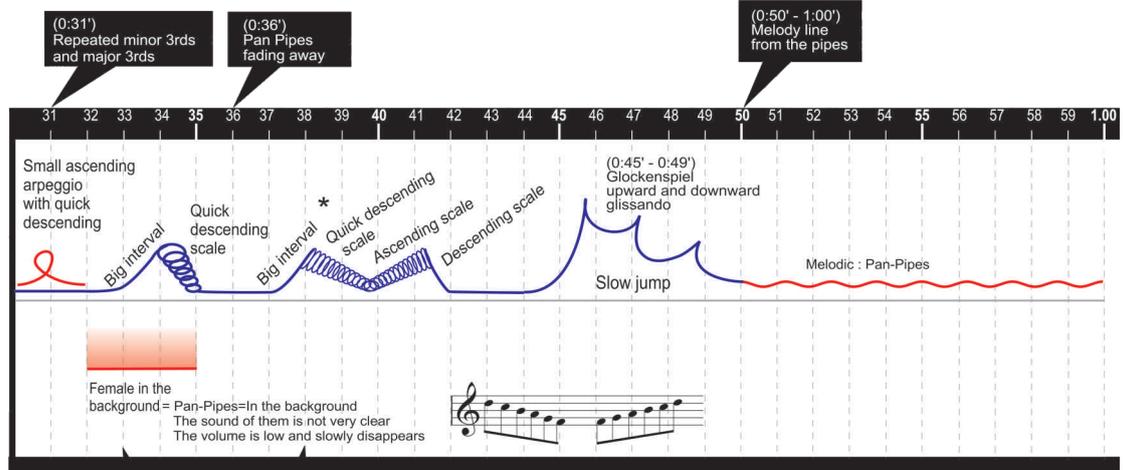
# Triangle: Diagram



Pan-Pipes example:

Sitar example:

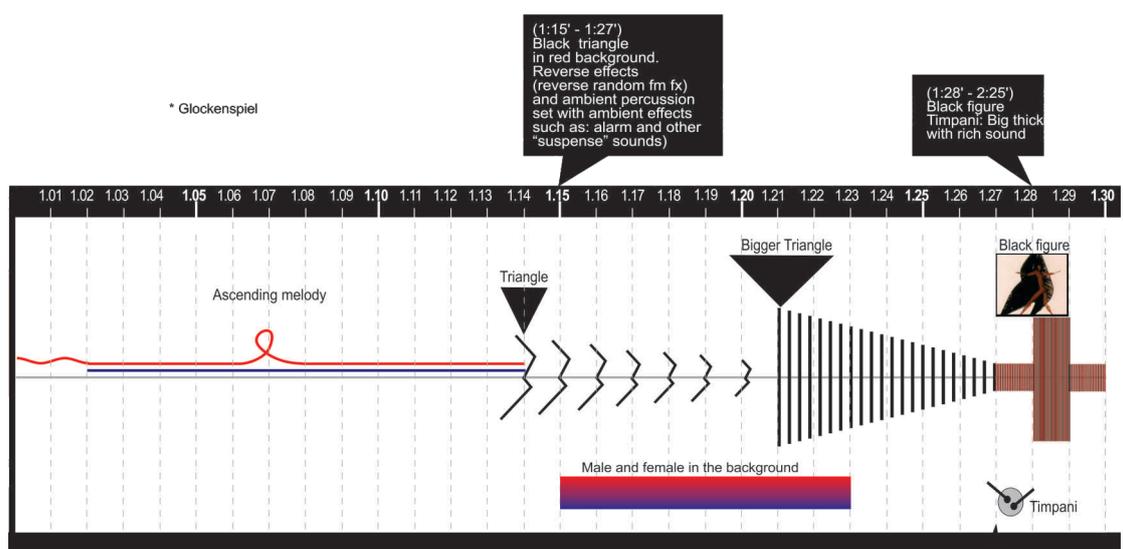
(0:13' - 1:14') Glockenspiel Bright Glockenspiel with slow attack (release time)



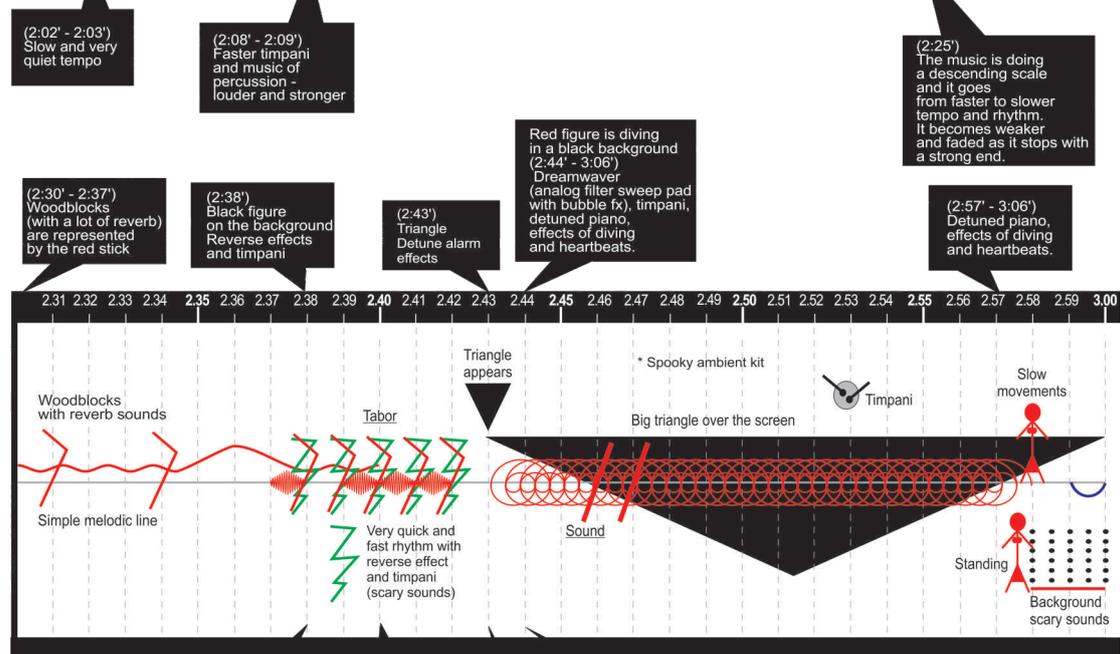
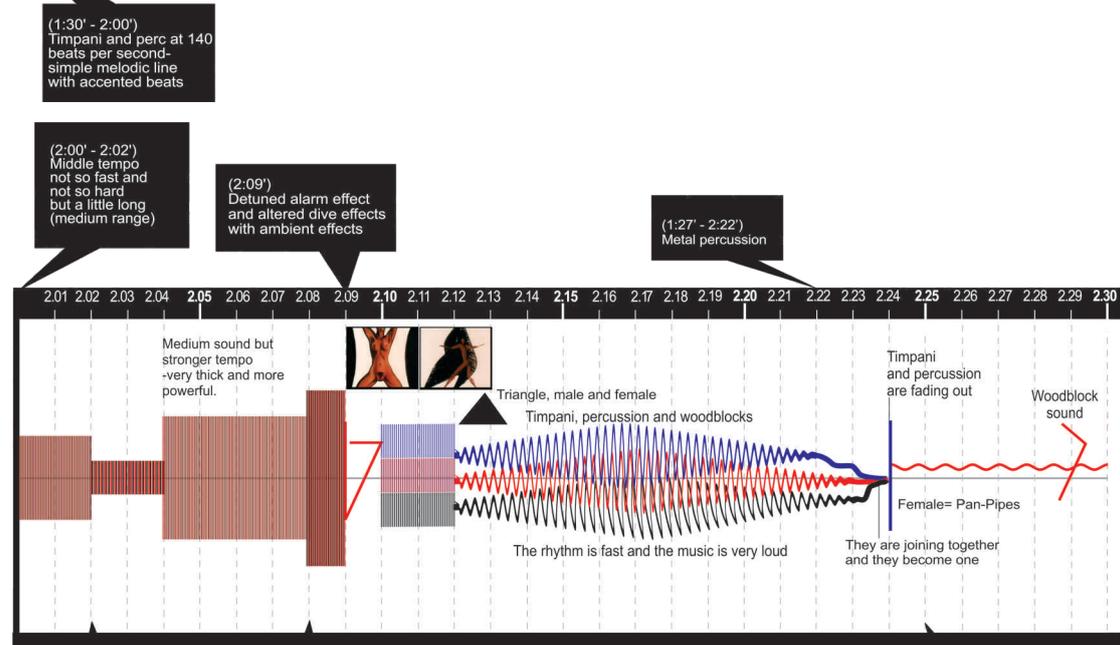
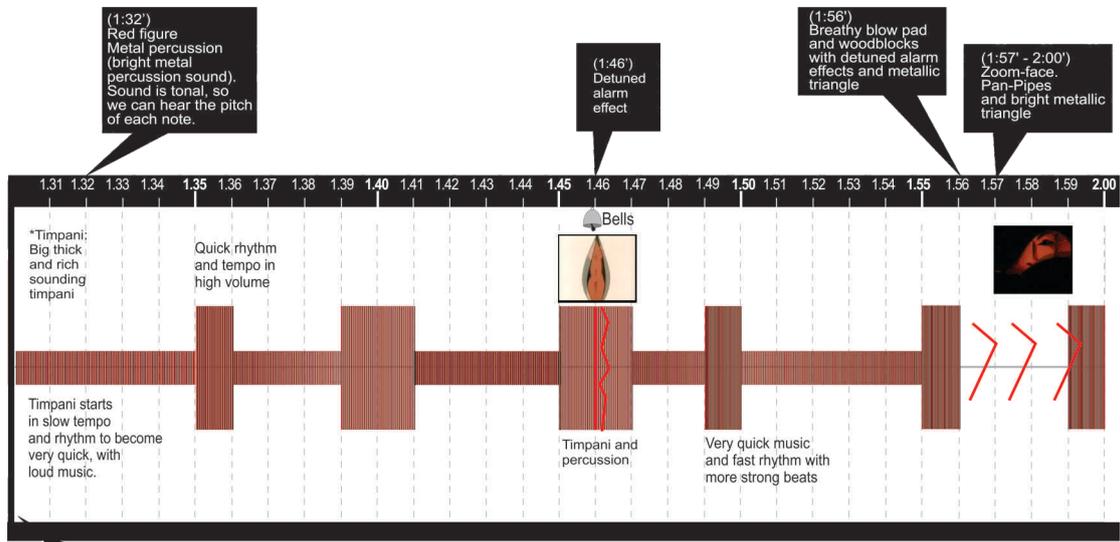
(0:34') Upward and downward succession of musical tones

(0:38' - 0:41') Descending scale (g,f,e,d,c,b,a,g) from sitar

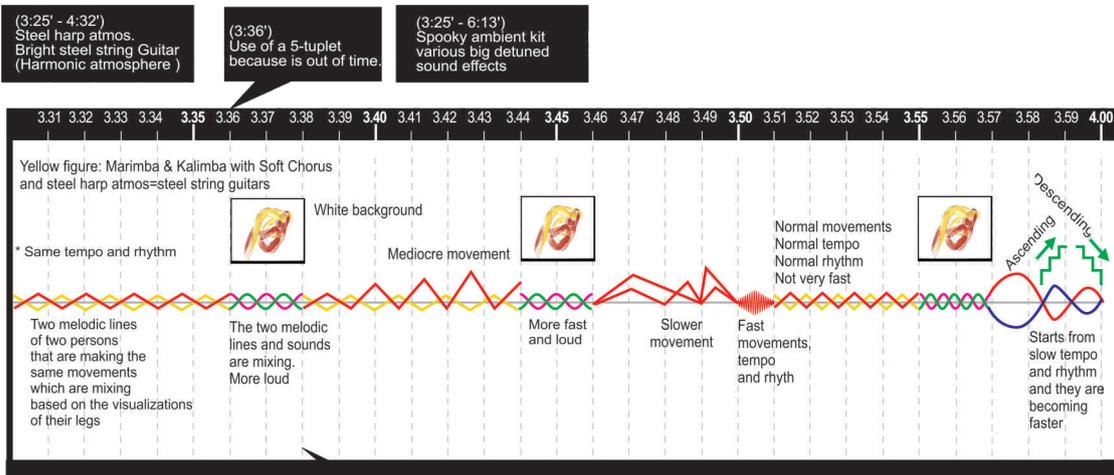
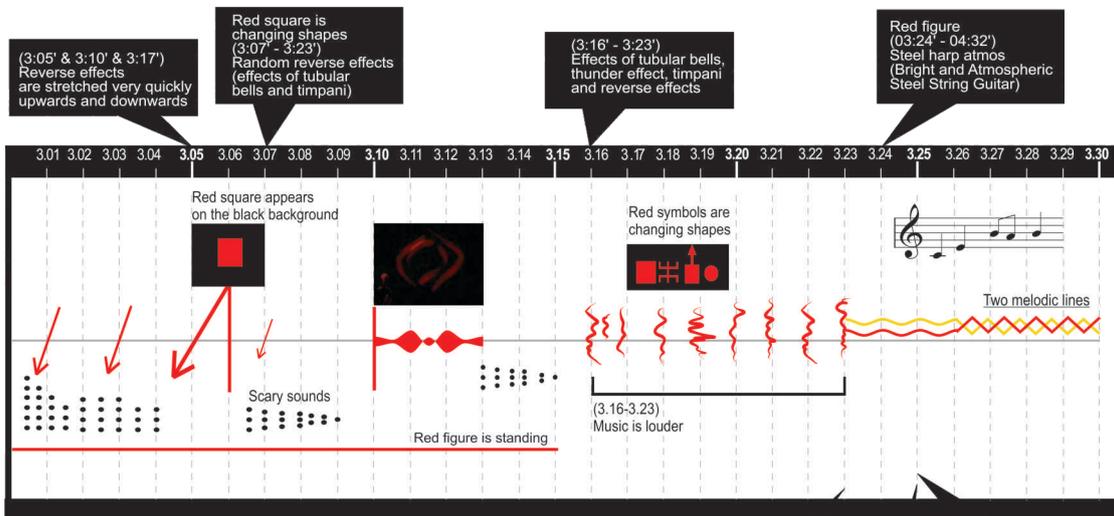
\* (0:38' - 0:41') Sitar



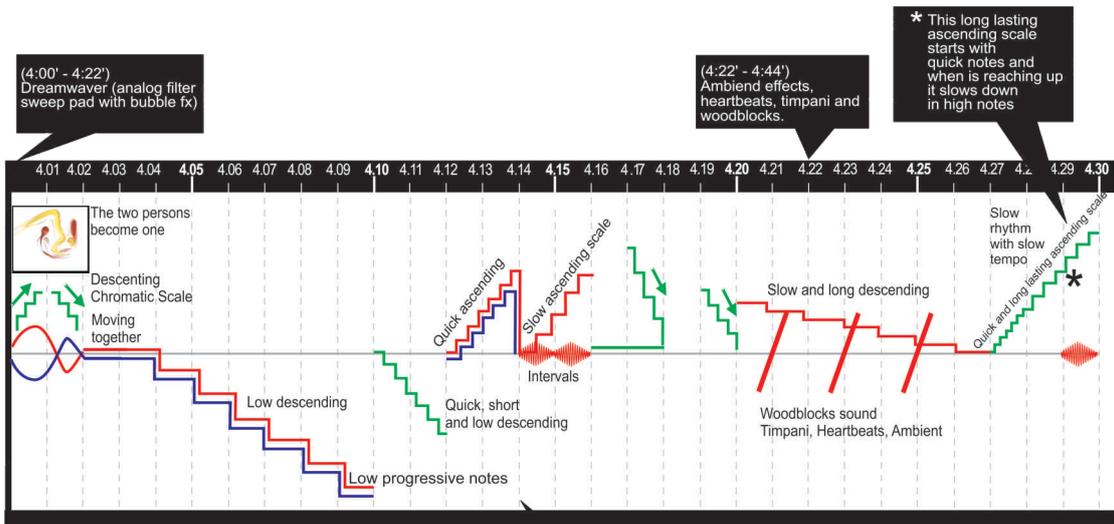
(1:27' - 2:22') Red figure  
Red figure  
Metal percussion (bright metal percussion sound). Sound is tonal, so we can hear the pitch of each note.

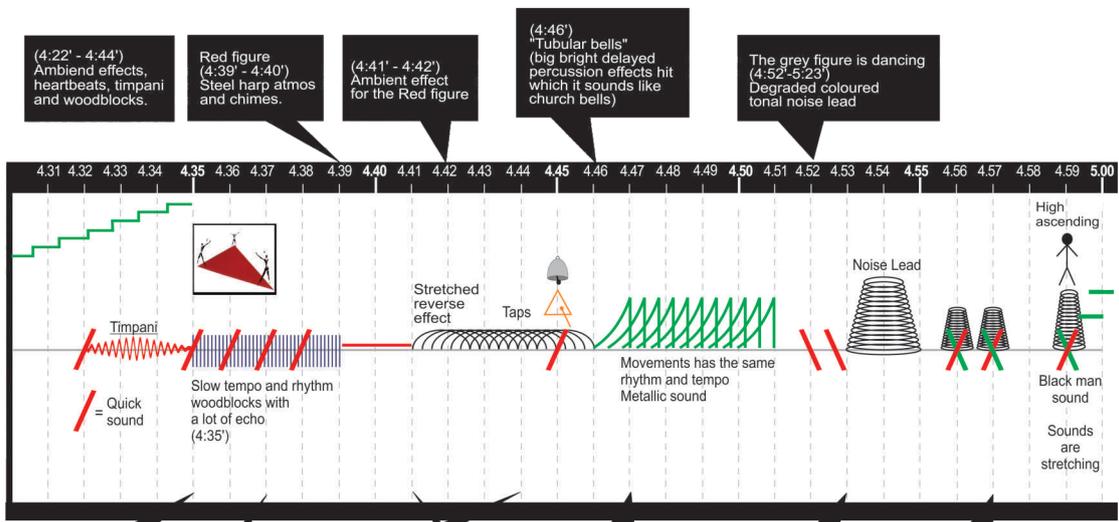


- (2:38' - 2:42') Single Strikes
- (2:40') One shot hit from the AMBIENT KIT
- (2:44' - 3:24') Spooky Ambient Kit with various detuned sound effects
- (2:43 - 3:00) Single chord and notes from the detuned piano.



(3:38' - 3:44') Different tempo and rhythm from the instruments. They don't move together





(4:22' - 4:44') Ambient effects, heartbeats, timpani and woodblocks.

Red figure (4:39' - 4:40') Steel harp atmos and chimes.

(4:41' - 4:42') Ambient effect for the Red figure

(4:46') "Tubular bells" (big bright delayed percussion effects hit which it sounds like church bells)

The grey figure is dancing (4:52' - 5:23') Degraded coloured tonal noise lead

(4:35')  
1) Single strikes  
2) Pad is fading in and out

(4:38' - 4:39') Upward broken minor 7th chord

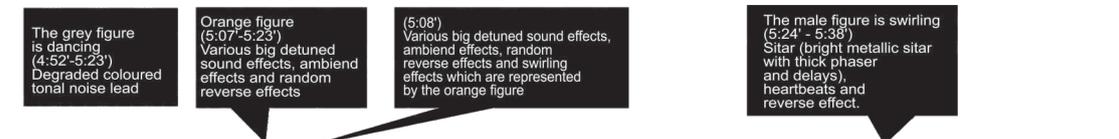
Three Black figures (4:44' - 4:52') "Planet-mart" (big bright delayed percussion effect hit which it sounds like church bells)

(4:41' - 4:45') Stretched reverse effect

(4:47' - 4:51') Plain strikes. Echo and reverb in the sound

(4:53' - 4:55') Stretched from down up

(4:56') JUMP - EFFECT



The grey figure is dancing (4:52' - 5:23') Degraded coloured tonal noise lead

Orange figure (5:07' - 5:23') Various big detuned sound effects, ambiend effects and random reverse effects

(5:08') Various big detuned sound effects, ambiend effects, random reverse effects and swirling effects which are represented by the orange figure

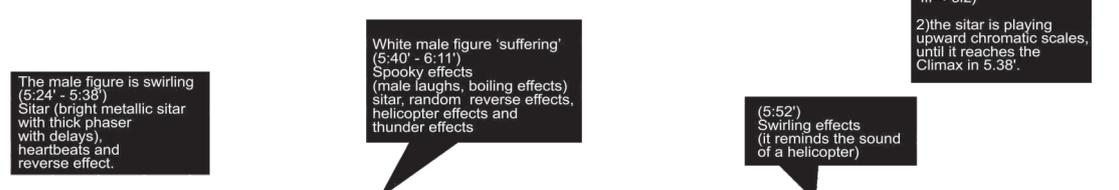
(5:05') Laser effect

(5:08') Fade out - Fade in

(5:12' - 5:15') Crescendo mf -> fff

(5:20' - 5:25') Upward Chromatic scale with accelerando

(5:26 - 5:39)  
1) dynamics (p -> f, f -> ff, ff -> fff, fff -> sfz)  
2) the sitar is playing upward chromatic scales, until it reaches the Climax in 5:38'.



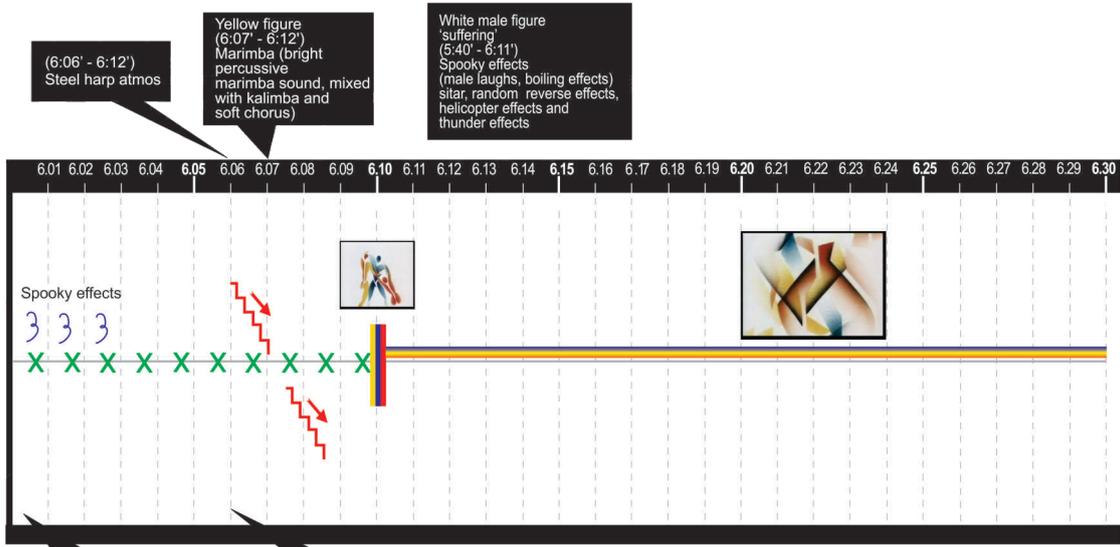
The male figure is swirling (5:24' - 5:38') Sitar (bright metallic sitar with thick phaser with delays), heartbeats and reverse effect.

(5:30' - 7:17') Dreamwaver (analog filter sweep pad with bubble effects)

(5:41' - 5:44') Spooky effects (single strikes)

(5:45 - 5:51) Spooky effects are continuing with a downward broken chord from the glockenspiel (5:47') An upward broken chord from the same instrument (5:50')

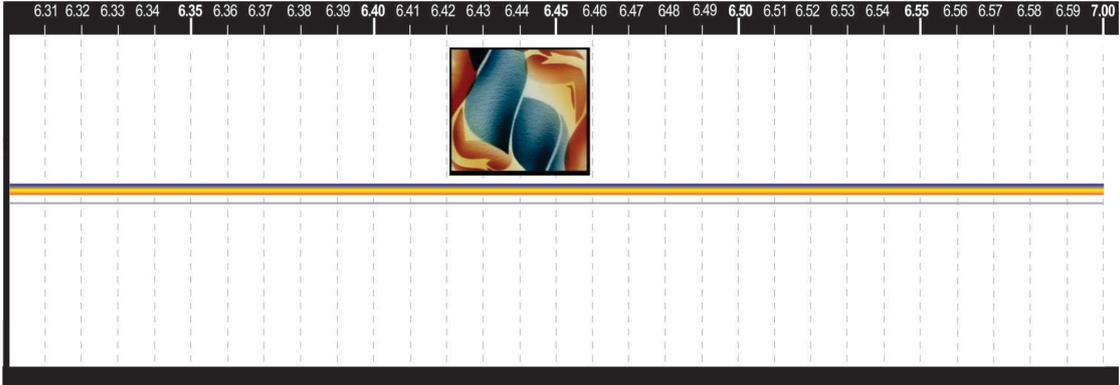
(5:52' - 6:06') Three different notes are repeated in different pitches (descending notes - ascending pitch) Eventually, the notes are descending and slowly are joining and reaching the climax (6:06')



(6:00' - 7:00')  
Sounds are merging, stretching and moving upwards and downwards with fluctuation at the dynamics p-f and f-p. There is no specific tempo. Out of time heartbeats.

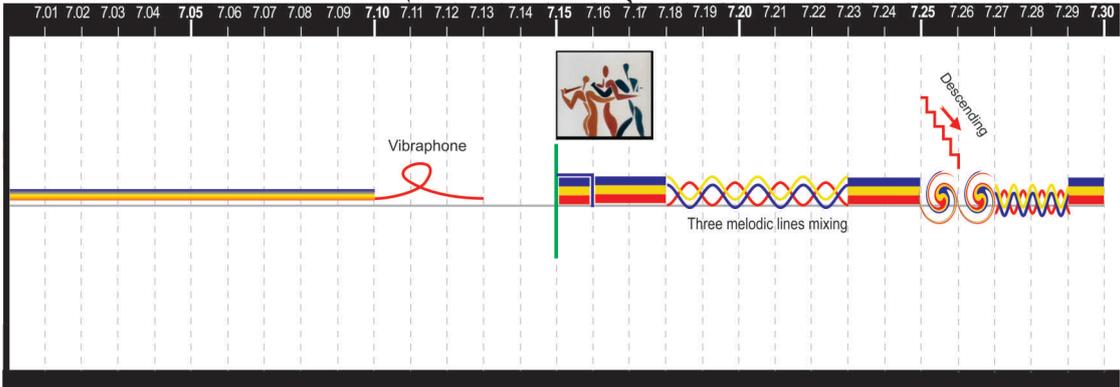
(6:06' - 7:06')  
Water-pad is continuously moving. ?????????  
>??  
Phaser pad with bubbling underwater effects

(6:00' - 7:00')  
Sounds are merging, stretching and moving upwards and downwards with fluctuation at the dynamics p-f and f-p. There is no specific tempo. Out of time heartbeats.

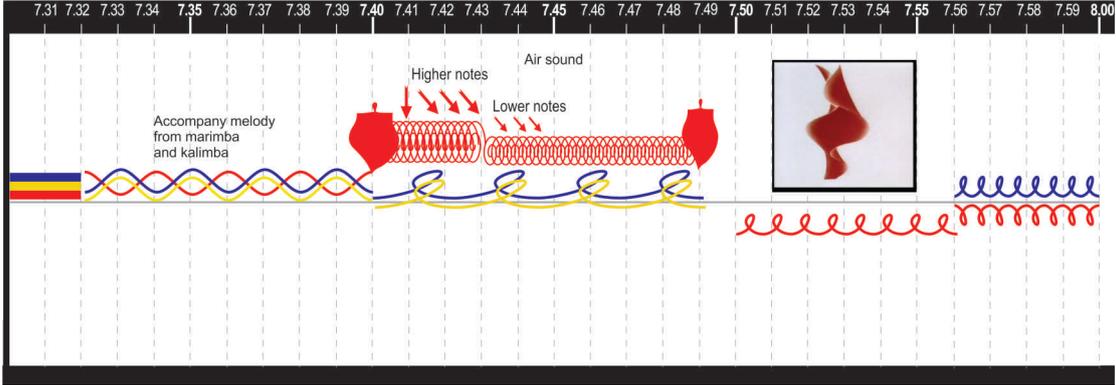


(7:11' - 8:05')  
Vibraphone:  
Large natural multivelocety vibraphone with soft chorus

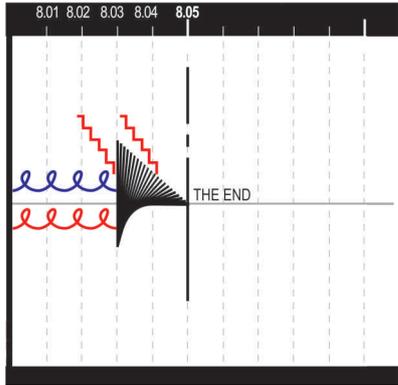
(7:17' - 7:40')  
Marimba – accompany and kalimba – melody like a piano  
There is no air sound, due to the white empty background.



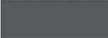
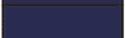
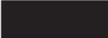
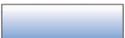
(7:56')  
 Heartbeats clinkety-clack.  
 Glockenspiel upward and  
 downward glissandos.  
 Crescendo from all  
 instruments until  
 the video ends and  
 reaches the climax (8.04').



Planet-Mort  
 last chord only  
 Big bright delayed  
 percussion effects hit



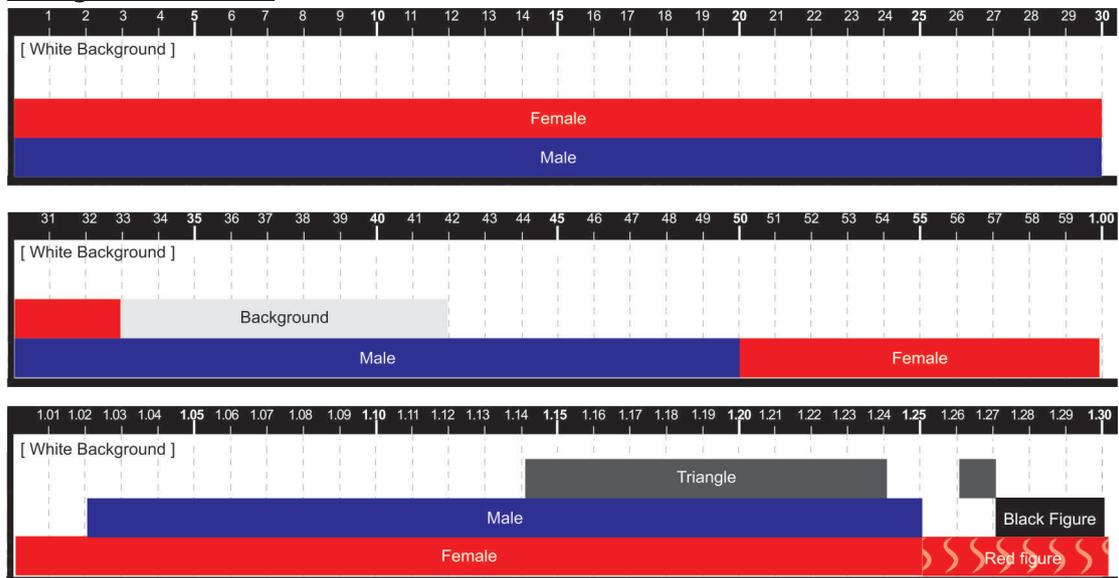
## Triangle: Character Index

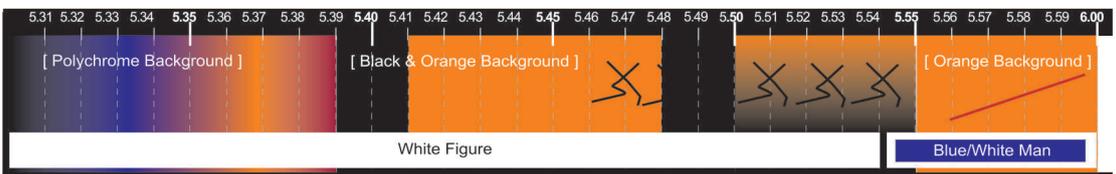
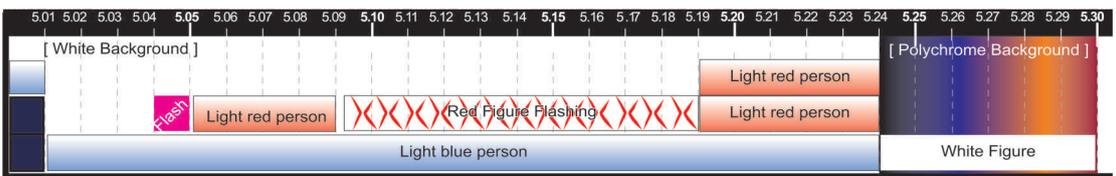
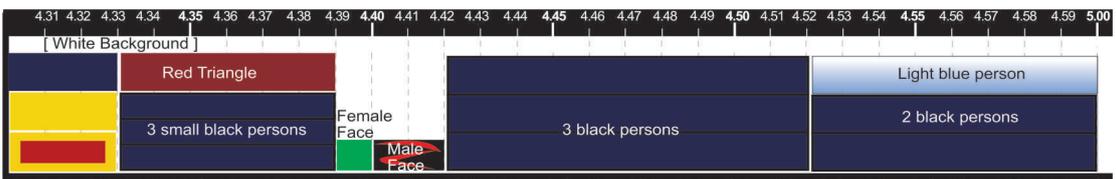
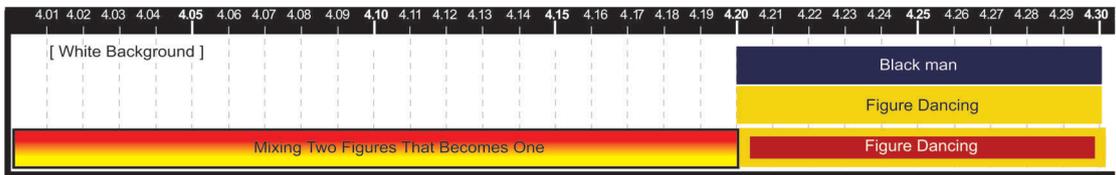
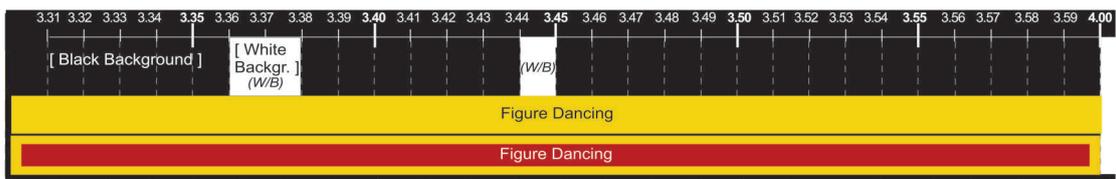
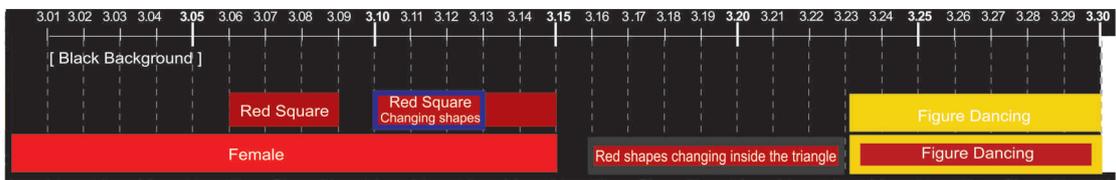
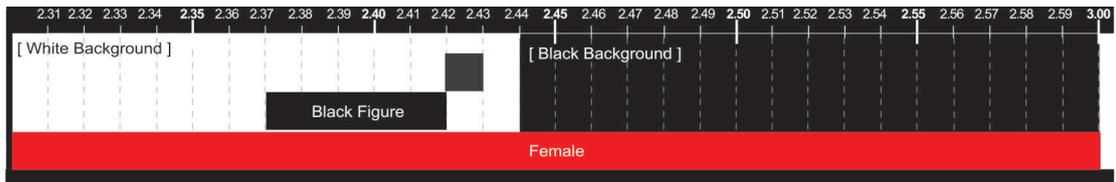
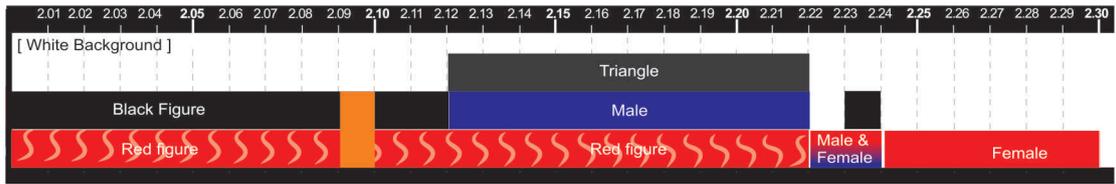
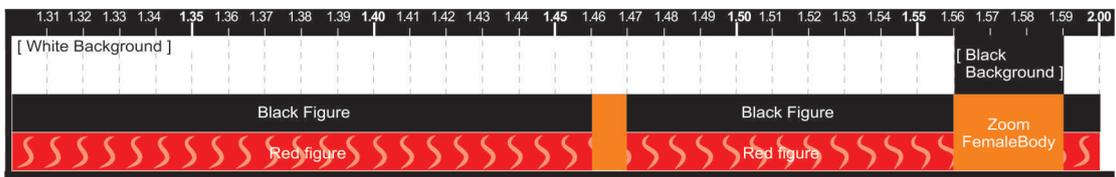
	: Female		: Mixing Two Figures That Becomes One		: White Figure
	: Male		: Black man		: Blue/White Man
	: Triangle		: 3 black persons		: Orange Figure
	: Red figure fighting		: 3 black persons		: Three Figures are mixing making an abstract dancing
	: Black Figure		: Female Face		: Three Figures dancing together
	: Male & Female		: Male Face		: Red Figure Changing Shapes
	: Zoom Female Body		: Red Triangle		: Red Figure with black lines
	: Red Square		: Light blue person		: Red Figure Twirling
	: Red Square Changing shapes		: Flash		: Black figure with 8 arms
	: Red shapes changing inside the triangle		: Light red person		
	: Figure Dancing		: Red Figure Flashing		
	: Figure Dancing				

## sounds and instruments Index

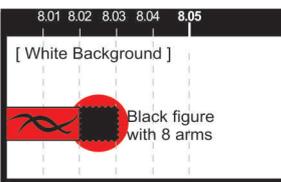
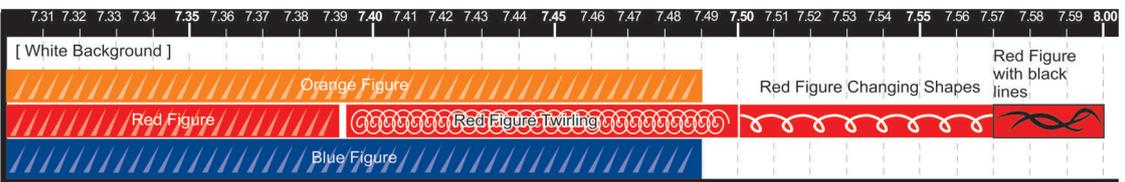
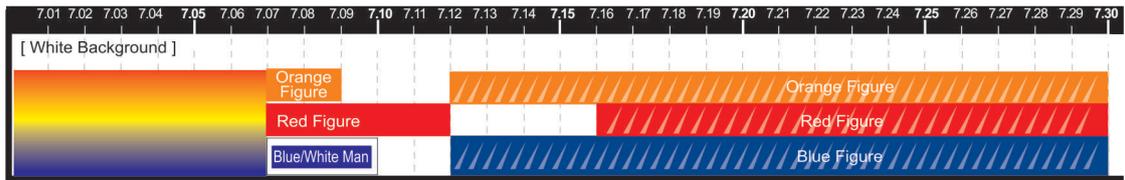
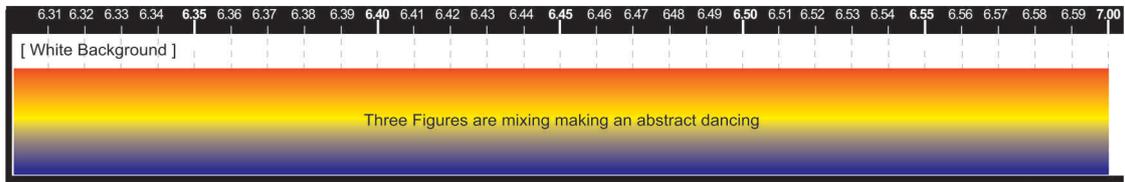
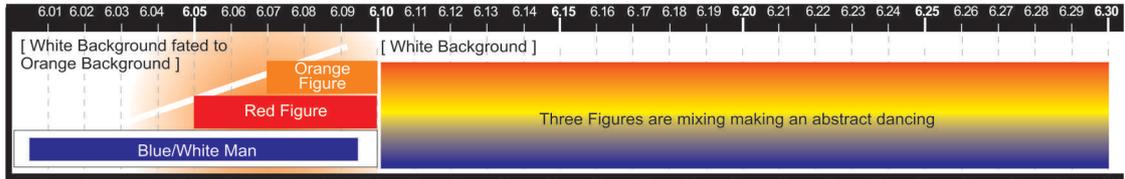
	Pan-pipes		Dreamwaver (analog filter sweep pad with bubble FX)		Sitar (bright metallic sitar with thick Phaser with delays), Heartbeats and reverse effect .
	Sitar		Ambient effects, heartbeats, timpani and woodblocks.		Spooky-swirling effects( male laughs, boiling effects) sitar, random reverse effects, helicopter effects and thunder effects.
	Reverse effects(reverse random FM, FX) and ambient Percussion set which include a variety of ambient effects such as: alarm and other "suspense" sounds		"PLANET-MORT" (big bright delayed percussion FX hit with sounds like church bells)		
	Metal percussion( bright metal percussion sound, This is tonal, therefore we hear the pitch of each note.)		Steel harp atmos and chimes.		water -pad: continuously moving phaser pad with bubbling underwater.
	Timpani: (Big thick and rich sounding timpani)		Ambiend effects.		Vibraphone: large natural multivelocity vibraphone with soft chorus.
	Timpani and percussion with woodblocks sound		Steel harp atmos and chimes, Ambiend effects.woodblocks.		Air sound with Vibraphone
	Detuned alarm effects, triangle and breathy blow pad		Coloured noise lead (Degraded colored tonal noise lead.)		Air sound with Vibraphone and metal percussion
	Random reverse effects, effects of tubular and bells and timpani.		Laser-effect		Air sound with Vibraphone
	Random reverse effects, effects of tubular and bells and timpani.		Varius big detuned sound FX and ambient effects.		Air sound with Vibraphone and planet -mort in the last chord
	Effects of tubular bells and thunder effects and timpani and reverse effects				
	Steel harp Atmos( bright and atmospheric steel guitar) and Marimba: bright percussive Marimba and Kalimba with soft Chorus				
					

## Triangle: Characters



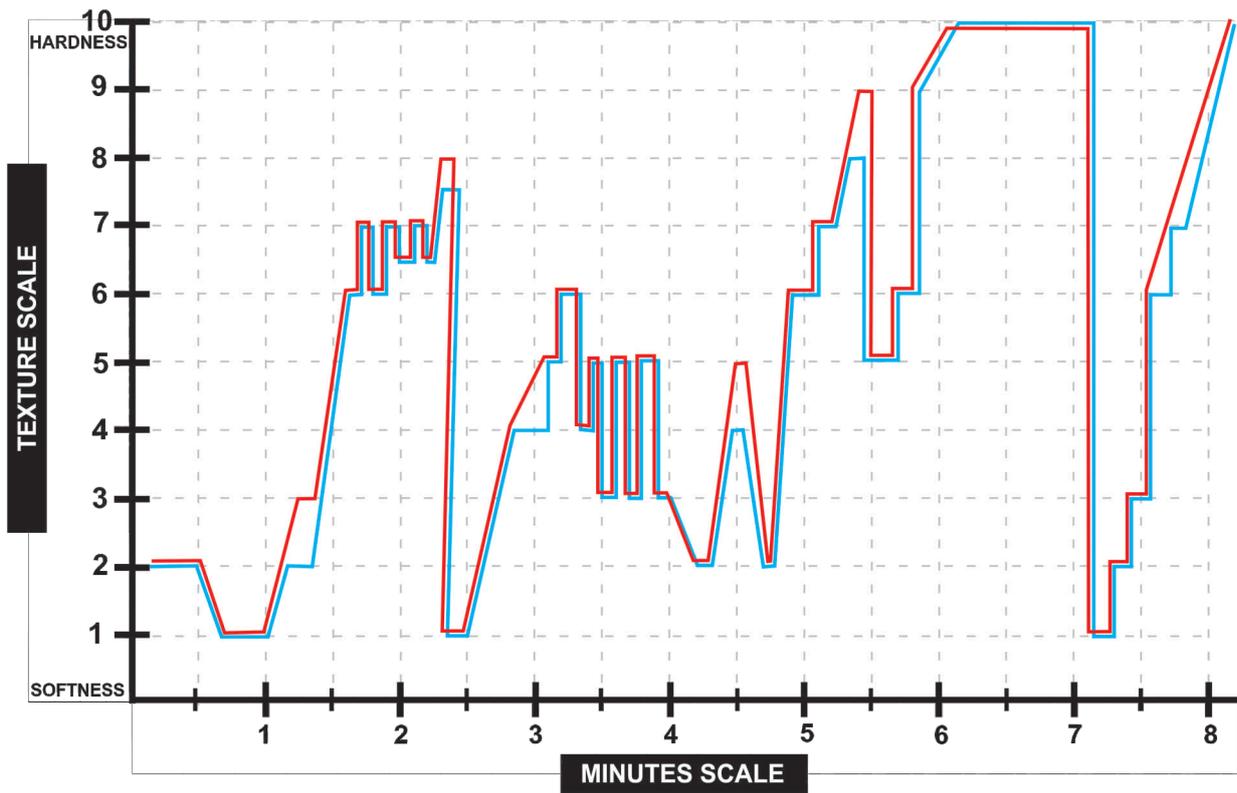


**CHARACTERS**



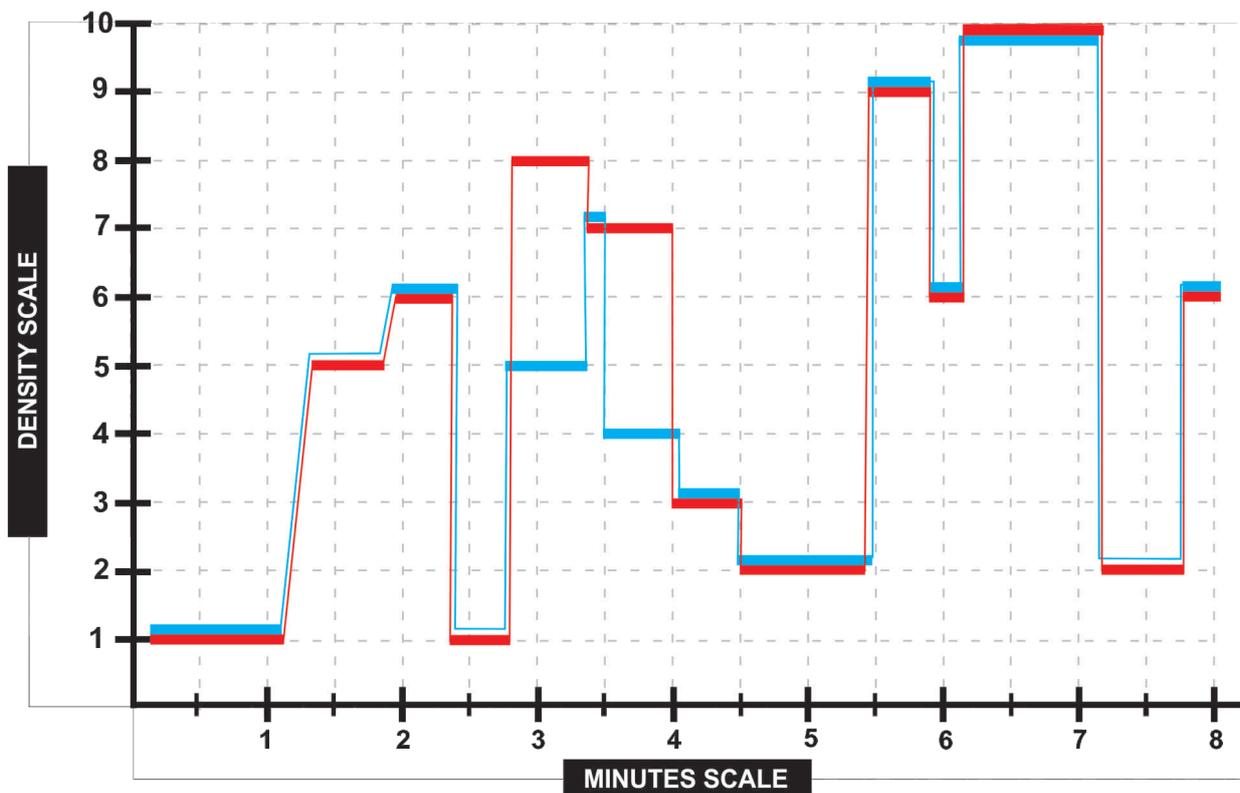
### TRIANGLE TEXTURE SCALE

AURAL  
VISUAL



### TRIANGLE DENSITY SCALE

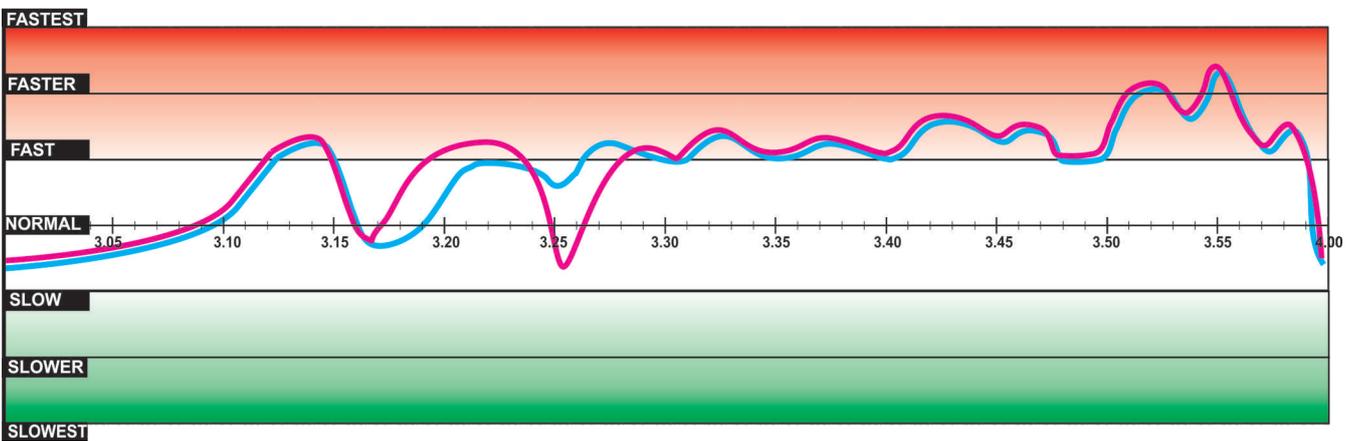
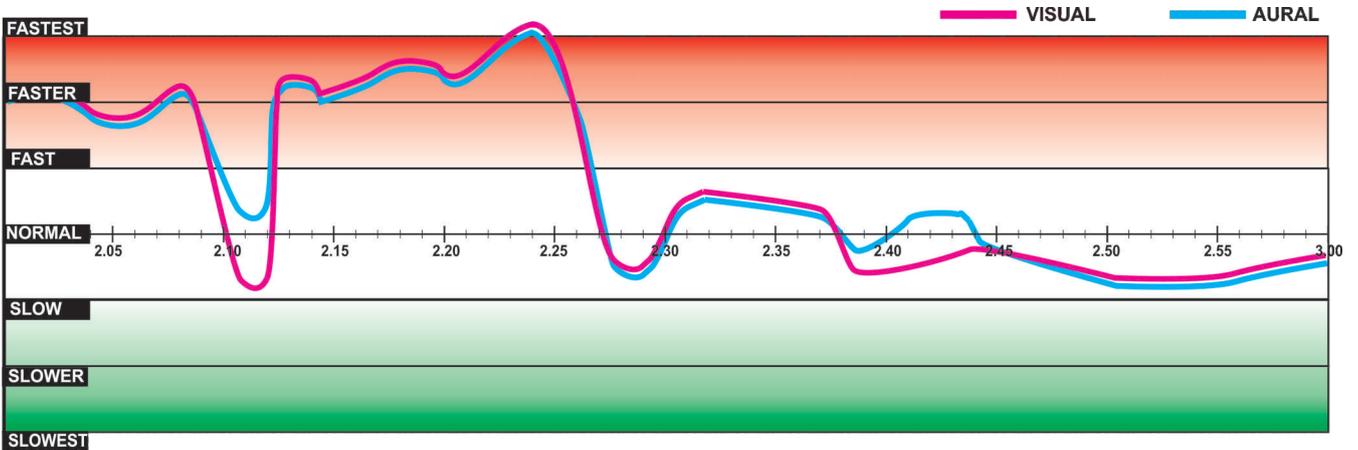
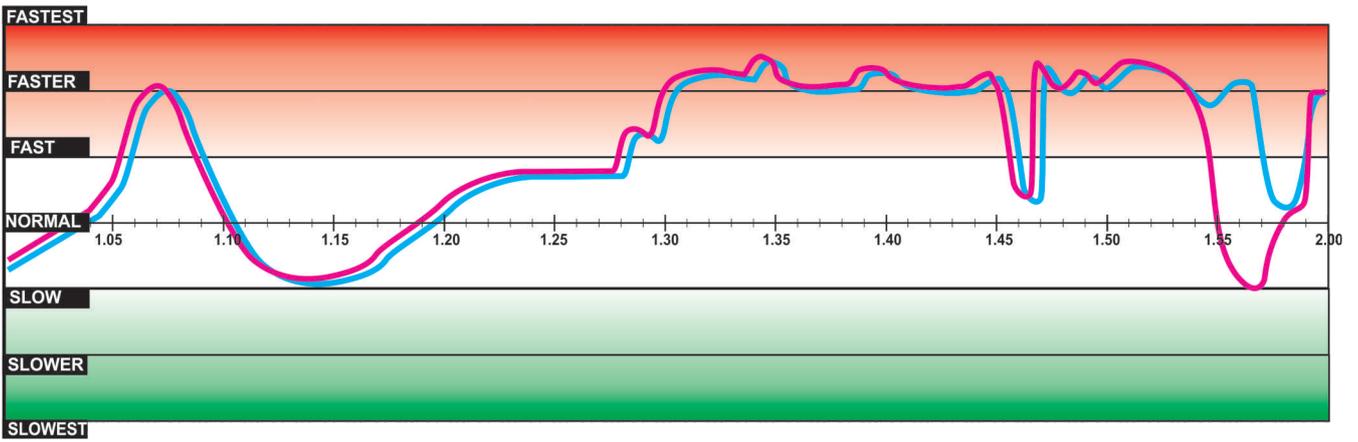
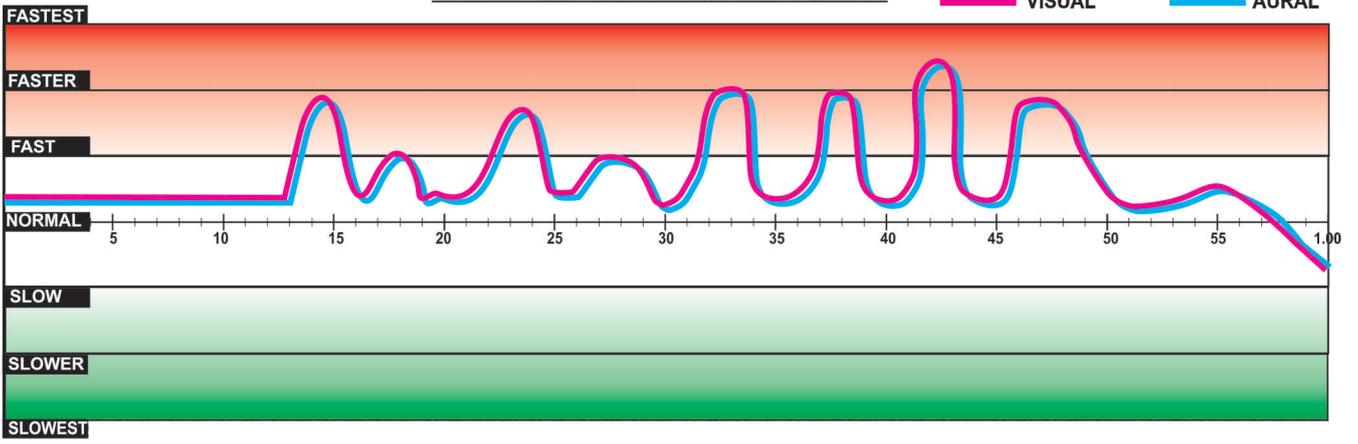
AURAL  
VISUAL



# TRIANGLE - RHYTHM AND TEMPO

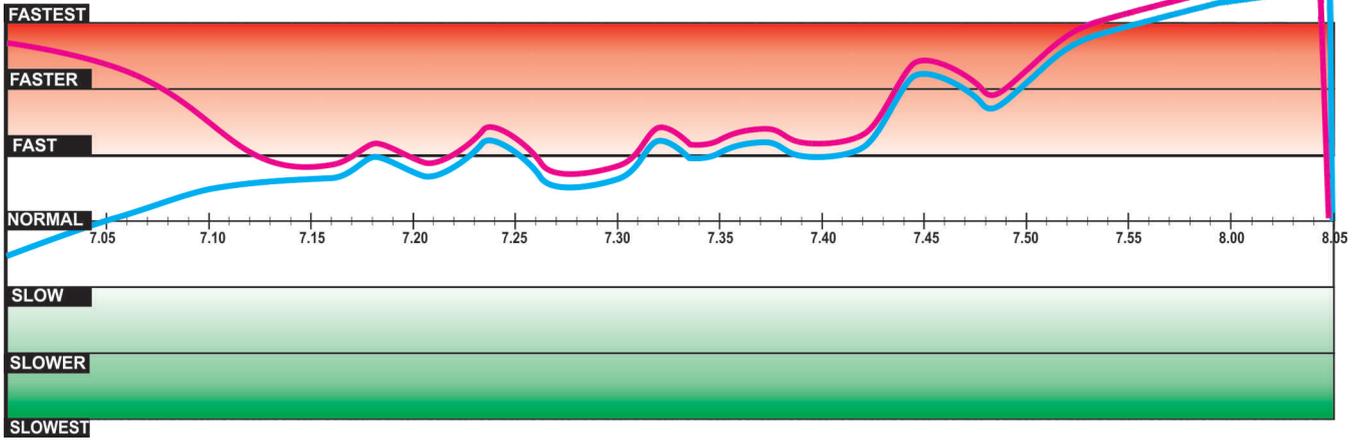
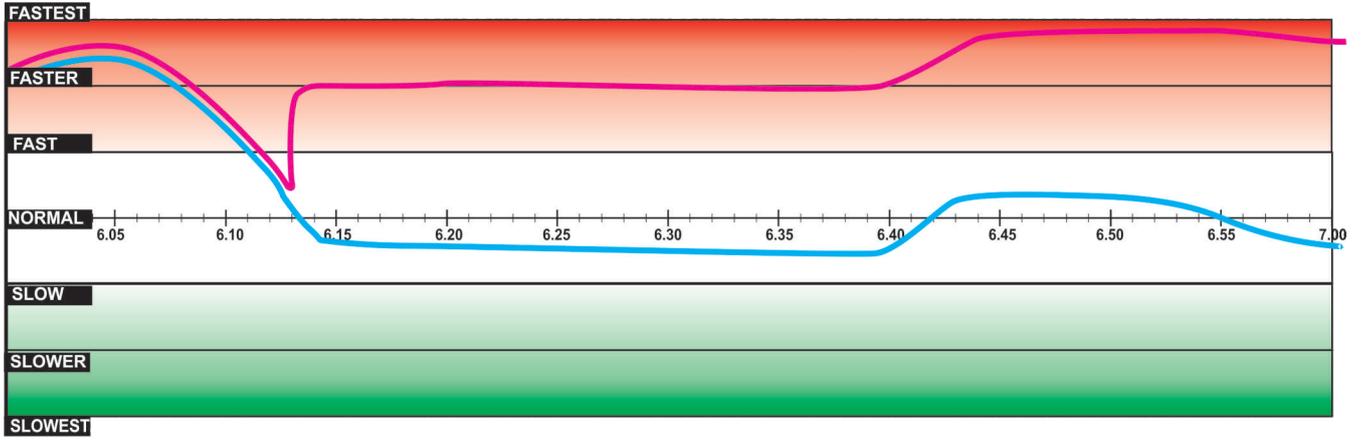
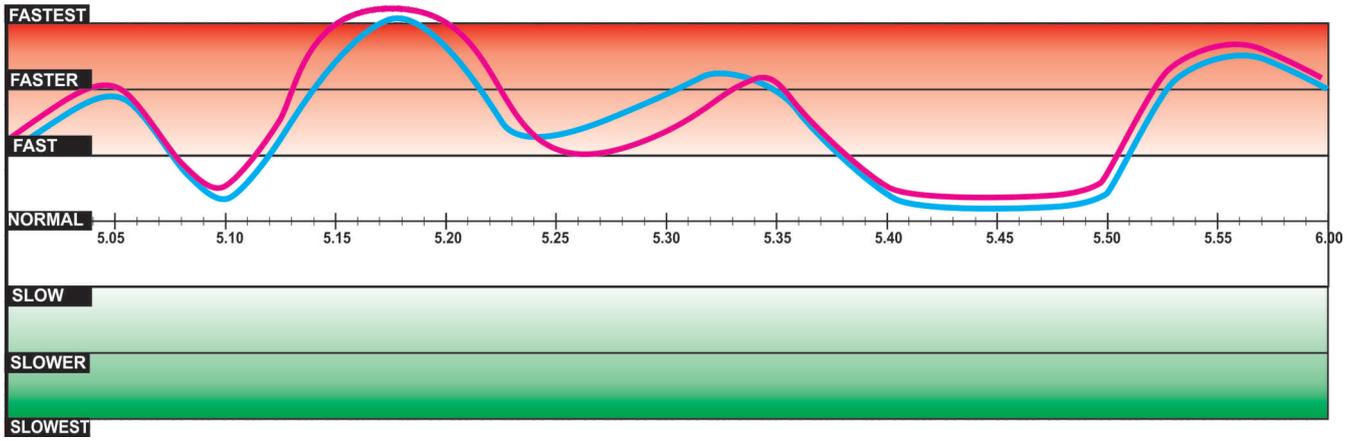
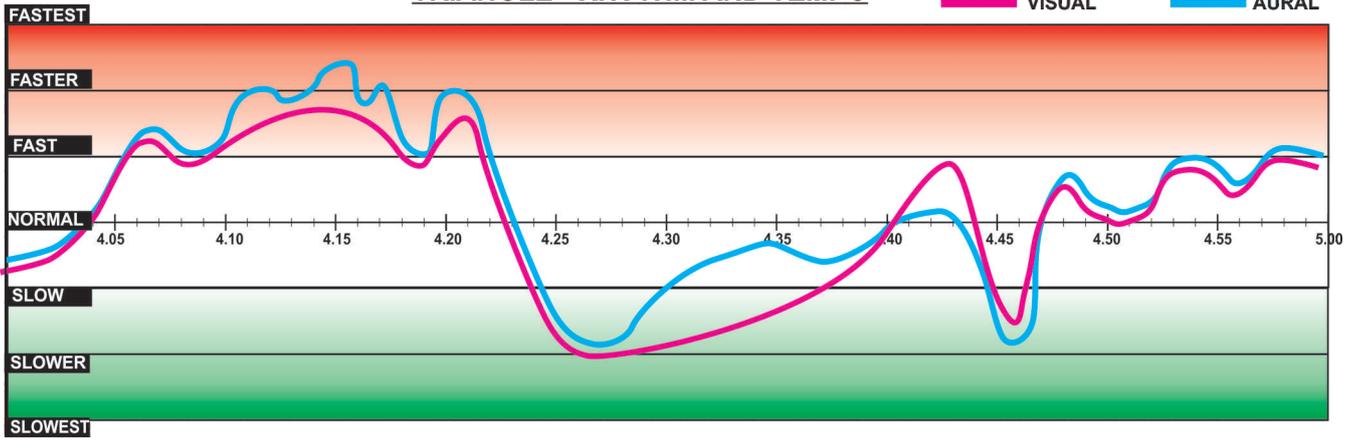
VISUAL

AURAL



# TRIANGLE - RHYTHM AND TEMPO

VISUAL AURAL



## **Appendix K: Analysis of the Graphs of the Triangle Animated Film**

In this video film excerpt the graphs which analyse the visual show the general lines of the graphs moving simultaneously in the same direction. Mostly the lines for the aural and the lines for the visual on the graph analysis move together except in some parts which will be explained later with the causes, the timelines (in minutes and seconds) and the results as well as the reasons for the line direction changes when using the acknowledging (events) by similarity technique.

The second explanation of the main parameters of the table of correspondences that are being explored and examined are for: Texture and Density

In the texture graph the visual and aural lines move together except in some very obvious moments like:

Timeline 1.14- 1.26

At this moment the lines suddenly change direction because until then both the visual and the aural were using the acknowledging (events) by similarity technique as they move with the same tempo and rhythm and so in the aural there is a simple melodic line from the 2 figures - male and female who are dancing.

At timeline 1.14 suddenly and unexpectedly something new and quick appeared on the screen with a weird shape and a dark-black colour. To show this new appearance in the aural the acknowledging (events) by similarity technique was used but there was an increase in the level of the aural that was used for this new element on the screen in order to give more emphasis and more dynamism and strength.

Therefore at this point the aural was at a higher level of the scale than for most of the main parameters that were used. For example the visual in the graph at that moment is

on 2/10 on the texture scale and the aural increases and goes to 3, one step higher in the scale than the visual images just to show the new element and give more emphasis in order to make the visuals more interesting within the relationship using a small climax in the aural..

Also the same thing happens with the music for emphasis and so climactic music is used as a warning of something new happening and it is made stronger than the visual elements but still works using the acknowledging (events) by similarity technique at a different level on the scale.

From timeline 2.20 -2.24: when the male and female visual figures on screen become one figure, the music is stronger and louder. Inside, the black shape is stronger than the figures. During this time the aural is 7.05 on the texture scale and aural in 8 showing a small difference.

At timeline 2.38-2.43: when the black triangle appears visually again unexpectedly on the screen, the visual level for texture is 4 on the scale and the aural is 5.

From timeline 4.21-41 there are various wavering events and new elements which occur in the visual elements on screen with the visual increasing incrementally step by step in schedule from level 2 to 4 on the texture scale and then decreasing from 4 to 2. At the same time the aural level will increase from 2 to 5 and then decrease from 5 down to 2 again. Therefore both the visual and the aural elements are increasing at the same time and the same pace but gradually in stages, incrementally step by step, with the visual one step ahead of the aural sounds because the music gives the final sound in order to take it to another dimension for the final results of the video film excerpt.

At timeline 5.15- 5.23 again the aural sound level is increasing using an ascending scale of the texture level but one step more than the visual images although they are both making the same incremental increases and decreases, ascending and descending but

the aural is higher on the scale in order to give it a more final strong texture and to emphasize in more detail what is happening.

At timeline 7-40 – to the end the visual in texture level is increasing incrementally step by step, slowly from 6 to 7 on the texture scale and then from 7 onwards it increases rapidly straight to 10 so there is a strong ending. The aural here is moving in the same way as the visual images with the acknowledging (events) by similarity technique increasing up the scale but not step by step as in the visual but making a rapid ascent until the end to emphasize the strength at the end and to make a more dynamically strong climax.

## DENSITY

Here also most times both lines in the graphs move together simultaneously because of the acknowledging (events) by similarity technique except sometimes they do not and the reasons for these points will be explored as to the reasons why:

At timeline 2.44-2.16 with the visual background changing from the white light background to the black colour it is simple but in general terms what occurs in the triangle visually is moving at different levels. Visually on the density scale it passes from 5 to 7 but not straight but only after a few minutes when it ceases to increase straight. In the aural, because the music is more important than the visual and using the acknowledging (events) by similarity technique, the aural moves from the 1st level on the scale rapidly straight forward to level 8. There is a vast difference between the aural and the visual images and this is because there are dark-black colours all over the shot of the screen-visual and more emphasis is given to the aural for the density parameters and here the aural has much more to give than the visual. The music here is more energetic, with more things happening which include more movements, faster rhythms and tempos than the visual.

Therefore the parameters that were taken and used for this section with the acknowledging (events) by similarity technique resulted in these different changes between the aural and the visual. This means that not all the parameters can be translated in the same way nor do parameters have to use similarity because the main technique is similarity. Here there is density and texture similarity but there had to be other parameters which were different and that is the reason for the contrast.

At timeline 3.26- 3.55 the same techniques are used with the same events occurring as in the previous timeline but this time it is the opposite effect, with the visual decreasing from 7- 4 and the aural also decreasing from 7 to 3 on the density scale.

All these techniques are used in order to achieve better results for the videos and the aural.

## **Appendix L: Visual and Aural Analysis of the Slap Stick Animated Film**

Main Theme: Blobs Of Colour Changing Shape

Timeline 00-017

### **VISUAL**

The video film excerpt opens with a coloured screen of light turquoise green with black lines randomly dotted over it. Then the whole screen appears to swirl and move until large black/purple blobs appear over the screen like ink blots with the background colour now changing to a light orange (00.00 – 0.15)

A black/purple blob which changes into a green blob creeps upward into the shape of a cross with an orange/red blob in the background. The blob changes into an orange blob bubbling like the lava in a volcano against the black background. It is rapid and powerful (0.15 - 0.17)

The bubbling changes into a stream flowing like a line around a mountain shape with a pathway against the black background.

It moves sliding like a snake, from left to centre, downwards until it falls like a waterfall, plopping into a puddle.

### **AURAL:**

0.0-0.17: The video starts with a 'steam pad' which has power and flexibility to create an organic and electronic result and then continues with a guitar pad. For the orange paint a guitar pad sound is created by blowing a metal clothes drying rack that is acoustically coupled to two acoustic guitars to make the sound louder. The music here is very simple compared to the visual on screen which is much stronger because of the position used for the density and the texture whilst using the similarity technique for the rhythm, speed,

and volume, and the guitars sound loud. A simple melodic line with ascending melody plays with a descending scale which will contrast with the visual orange river moving upwards. There are bubbling sound effects to represent the bubbles which give the impression of the visual bubbles. The music melody in some parts gives emphasis by repeating the notes or a phrase again but it is quieter the 2nd time or just fading in and out. In this section, for the density and the texture the acknowledging (events) by similarity was used and for the rhythm and tempo acknowledge by opposition was used.

#### Sub Theme No1 (Droplets)

Timeline 0.17-0.27

##### VISUAL:

The colour changes into a light cream colour flowing and then dropping into 3 droplets. When it hits the ground it appears to disappear down a hole and it changes into a blue colour blob (0.17 - 0.28)

##### AURAL:

0.17-0.28: The bubbling sound effect continues with the guitar pad sound created by blowing a metal clothes drying rack, using the two acoustic guitars to give emphasis and make the music more pleasant and louder.

When the orange colour drops downwards the music is glissando and trills to show the opposite technique is being used musically to the visual image for the density and texture of the visual dropping movement of the orange colour.

#### Sub Theme No 2 (Blue Rigid Rectangle/Square Shape)

Timeline 0.28-0.39

##### VISUAL

The orange blob changes after it has reappeared shooting out of the hole and shoots into a rigid blue rectangle shape which slips from left to right – changing from a rigid shape to globules and then flowing rapidly up the screen on the right and then down the screen on the left to form another blue square.

It splats up and down and then forms a puddle before jumping back out, leaping across the screen changing colour to a lighter blue which is fragmented as if being cut from left to centre as it flows rapidly. The lighter blue stream plops downwards in a semicircular cup shape for a second period of bubbling and splashing (0.28-0.39)

AURAL:

0.28-0.39: The arpeggiator generates random effects and noise-based pitches, which are used very simply in this section to emphasize the opposite effect to the visual.

Sub Theme No 3 (The Liquid Changes Into A Horizontal Line)

Timeline 0.39-0.51

VISUAL:

Rapidly, the light blue globules change into a green horizontal line running across the screen from left to right and back forming a horizontal line with a darker green jelly blob bouncing on top of the light green line like a tightrope. The darker green takes over the light green line with lighter green coloured droplets descending and the dark green line flows left to right of the screen until it meets an orange blob coming from the right. The visual is very busy and energetic with fast movements with a brief appearance of a straight blue line for 1 second on the left near the green line (0.39 -0.46).

The orange blob and the green line meet but the orange line then moves over the top of the dark green line slowly as some of the green line drops away in splashes to the right of the screen (0.47-0.51)

## AURAL:

0.37 - 0.51: For this section for the green paint, the music is the "Shining Voices" which is a chiming vocal pad that works effectively when played as single notes as well as chords. It can be useful by itself or as an additional layer to add depth to another sound. Velocity modulates timbre is used for the sounds stretched upwards and downwards in order to change the sound to make another sound impression. In addition there is the bubbling effect as before but at an increased pace to show simplicity and to contrast with the visual. The sounds move rapidly and are sustained for a length of time starting loud and then fading as they slowly close. The sound is thick and strong as it moves but then it becomes thin and weak.

The same sound is used for the other green visual colour on screen. "Shining Voices" is used by changing the tone and the sound to give the impression and depth of another sound as the colour changes to yellow with a Velocity modulates Timbre.

For the blue paint the "Arpeggiator" generates random effects and noise-based patches to the musical sounds. This technique is used to make the aural as simple as possible because of the busy nature of the visual on screen. More emphasis is given to the volume which fades in and out with loud sound bursts fading until the end when it is quieter and then the sound is repeated. When the blue colour moves on to the green on screen, the bubbling effect is used with one-shot only which keeps fading in and out.

Main Theme Blobs Of Colour Changing Shape Returns

Timeline 0.52-1.06

## VISUAL:

The orange blob which took over the dark green line is seen dropping down the screen, being sliced horizontally by a black line, cutting the orange blob into large chunks which

drop, changing colour into a dark green mass which lands in a black outlined beaker shape. The green line is still seen under the orange blob and a yellow small blob is seen to the left of the beaker shape (0.52-0.55)

The dark green blob changes to a yellow blob dropping into the black outlined beaker shape followed by red, green, blue and pink shapes dropping into separate beaker shapes. The blue and the green paint in the beakers join either side of the pink shape in the beaker so they are in a line. Then the blue in the beaker shape moves from the left to the right side and then they start to rotate around the screen

Finally the blue paint becomes a blue line (0.55-1.06)

AURAL:

0.55- 0.58: For the red paint flute flutterings are used which are an altered flute pad but because the visual uses different movements on screen than previously, a different instrument is used.

The flute plays a different rhythm in this section, some with quick note and rhythms and for some the notes are sustained to give the impression of the opposite to the visual as the rhythm is all the same for this section whilst visually the red paint is descending. Single notes with vibrato are utilized as well as high range notes which are quick trills – the opposite to the visual downward movement of the paint. In order to achieve the opposite the aural has to be made as simple as possible but this does not mean that for all the parameters I used the acknowledging (events) by opposition technique. As can be seen in some sections, the rhythm or tempo is very busy in the visual and I also wanted to give emphasis to some visuals and so I changed the acknowledging (events) by similarity technique to the acknowledging (events) by opposition technique to make a point.

For the blue colour cutting the red colour on screen, an ambient spooky pad with a harmonic mix and radio delayed mix used.

The background music for a few seconds is the flute flutterings (representing the red paint), even though the visuals do not show the red colour, in this section. A bubbling effect is heard again with one-shot of the sound and the ambient spooky pad with some delays.

0.55 - 0.58: The visual is a sequence of colours – Yellow – Green- Red – Blue

For the yellow the "Steam Pad" is used; for the green "Shining Voices", for the red "Flute Flutterings", and for blue the "Arpeggiator". Evolving Generates random effects and noise-based patches. They are all single notes.

In this case the opposition technique was used but in order to ignore the busy visual action the similarity technique was used for all the colours using one single note although not as busy as the visual with a melodic line or a continuous sound.

0.59 - 1.08: The Divine evolver is used as the One-shot Hits offers a wide variety of hits, impacts and dramatic FX that are very useful for video and cinema sound design and they are stretched upwards.

1.00: When the visual shows some colours on screen, there is no music. In the background when other visuals are happening, there is only the sound effect one shot for the foreground and sounds that starts loudly and slowly disappear and become weaker with a final fade out.

Sub Theme No 4 (Coloured Lines Down The Screen)

Timeline 1.07-1.38

VISUAL:

The visual now is very busy and energetic due to the different use of colour.

The coloured paints in the beaker shapes rotate around the screen as each becomes a coloured paint line. A blue line, a green line and a purple line move down the screen with green liquid pouring and splashing at the bottom of the screen. (1.07-1.12)

The beaker shapes disappear and the volume of the yellow liquid increases as more is poured into a much larger beaker shape outlined in black while blue, orange and red lines dance down the screen to the right and left. There is a great deal of splashing as the yellow liquid increases in volume (1.12-1.26)

A red line and then a blue line appear across the screen whilst the yellow liquid is increasing. The yellow liquid changes a subtle colour and becomes a lighter green/yellow mass forming into a vase shape and then into a bubble (1.27-1.32)

A pink line appears downwards across the front of the vase shape (1.35)

The yellow/green vase begins to change shape into a bubble/ball with a blue line spiraling across it and it bounces off screen to the right (1.35-1.38)

AURAL:

Once again for this section as before use is made of the one-shot hits that offer a wide variety of hits, impacts and dramatic FX cinematic and sound design and divine evolver. The sound from the one-shot hits is sustained for longer and it is heard as different sounds because it starts loudly but then changes the range slowly until the close where it weakens and finishes. The sound is similar to using a descending scale if it is compared with an instrument playing this.

I wanted to create simplicity in this section without using many sounds or instruments. The same sounds were taken and changed by altering the range or by stretching the sounds

When the visual creates glass bottles which are throwing the colours, the sound is not meant to be played synchronized. There are a few seconds delay between the visual and the aural purposefully created to give emphasis to my creation of the music using the acknowledging (events) by opposition technique.

1.11 - 1.19: The stretched upwards sound changes and there is the addition of the bubbling effect.

1.19 - 1.26: There are flute flutterings and an altered flute pad and for the yellow liquid the Steam Pad is used. The power and flexibility of the Steam Pad creates an organic and electronic result making the sound very strong and powerful for this part of the video film excerpt.

There is repetition of the sound all the time with time delays and the use of some fade in and outs to create these changes to the sound in order to show the simplicity which is the opposite of the visual. It is much more complex.

1.26-1.32: The previous sound is used but it is stronger, fuller and more powerful in nature with delays and repetitions. When the other two colours, pink and blue appear there is the use of a simple bubbling effect in the background, very quietly. This sound is not used with any other sounds or effects unlike the visual where the colours appear in the foreground, the sounds will be left in the background.

As the visual is very busy, the main sound for the yellow colour and the other colours is sometimes one-shot sound but in the higher range or very low to show the similarity when there is a strong visual. I tried to use this with other parameters as the main technique used for this section was the acknowledging (events) by similarity for the density and texture but it is the same sound, although louder and repeated. Sometimes it has time delays even if the different colours appear visually on screen but the aural is simple in content.

1.26 -1.37: In this section the "Steam Pad" creates an organic and electronic result with the use of a flexible filter effect.

Sub Theme No 5 (Creeping Snail)

Timeline 1.38-2.01

VISUAL:

The light coloured yellow/green blob bounces back and changes into a creeping snail shape with a pink and then blue line crossing from left to right of the screen. Then a lighter coloured line crosses it downwards to the right with the pink line to the left downwards (1.38 – 1.46)

The green shape appears to create another form from its head and then becomes a blob again. The movement is slow and curling with a blue line in a hair shape passes back and forth across the screen (1.46-2.01)

AURAL:

The same sound is used as in the previous section but the range changes all the time as it is moving, and it becomes thicker sometimes and at other times stronger. Occasionally the first part is strong and then becomes weak and then at other times the last beat is strong and so it fades in and out as necessary. There is a great deal of repetition and sound delays and some stretching of the sound for this section.

For the metal that appeared in the visual images, I used a metallic sound-effect with one-shot with a delay, as in this section the volume of the sound is very loud and the delay gives emphasis to something new happening on the screen with the visual elements.

1.38-1.41: For this part, there is use of the flexible filter effect with the sounds and then the ambient spooky pad enters which is a Harmonica mix and Radio delayed mixed sounds.

1.41-1.46: The Steam Pad sounds stretching them and changing the range of the note and the pitch to create an organic and electronic result in order for the audience to hear the aural more effectively.

1.46-1.48: In this part there is more emphasis on the music because of the shape of the yellow liquid and so the sound becomes stronger and heavier and more powerful than before with repetition of these sounds many times but in a different range whilst the volume gives the impression that something new has been added.

Here also to give more emphasis to what is happening visually, an electronic sound is used very loudly in one part to show the dramatic FX part with the "Devine Evolver". One-shot hits and also the Steam Pad are used which are stretched to change the range. The power and flexibility of the Steam Pad creates an organic and electronic result.

1.48-1.50: An ambient spooky pad which is a harmonica mix and Radio delayed mix with single chords becomes quicker and monotonous with few sounds around as the composition is using the acknowledge by opposition technique which means that when the visual is busy and energetic, the aural is the opposite in the most important parameters which were added to the table of correspondences.

1.51-1.55: The Arpeggiator Evolving Generates random effects and noise-based pitches are used in this section.

1.56-2.01: An ambient spooky pad with harmonica mix and Radio with delayed mix is used for this section.

## Sub Theme No 6 (Unseen Cutting Implement)

Timeline 2.01-2.08

### VISUAL:

An unseen element or tool cuts, slaps and chops the yellow/green blob into different shapes roughly and rapidly whilst the blue line drops to the right of the screen. Blue, red and white lines move across the screen rapidly whilst a yellow line becomes a stream of liquid ending in a puddle (2.01-2.08)

### AURAL:

For this section of the video film excerpt there are loud, strong, thick electronic sounds with an ambient spooky pad of harmonica mix and radio delayed mix, for the main part of this section. The music is ascending and descending the range and notes and as it is more sustained it becomes more powerful and strong as there are many colours visually but they appear thin and small for only a few seconds on screen. Therefore using the acknowledging (events) by opposition strategy for this part, sounds are used for the thin colours seen on the visual on screen which are visually opposite to the aural and so the music is loud, thick and powerful. In the background there are a few quiet sounds in order to make the aural a little more similar. In the graphs the results are shown to be a little different from the other parts.

## Sub Theme No 4 (Coloured Lines Down The Screen) Returns

Timeline 2.08-2.10

### VISUAL:

The yellow blob like a snail creeps quickly across the screen to the bottom right corner and disappears momentarily to reappear as a large yellow blob which is cut in two and

then scooped up. The blue and red lines walk across the screen like hairs quite rapidly (2.08-2.10)

AURAL:

The same sounds as used in the previous section are used because of the busy nature of the visual. However a different sound is not used for each colour movement as the technique uses the opposite. One sound is used for all but with a change of the sound through stretching cutting, fading etc.

Sub Theme No 3 (Liquid Into A Horizontal Line)

Timeline 2.10-2.36

VISUAL:

The yellow slime comes back as a line and then is cut into two as a blob again very quickly (2.10-2.18).

One half of the yellow line is cut in half and thrown so that it hits the coloured hair like lines which stand upright like tree strands. The movements are very quick like the throwing of mud or paint onto a canvas. The lines are various colours including blue, light blue, white, red, and pink (2.18-2.23)

When the slime hits the coloured sticks it reverberates like piano wires twanging, dividing the green into fragments. The colours of the lines are pink, blue, purple, grey, white and yellow. The screen is very rapid and busy as the coloured lines are moving and the yellow paint is splashing around. The yellow paint which is splashing becomes a bright orange which splatters as it hits the upright line. An orange blob appears and a blue blob which is thrown against the multiplying coloured upright strands. Each of the coloured lines becomes a blob dropping and returning to be a line (2.24 -2.27).

The coloured lines shatter and divide and a large red blob appears left (0.27) as if it is taking over the screen and is cut horizontally in several large chunks by a black scything movement against the black background. From a line which slides down the screen like jelly being cut by the horizontal passing of a blue line (2.27-2.36).

## AURAL

2.24-2.29: In this section the same sounds are used as the previous section because of the busy nature of the visual. However a different sound is not used for each colour movement as the technique used is opposite but only one sound is used and it has been changed through stretching cutting, fading which includes all the visual elements together.

With the emergence visually of the red paint on screen, the use of the flute fluttering and altered flute pad are used whilst for the black that is making visual cutting movements across the red colour, the one-shot of bubbling sound-effect is used.

Here the flute plays again, not a rhythmical musical melody but an atonal melody in different rhythm. It is not a chromatic melodic line as the red paint is moving rhythmically so in opposition, the music will be with very high notes played by the flute accompanied in some parts by flute trills. The bubbling effect is also used for the cutting movements.

## Main Theme (Blobs Of Colour Changing Shape) Return

Timeline 2.36-2.38

## VISUAL:

The long lines are various colours – blue, black, red, pink, purple and the orange line is being shattered against them. The scene is frenzied and fast. The yellow blob appears from the left like a snail which is rapidly moving downwards following a path from the left and appears to fall off the cliff edge (2.36-2.37).

AURAL:

2.30-2.33: For the yellow colour on screen again the Steam Pad is used as the sound of its power and flexibility creates an organic and electronic result by stretching the sound to make it sound different with the use of a different range. This gives the audience another aural aspect of the visual and creates the impression of the opposite mood to the visual.

2.34-2.34: The ambient spooky pad which is a harmonica mix and radio delayed mix, is used for this section of the video but for this part it is stretched .

2.34-2.38

Here the Arpeggiator Evolving is used to generate random effects and noise-based pitches to represent all that is happening in the visuals on screen.

Sub Theme No 4 (Coloured Lines Down The Screen) Returns

Timeline 2.38-2.41

VISUAL:

As the yellow snail disappears from the screen, red and blue paint splashes appear as they are thrown against the strands. They are moving more slowly and their thickness varies. Other coloured lines like raindrops appear to be hanging in space while the orange thick line moves rapidly down the screen. The blue fat line appears in a snail shape to the right rapidly running down a path (2.38-2.41).

AURAL:

2.38-2.41: Again use is made of the arpeggiator" which generates random effects and noise-based pitches accompanied by the Shining Voices Chiming vocal pad that works effectively when played as single notes as well as chords. It is a useful sound used by

itself or as an additional layer to add depth to another sound, the Velocity modulates Timbre.

These 2 sounds are used during the visual to represent the visual but in an opposite manner so that when the visual is energetic and busy, the music will be soothing, relaxed and calm using the simple single notes as well as simple chords.

Main Theme (Blobs Of Colour Changing Shape) Return

Timeline 2.41-3.02

VISUAL:

Green and yellow blobs bounce around between the coloured lines and the red blob is thrown again quickly against the lines and reverberates off. A blue blob appears from the bottom of the screen frantically climbing up the strands – its movements are shimmery and erratic, shaking and wobbling (2.41 -2.44) .

A similar smaller size green blob shimmering and shaking appears to the bottom right and then disappears as then a large red blob dominates the screen coming from the left (2.44-2.48).

Then the large green blob reappears and takes over the screen rapidly shimmering and shaking whilst the red line has a knot in it from the left of the screen and other lines appear on the right. A large red blob bounces briefly to the right and disappears. The large green mass sinks and then reappears changed to a pink/purple shimmering blob shaking upwards against the black background and amongst the coloured lines, expanding with a yellow snake-like line swirling down its centre (2.49-2.55).

The pink/purple blob becomes a pink fat line spiraling downwards on the left of the screen whilst the yellow snake line spirals more slowly in the centre and a blue line is to the right.

There is a mass of pool swirling liquid at the bottom of the screen as the yellow snake line becomes faster and fatter and the red blob appears to fly from the bottom right to the top left of the screen rapidly (2.56-3.01).

The prominent black background comes out with a yellow and blue line being cut horizontally. A pink blob drips to the bottom and the yellow snail droplet hurries rapidly down a path to the right following the way to merge with the light green slime to the bottom left (3.01-3.02).

AURAL:

Shining Voices Chiming vocal pad is used as it is effective when played as single notes as well as chords and is successfully utilized by itself or as an additional layer to add depth to another sound as in the music for this section use is made of the Velocity modulates Timbre.

The flute flutterings altered flute pad is used to represent the visual again in an opposite manner with one sound used for the many colours but altered.

2.43-2.45: The Shining Voices is used here with a downward chromatic scale and single notes as well as chords.

2.46-2.52: Devine Evolver One-shot hits is used for the simple aural results just by changing the sound with different techniques.

2.53: The Arpeggiator and Single note/strike are used in a very simple way in this section.

2.54-2.59: For the orange paint the Guitar-Pad sound is created by blowing a metal clothes drying rack that is acoustically coupled to two acoustic guitars to make the sound louder. The visual returns with the orange visual image but it appears more powerful in the visual and so the aural is now made simpler. Once the visual becomes simpler, the

aural uses the Guitar-Pad acoustically coupled to two acoustic guitars to make the sound louder because the video film excerpt is coming to an end and a different and strong end is needed to again match with the beginning.

3.00-3.02: For the finale there is a mixture of 2 sounds - the ambient spooky pad with harmonica mix and radio delayed mix and the Steam Pad with a single chord stretched upwards and fading out for the end.

Slap Stick: Main Instruments and sounds:

Bubbling effect: generates bubbles-effects (throughout the video)

Flexible Filter effect: up-down effect (throughout the video)

Yellow Paint: Steam Pad - the power and flexibility of the Steam Pad creates an organic and electronic result.

Orange Paint: The Guitar Pad sound created by blowing a metal clothes drying rack that is acoustically coupled to two acoustic guitars to make the sound louder.

Blue Paint: Arpeggiator Evolving Generates random effects and noise-based patches.

Green Paint: Shining Voices Chimes vocal pad works great when played as single notes as well as chords. Useful by itself or as an additional layer to add depth to another sound, the Velocity modulates Timbre.

Red Paint: Flute Flutterings altered flute pad

Pink Paint: Devine Evolver Oneshot Hits offer a wide variety of hits, impacts and dramatic FX that are very useful for cinematic and sound design.

Black effects: Ambient spooky pad". Harmonica mix and Radio delay mix

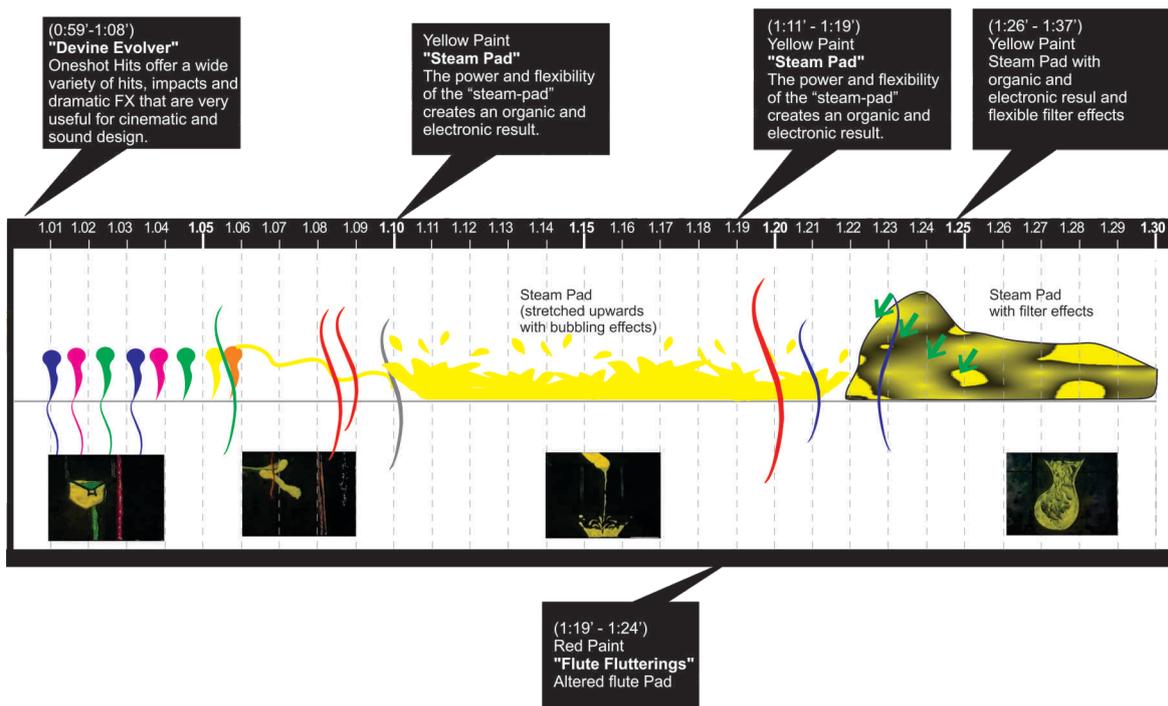
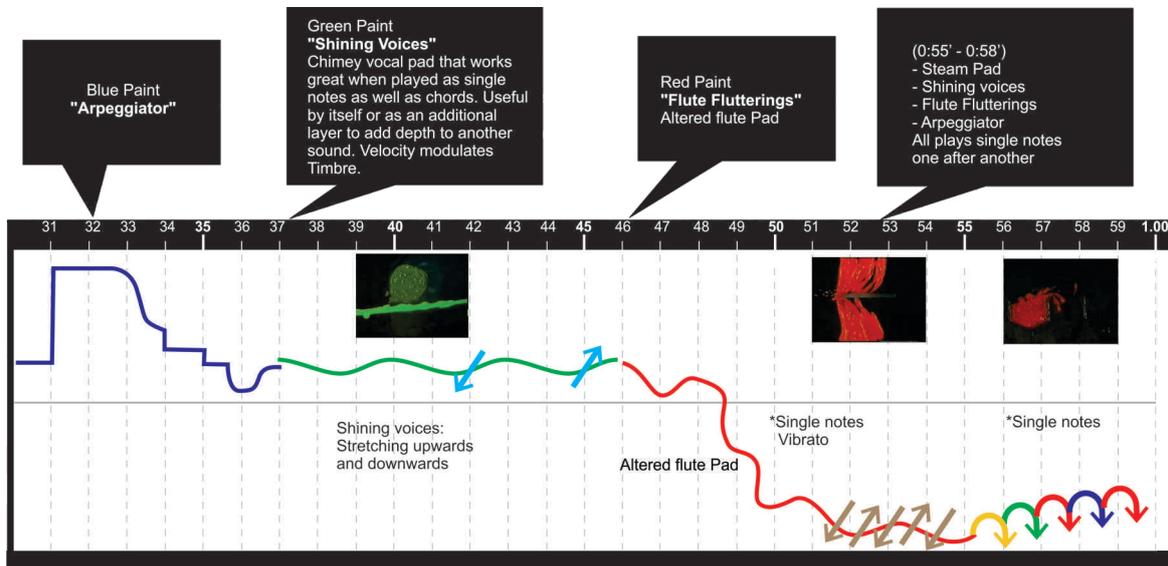
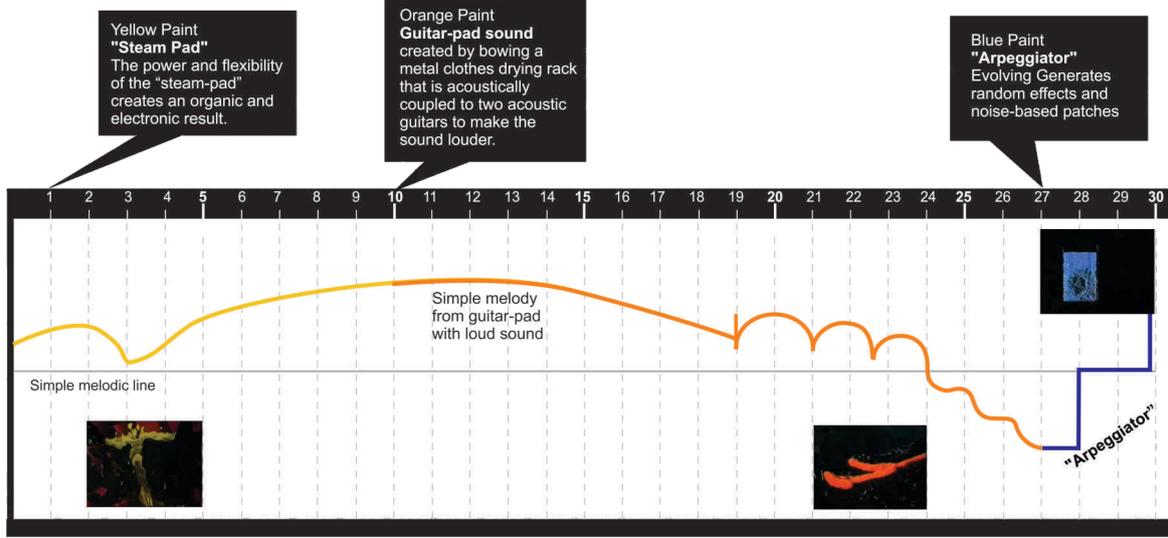
Appendix M: Graphs of the Slap Stick Animated Film

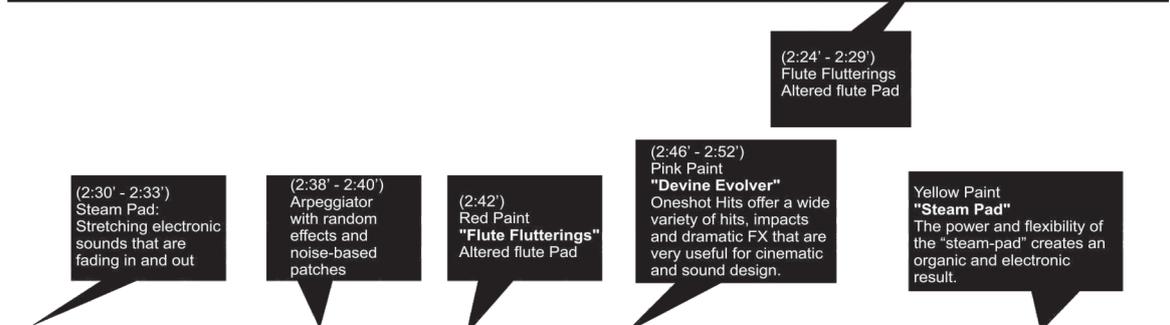
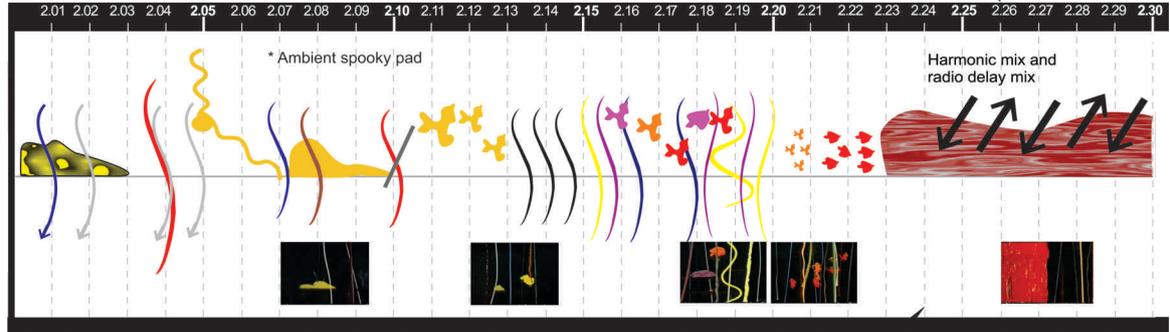
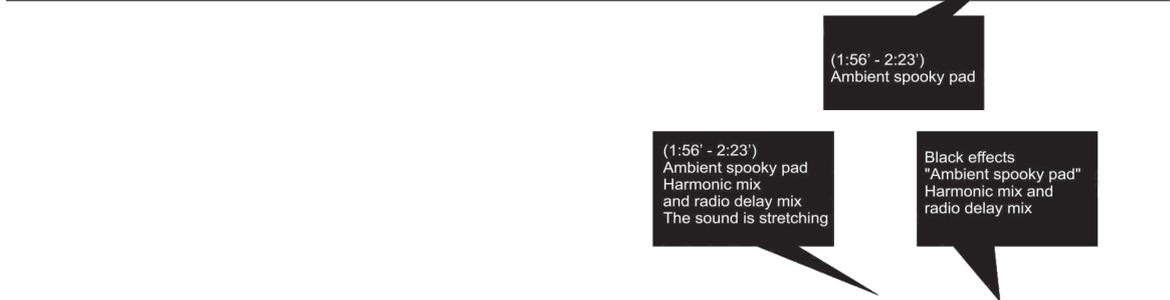
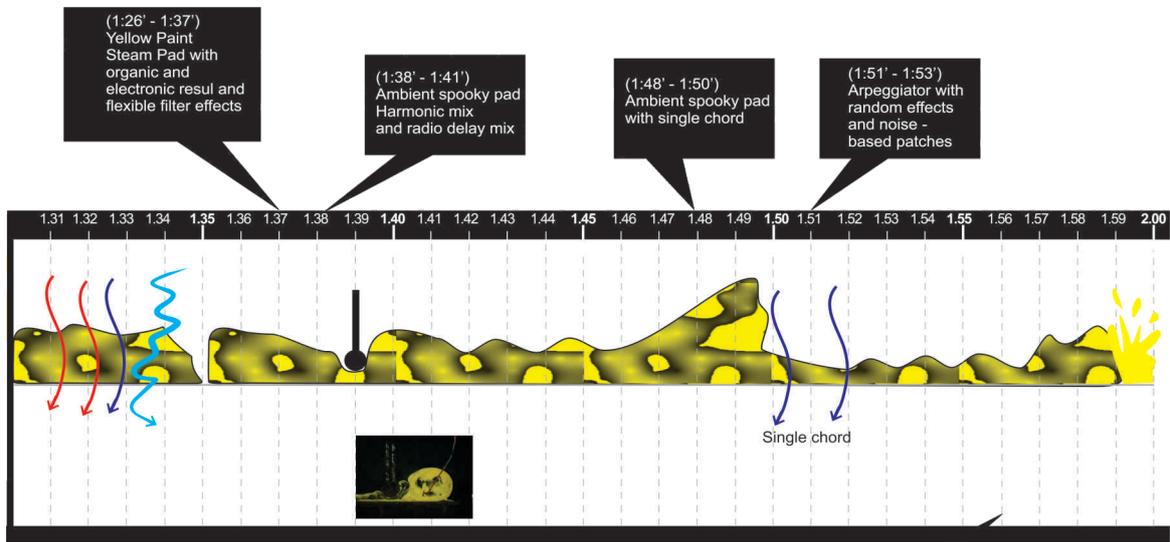
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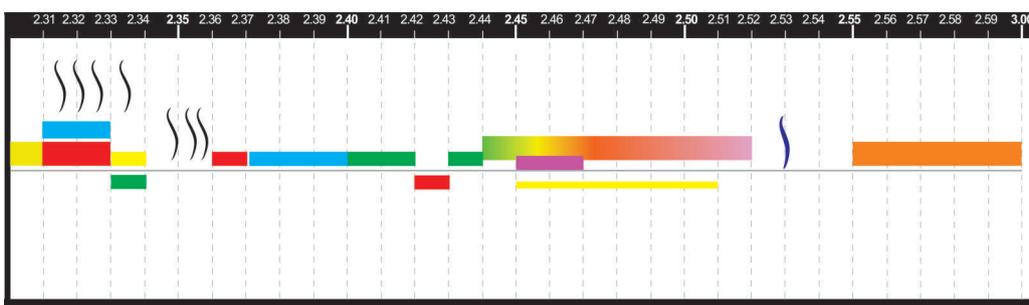
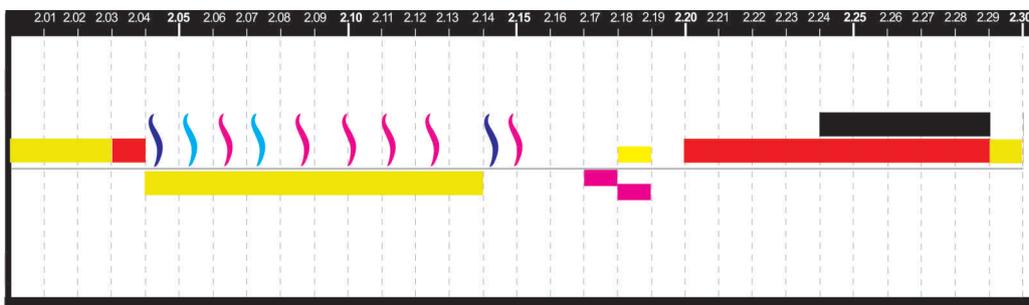
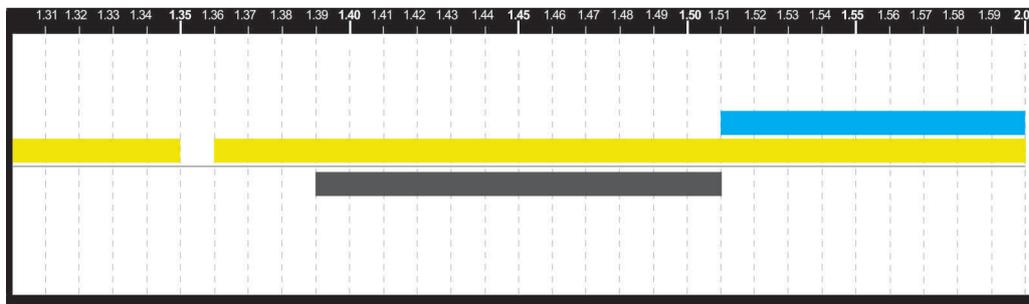
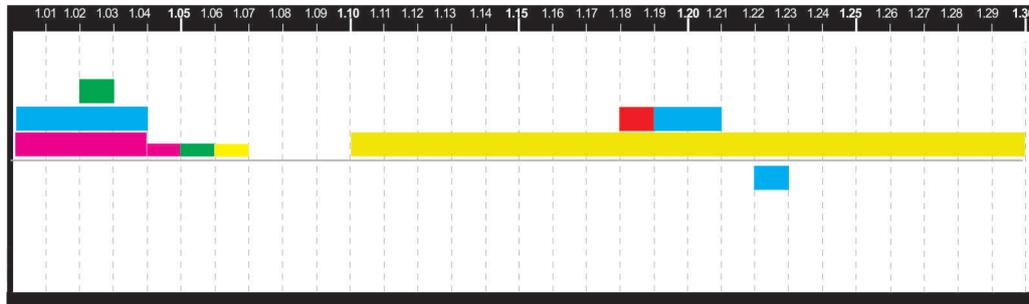
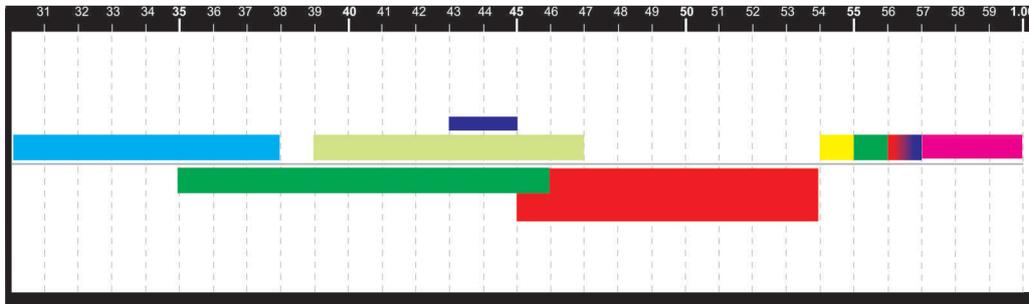
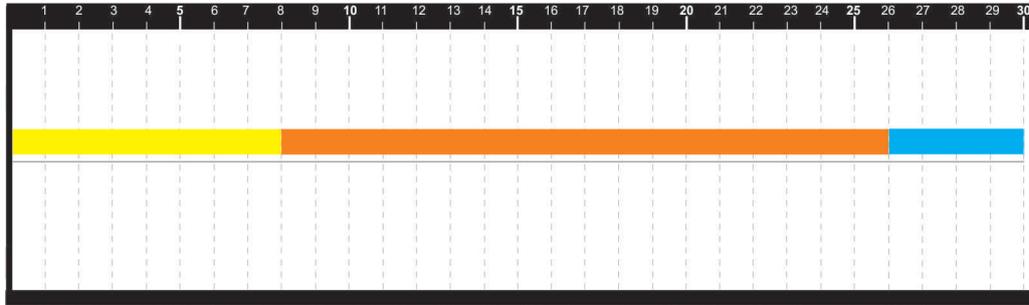


# SLAP STICK : DIAGRAM





# SLAP STICK CHARACTERS



## Slap Stick - Sounds and instruments Index

### Yellow Paint

#### "Steam Pad"

The power and flexibility of the "steam-pad" creates an organic and electronic result.

### Red Paint

#### "Flute Flutterings" Altered flute Pad

### Orange Paint

#### Guitar-pad sound

created by bowing a metal clothes drying rack that is acoustically coupled to two acoustic guitars to make the sound louder.

### Pink Paint

#### "Devine Evolver"

One-shot Hits offer a wide variety of hits, impacts and dramatic FX that are very useful for cinematic and sound design.

### Blue Paint

#### "Arpeggiator"

Evolving generates random effects and noise-based patches

### Black effects

#### "Ambient spooky pad" Harmonica mix and Radio Delay mix

### Green Paint

#### "Shining Voices"

Chimey vocal pad that works great when played as single notes as well as chords. Useful by itself or as an additional layer to add depth to another sound. Velocity modulates Timbre

### Bubbling effect

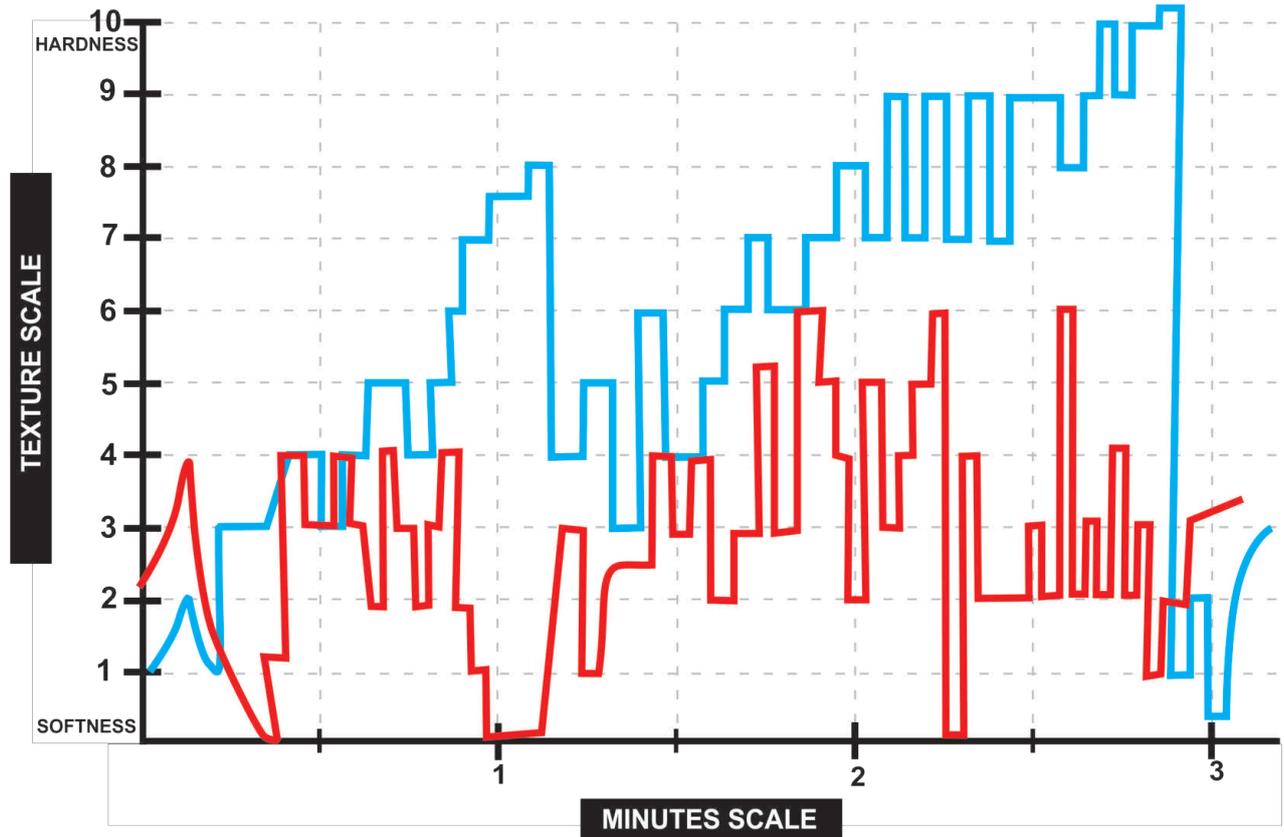
Generates bubbles-effects (throughout the video)

### Flexible Filter effect

Up-down effect (throughout the video)

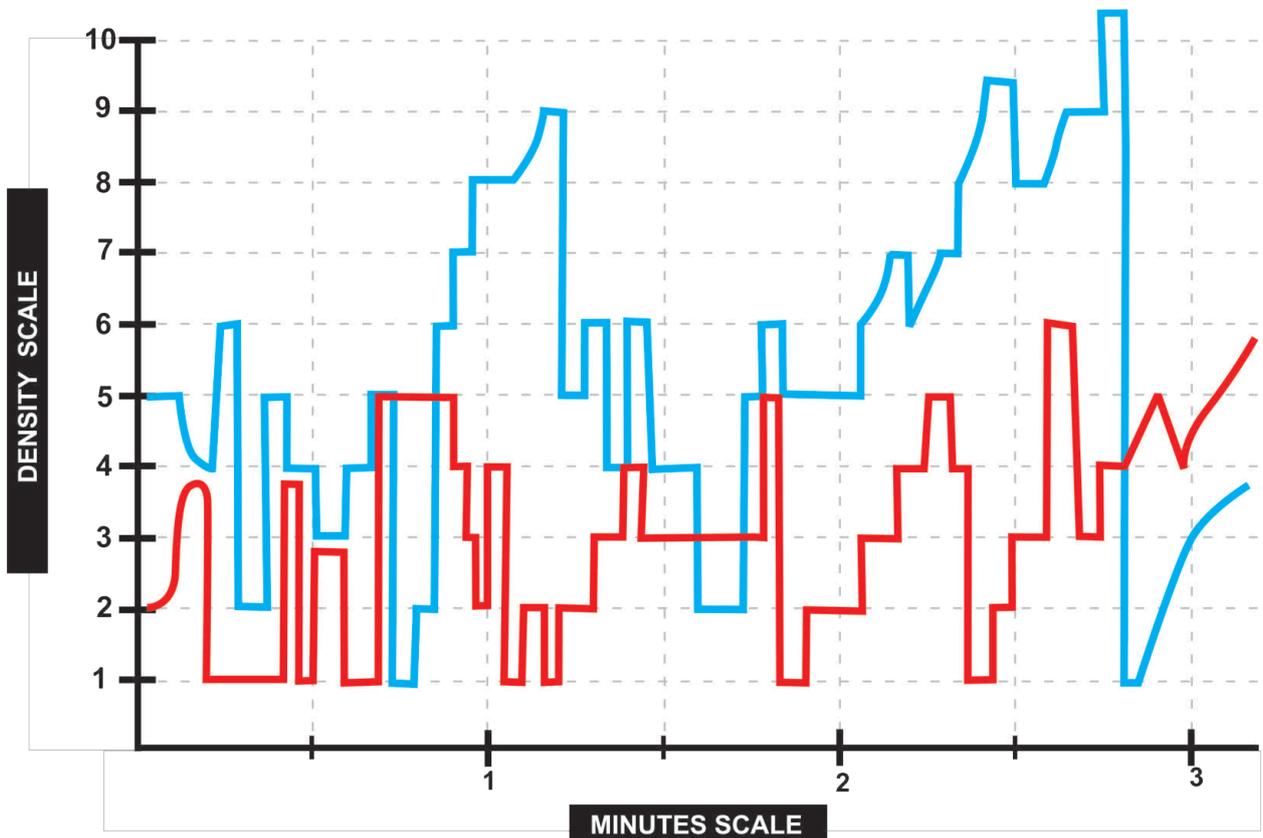
### SLAP STICK - TEXTURE (SOFT or HARD)

AURAL  
VISUAL

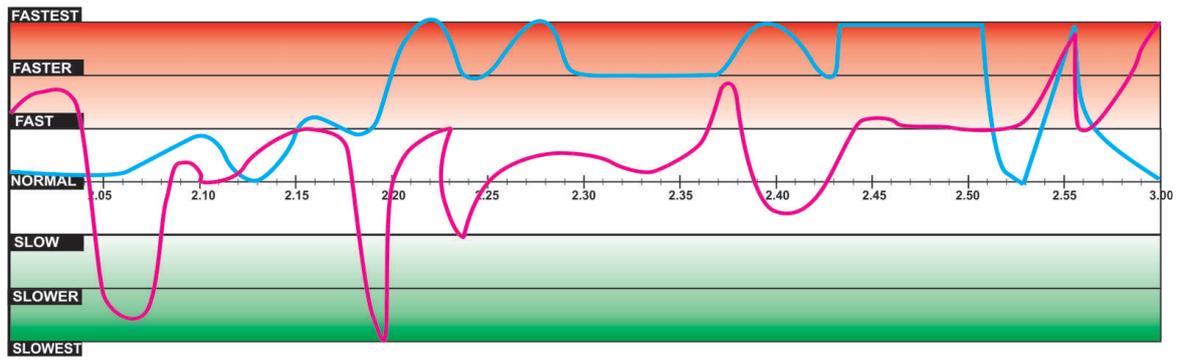
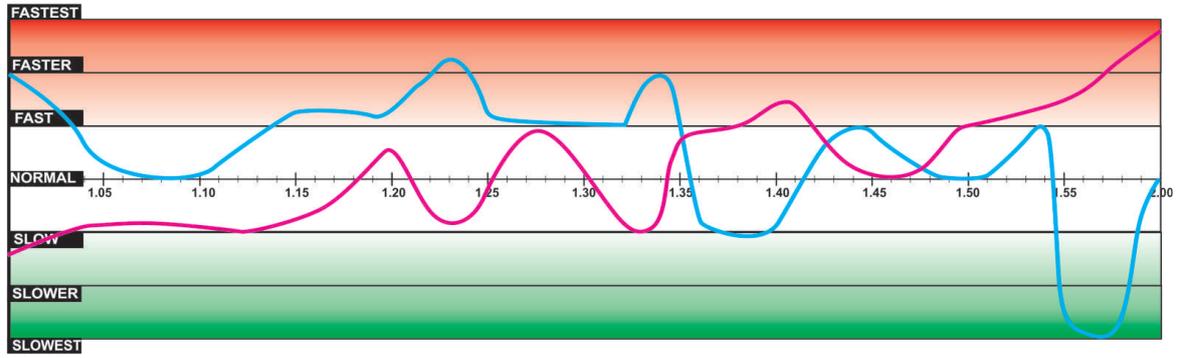
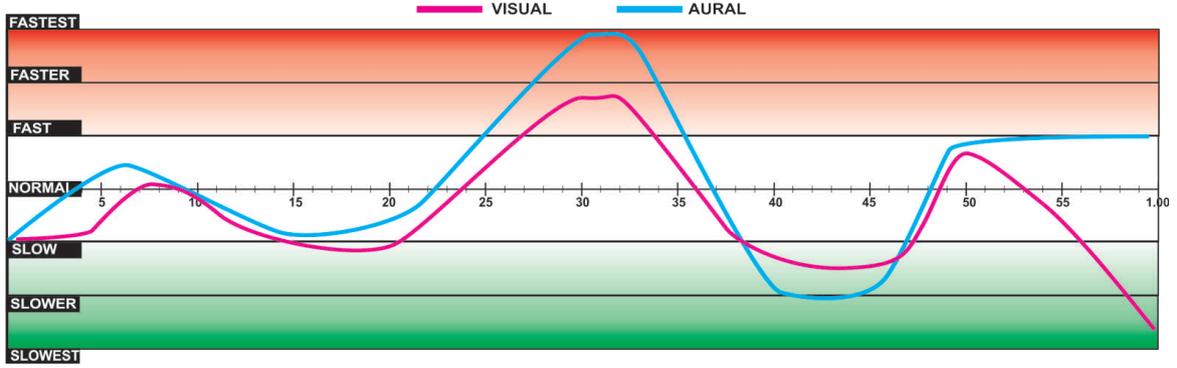


### SLAP STICK - DENSITY

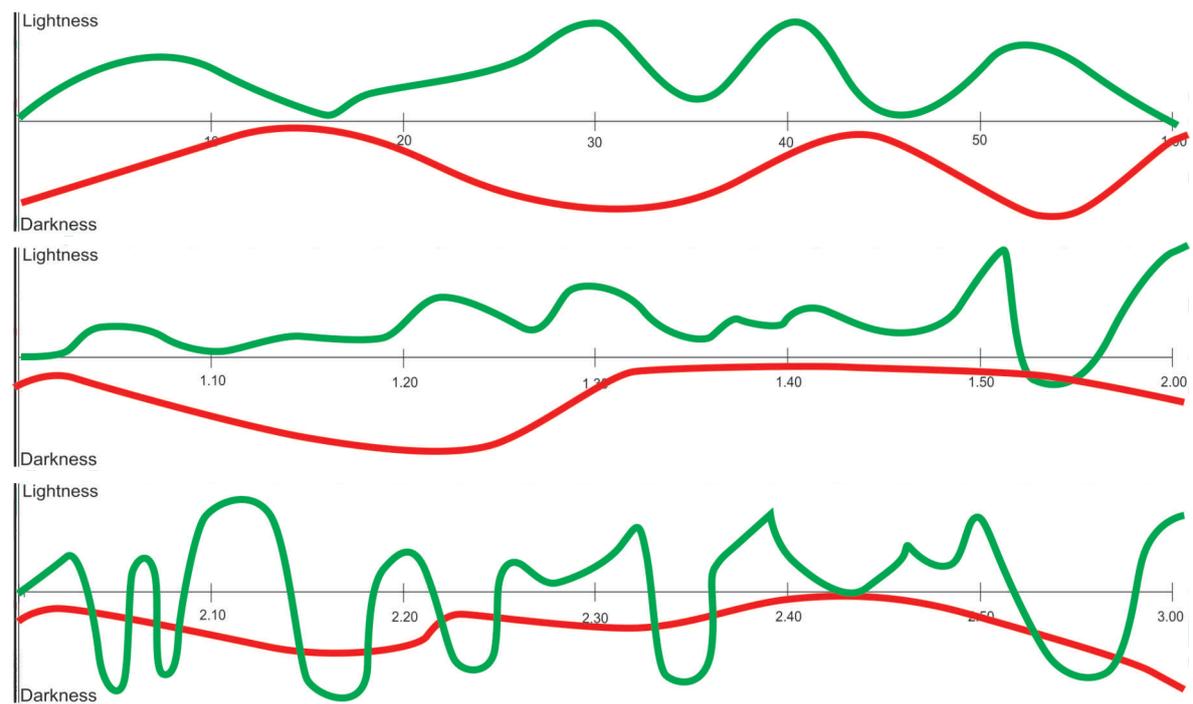
AURAL  
VISUAL



SLAP STICK - RHYTHM AND TEMPO



SLAP STICK - Lightness and Darkness in Visual and Aural



## **Appendix N: Analysis of the Graphs of the Slap Stick Animated Film**

In this video film excerpt of *Slap Stick* there will be an analysis of the graphs of density and texture that are based on the technique of acknowledging (events) by opposition to ascertain what the events are and what can be seen from the way that the music is composed compared to the visual images on screen.

The analysis and the composition used the acknowledging (events) by opposition technique and previous small experiments had been carried out for *Slap Stick* using the same 2 small sections of the video with the music being composed firstly using the acknowledge (events) by similarity technique and then secondly for the same section, music was composed using the acknowledging (events) by opposition technique. It was finally decided in this video, because of the very energetic events happening to the visual, it would be more successful for the second example to use the technique of acknowledging (events) by opposition and so the composer used those methods for the main *Slap Stick* video. Therefore by using the acknowledging (events) by opposition technique the audio sounds move in the opposite direction from the visual images so that the opposite can be seen and heard, although this opposite effect was not used for all the video. There was an analysis of the changes in direction and the reasons for those changes.

Texture:

At the beginning of the video there are more simple lines and events happening in the visual images on the screen and so I used the same direction for the musical composition. Therefore on the texture scale the visual and the audio lines move simultaneously ascending and increasing and then descending and decreasing. The visuals start from 1 on the texture scale increasing to 2 and the aural starts from 2 on the texture scale which is one level more than the visual and then increases to 4. However

this uses the same movement because both have simple lines with not many events happening in the texture and in order to give more emphasis to the aural, the music is a little higher than the visual by using in this section the acknowledging (events) by similarity technique but on the descent the aural descends from level 4 slowly moving to level 0 whilst the visual images decreases, descending with smaller steps in a shorter time to level 1. Here the acknowledging (events) by opposition technique is used just for the aural as more of an increase than the visual was thought necessary and this is the only time in the graph that the aural is at a higher level than the visual because of the simplicity of the visual and that is the reason I have used the opposite in the aural to make the music more energetic and more powerful than the visual.

Further down the acknowledging (events) by opposition technique is used throughout all the video film excerpt in the texture but the visual increases up to a very high level on the scale due to the fact that there is high energy in the visual images on screen and a multitude of events occurs visually and it reaches the final level of 10 in the last part of the video from timeline 2.38 to 2.50 when the events are most busy, strong, heavy and energetic ending with a climax after which it descends, decreasing until it reaches 0 and then finishes with a simple visual at level 2.

In the aural in the same section of timeline 2.38- 2.50, there is no climax in the music aural with not very high levels but there is a variety of dynamic loud sound-effects because I did not want this section of the musical work to be the same as the visual images and did not want it to move to the same level, and so the aural was left as simple as possible using the aural sounds moving up from levels 3 to 4 and then decreasing from 4 to 3 with some ascending and descending scales. Therefore it would not be monotonic or all the same and not moving on the same level all the time.

At the end of both of the visual and aural there is an increase in the graph level before at the end from 0 it moves upwards to level 4 with one small stop at level 1 and then

increases straight to level 4 and the visual increases from 1 to 2 and then decreases back to 0 and then increases again to 3. Here the aural is more powerful than the visual because in the visual the scenes are not very busy and energetic and very simple both at the beginning and the end and that is the reason for using the acknowledge (events) by opposition technique for the aural sounds so that there would not be movement for both visual and aural at the same level and this would give a better and more pleasing result to the video from all points of view.

From timeline 0.30 to 1.12 in the visual there are slow incremental step by step increases until it reaches level 8 on the scale that represents the visual in the texture and so something else is added to the visual events each time and that is the reason for the increase to 8 on the level.

In the aural the opposite is achieved by increasing the level but leaving it to stay the same level for most of the time and then it increases from level 3 to 4 and decreases from 4 to 3 although it will decrease in some parts to level 2 and then to level 1 as the visual increases to 8. In this way I have shown the totally opposite use of the aural and when in the visual something else is added to the energetic visuals on screen, then the music becomes simpler and more than the visual and without many changes and movements from the aural in the music, using the same sound-effects most of the time with just small changes made to the range or stretches made to them or small notes ascending but all still at very low levels.

After timeline 1.00 when a very high level is shown on the scale of 8, in the visual images on screen there are many colours and characters which appear and so then the aural descends to level 0 on the scale meaning that it is almost silent because as the new elements including the colours appear on screen. I did not want sound effects to add to these appearances but to just leave the music as simple as possible just with a small sound in the background for all of the colours together. For the audience this aural

composition would determine that there is emphasis here to what is happening to the visual images and to help the observers to understand the meaning rather than to make both the aural and the visual very busy and the results then become opposite and negative.

Later on after timeline 1.20 the aural heads in the opposite direction from the visual elements but with more slow movements as the minutes pass and with just a few changes to the scale with very large steps made slowly after time.

After timeline 2.10 when there is visually a mixture of colours and the colours appear to be playing, splashing and jumping around the screen, then the aural moves lowly on the lines of the graph of the colours but because of increase in events happening in the visual and the quick movements of the visual, the analysis of the graph moves from 7 on the scale to 9 which is a high level of energy and texture. It retreats back from the busy 9 to a 7 and then again jumps back to 9 for a few moments.

In the music in this section there is a lower range for the aural in the scale of the graph and there is no straight change to another level with only the use of slow incremental steps from one level to another. For example in the aural it advances from level 3 to 4 then on again to 5 and then increases further to 6. It does not increase straight from 3 to 6 but uses large movements and then quickly decreases straight to 0, when in the visual images something important occurs and the shots of the visual show the zooming in and out. In the aural to gives emphasis to the fact that the visual is zooming. There are a few seconds of silence and then low and quiet music to give the opposite effect to the zooming visuals on screen, but at same time to still give the audience the impression and emphasis that something important is happening. Therefore the music increases slowly which is different to what is happening to the visual which changes straight from one level to another, except when it decreases in the scale from level 6 to 0 because more emphasis is then given to what is happening in the visual elements. Therefore one

complements the other, the visual helps the aural and vice versa in order to give a better understanding in relation to the visual and for both of them it is important to use the correct technique for better results.

Density:

The density graphs show the results after the finish of the composition of the aural part where the lines and the levels for the visual and aural do not move together because of the use of the acknowledging (events) by opposition technique.

At the beginning of the video the level of density is level 5 in the visual which decreases to level 4 for the density as the colour moves on screen in the video and becomes thinner as it appears to be moving as a river and so the density at this point decreases to level 4 and after this it increases to level 6 to show that the element which is colour has visually increased on the screen and then again it slowly decreases from 6 to level 2.

In this section the aural does not start from the same level as the visual but because in the music there is a simple melody, which is not very quick or very loud, the music starts from level 2 and increases to 3 as the visual elements increase to level 6 and then the aural decreases to level 1 with a very simple melody and remains there for a few seconds without any changes to the structure of the melody until the visual images increase in level from 0.20 and there is a colour splash occurring in the visual from the colour-character and so then the music level increases up from level 1 to level 4. This is shown aurally with a time delay which is later than the visual in order to give emphasis to the end part of this shot of the visual colour splash and make the visual more dynamic and to make more obvious what is occurring to the audience with the help of music. In this section there is a small climax.

After this point in the timeline 0.30 the visual and aural continue moving in different and opposite directions as detailed by the graph.

From the timeline 0.30 to 0.40 when visually there are green colours appearing on the screen which are very thin lines the visual decreases from level 5 to 1 and then after a few seconds increases rapidly straight to level 6. Here the music uses the acknowledging (events) by opposition technique to achieve the opposite effect and the graph of the aural increases from 2 to 5 and then when the visual decreases to level 6, the aural does not move thus achieving simple movements whilst the sounds are not changing a great deal with different ranges or they become louder or quicker with the aural moving to the same level of 5.

At this point in the analysis it is important to state that when in the section there are large differences between the visual and the aural in the graphs this has been achieved purposefully to establish an emphasis making the visual video film excerpt generally more successful with the help of the aural heading musically in the opposite direction and making this part very obvious with the changes showing that either something is happening in this section or something new has arrived or been added here. At this point the aural is still always lower than the general visual movements of the graph because as has been pointed out at the beginning, the point of using the acknowledging (events) by opposition strategy in this film is because the visual is so busy and highly energetic and I was trying to use the aural music composition as simply as possible, using a low volume and few instruments and sounds and not many changes or large increases in the aural. In this way the visual would look more natural. I attempted to achieve a better understanding by using mostly simplicity for the aural.

In the timeline 1.06 visually on screen, the same event occurs in the texture graph as for the visual and so there is a slow ascending step by step increment as time passes, from level 6 increasing slowly to level 9 but there is also a small climax in the visual which is very highly energetic visual and so at the same time in the aural there is the opposite direction of the graph line shown decreasing step by step from 5 to 4 and then to level 3 and then to 2 and then to 1. There is a small increase which is straight and quick to level

4 and then it returns to 1 because I wanted to emphasize this specific time in the video and the density level of the aural-music increases to achieve this thus making the music more busy with changes to the sound-effects which become aurally more busy and loud with faster movements and changes just as the visual increases slowly from 8 to 9.

In general the lines moves in opposite directions between the aural and visual most of the time because of the strong and energetic visual elements on screen which means that there will be very high levels in the graph, because of the simplicity and less energetic use of the aural to achieve good results and to achieve what I wanted to show which was the aural generally moving lower than the visual and at a greater distance as well as at a different level from the high level of visual images.

After timeline 1.30 when the visual is simple with just one movement and one colour on the screen, it is seen graphically as a level 2 on the visual and one level higher on the aural at level 3. This is due to the simplicity of the visual where nothing important is happening and I wanted to give a different dimension and light to this part and so composed the music to sound stronger and louder with more dynamics with various changes and delays and effects. This is to compensate for anything missing in the visuals on screen and so in order to make it perfect, the music must make up for the missing visuals.

Another good point to analyse here is at timeline 1.48-1.50 when there is ascending in both the visual and aural the visual is at a higher level than the aural in the density scale because of something important happening and a new change happening in the visual images and so the composer wanted to make a point of this part. Therefore for a few seconds the music becomes very loud and strong to give more emphasis to this section.

From timeline 2.00 to 2.40 the visual generally shows a step by step slow incremental movement from one level to another with small changes sometimes downwards when it is not so busy until the climax of the video at the end when the visual is at 10 in the scale

of density as well as the texture level. However in this section the aural is decreasing in small movements incrementally step by step until timeline 2.10- 2.14 where the music is very loud and strong with a lot of reverbs and echoes and loud music which makes a dynamic aural sound with some changes decreasing, for example in timeline 2.15 -2.20 when there is a quick straight forward decrease down from level 4 to 2. In the visual elements again the screen there are various events and so for this part simpler and quieter music was composed and after this it slowly starts again to increase until the small climax of the music. This does not correspond with the visual in 2.4 but actually occurs before this in timeline 2.34-236 when the colours are larger and they splash and move slowly to the end with ascending and descending moves in the music which are not of a very quick or fast tempo or even very loud but all composed in a middle stage until the end, moving from level 4 up to 5 with a small and slow climax as the visual here shows a dramatic movement from silent and very simple and not very energetic visual and moves from 1 in the density scale to 4.

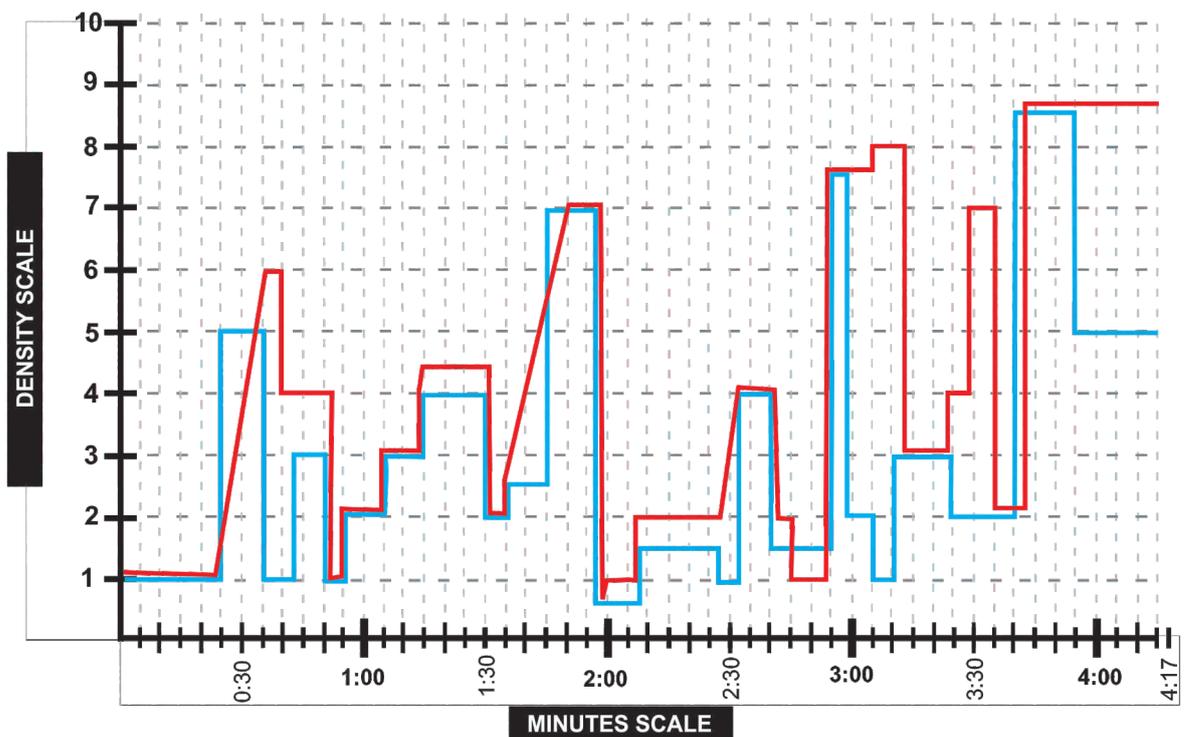
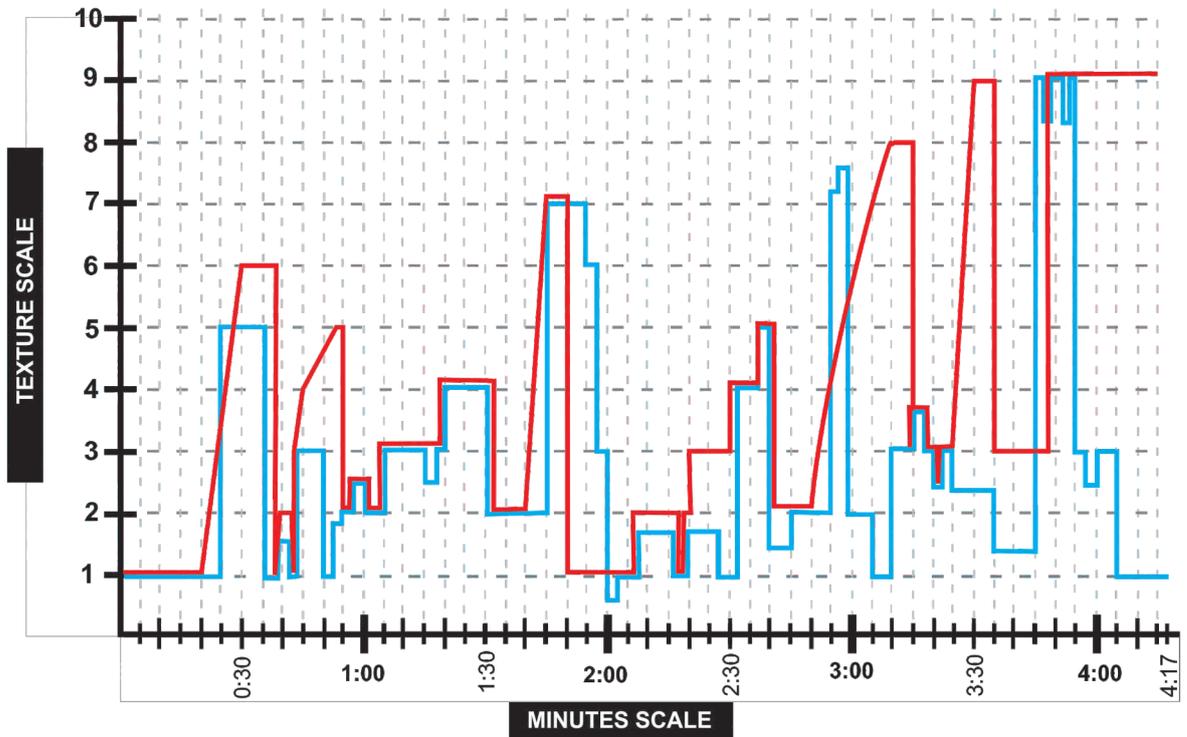
All these points are shown in the graphs and detail the investigation into the possibility of applying synaesthetic principles to soundtrack composition. I used the strategies of acknowledging (events) by opposition in these examples with the parameters mentioned in the table of correspondences to view and see what the results were and how these parameters were used and what was happening to each parameter and the reason they were used in this way.

Appendix O: Graphs of The Flat Film, Versions A, B, C

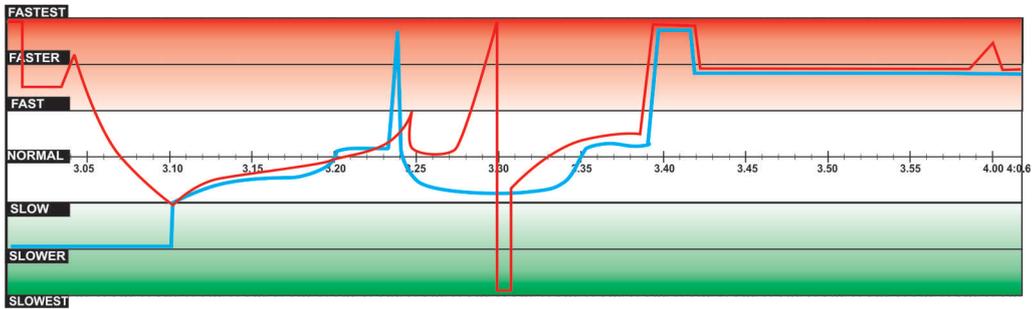
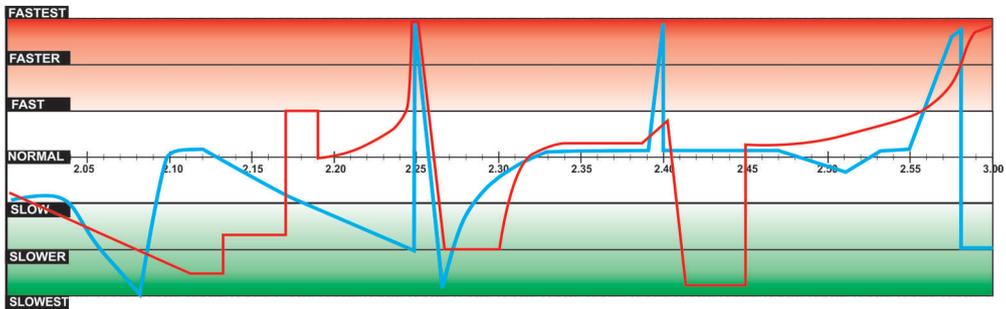
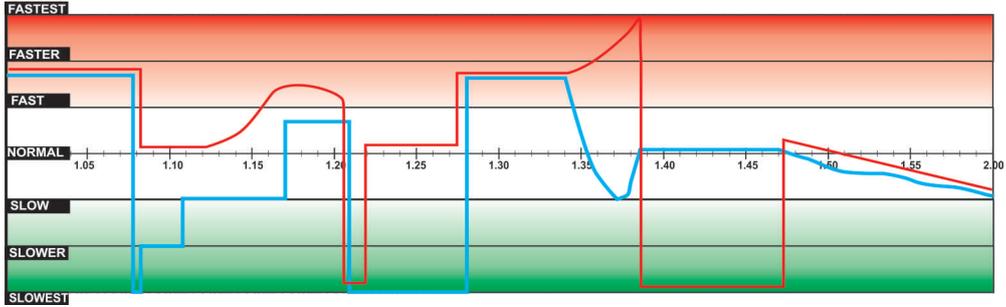
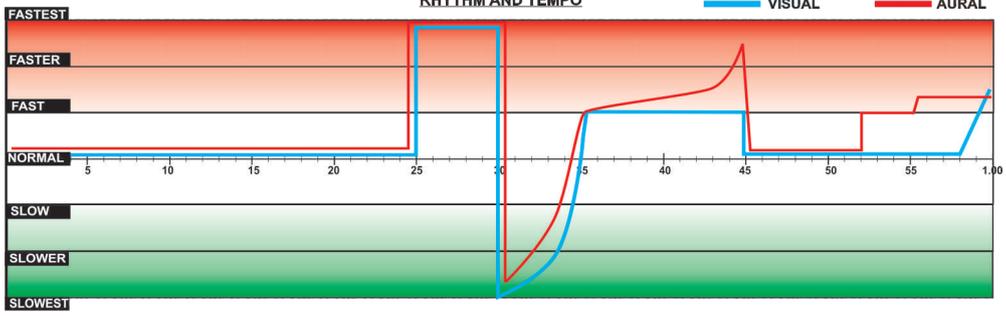
# *The Flat* *Versions A, B & C*

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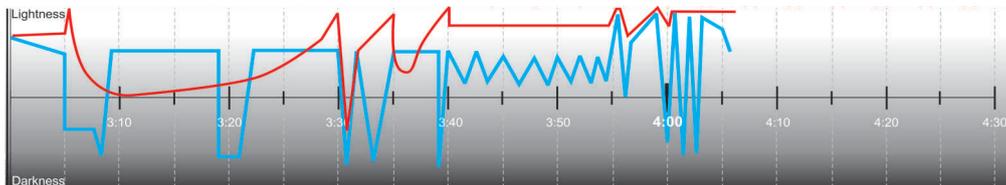
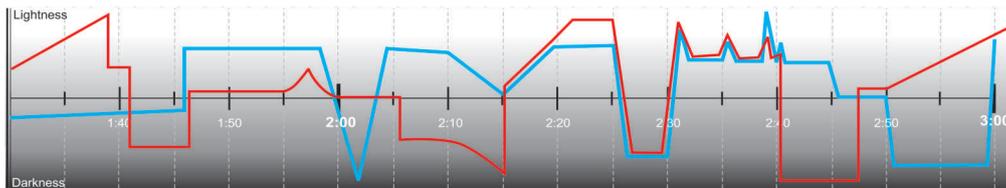
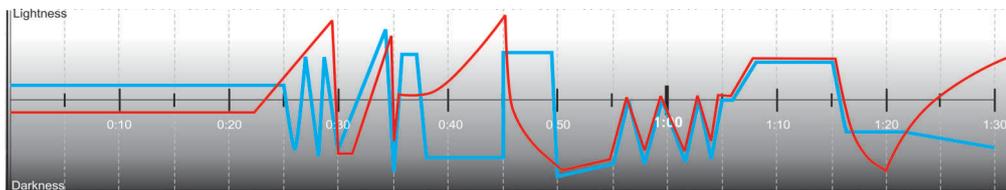




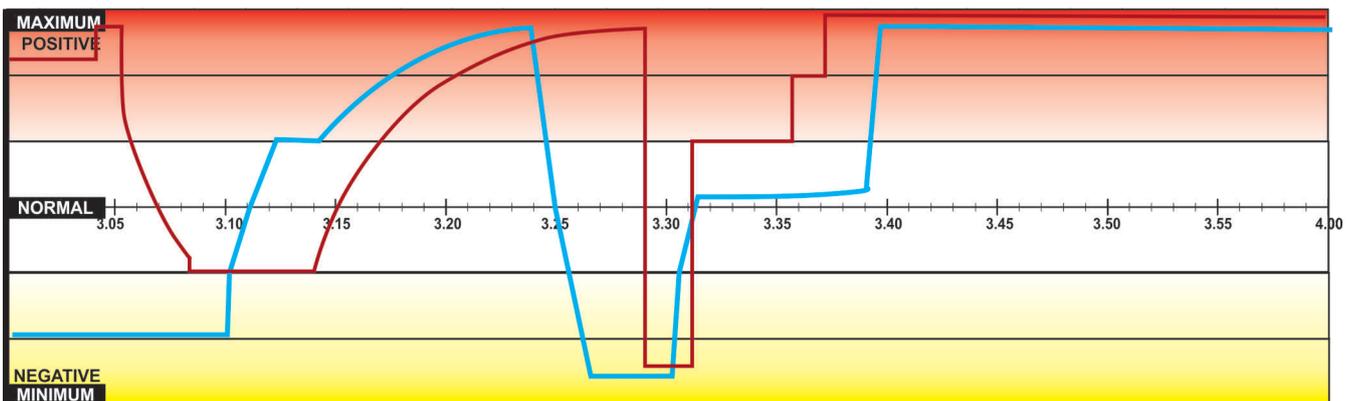
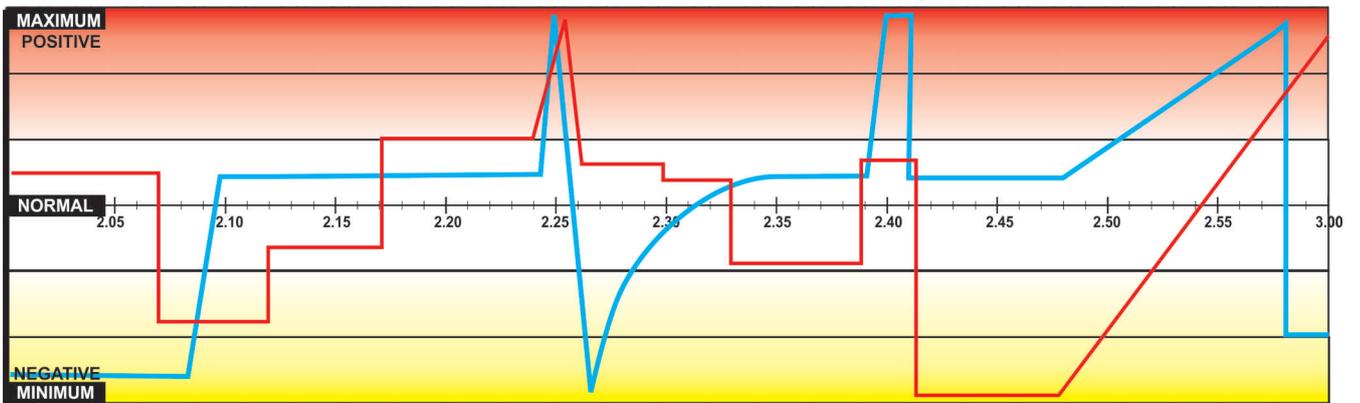
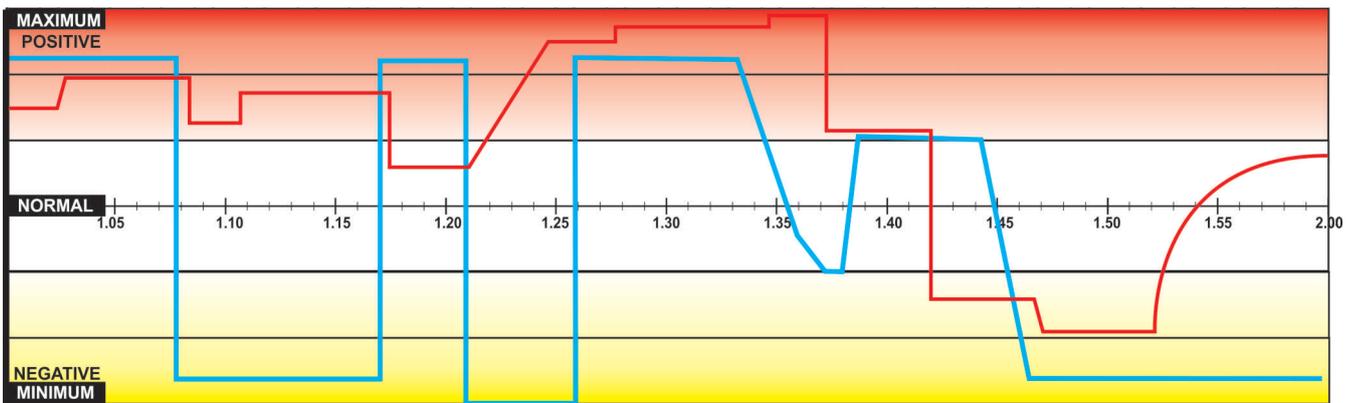
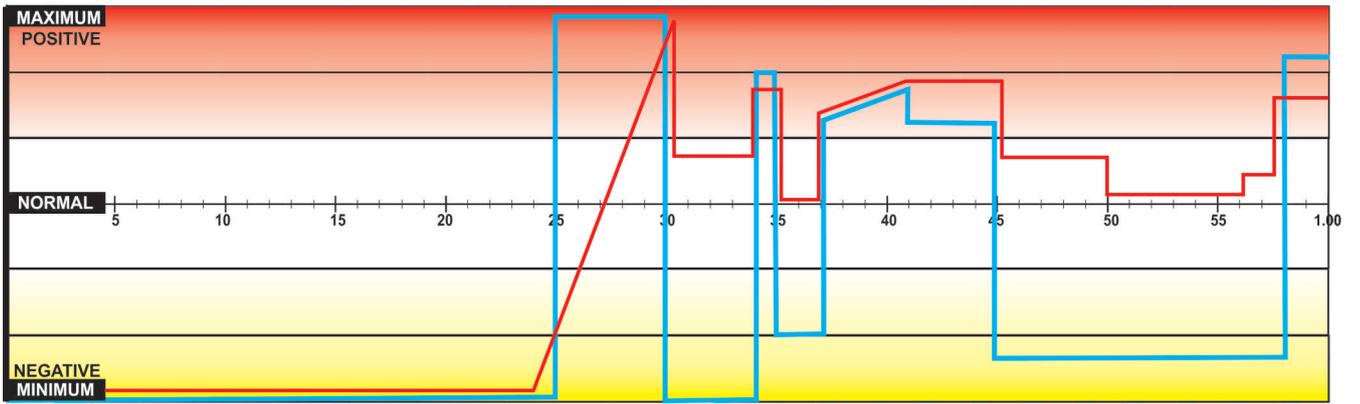
Jan Svankmajer «The Flat» (Version A)  
RHYTHM AND TEMPO



Jan Svankmajer «The Flat» (Version A)  
LIGHTNESS AND DARKNESS

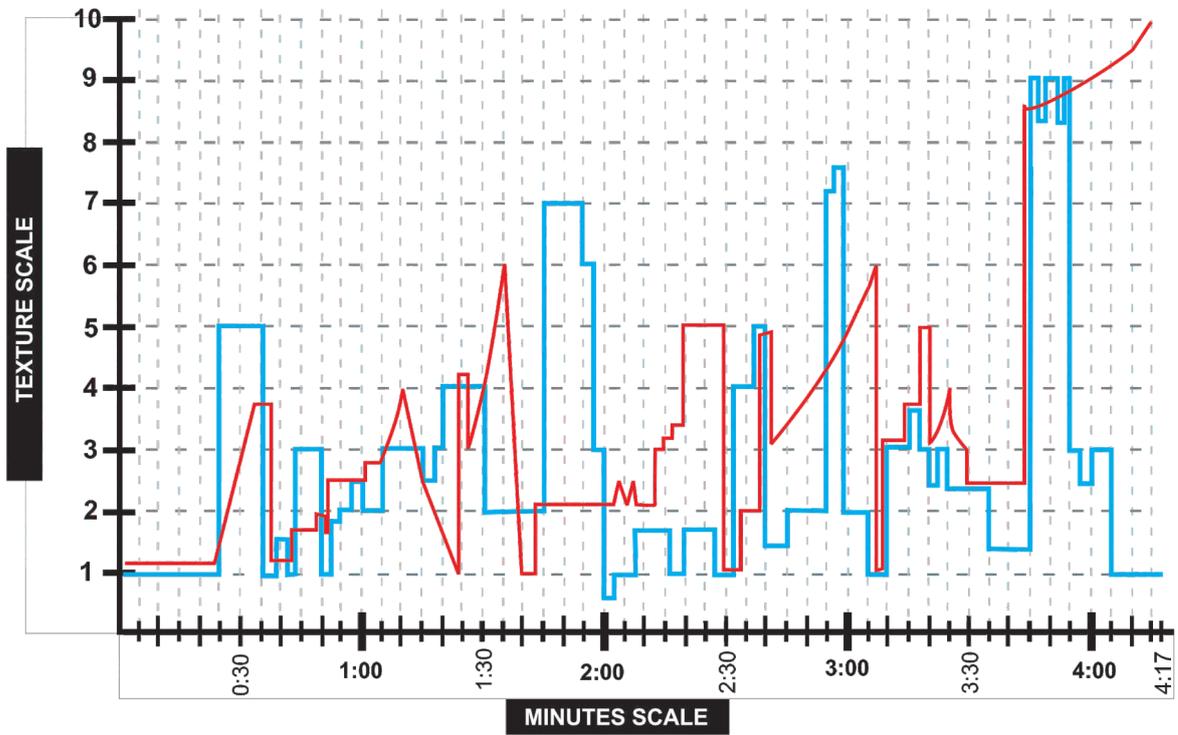


— VISUAL — AURAL



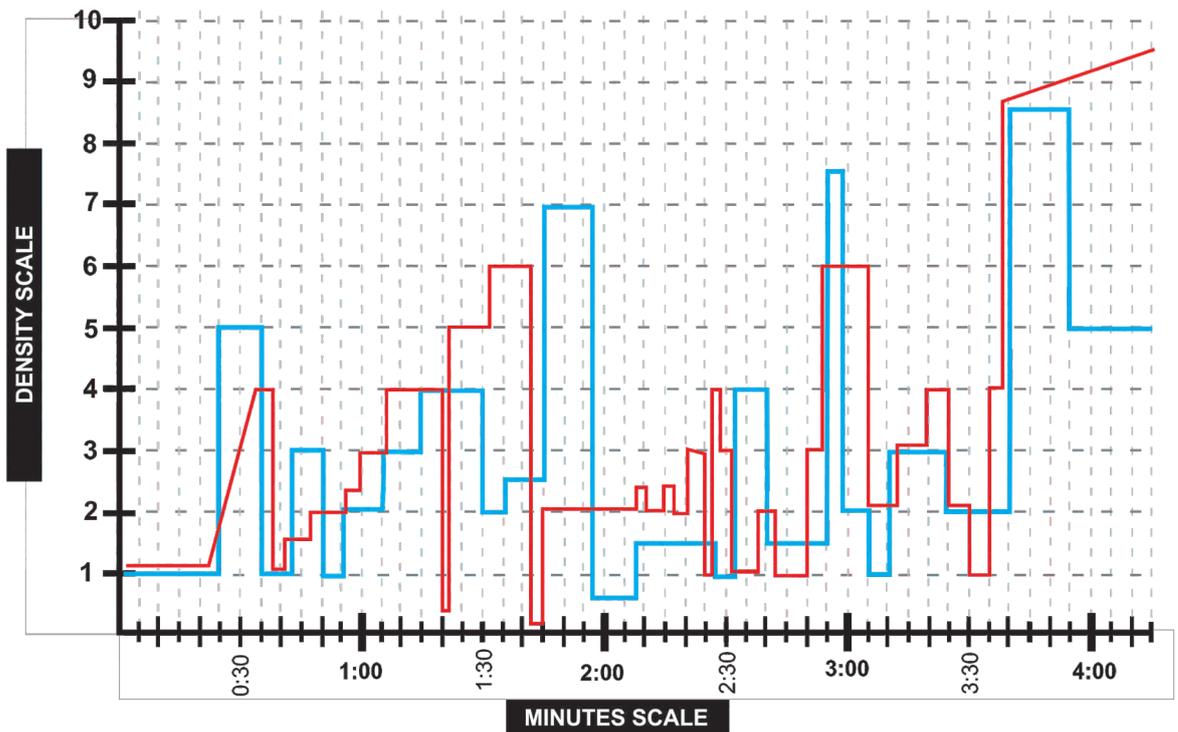
Jan Svankmajer «The Flat» (Version B')  
TEXTURE SCALE

AURAL  
VISUAL



Jan Svankmajer Byt «The Flat» (Version B')  
DENSITY SCALE

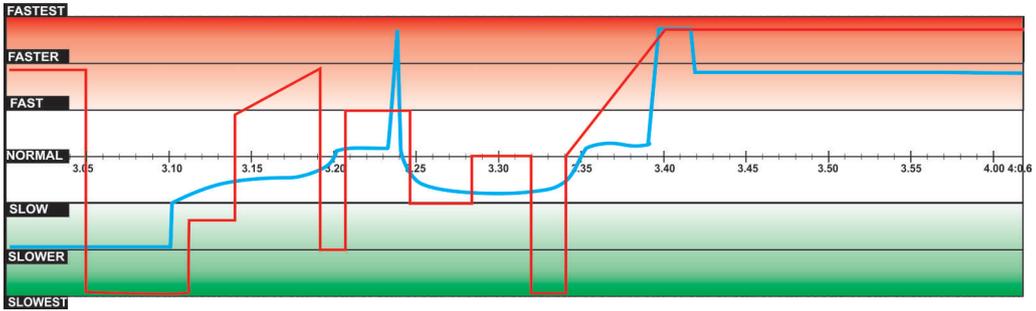
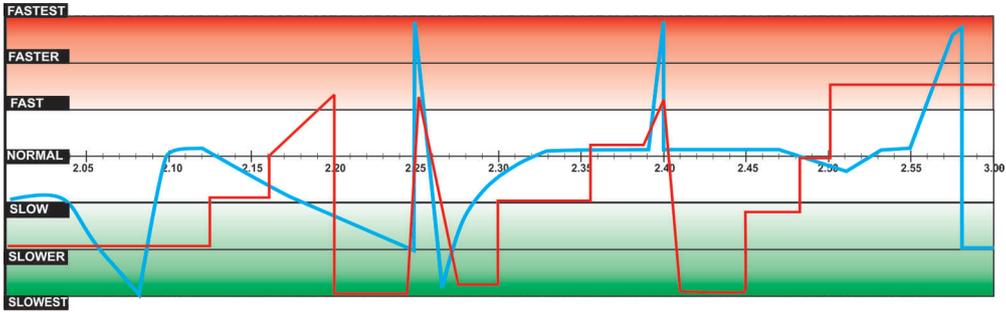
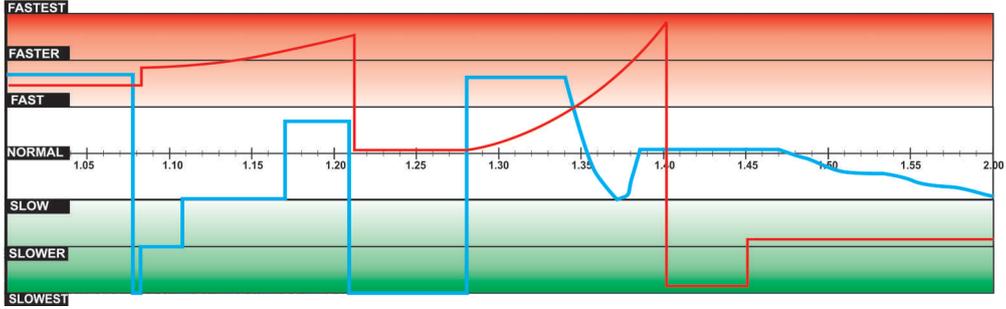
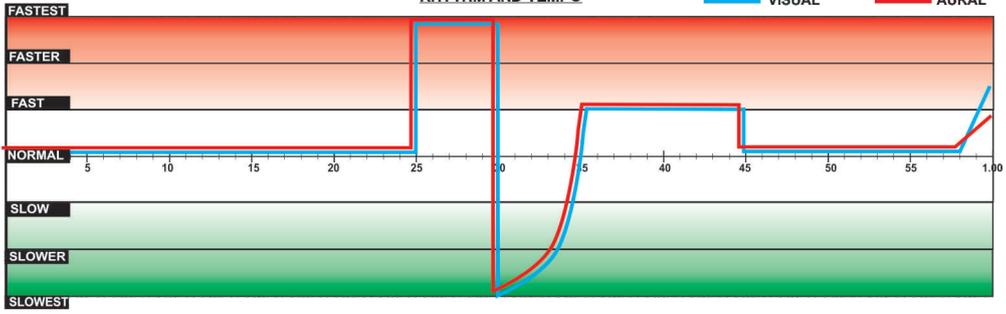
AURAL  
VISUAL



RHYTHM AND TEMPO

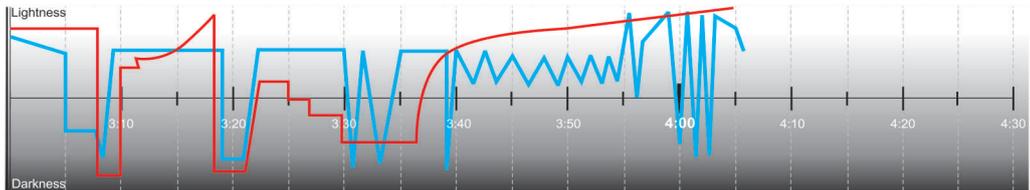
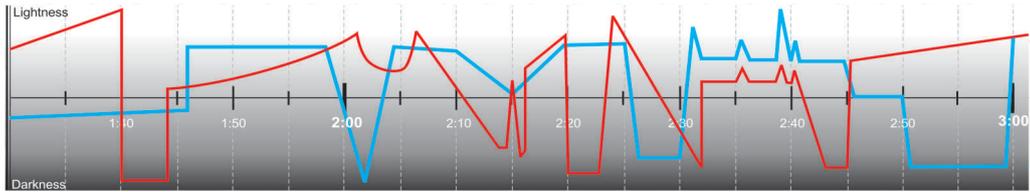
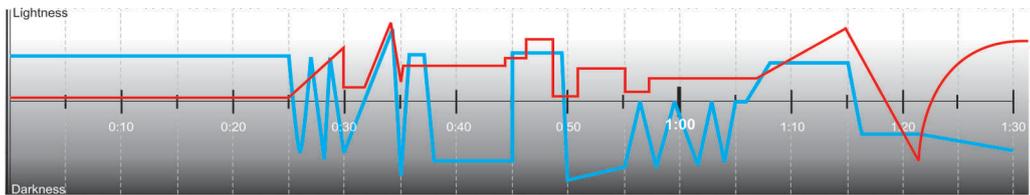
VISUAL

AURAL



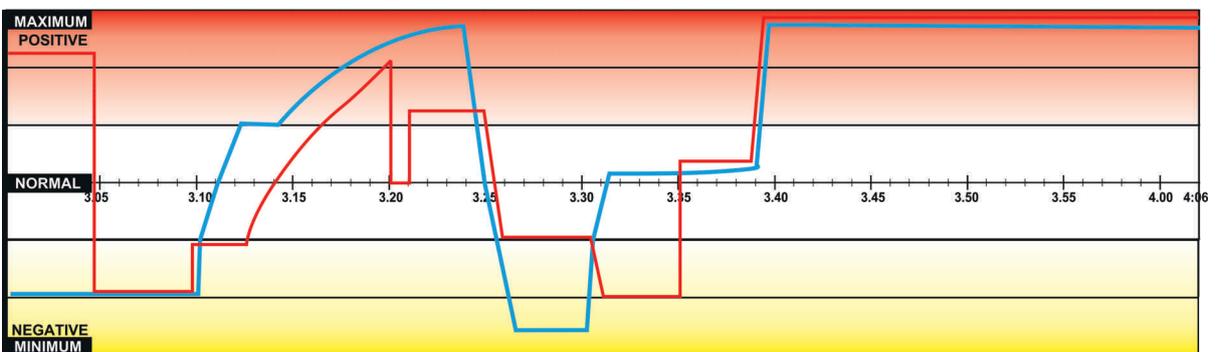
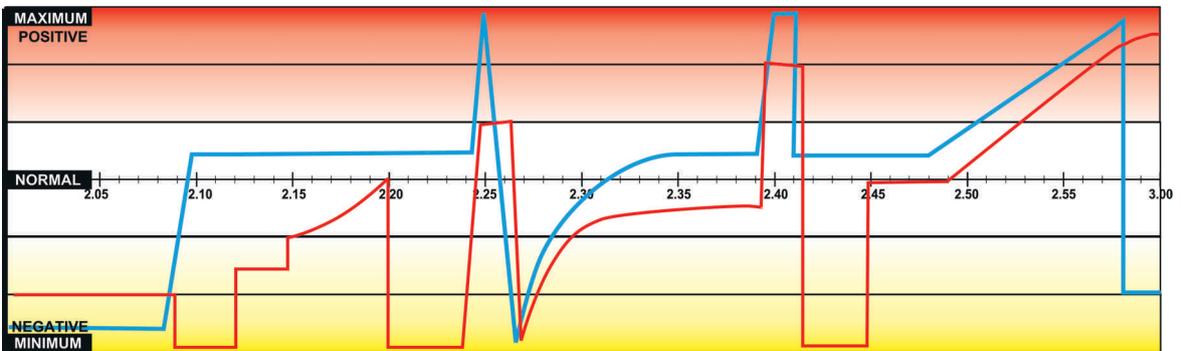
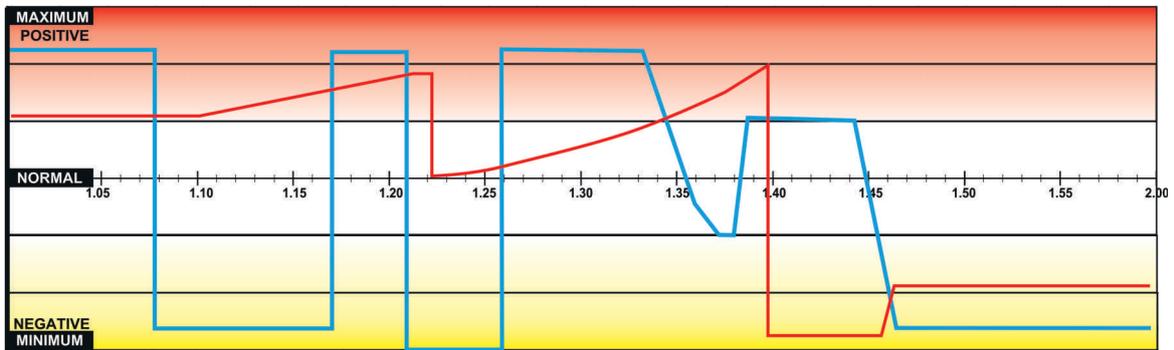
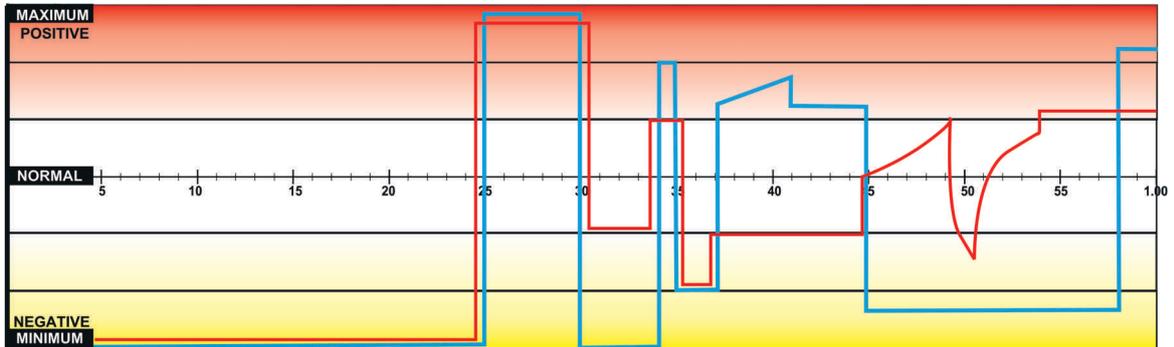
Jan Svankmajer «The Flat» (Version B')

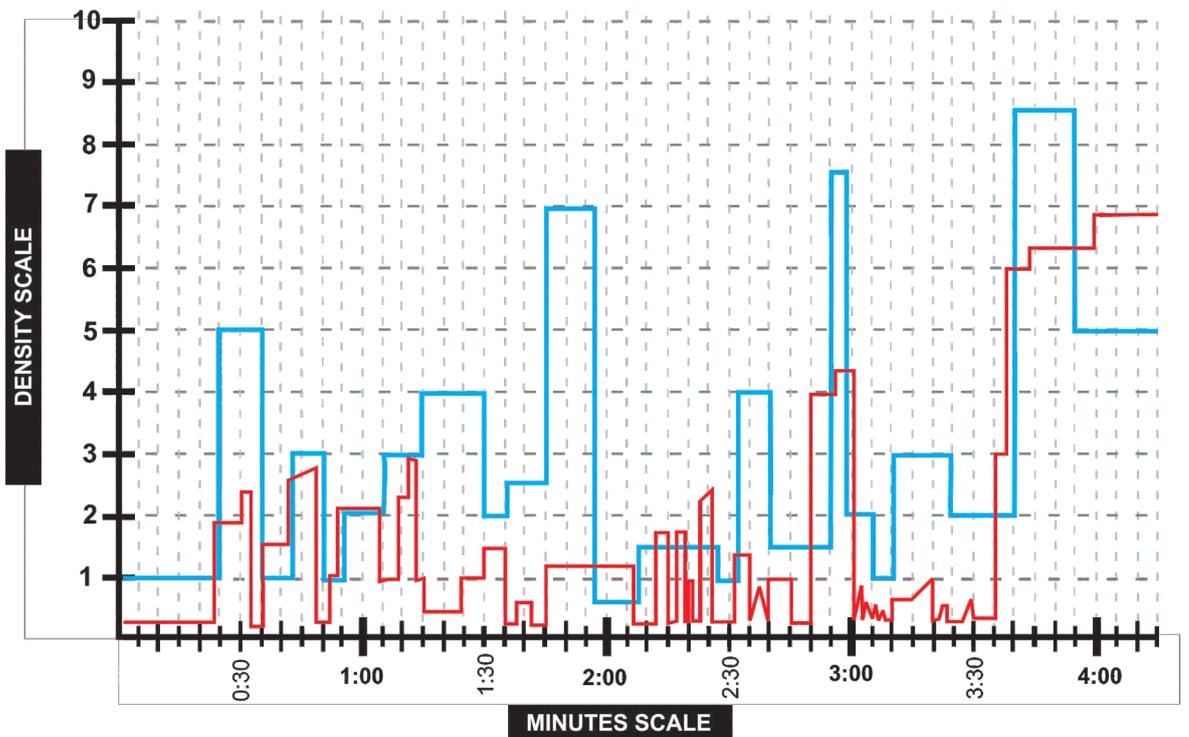
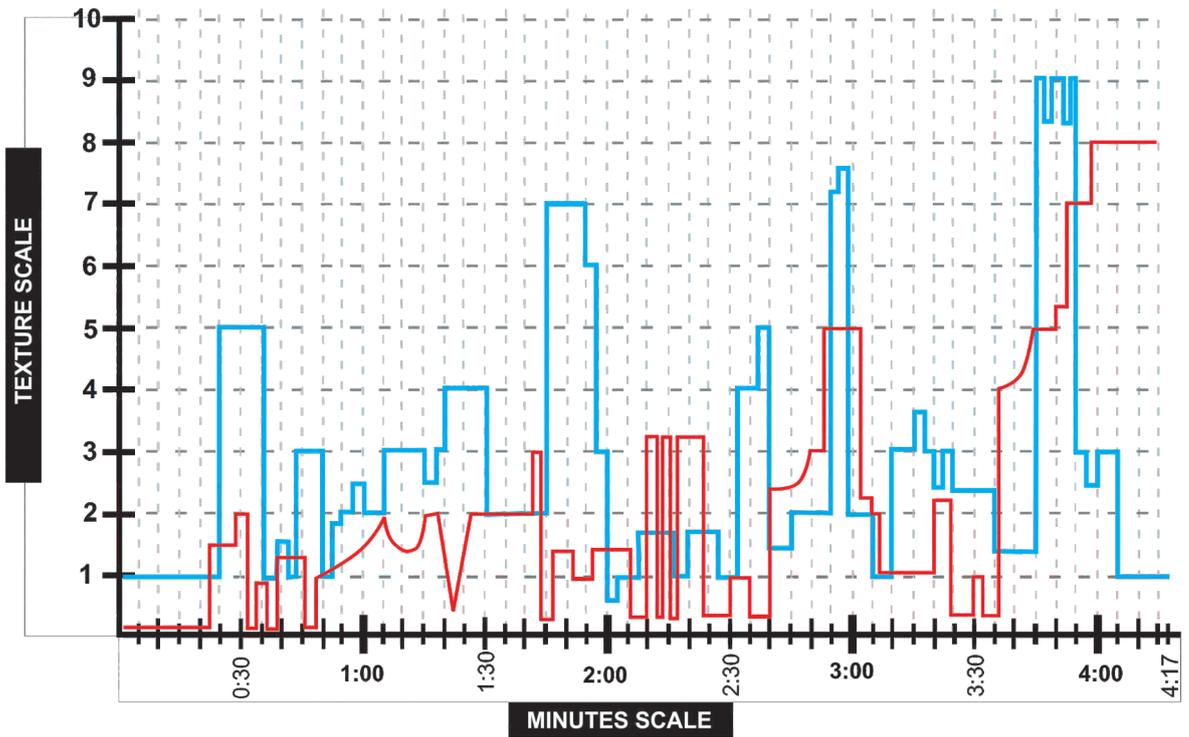
LIGHTNESS AND DARKNESS



Jan Svankmajer **'The Flat'** (Version B')  
**ENERGY**

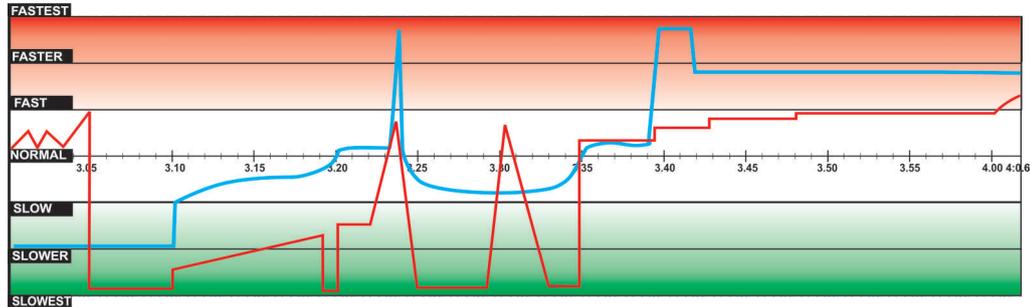
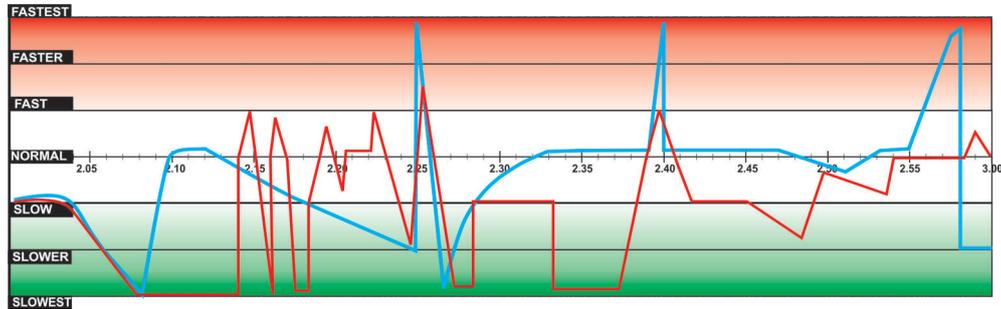
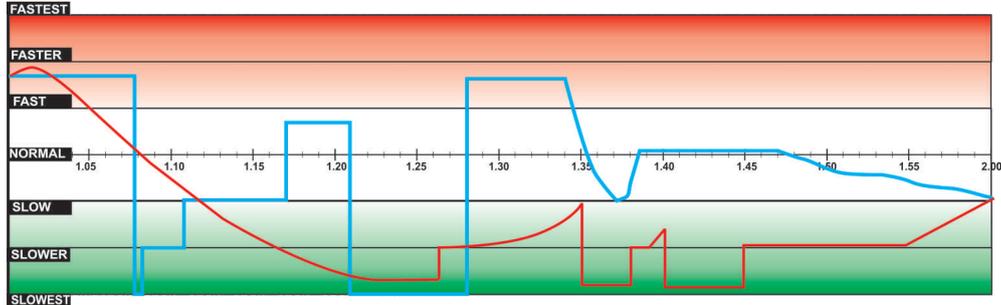
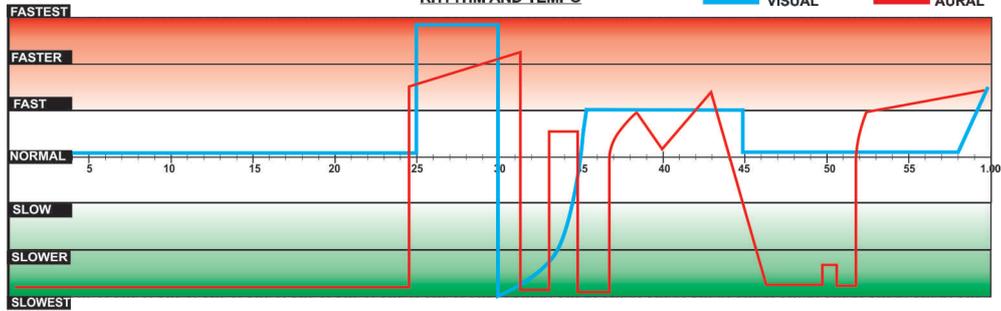
**VISUAL** **AURAL**



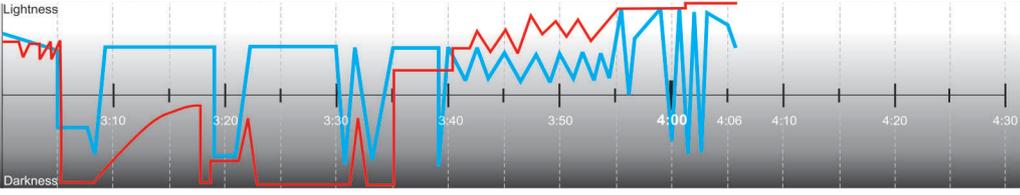
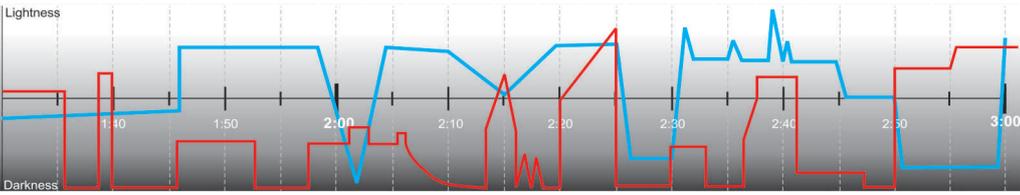
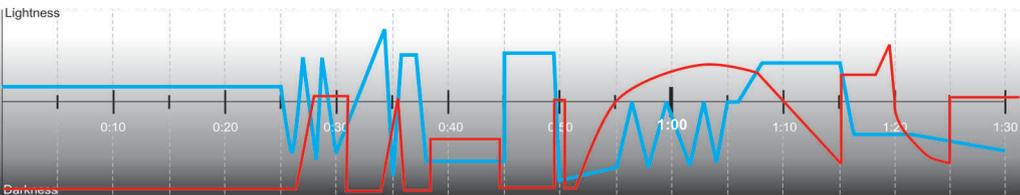


RHYTHM AND TEMPO

— VISUAL — AURAL

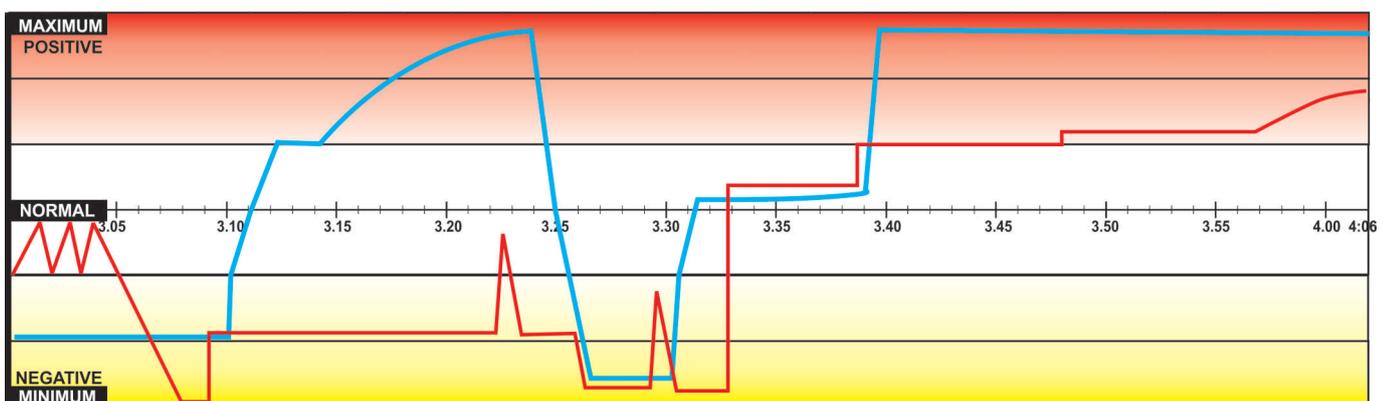
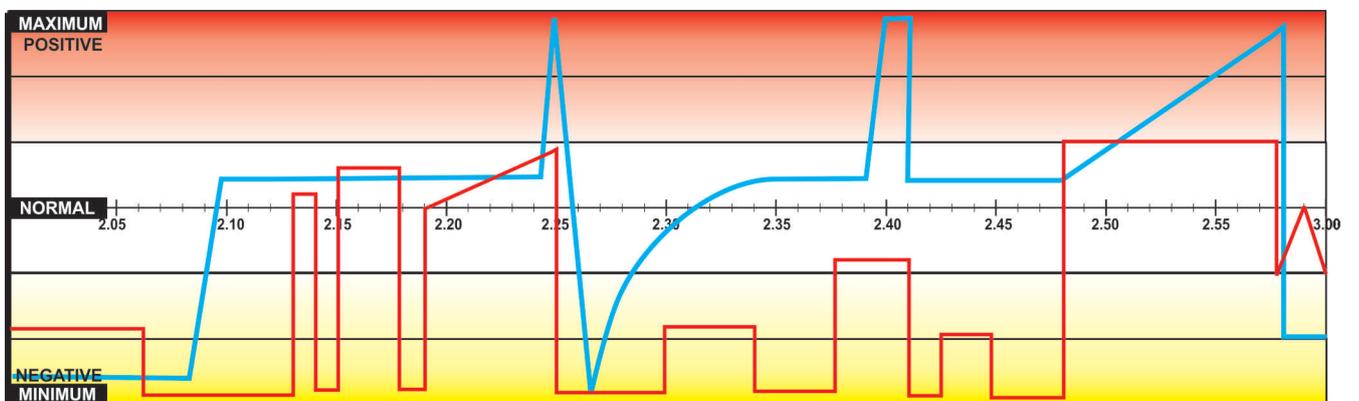
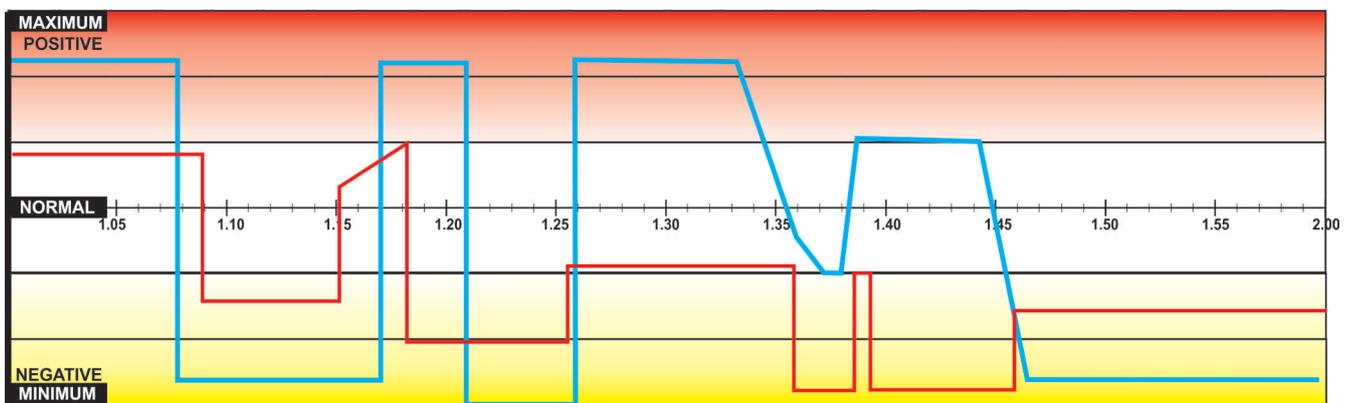
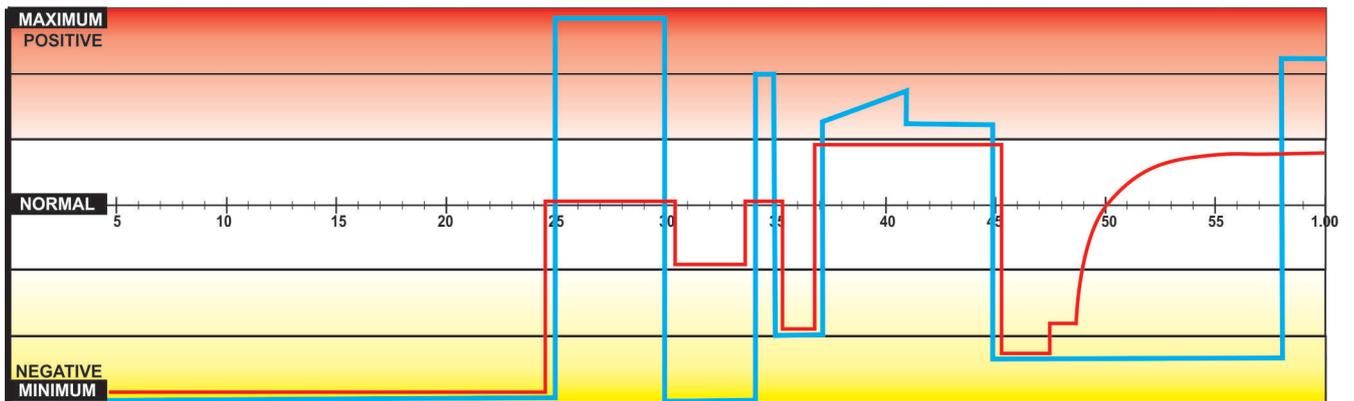


Jan Svankmajer «The Flat» (Version C') - (Minimal)  
LIGHTNESS AND DARKNESS



Jan Svankmajer «The Flat» (Version C') - (Minimal)  
ENERGY

— VISUAL — AURAL



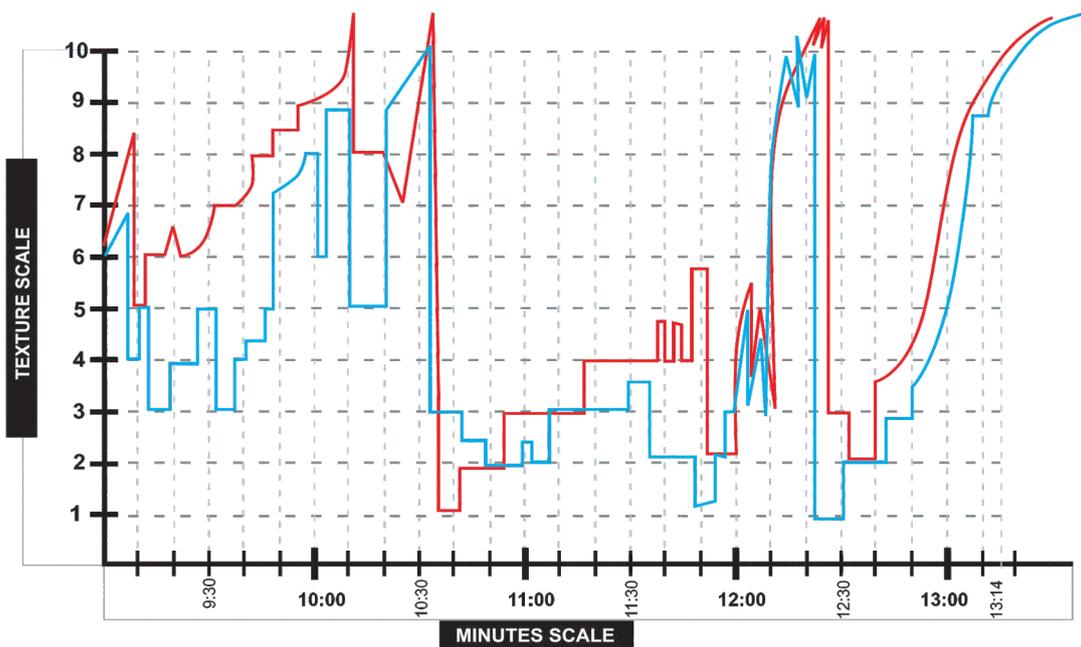
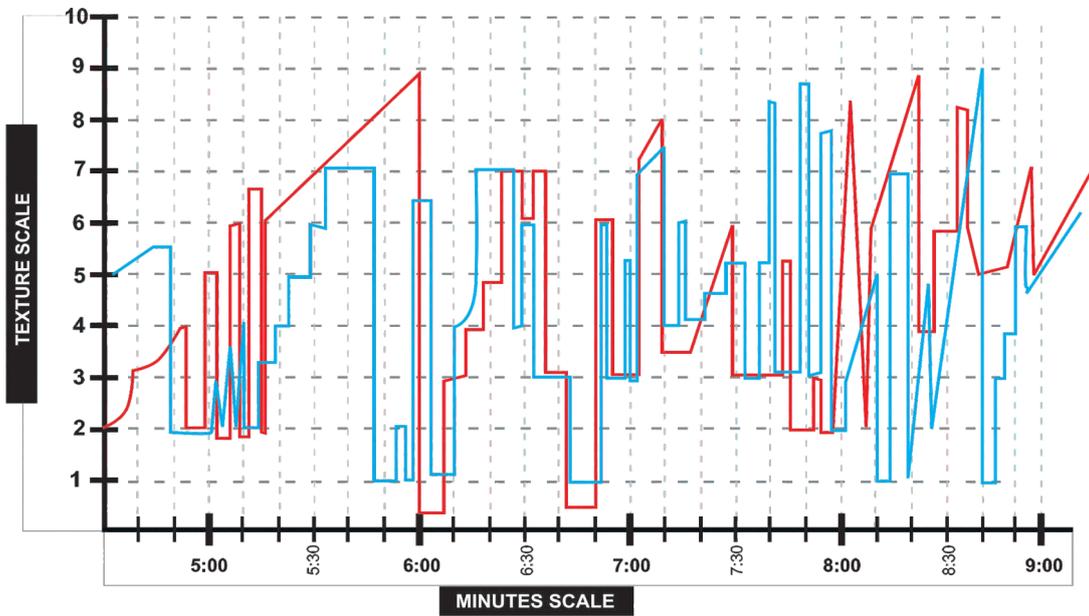
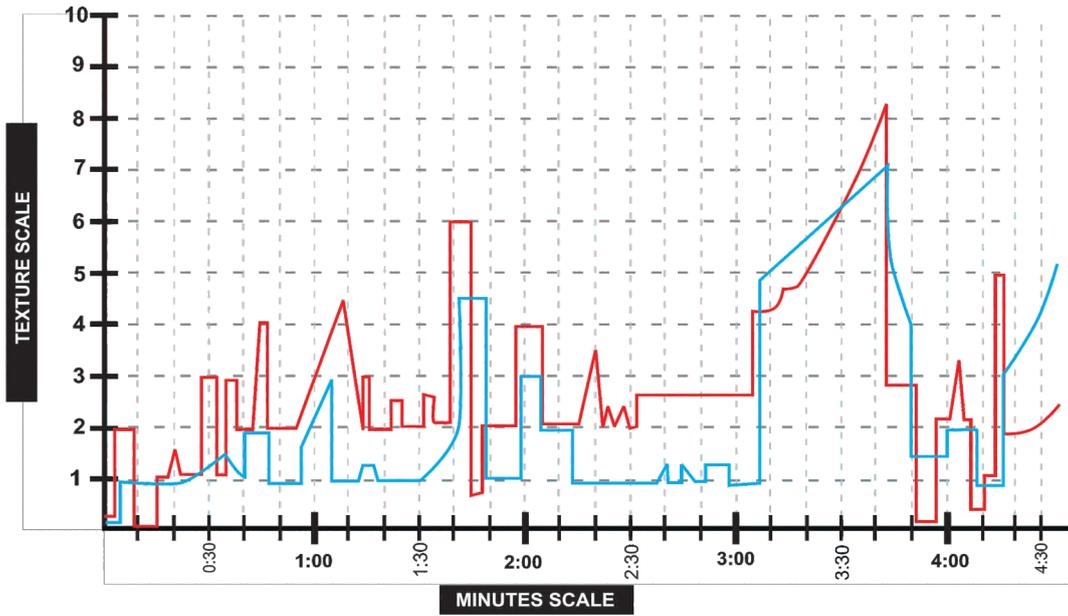
# *Meshes of the Afternoon*

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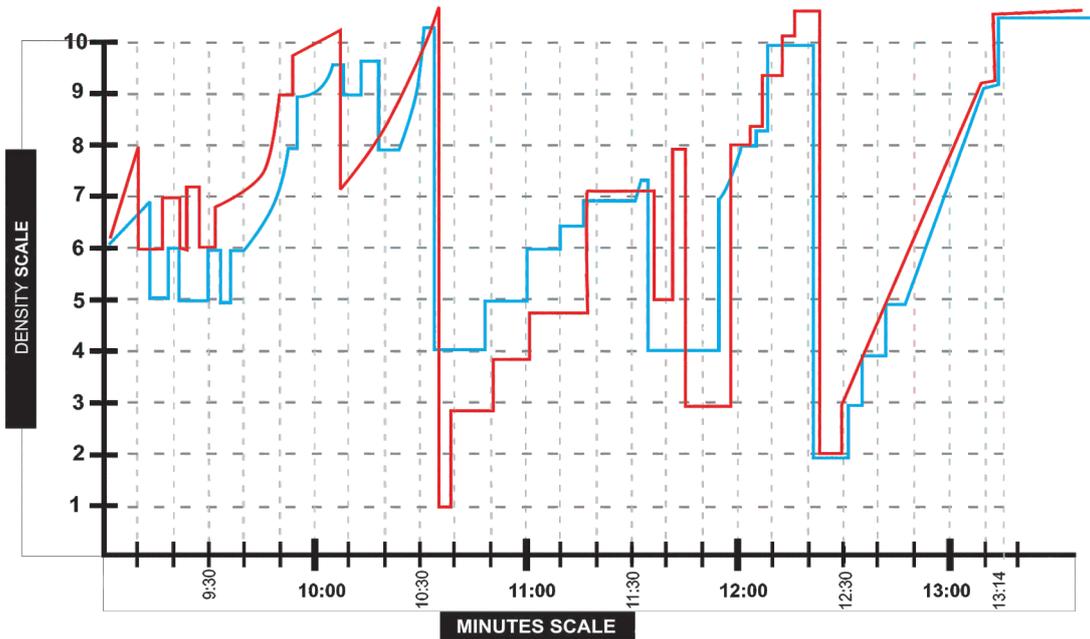
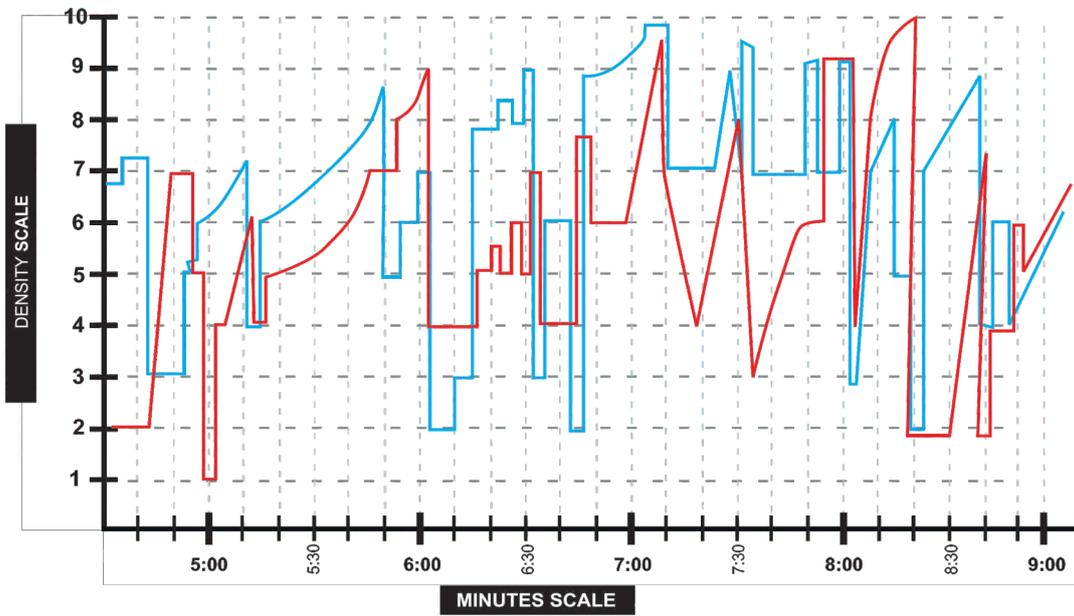
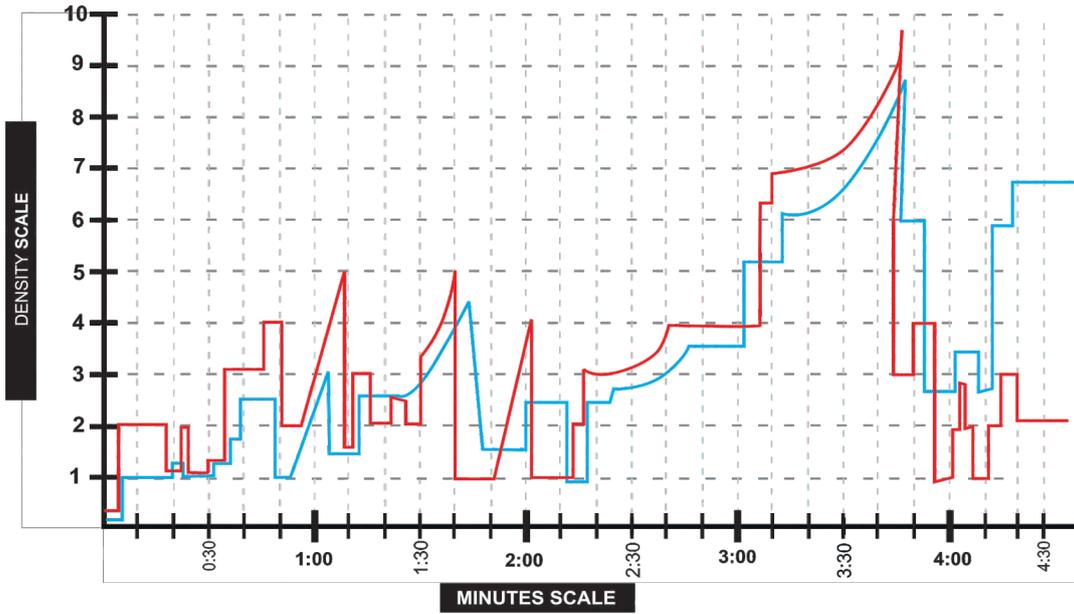
MESHERS OF THE AFTERNOON  
TEXTURE SCALE

AURAL  
VISUAL



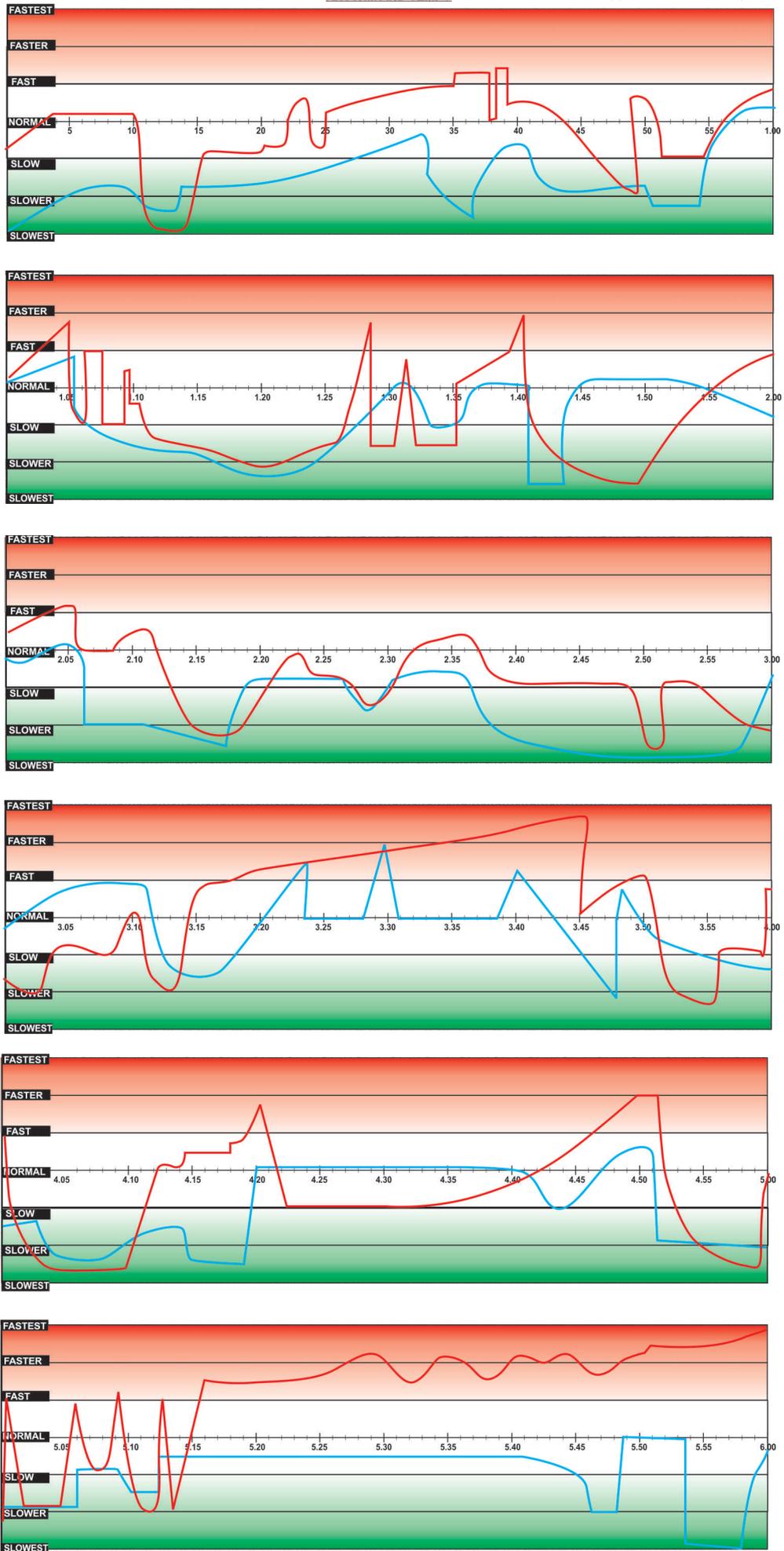
MESHERS OF THE AFTERNOON  
DENSITY SCALE

AURAL  
VISUAL



MESHERS OF THE AFTERNOON  
RHYTHM AND TEMPO

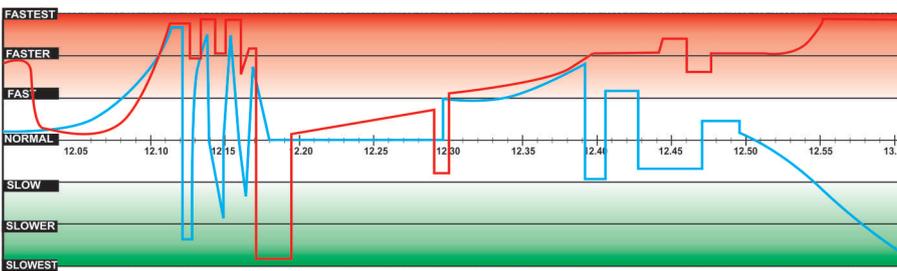
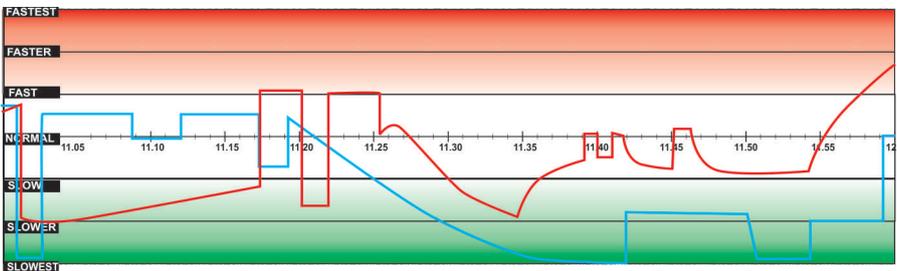
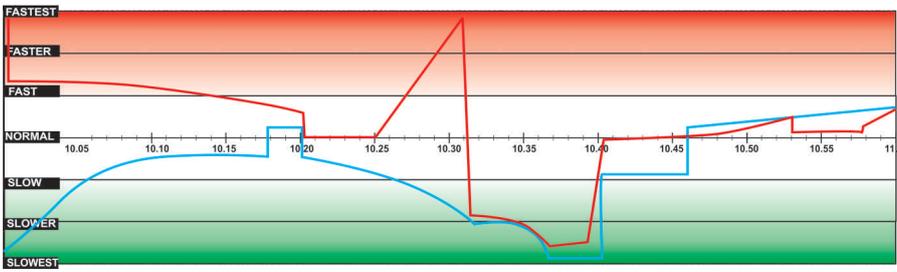
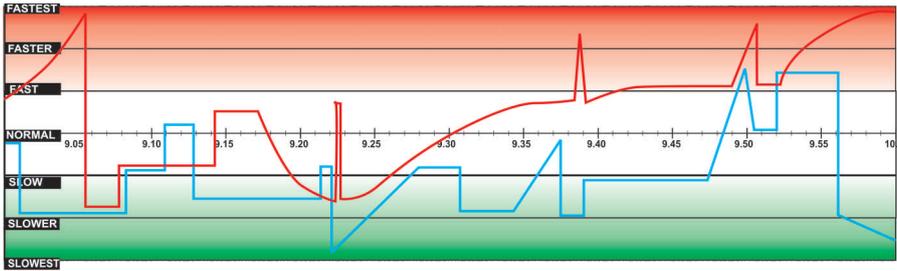
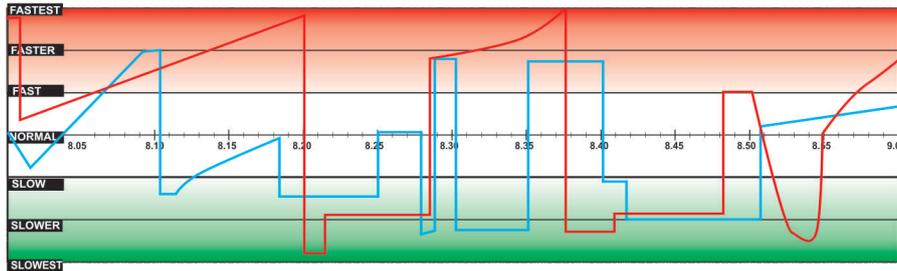
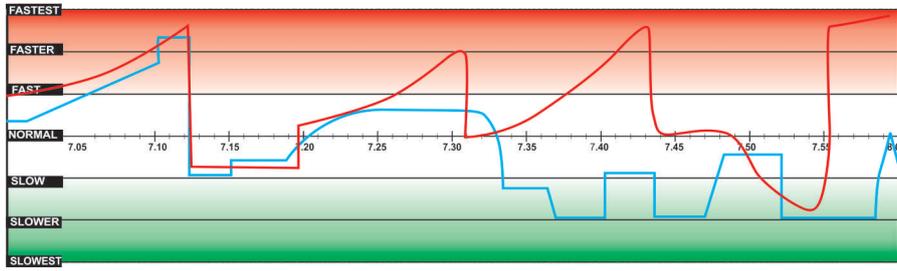
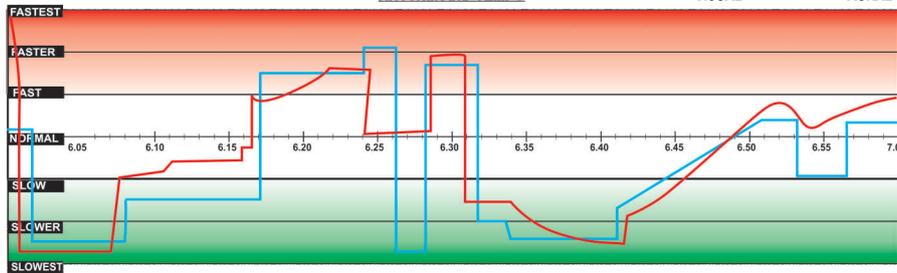
— VISUAL — AURAL



MESHERS OF THE AFTERNOON  
RHYTHM AND TEMPO

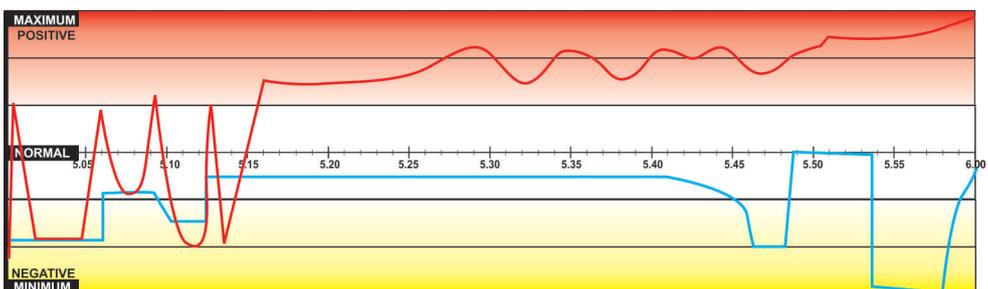
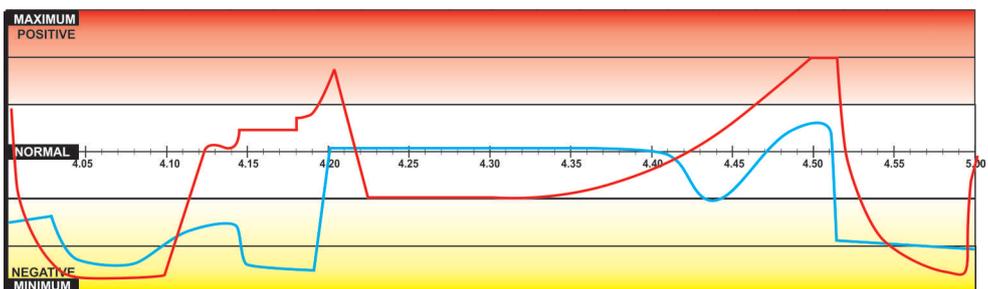
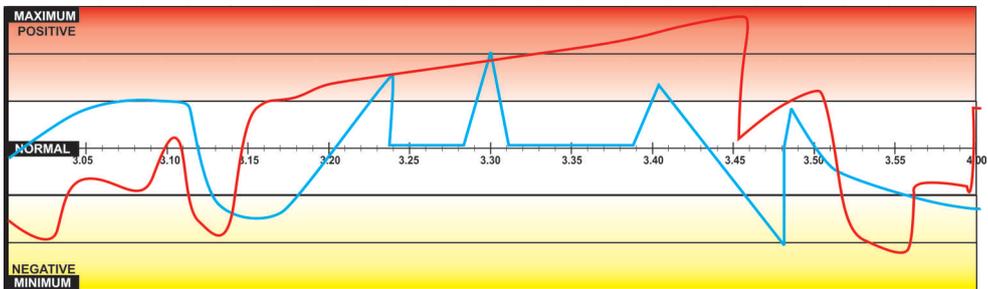
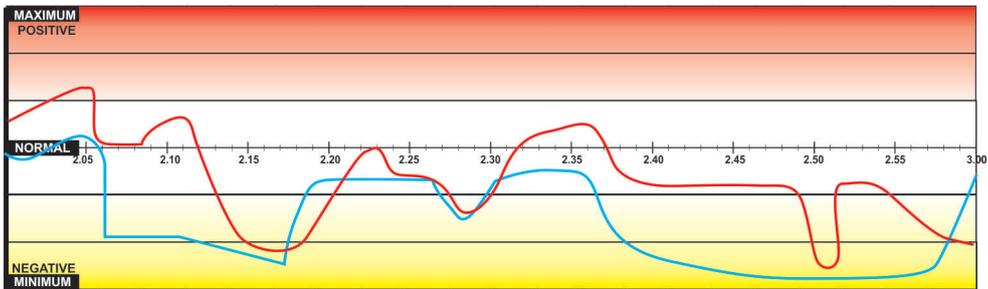
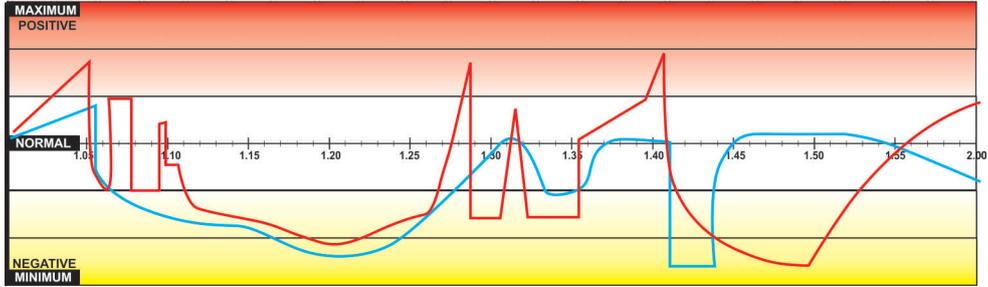
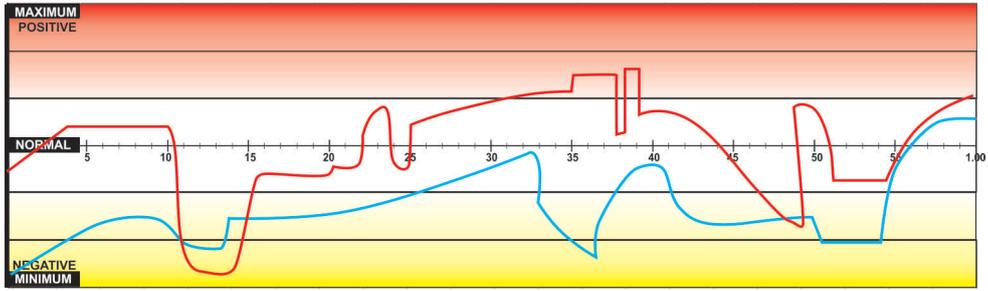
— VISUAL

— AURAL

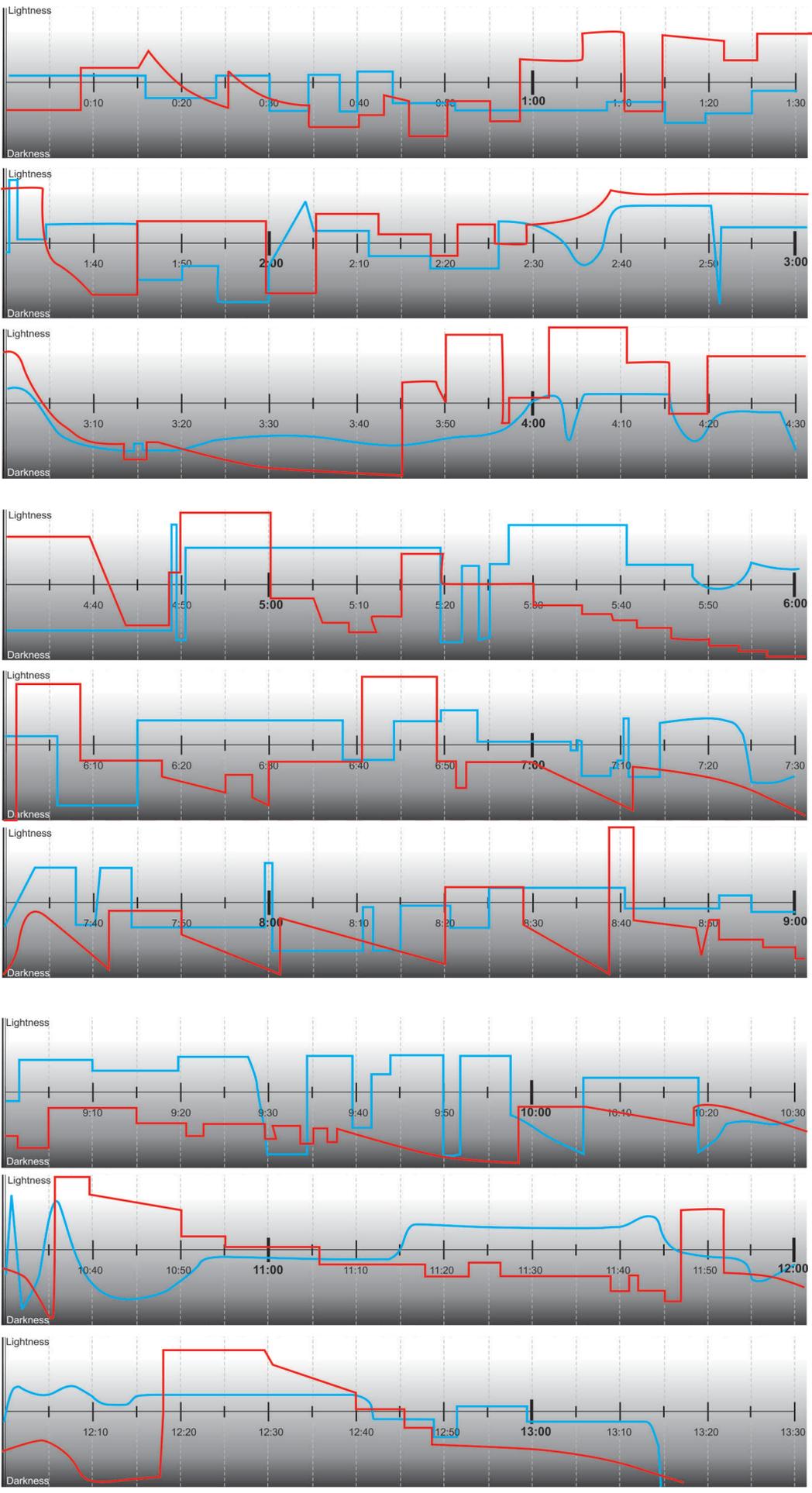


MESHERS OF THE AFTERNOON  
ENERGY

— VISUAL — AURAL

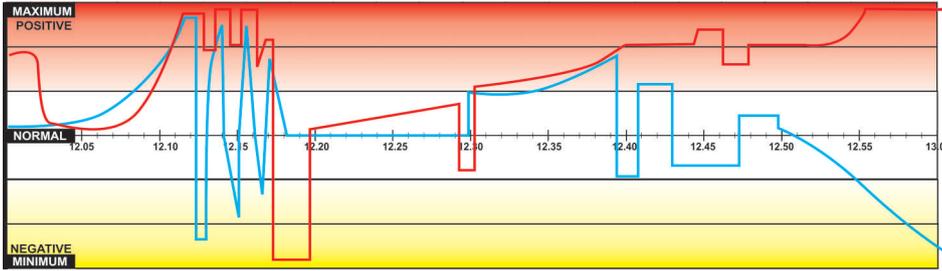
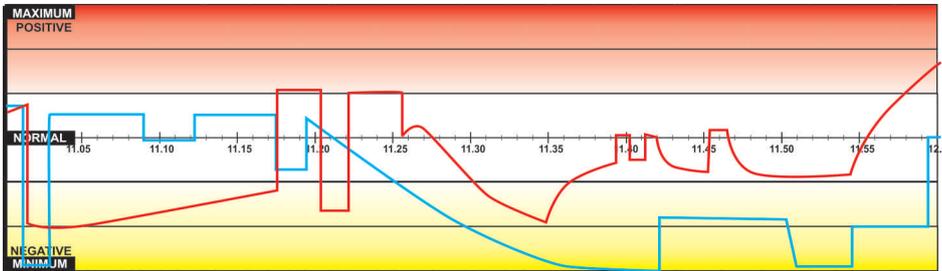
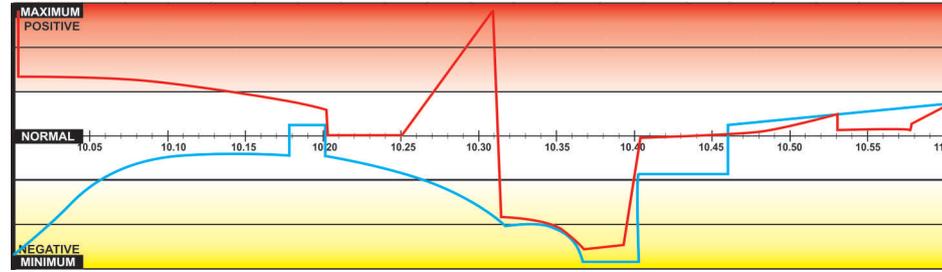
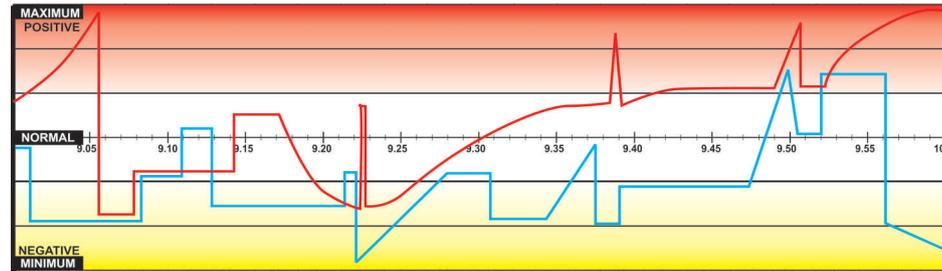
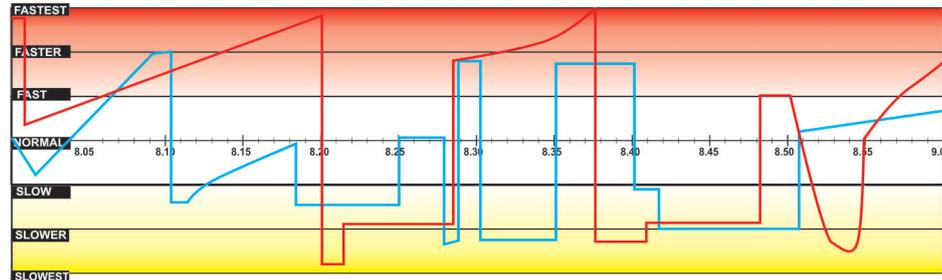
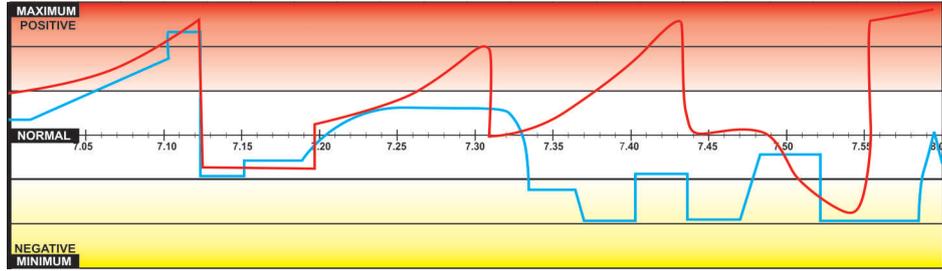
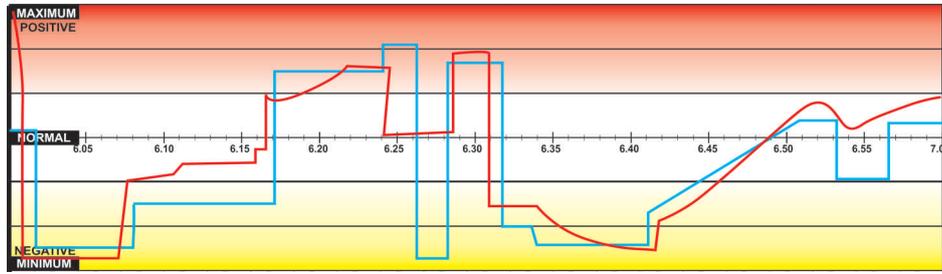


MESHERS OF THE AFTERNOON  
LIGHTNESS AND DARKNESS



MESHES OF THE AFTERNOON  
ENERGY

— VISUAL — AURAL



Appendix Q: Graphs of the Eraserhead Film

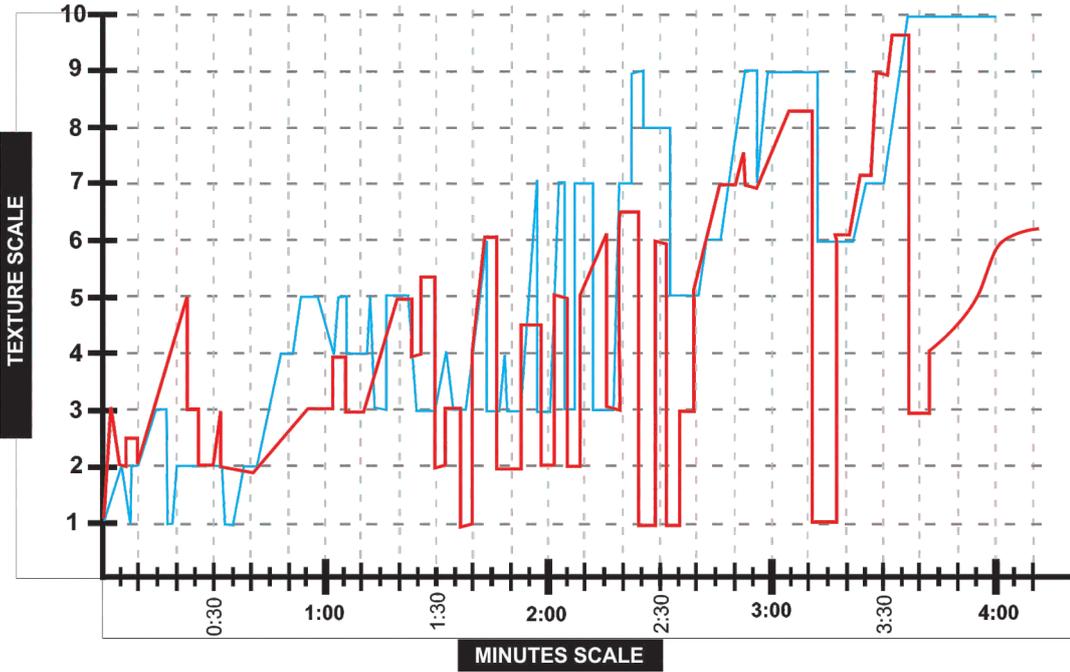
# *Eraserhead*

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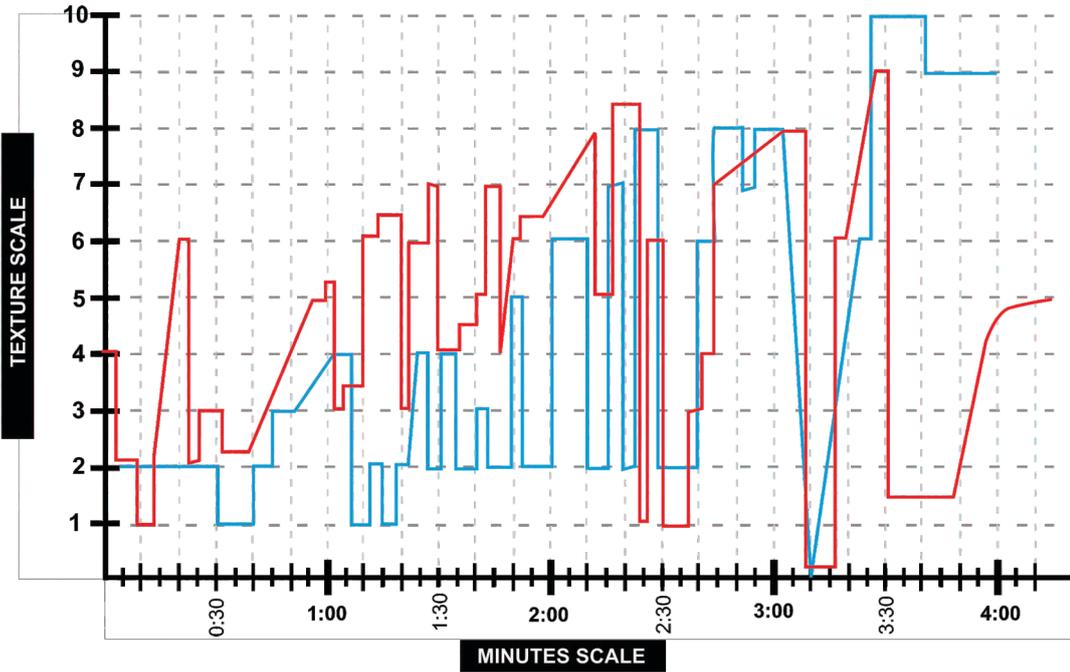
ERASERHEAD  
TEXTURE SCALE

— AURAL  
— VISUAL



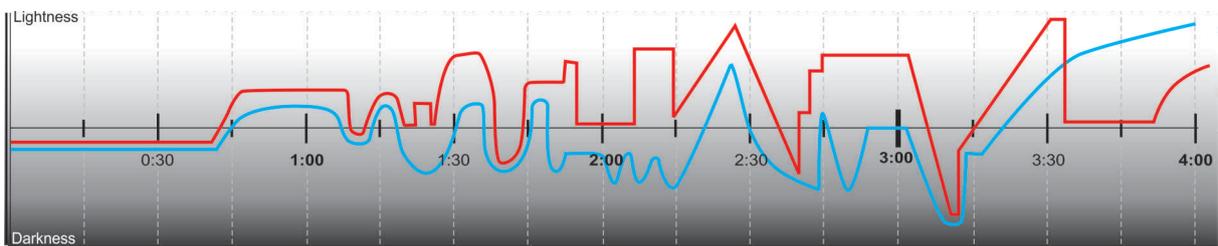
ERASERHEAD  
DENSITY SCALE

— AURAL  
— VISUAL



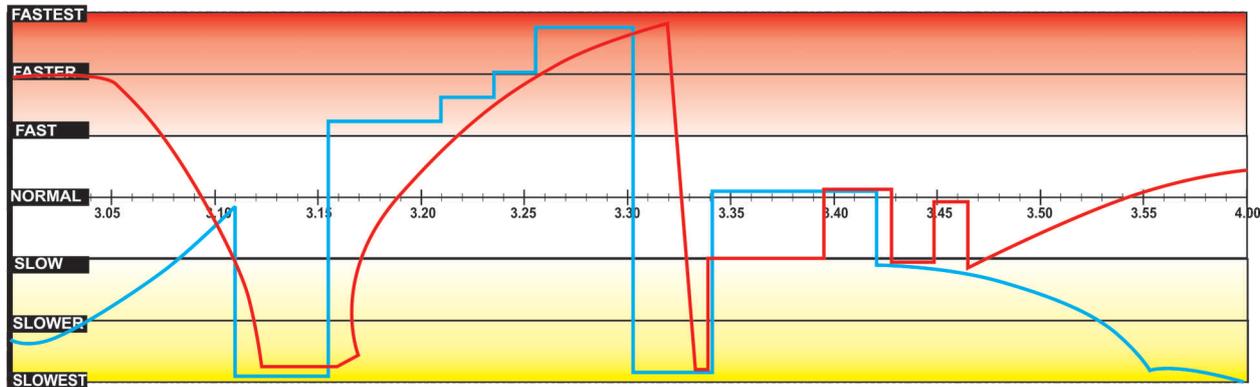
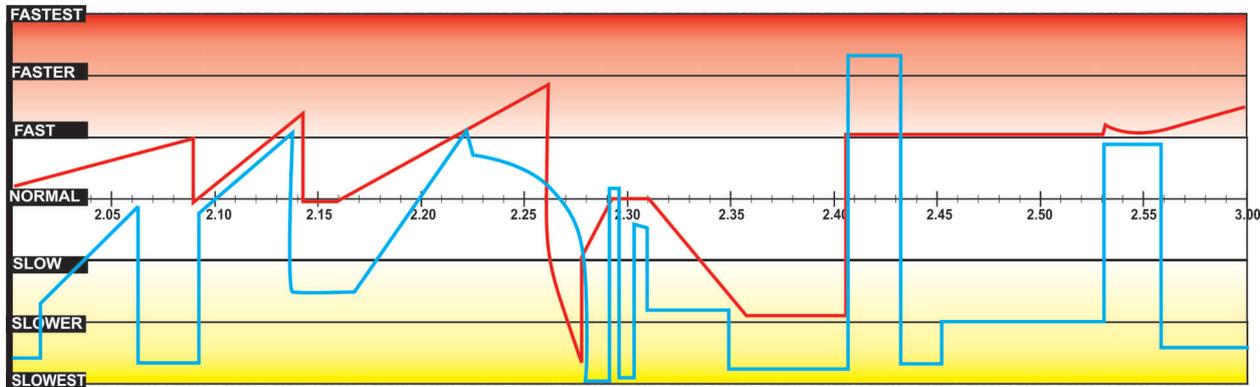
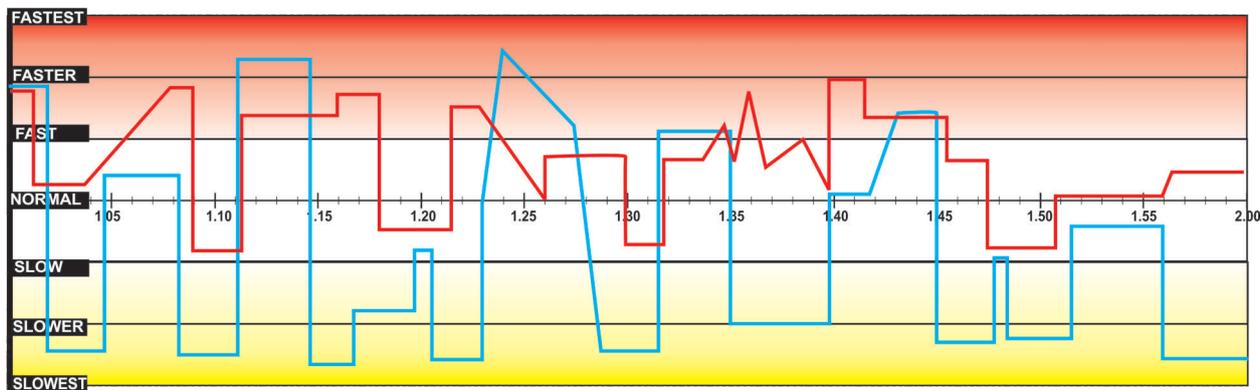
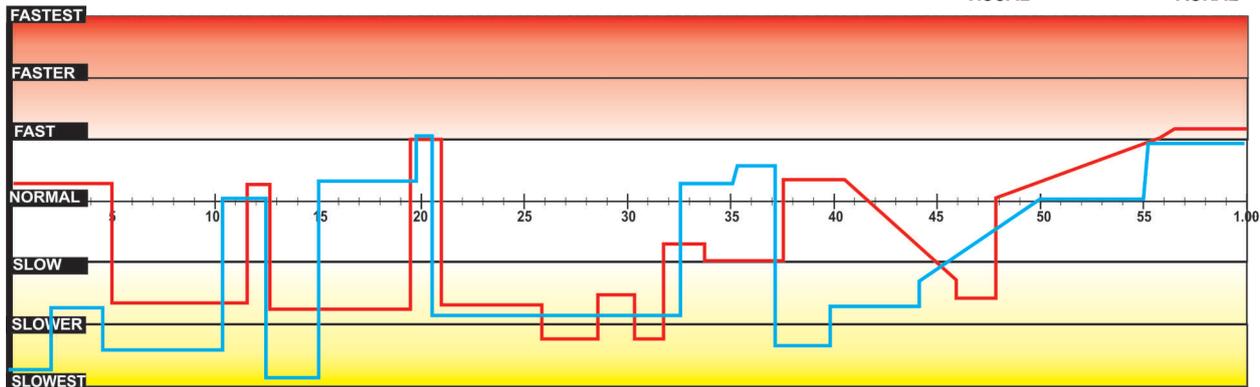
ERASERHEAD  
LIGHTNESS AND DARKNESS

— Aural  
— Visual



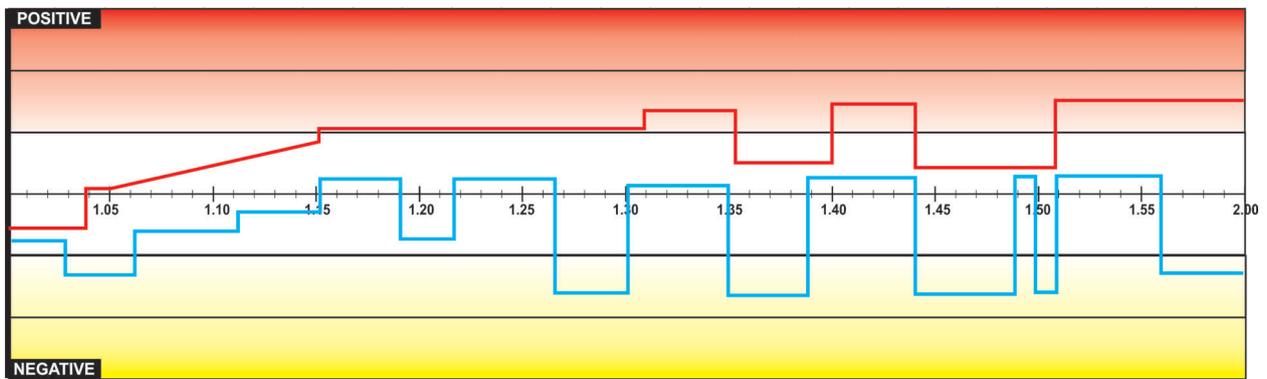
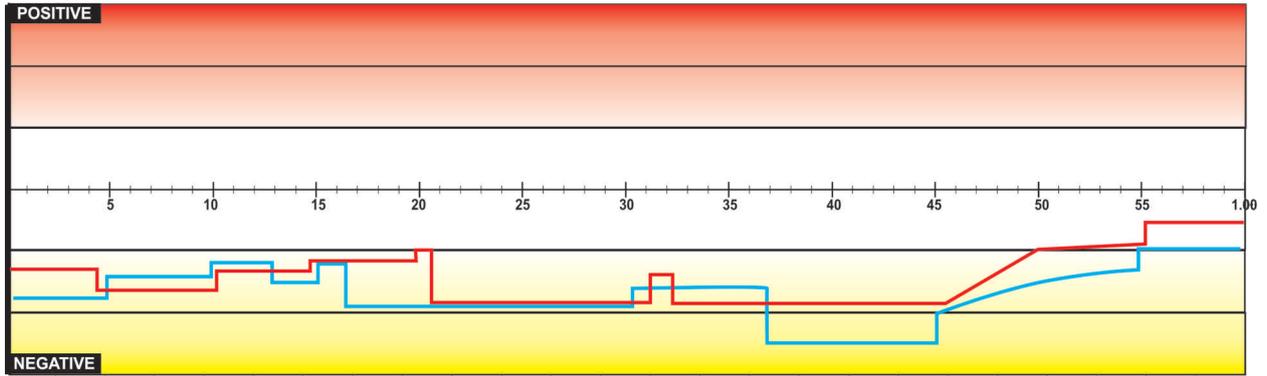
**ERASERHEAD  
RHYTHM AND TEMPO**

— VISUAL — AURAL



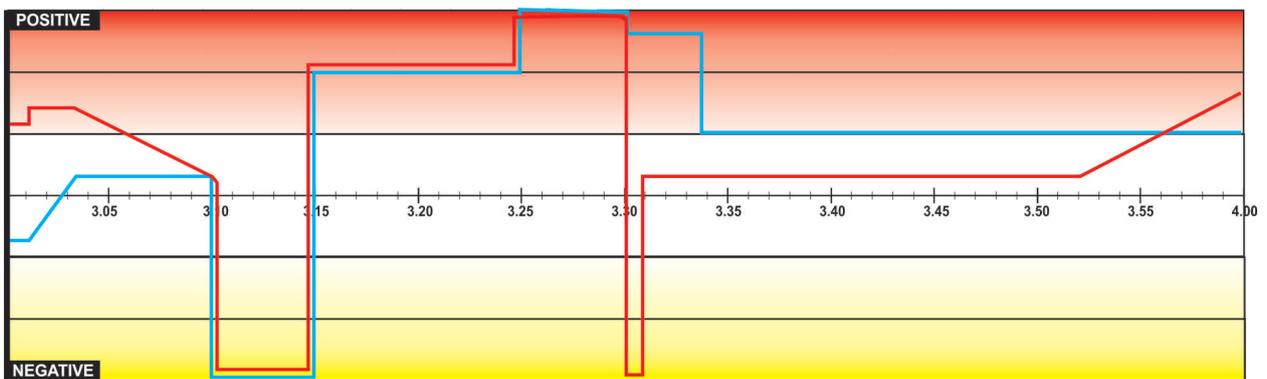
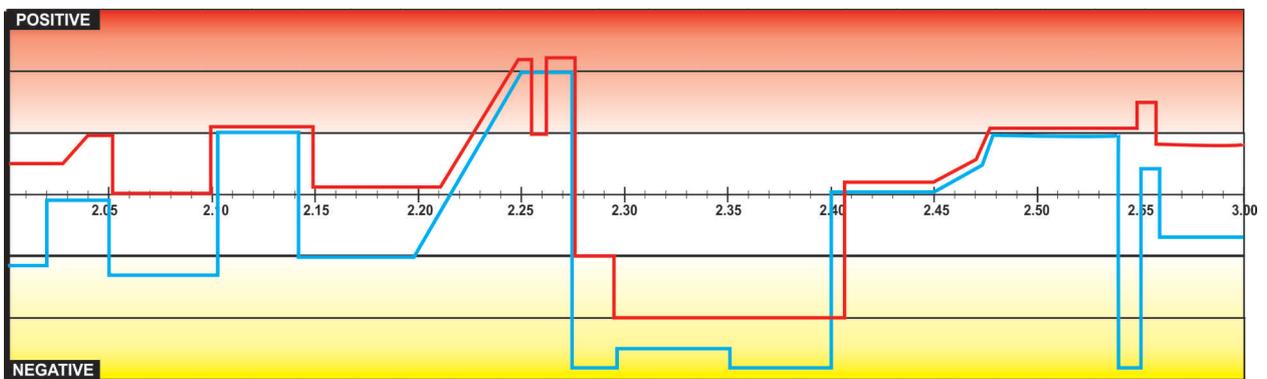
**ERASERHEAD  
ENERGY**

— VISUAL — AURAL



**ERASERHEAD  
ENERGY**

— VISUAL — AURAL



## Appendix R: Graphs of the Soup Film

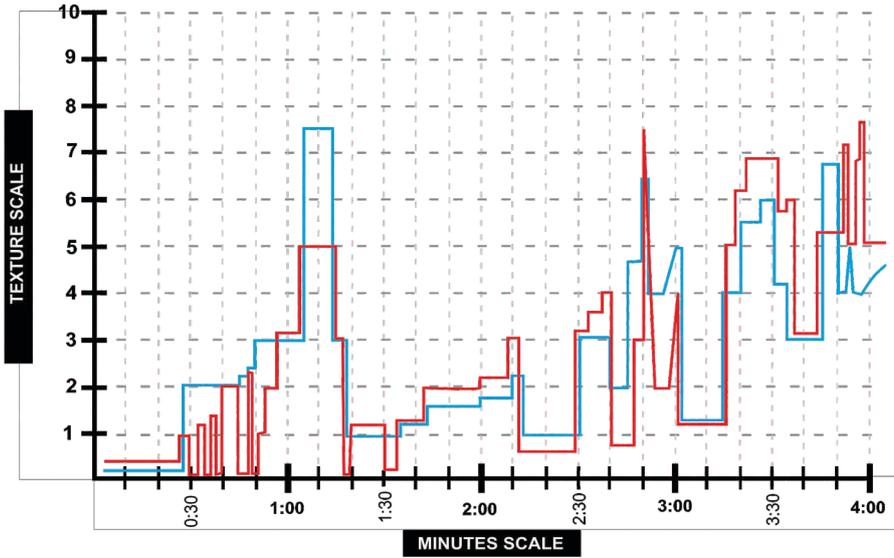
# *Soup*

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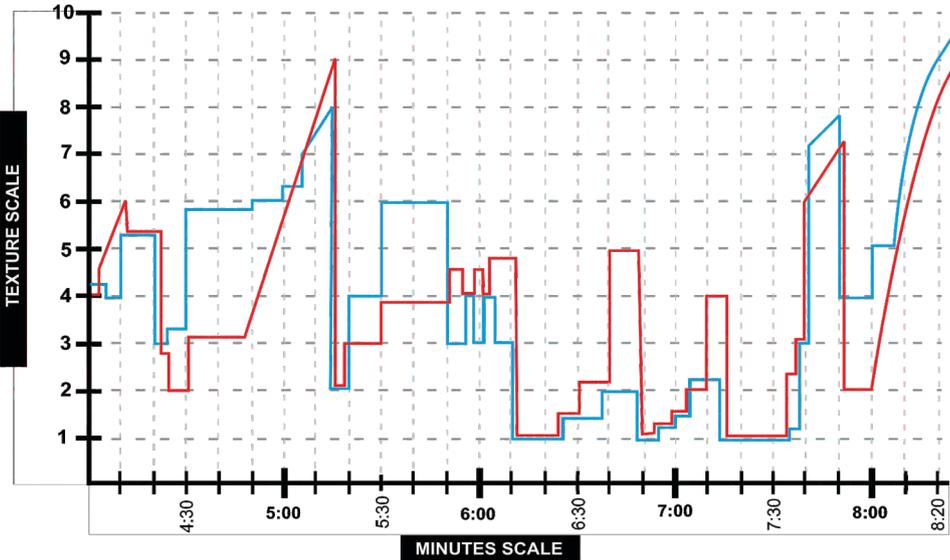
**SOUP**  
TEXTURE SCALE

— AURAL  
— VISUAL



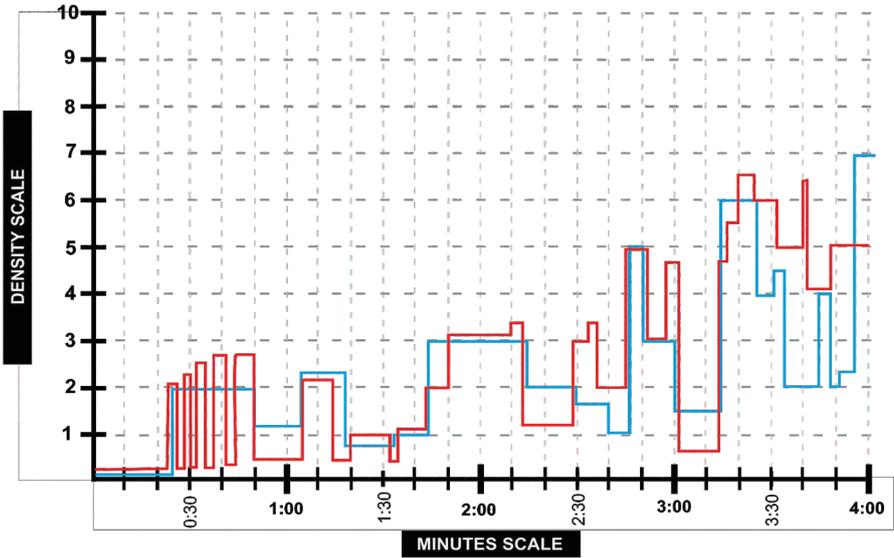
**SOUP**  
TEXTURE SCALE

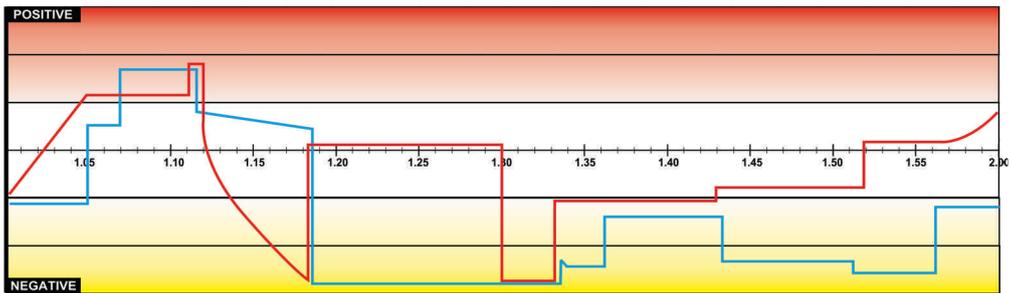
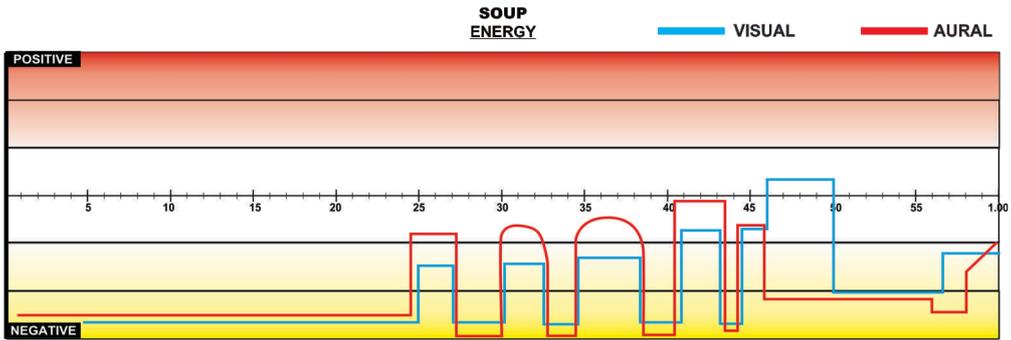
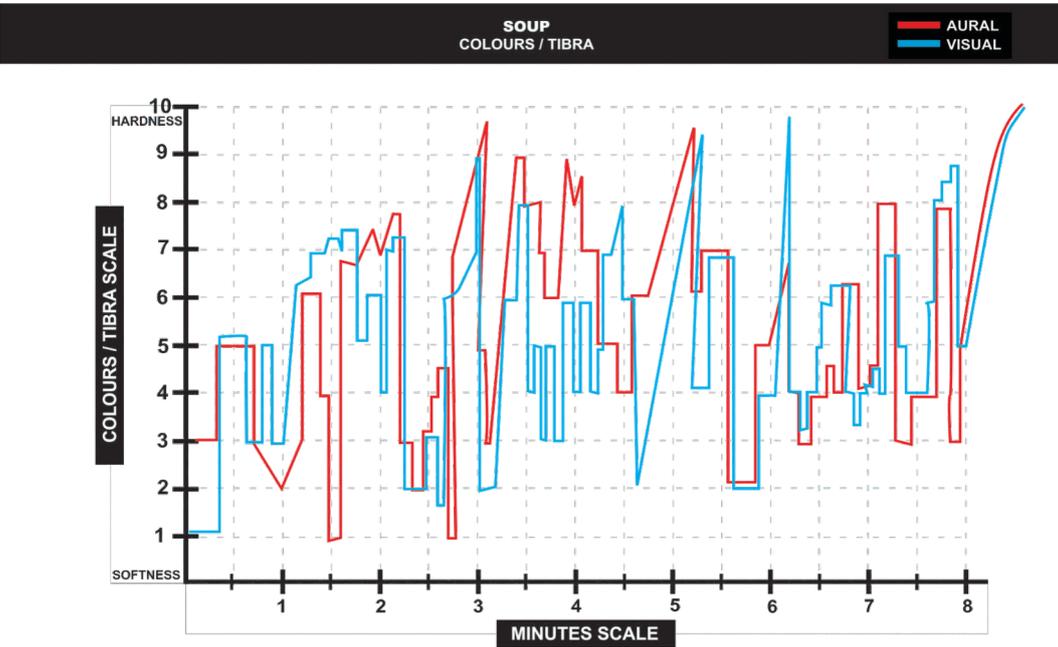
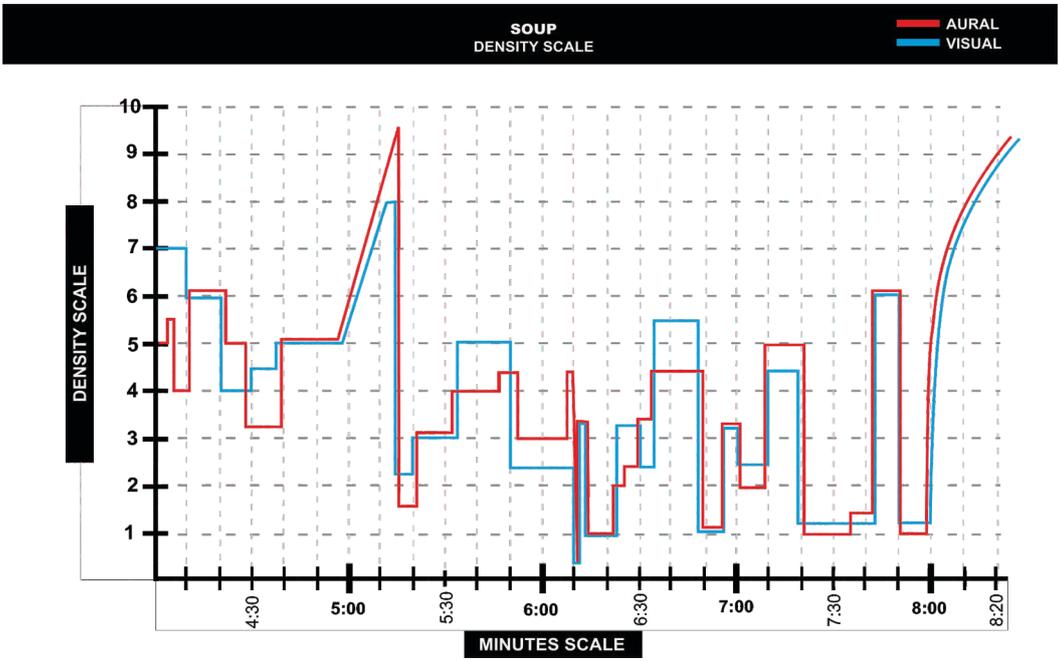
— AURAL  
— VISUAL



**SOUP**  
DENSITY SCALE

— AURAL  
— VISUAL

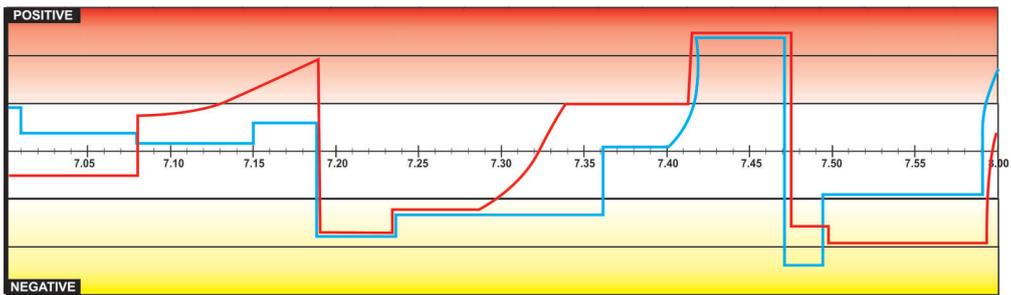
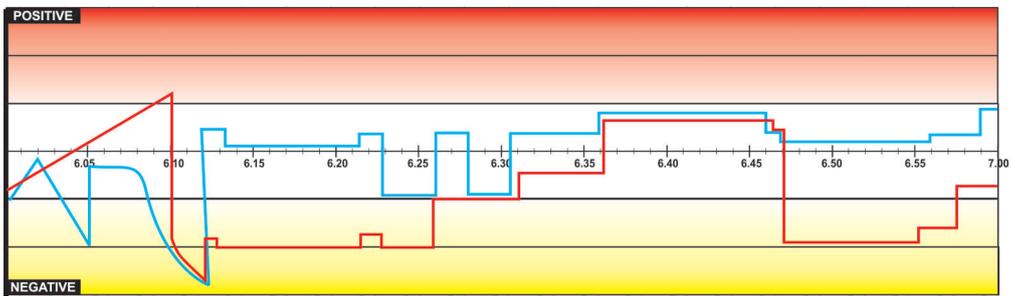
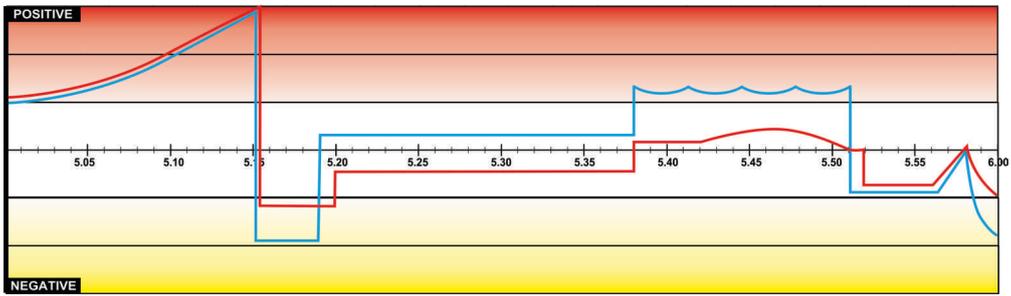
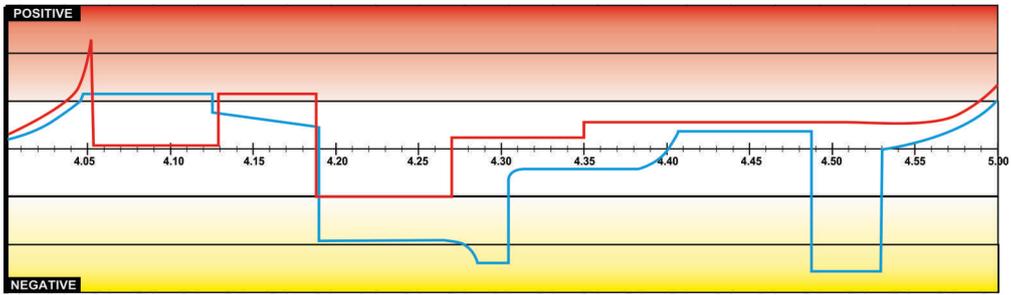
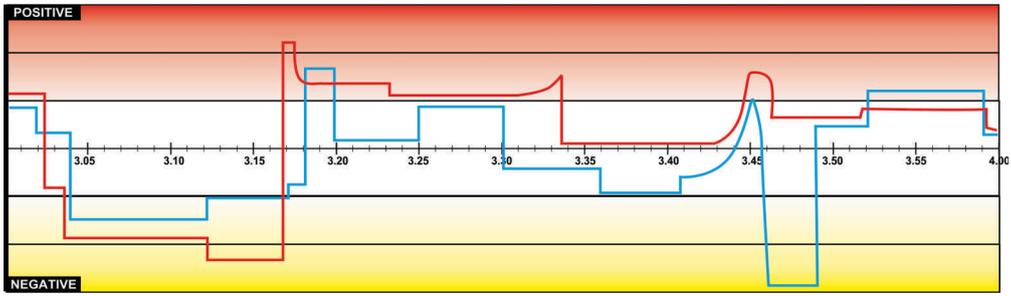
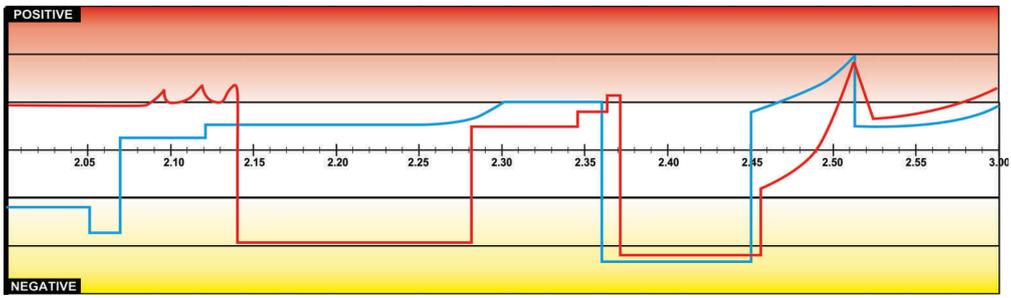


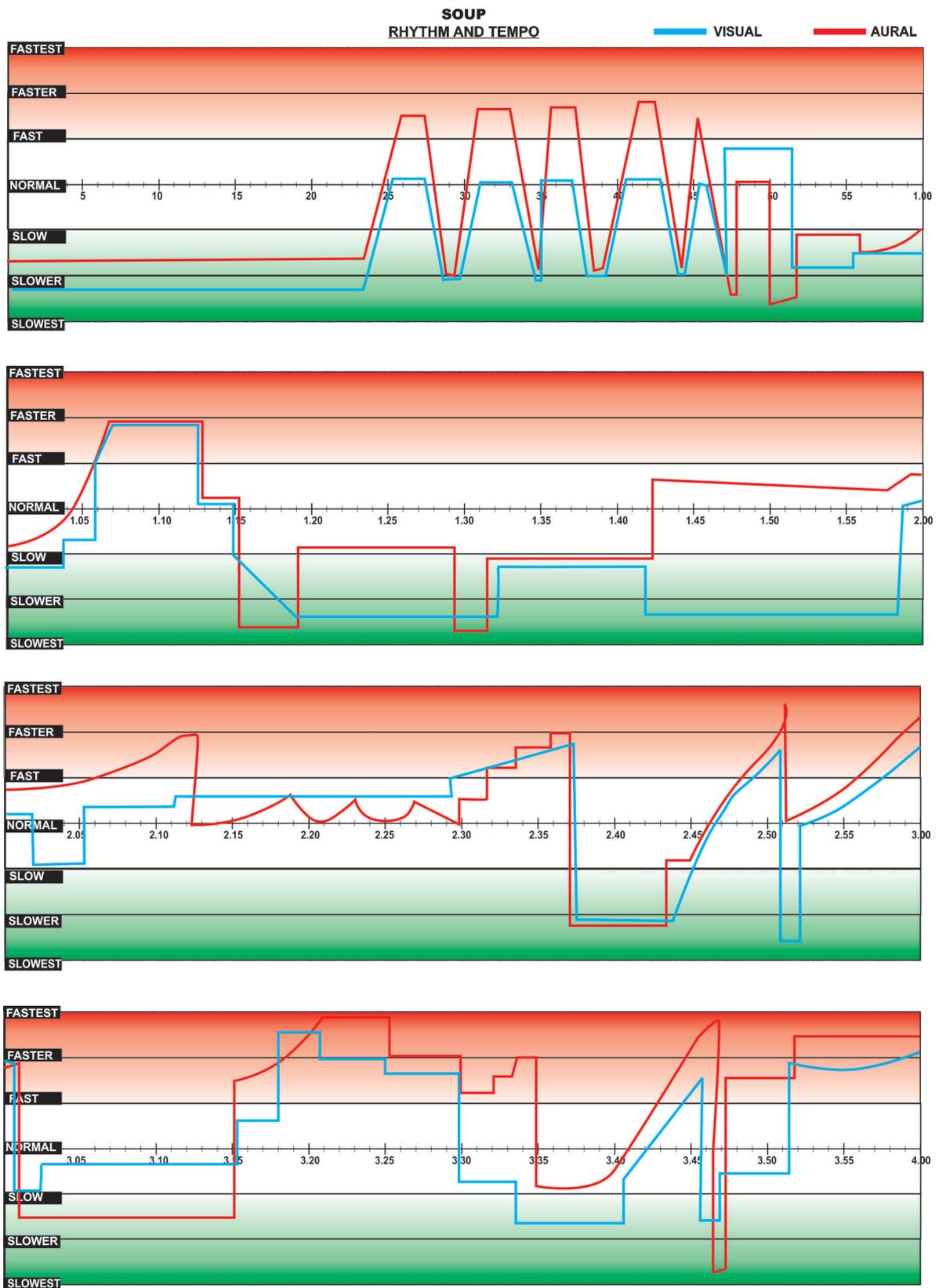


SOUP ENERGY

— VISUAL

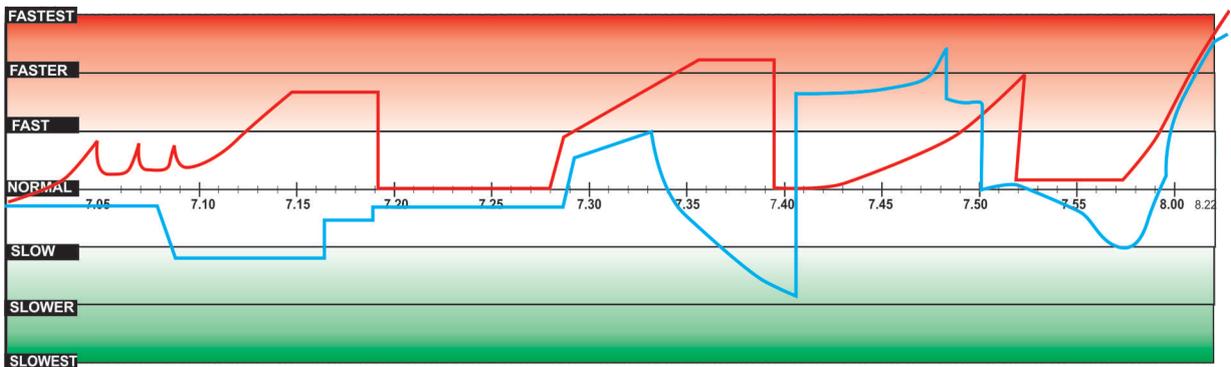
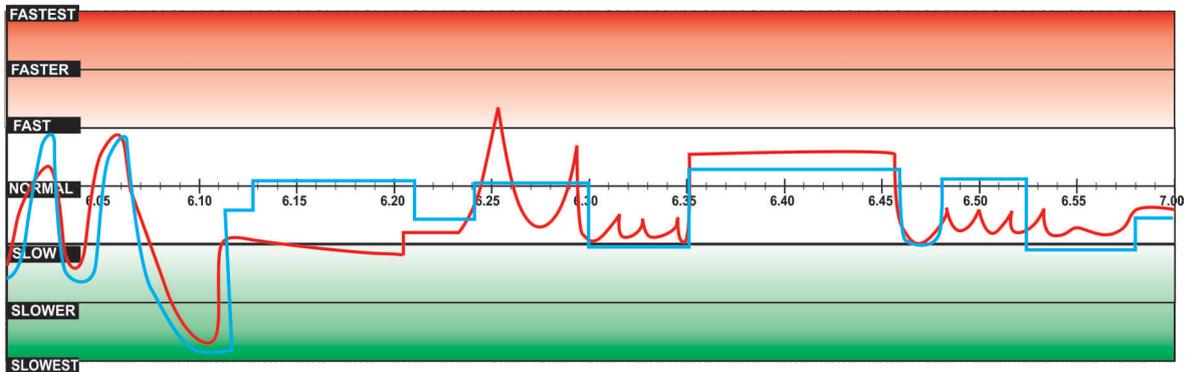
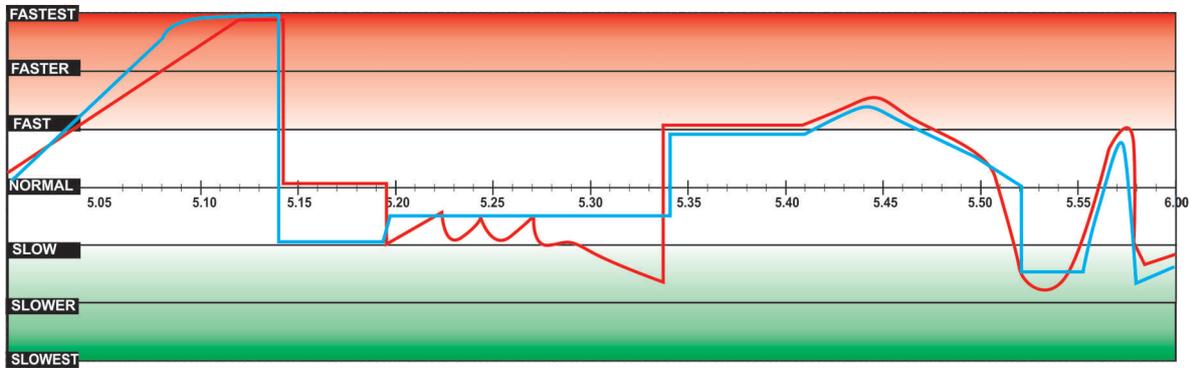
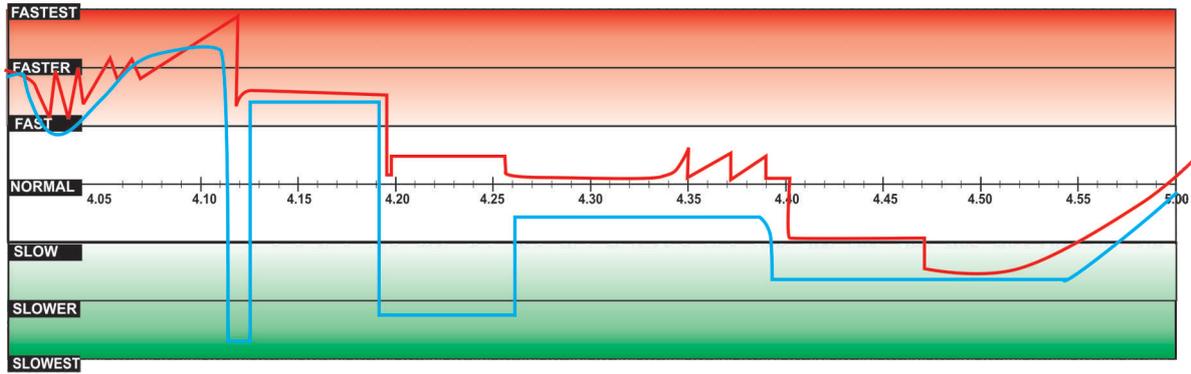
— AURAL





**SOUP**  
RHYTHM AND TEMPO

— VISUAL — AURAL



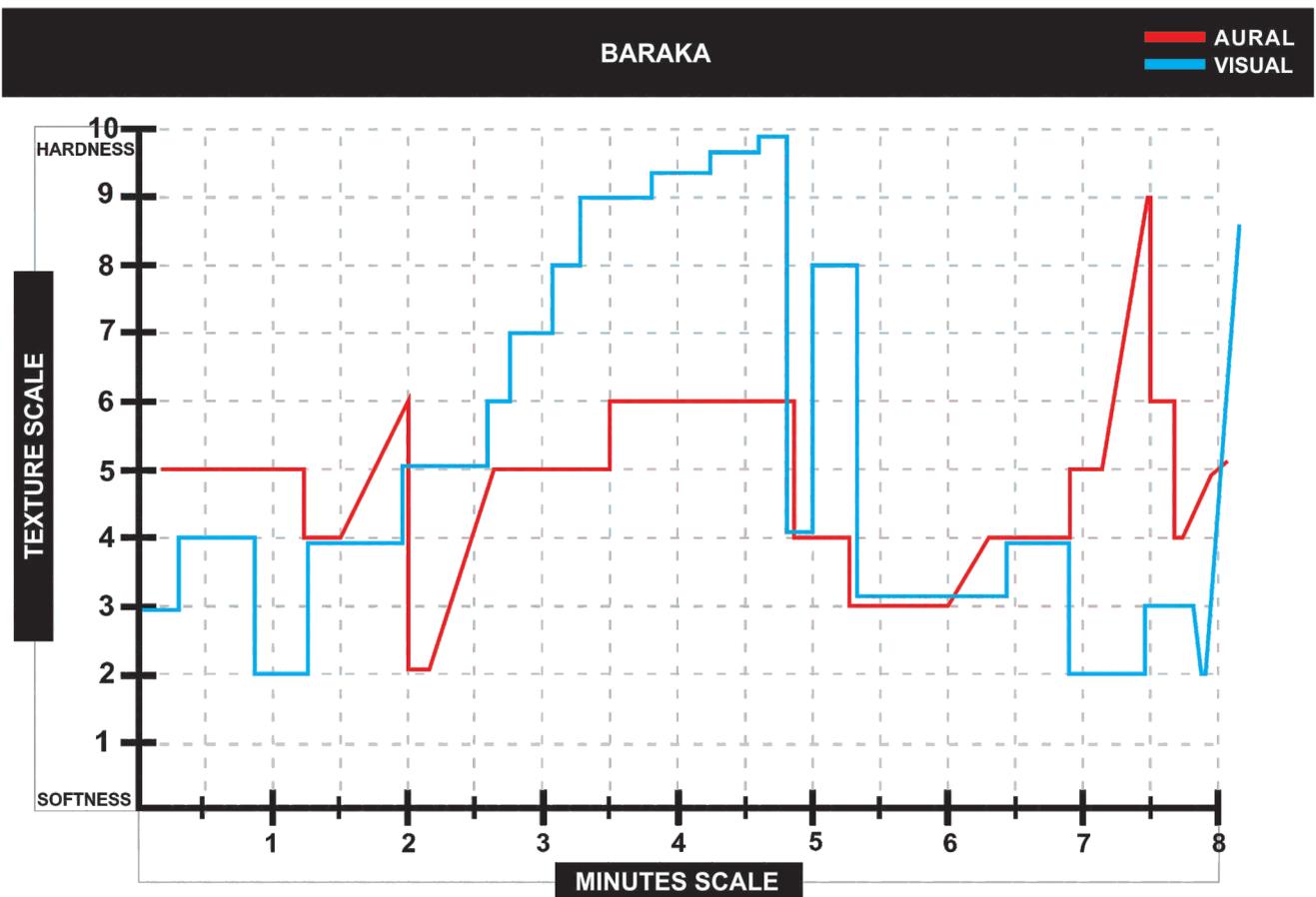
## Appendix S: Graphs of the Baraka Film

# *Baraka*

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## GENERAL GRAPHS OF AUDIO-VISUAL CORRESPONDENCES



# *The Club of the Laid Off*

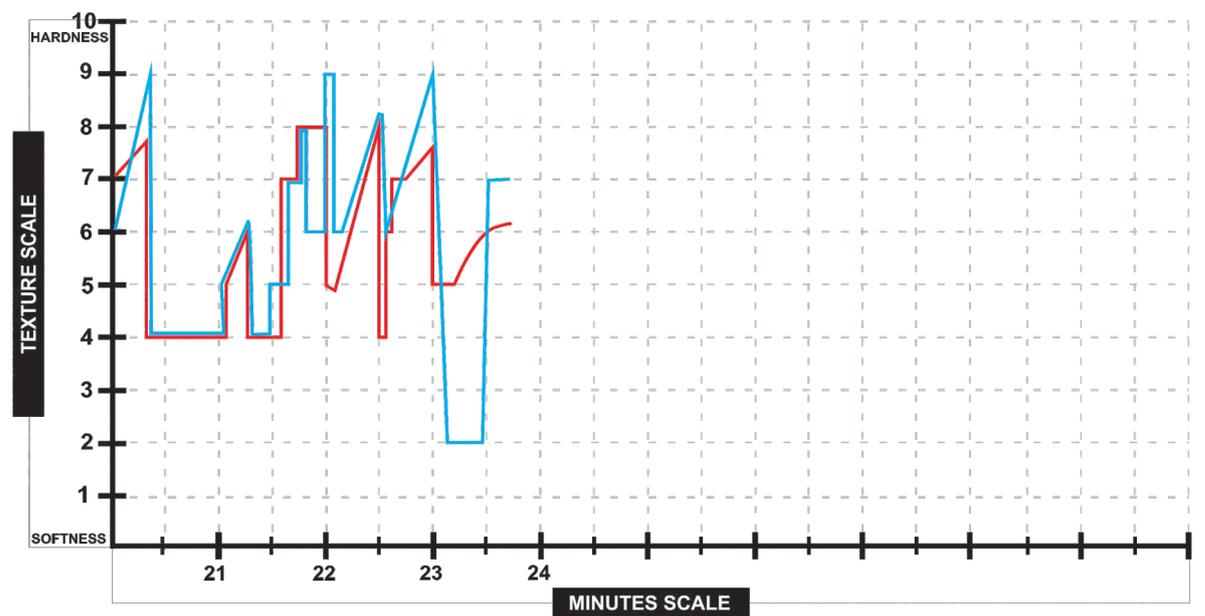
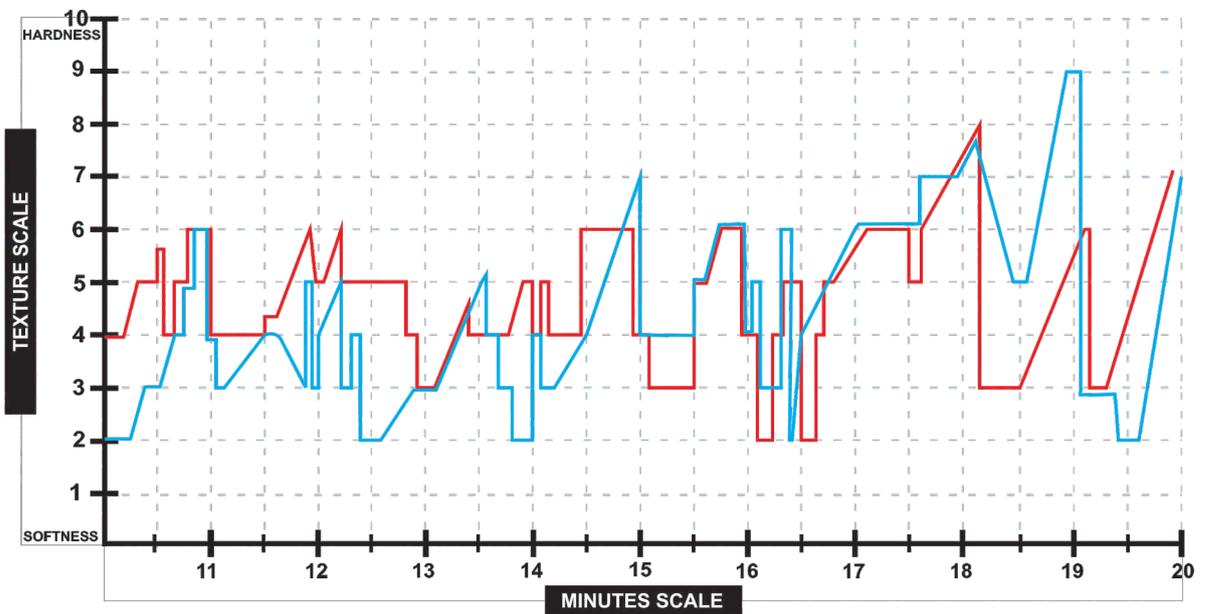
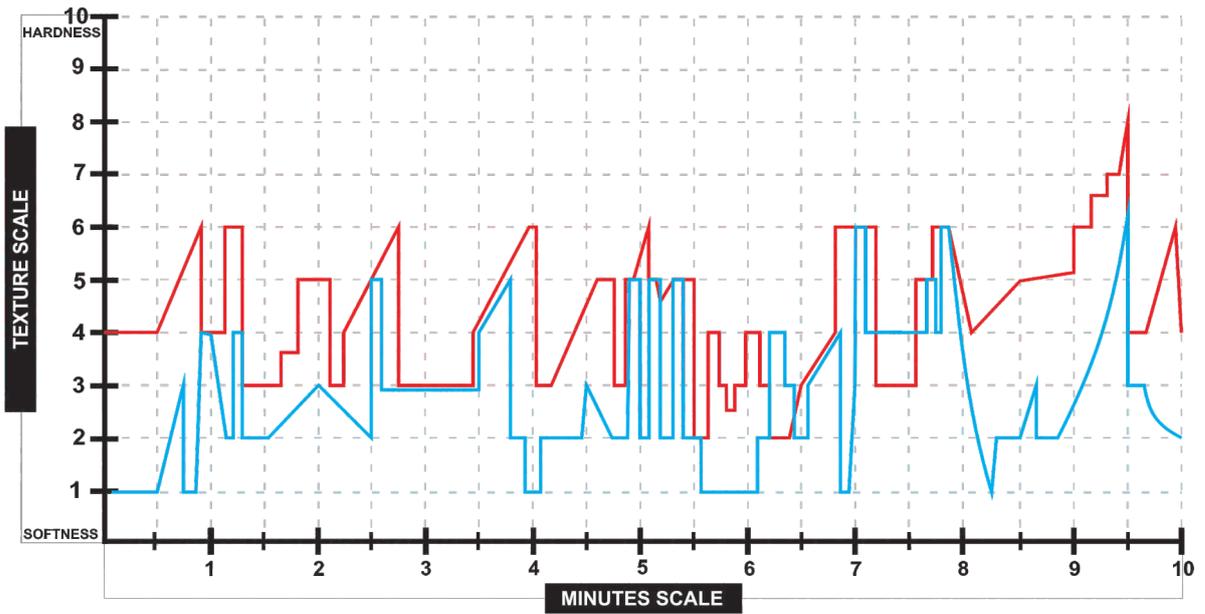
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GENERAL GRAPHS OF AUDIO-VISUAL CORRESPONDENCES

THE CLUB OF THE LAID OFF

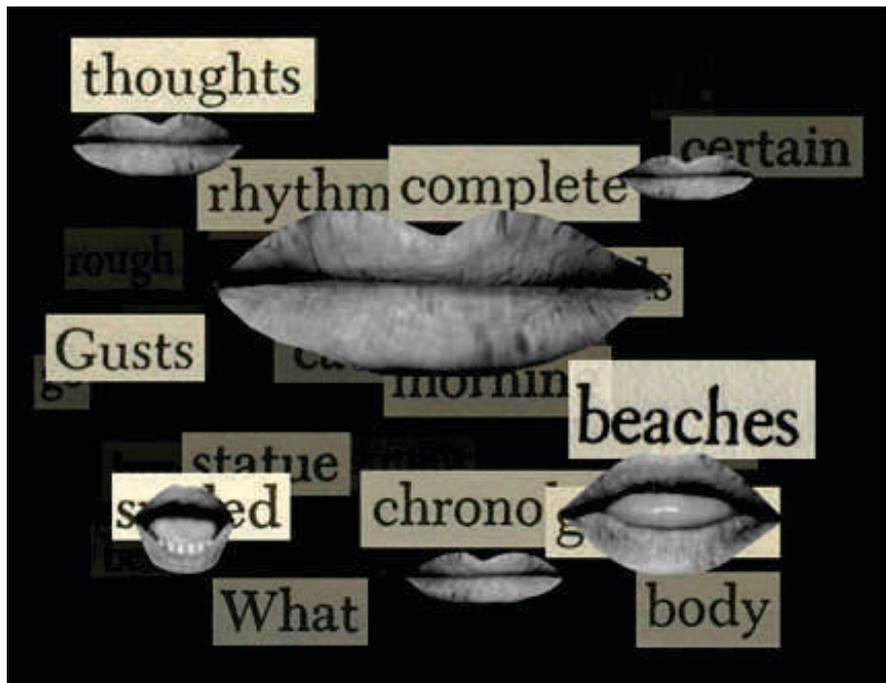
AURAL  
VISUAL



Appendix U: Graphs of the A Painful Glimpse Into  
My Writing Process Film

***A Painful Glimpse into  
My Writing Process  
(In less than 60 seconds)***

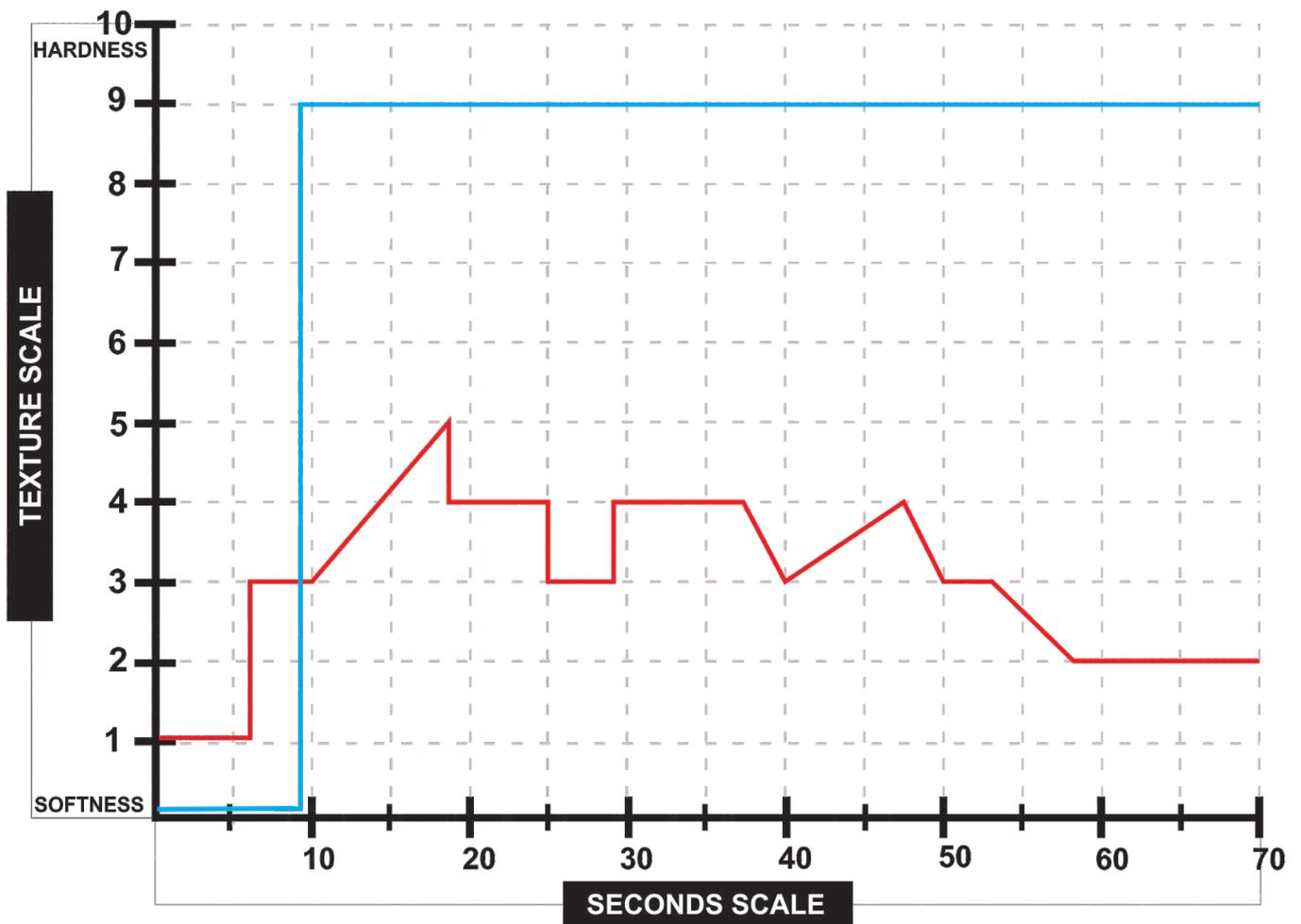
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## GENERAL GRAPHS OF AUDIO-VISUAL CORRESPONDENCES

A PAINFUL GLIMPSE INTO MY WRITING PROCESS  
(IN LESS THAN 60 SECONDS)

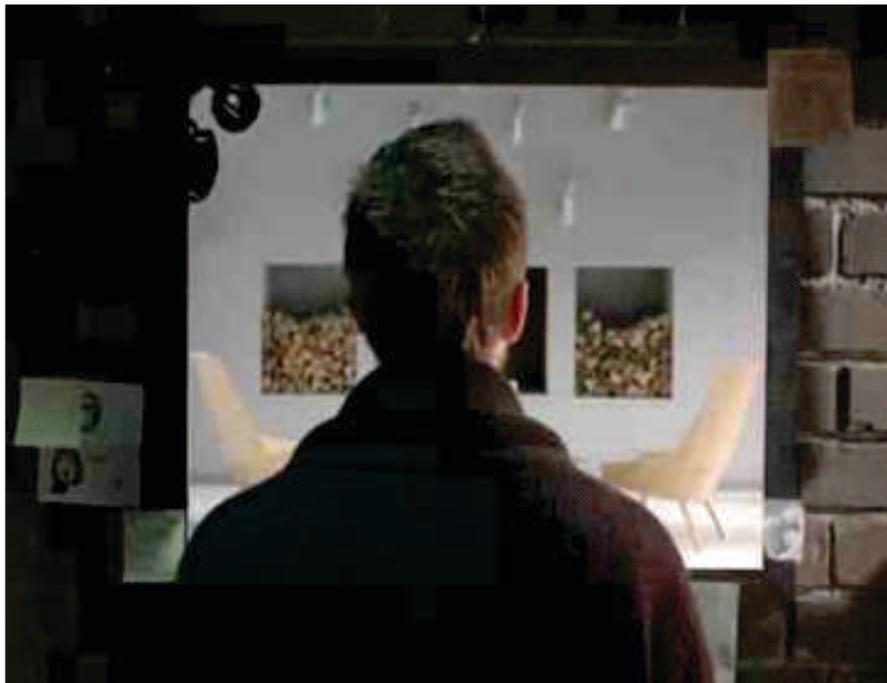
AURAL  
VISUAL



Appendix V: Graphs of the Blooddrop Film, Versions A and B

# ***Blooddrop Versions A & B***

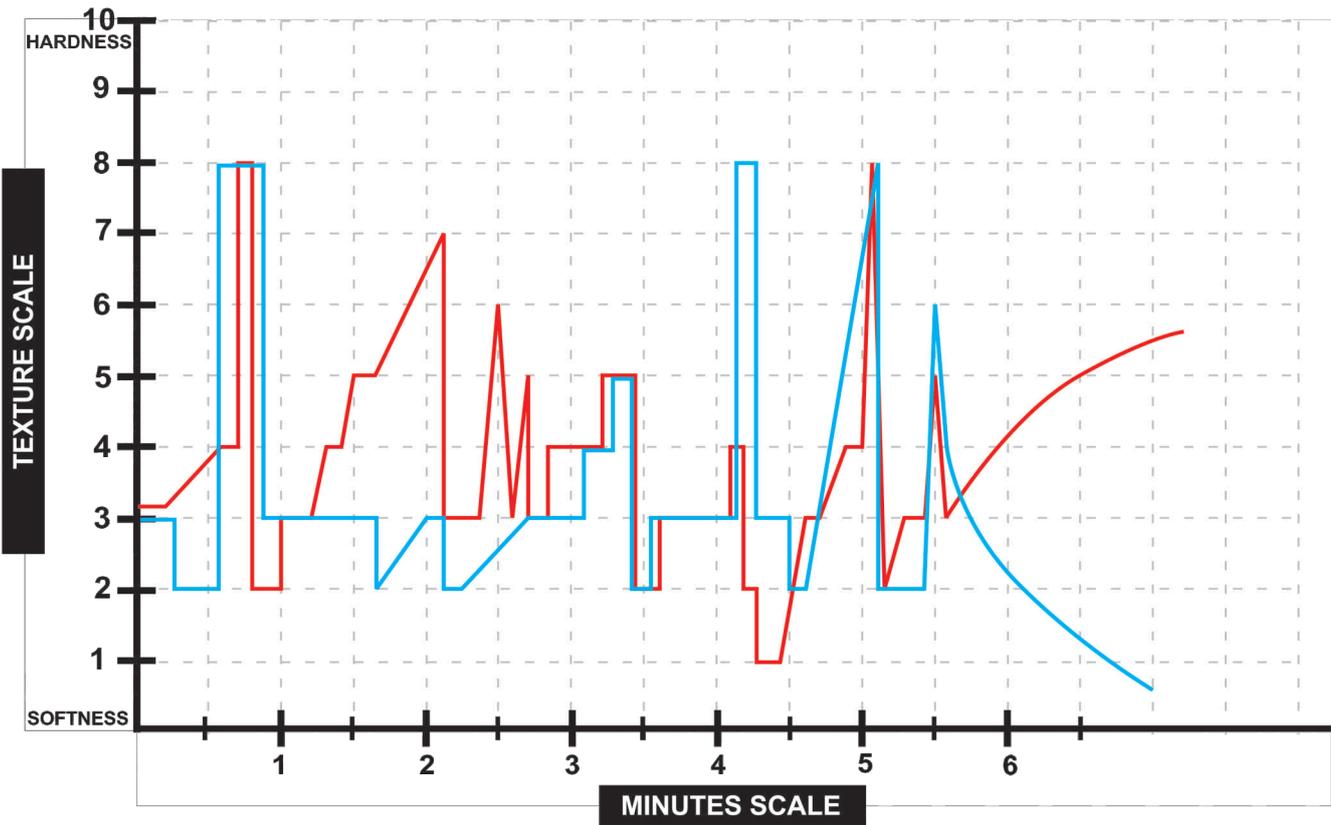
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GENERAL GRAPHS OF AUDIO-VISUAL CORRESPONDENCES

BLOODDROP VERSION A

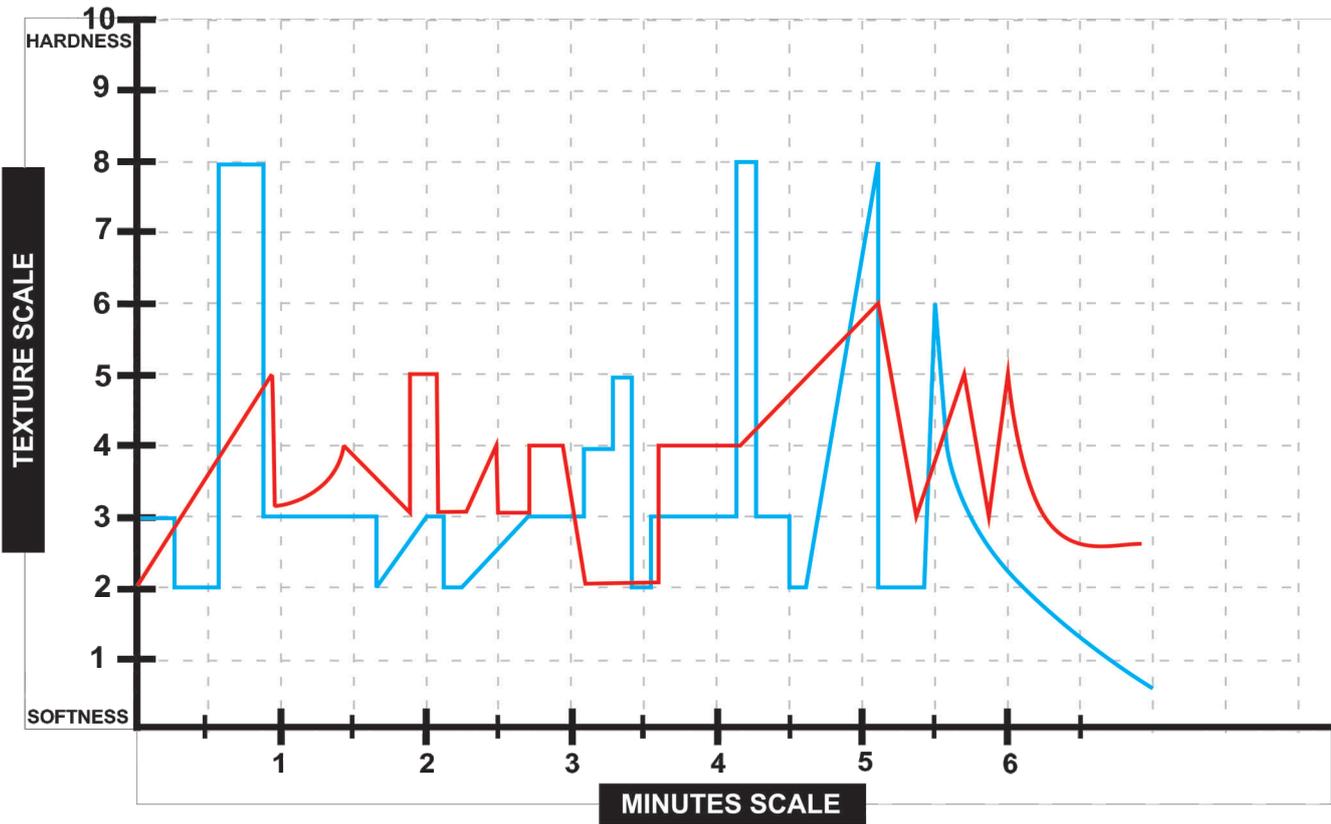
AURAL  
VISUAL



GENERAL GRAPHS OF AUDIO-VISUAL CORRESPONDENCES

BLOODDROP VERSION B

AURAL  
VISUAL



# *We Have Decided Not To Die*

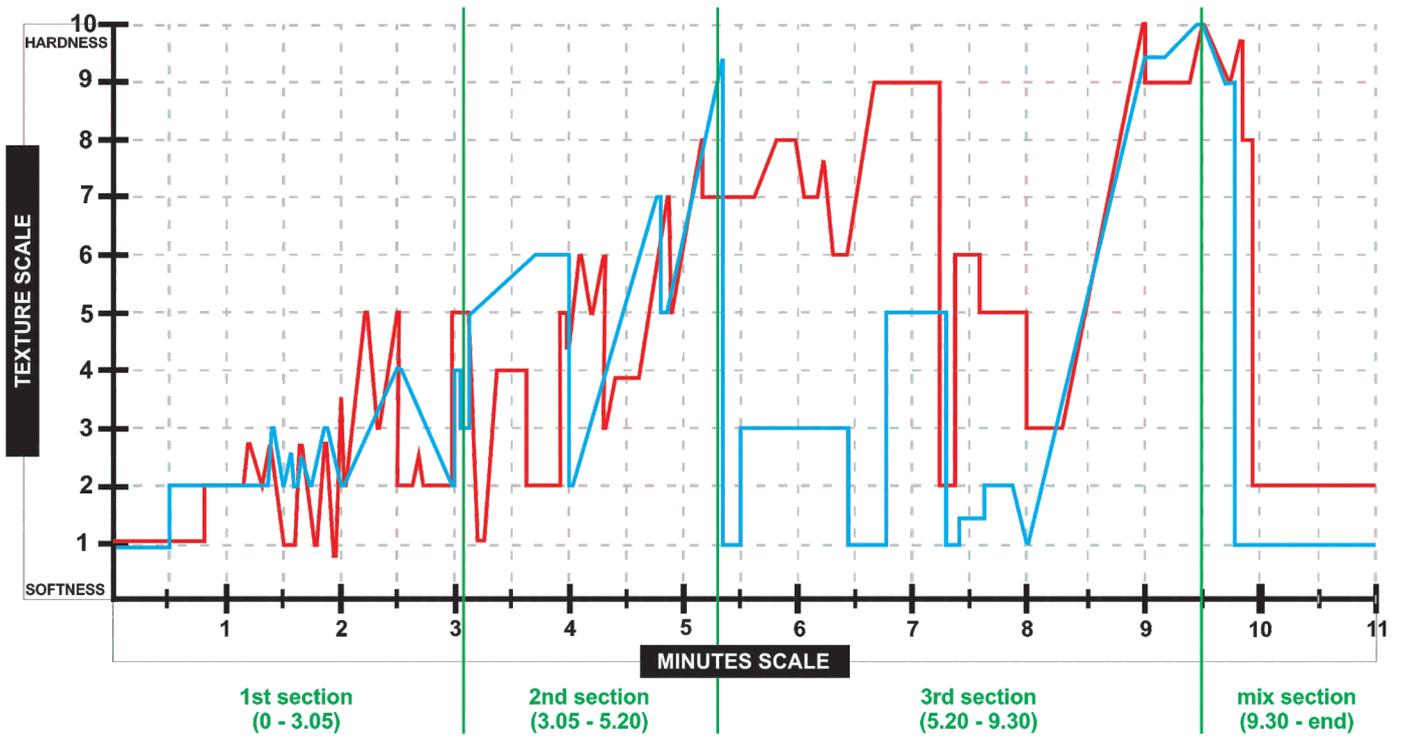
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### GENERAL GRAPHS OF AUDIO-VISUAL CORRESPONDENCES

#### WE DECIDED NOT TO DIE

AURAL  
VISUAL



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