

Kenneth Israel Hemmerick

Cinematic Transcendence From a
Synaesthetic Perspective
(A Review of Michael Snow's *Wavelength* &
David Rimmer's *Variations on a Cellophane Wrapper*)

INTRODUCTION

Imagine watching a film. Imagine seeing the film without the sound track. Imagine listening to the sound track on its own. A film is a synergetic whole. That is, a film is greater than the sum of its parts - the visual track and the audio track, when considered separately. The visual and audio tracks combine and interact to produce an event - a film, with its subsequent content, structure, form and meaning. At times, these two tracks can interact in such a way that the viewer is truly moved.

This paper will explore the notion of cinematic transcendence from a synaesthetic perspective. The word synaesthesia comes from the Greek *syn* (union) and *aisthesis* (sensation), literally a joining of the senses.¹ Using Michael Snow's *Wavelength*, (1967) and David Rimmer's *Variations on a Cellophane Wrapper*, (1970), I will show how a cinematic transcendence, or a shift in awareness in the viewer, is created through the specific and delicate combination of audio and visual events in their respective films. In other words, I am reviewing these works with the notion in mind that a full appreciation of these films is realized when they are considered as a combination of visual and aural events, and that these two events interact in such a way as to produce a blending, or uniting, of the senses.

Cinematic Transcendence from a Synaesthetic Perspective

I will explore the senses and synaesthesia, and will provide examples of synaesthetic creativity and exploration. I will then describe cinematic transcendence. The final section of this paper will provide a synaesthetic rationale for cinematic analysis of both the visual and aural components of a film as a combined and singular event encompassing space (image) and time (music). I will show that humans have an innate predisposition to synaesthetic, or poly-modal perception. I will suggest, further, that it is through this synaesthetic capability that cinematic transcendence can occur in the viewer.

As Mary Ann Doane states:

It has become a cliché to note that the sound track has received much less theoretical attention and analysis than the image. Yet the cliché is not without truth or value and isolates, but leaves unexplained a fact. This lack of attention indicates the efficacy of a particular ideological operation which is masked, to some extent, by the emphasis placed on the "ideology of the visible." While it is true that, as the expression would have it, one goes to "see" a film and not to hear it, the expression itself consists of an affirmation of the identity (ie. wholeness, unity) of the film and a consequent denial of its material heterogeneity.²

Simply stated, I have taken Doane's holistic appreciation of film analysis and applied it to *Wavelength and Variations on a Cellophane Wrapper*. I believe this approach does reveal that within a film's construct there lies a unity in creative activity and perception. This unity has its foundation in the unity of the senses.

Lonergan Review

SYNAESTHETIC ANALYSIS

The senses are the highways of human perception through which the world is apprehended and comprehended. In reviewing the static and dynamic ranges of the senses, we can begin to appreciate how important these "information gatherers" are to human awareness and creativity.³

Radius of Static Ranging	Dynamic Velocity
Tactile: 1/1,000 of a mile	10 miles per hour
Olfactory: 1 mile	400 miles per hour
Aural: 100 miles	1,100 miles per hour
Visual: 6 trillion miles*	700,000,000 mph

* One light year is 6 trillion miles, and humans see Andromeda with the naked eye one million light years away, which means six quintillion miles.⁴

Throughout history, the actual number of senses which humans are believed to possess has been in dispute. (Aristotle, Galen, Erasmus, Darwin, and von Frey believed there were five, six, twelve, twelve, and eight, respectively.) However, philosophers, scientists and artists have agreed that there appears to be a *sensus communis* through which all the senses seem to be unified. John Locke (1690) noted that the senses assist one another' in defining the existence of a perceived object.⁵ In other words, the paper you are presently reading is known to you through sight, touch, sound, and perhaps the smell of the paper and ink. W. H. Auden suggested that there exists an "infirm king" to whom eyes, ears, tongue and nostrils bring together objects that vary in size, texture and shape.⁶ We sensually perceive the objects differently and as different from one another; but when we touch them and when we see them, we know that the objects are one and the same. Aristotle

Cinematic Transcendence from a Synaesthetic Perspective

considered rest, motion, number, size, unity and shape to be common sensible attributes.⁷ Galileo named four qualities- size, shape, quantity and motion.⁸ To Hobbes⁹ and Locke¹⁰ form or figural shape was a common attribute of sensation. Kant (1781) believed space and time are general forms of perception." Hume (1739) stated it is impossible to go beyond sense data to objects and events themselves.¹²

J.S. Mill' s (1865) interpretation of reality was as the permanent possibility of sensation.' ³ Hombostel (1925) observed movement can be perceived by touch, sight and sound.¹⁴ Macintyre (1958) believed that not only do odours, lights and sounds correspond to one another, but they also point to the noumena underlying the phenomena of synesthesia.¹⁵ Given this wide range of experience and insight into the senses, it may be said that the senses display a fundamental unity because there exists a class of supra-sensory attributes which pertains to all senses, however distinct from one another.

SYNAESTHESIA

Synaesthesia can present itself in many forms. Chromaesthesia, or coloured hearing, is the most common. People who experience chromaesthesia report seeing colours when listening to music or hearing sounds. Another manifestation of chromaesthesia includes seeing coloured letters and words. Some synaesthetes report coloured olfaction and name-colour associations. Cytowic reports the wide variety of synaesthetic experience. Polymodal letters and numbers; number form, simple

Lonergan Review

synaesthesia, coloured auras, musical and word or letter tastes and smells, colourless number forms, visual smell, audioalgesic touch, shaped pain, coloured music keys and geometric hearing are other forms of synaesthesia.¹⁶ Cytowic has recorded the cerebral blood flow of a synaesthete during his experiencing of intense synaesthesia, revealing an abnormal pattern of brain activity.¹⁷ He argues that synaesthesia is in the left hemisphere, is not ' "cortical" in conventional sense, and involves temporal lobe-limbic structures.'¹⁸ Studies of blood flow among synaesthetes are being continued and are concerned with the examination of coloured speech synaesthesia using Positron Emission Tomography.¹⁹ These studies, and others, point to direct physiological evidence of synaesthetic experience.²⁰

However, there exist intersensory correspondences that fall under the rubric of synaesthesia. Synaesthesia is a term that refers to the transposition of sensory images or sensory attributes from one modality to another, as where the mellow tones of a lover's voice flow in a kaleidoscope of colour, or where the sundry flavours of dinner come alive in melody. Probably the most common form - certainly the most thoroughly studied - is visual hearing, where sounds take on the accoutrements of sight.²¹

Synaesthesia becomes quite apparent to us through language. When cross-modalities appear in language, they typically take the form of similes or metaphors. The cross-sensory or synaesthetic expression provides one of the simplest kinds of metaphoric language, in which one mode of sensory or perceptual experience transfers to another.²² We commonly speak of loud colours and bitter cold. Kipling wrote of an orient where "the dawn comes up

Cinematic Transcendence from a Synaesthetic Perspective

like thunder." The historical roots of such metaphors are old. Chapter 20 of Exodus informs that when Moses ascended Mount Sinai to receive from Jehovah the Ten Commandments, the Israelites waited below: "And all the people saw thundering, and lightening, and the voice of the shofar, and the mountains smoking." Although many of the English translations give perceived in lieu of saw, the Hebrew verb "Rahah" refers specifically, metaphorically, synaesthetically to sight.²³

Metaphor derives from two Greek words: meta, which means "over and above," andpherein, which means to "bear across." A metaphor allows a leap across a chasm from one thought to the next.²⁴ In the same way, synaesthetic experience is revealed in metaphoric description and interpretation, and is a common cross-modal activity. Synaesthetic percepts tend to follow conventional trends of connative meaning. In coloured hearing, for example, both synaesthetes and normals matched low pitches with large dark photisms; high pitches with light, small photisms and louder sounds with brighter, larger photisms. The difference is that synaesthetes actually report seeing an external photism; whereas normals imagine that these "go together" appropriately. Synaesthesia carries special interest because there is evidence that it represents something much more general, perhaps even universal, than an idiosyncrasy peculiar to a small number of people. Rather than being "abnormal," synaesthetic perception may rest on a universal undercurrent of cross-modal experience.²⁵

It is not surprising that synaesthesia has been of interest to individuals in

Loneragan Review

the arts, sciences and philosophy. The basic premise of this interest is that a co-relation exists between sound and colour. Isaac Newton proposed a mathematical correlation organizing sound and colour.²⁶ In 1810, Goethe wrote *A Theory of Colour (Zw Farbenlehre)*" His Colour-Theory is based on the idea that all colours belong either to a group deriving from the primary yellow or to one deriving from blue: these in turn stand for light and darkness, and are metaphoric representatives of the duality in all Nature.

The composer, Messiaen, wrote in 1956, *Technique de mon langage* in which his modal systems are directly related to colour.²⁸ For example, mode two of the limited transpositions is a certain shade of violet, blue, and violet purple, and mode three, orange with red and green pigments and spots of gold, and also milky white with iridescent reflections like opal. Once again, another example of what I term "associative" synaesthesia. Kandinsky takes this idea further in "The Yellow Sound."²⁹ He writes about colour as being equivalent to music and line as being equivalent to dance. Kandinsky' s acceptance of the concept of synaesthesia led him to believe that his paintings might stimulate multiple sensory responses in the viewer. He felt that sensory equivalents could be scientifically measured; he believed, for example, that exact equivalents could be found for individual musical notes within the spectrum.

Another example of "associative" synaesthesia can be found in the case of Scriabin who proposed that the key F Minor was blue, D major was yellow and F Major was red.³⁰ A similar example can be found in Bliss' *Colour Symphony* (1922). The movements are given colours relating to tonalities. As such, the first movement is called: "Purple: the Colour of Amethysts,

Cinematic Transcendence from a Synaesthetic Perspective

Pageantry, Royalty and Death." The second movement is "Red: the Colour of Rubies, Wine, Revelry, Furnaces, Courage and Magic." Blue is the colour of the third movement - "the colour of sapphires, Deep Water, Skies, Loyalty and Melancholy." The fourth movement is called: "Green: the Colour of Emeralds, Hope, Joy, Youth, Spring and Victory."³¹

Cytowic proposes that synaesthetes, people who have synaesthetic experiences, can be defined through diagnostic criteria. Lawrence Marks, on the other hand, proposes that synaesthesia is a direct, economical, salient and compact mode of childhood cognition, laden with physiognomic characteristics of perception. As such, synaesthesia may play an important transitional role in the sharpening of modes of information processing. It is transitional because it may be superseded by the more abstract representations embodied in the linguistic mode of cognition.

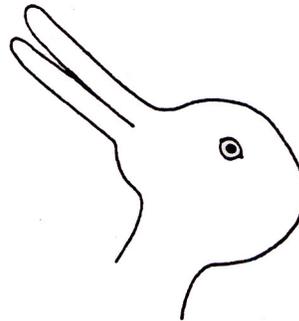
Perhaps synaesthesia exists in associative and physiological terms because of the functional differences of the activities of the brain' s hemispheres. Indeed, all the right brain' s principal attributes - being, images, metaphors, and music - are echoes of evolutionary techniques used by our recent zoological ancestors to comprehend reality, and are perceived holistically.³² All the innovative features of the left hemisphere - doing, words, abstract thinking, and number sense - are principally processed in time. To develop craft, strategy, language, logic, and arithmetic the mind must range back and forth along the line of past, present, and future.³³ I sense that synaesthetic experience may exist in as much that sensory memory decays quickly over a

Loneragan Review

short unfilled time interval, that modality-specific immediate memory is not affected by events occurring in other sense modalities, and lastly, the inverse of this, that events occurring in the same modality will interfere with recall accuracy.³⁴ However, there is a conscious mixing of sensory channels almost as if what is normally a subconscious mechanism is somehow laid open to the synaesthete' s experience. Synaesthesia is what humans do without knowing it; whereas, synaesthetes do it and know that they do it.

CINEMATIC TRANSCENDENCE

Cinematic transcendence describes a shift in the consciousness of the film viewer. This shift is an expansion of perception, knowing and understanding. A clear example of transcendence, or a shift in consciousness, can be seen in Wittgenstein' s well-known example of the Duck-Rabbit figure shown below:



As John Gilmour states in *Picturing the World*:³⁵

A spontaneous shift of aspect yields a new perceptual whole; thus the figure may be seen first as a rabbit and then as a duck with no process of interference intervening. This difference of perception occurs without change of line since the same line may take on either aspect.

Cinematic Transcendence from a Synaesthetic Perspective

The duck/rabbit or rabbit/duck paradox enables the viewer with a line of consciousness which brings into focus one' s internal perceptual process. Once the paradox is known, the shift between the co-existing images is easier to negotiate. The viewer experiences a transcendence in the understanding of ambiguity and of one' s own decision-making process. Through this sense of enlarged inner self-awareness, the viewer develops deeper understanding of the "exterior" world and its diverse manifestations.

In the same way, cinematic transcendence allows the viewer to shift between his/her inner world and the outer world of experience. Through this process, the viewer becomes aware of what it is that he/she is aware of; and, by extension, of what he/she is not aware of. For example, in watching a film, the viewer may be so absorbed into the film that his/her own self-awareness of "it is I who is watching the film" is lost in, or hidden, behind the film' s absorption. At the other end of the spectrum, the viewer, knowing the "watcher-as-self" in the film experience, can critically perceive the film with questions concerning content, meaning, form and structure, etc.

These states of awareness are not static. The viewer' s consciousness freely flows in and out of the awareness of self or of the other. The viewer may or may not experience the flux between these two states of consciousness. However, it is this movement from the known to the unknown that adds depth and meaning to that which is being experienced.

Lonergan Review

Another way to understand cinematic transcendence, analogously, may be suggested by the functional differences in the brain' s hemispheres to achieve a heightened state of being aware of what/who one is aware of. Jeremy Campbell in Grammatical Man provides a list of terms used by psychologists who, over many years, have grouped definitions of left brain and right brain styles of knowing.³⁶

LEFT BRAIN	RIGHT BRAIN
intellect	intuition
convergent	divergent
intellectual	sensuous
reductive	imaginative
active	receptive
discrete	continuous
realistic	impulsive
transformational	associative
linear	nonlinear
temporal	timeless
explicit	tacit
objective	subjective

Transcendence in cinema gives the viewer insight into exterior and interior experience, enabling the realization of perceptual layers or shells between left and right brain modes of knowing - enabling awareness of the psychological circuitry as the viewer shifts from rabbit to duck or duck to rabbit. This transcendence, or shift in self-knowing, is encouraged visually, musically/sonically or through the synergetic combination of the two. I believe, however, the combination of visual and aural events to produce a transcendental experience has deep roots in human perception which can be

Cinematic Transcendence from a Synaesthetic Perspective

described in terms of modes of hearing/listening and seeing/watching. This combination can also be described in terms of synaesthesia or poly-modal sense perception.

In this paper we have discussed the senses, synaesthesia and cinematic transcendence. Michael Snow states "knowledge isolates, selects and points out unities or differences which were not previously evident. Identification, definition is a matter of limits, of recognition of limitations, bounds and boundaries."³⁷ In this paper I am attempting to push the boundaries of cinematic analysis to include a poly-modal synthesis. In this regard, I am looking at how cinematic visual and aural events interact to produce a shift in awareness.

Wavelength (1967), by Michael Snow, is a forty-five-minute film which encourages transcendence in the viewer. The film is structured as an apparent "single shot," moving progressively and slowly towards a photo of an ocean wave on a wall. The camera's forward movement is through the almost-empty space of a room, providing the viewer with psychological space to imagine and to fill the screen with his/her speculation and to hypothesize about the "dramatic" narrative which is taking place. At various times throughout the film, events happen - a bookcase is moved into the room; two women enter the room and listen to the radio; the women disappear; a man enters the room and falls to the floor, as if dead, and a woman enters the room and telephones a man called Richard, telling him about the dead man on the floor and to arrange a meeting downstairs.

Lonergeran Review

Bruce Elder gives a detailed and knowledgeable analysis of this film, defending it as a meditation of drama in film, an interplay of time and space as single, fixed and continuous, and the creation on film of a subjective space, the space of vision and imagination.³⁸ His analysis shows how Snow evokes, in the viewer, an engagement of self in the negotiation of the film' s sense of time and space. For Elder, the camera movement is the structural organizing principle of the film; from the long, slow, forward movement of the camera lens towards the photo of the waves on the wall, to the intense climax of the movement of the image, finally moving towards the viewer.

As in the case of Wittgenstein' s duck/rabbit paradox, the "line" of consciousness shifts between the film' s subjective space of vision and imagination and the underlying subjective awareness of the viewer' s own interior space of vision and imagination. Through the use of the "single shot," the viewer is confronted with self-awareness in the form of questions such as, what is happening here? What is this film about? Where is this narrative taking place? Why is the man on the floor? Who are these women? The interior space of the viewer becomes filled with possible answers or solutions to the questions being asked. Throughout the film, there is a hum in the background of the film. This sonic event aurally complements the notion of a wave length. Metaphorically this generated wave or signal suggests, along with the slow moving zoom, that all life is a wave formation.

Bruce Elder writes:

Suddenly one' s attention is diverted from the continual extension of the zoom. There occurs the second of the "human events": two women, one of whom we saw previously supervising the moving into

Cinematic Transcendence from a Synaesthetic Perspective

the room of a bookcase, walk into the room and listen to a radio broadcast (supposedly) of the recording "Strawberry Fields Forever."³⁹

The playing of this popular tune acts as a trigger which activates a different knowing. As a then well-known Beatles song, it provides the viewer, aurally, with a sense of familiarity of the known, as contrasted with the unfamiliarity of the film's context, the unknown. The song enables, in the viewer, a "break" or shift in knowing in the right-brain sense. Wavelength visually calls upon the viewer's intuition, sensuousness, imagination, receptivity, associativeness and subjectivity. With the insertion of "Strawberry Fields Forever" into the film's discourse, the viewer shifts to a left-brain mode of knowing of the intellect, intellectual, reductive, active, realistic and objective. The visual right-brain activity of recognition is contrasted with the aural left-brain activity of experience. At this point, a spontaneous shift of aspect yields a new perceptual whole; thus the film may be seen first as "imaginary" and then as "real", with no process of interference intervening.

A second and completely different aural trigger of cinematic transcendence can be seen/heard in the film *Variation on a Cellophane Wrapper* (1970) by David Rimmer. This film is structured in a similar way to that in which electro-acoustic music compositions are often organized. Communication theory initially began with the electronic signal. As the theory increased in acceptance, musicians began to see that the electronic signal itself was material with which they could work.

Lonergan Review

In 1948, Claude E. Shannon published his Mathematical Theory of Communication based on his work in deciphering electronic signal messages.⁴⁰ Simply stated, in communication theory, the amount of information conveyed by the message increases as the amount of uncertainty as to what the message actually will be becomes greater. This was a revolutionary idea. A message which is one out of ten possible meanings conveys a smaller amount of information than a message which is one out of a million possible meanings. Entropy, in communication theory, is the measure of uncertainty, and entropy is taken as the amount of information conveyed by a message from a source. The more that is known about what message the source will produce, the less uncertainty, the less the entropy and the less information.

Edgar Varese, (1883-1964) is widely regarded as one of the first masters of electronic music. Rather than imagining structures of melodies and harmonies as such, he conceived of music more in geometric, sculptural terms. Blocks of sounds could be treated as objects to be turned, reshaped and projected through space - something of a 'plate tectonic.' Varese preferred not to call his work "music", but rather "organized sound."⁴¹

One strategy electro-acoustic composers use to organize their compositions is to play with detail, foreground and background.⁴²

Rimmer visually uses the repeated pattern of a factory worker straightening out a sheet of cellophane in the same way one may straighten out a folded sheet before making a bed. This is the detail signified by its placement in the foreground or background, or transformation from one

Cinematic Transcendence from a Synaesthetic Perspective

ground to the other. Visually, Rimmer places this detail, or information, in the respective fore and backgrounds through layering on top of, or underneath, colour, or its absence, and film textures. Similarly, the aurally detailed motif, gesture or information is foregrounded or backgrounded through tape manipulation (splicing, looping, tape reversal, speed alteration, and amplitude and frequency modulations).

Rimmer is playing with visual and aural entropy. As the viewer comes to know more about the message the film will produce (a woman slowly and repeatedly flapping a large sheet of cellophane), the less uncertainty, the less entropy and the less information there is. Rimmer visually keeps the viewer's consciousness of the message at the line concept of our Duck/Rabbit analogy. However, aurally, he uses music to enable the viewer/listener to have a cinematic transcendence. Repeatedly, when the visual image lessens in intensity, the musical gesture or detail moves closer to the foreground of the cinematic experience. When the musical detail wanes into the sonic background, the visual detail waxes in the visual foreground.

As such, Rimmer forces the viewer to shift between visual and aural modes of perception through their respective placements in the schemata of the perceptual foregrounds and backgrounds. Thus, this film is based on a visual and aural gesture being intellectually/intuitively, convergently/divergently, discretely/continuously, explicitly/tacitly perceived. Each time there is a shift in consciousness between these two modes of perception, a cinematic transcendence occurs and the viewer, if self-aware, is knowingly repositioned into

Lonergan Review

a mode of consciousness which moves him/her towards self-understanding. This mode of consciousness is called "responsibility" in Lonergan's system of self-appropriation.

The philosopher, Bernard Lonergan, in his *Insight: A Study of Human Understanding*, provides a clear description of how the knower comes to know the knower in experience.⁴³ Simply stated, one's self-understanding requires a prescribed way of thinking which enables and activates the organizing principle and function of self-appropriation. Self-appropriation is transcendence in the most personal sense. Dr. Moira Carley has developed the following chart which outlines the progressive levels of consciousness which are stages of self-appropriation or transcendence:⁴⁴

LEVELS of CONSCIOUSNESS	WHAT I WANT/DESIRE	MY QUESTION/MY TASK AS KNOWER
experience	data	be attentive
understanding	intelligibility	What is it? be intelligent Why is it?
reflection	truth	Is it so? be reasonable
responsibility	good	Is it valuable? be responsible

Throughout this film the viewer is confronted with visual and aural data or information. At this time, there are no questions. However, as understanding increases through the questions, what is it? and why is it?, the viewer is developing an intelligibility about the experience he/she is having. This leads to the reflective question, Is it true? This question in turn leads to the question, Is it valuable? In other words, Where am I in this experience, what am I learning, and what have I learned?

Cinematic Transcendence from a Synaesthetic Perspective

In both *Wavelength* and *Variations on a Cellophane Wrapper*, sound/music is used to trigger cinematic transcendence; transcendence being a shift in perception of the viewer/listener. *Wavelength*'s visual movement is in the form of a zoom lens closing in on a stationary object. In *Variations on a Cellophane Wrapper*, visual movement is in the form of a stationary camera filming a moving subject/object.

Peter Harcourt, in a class lecture, defines parataxis as "a rhetorical term relating to the elimination of temporality and logical connective links." *Wavelength*'s parataxical treatment of foreground, detail and background is different from that of *Variations on a Cellophane Wrapper*.⁴⁶ It is a slow unfolding of these three elements. However, *Variations on a Cellophane Wrapper* approaches these elements catachrestically in order to startle or to shake the viewer/listener into awareness of detail, background and foreground. (Harcourt describes catachresis as the "deliberate misuse of a rhetorical device - to startle, as in rap music.") In both films, the aural dimension plays a pivotal role in negotiating the shift between uncertainty and certainty, unfamiliarity and familiarity; a shift between duck and rabbit; a shift towards self awareness and the unravelling of perceptual and psychological masks.

David Rimmer states, "the ambiguity of the content-message permits the viewer to experience and interpret the film in a variety of ways."⁴⁶ This is the sense of freedom we have to explore synaesthetic activity in his work. Both David Rimmer's and Michael Snow's films evoke synaesthetic, or poly-modal

Lonergan Review

sensory experiences to trigger cinematic transcendence in the viewer. Their works are a conscious intermixing of visual and sonic events, where the sonic is inexorably connected to the visual, and the visual keyed to the sonic. This play between the aural and the visual allows for a blurring of the bias of space concept over time concept and time concept over space concept.

Harold Innis in his Plea for Time states "the character of the medium of communication tends to create a bias in civilization favourable to an over-emphasis on the time concept or on the space concept and only at rare intervals are the biases offset by the influence of another medium and stability is achieved."⁴⁷ I believe that synaesthetic film analysis addresses these biases and provides a different ideological nucleus from which to explore.

I propose that film analysis must address both time concepts and space concepts within a unity of comprehensive experience. To separate the visual/space concept from the aural/time concept means not considering the synergistic interaction of the two concepts/dimensions and their combined effect on perception and consciousness. I believe critical analysis from this synergetic/synaesthetic perspective could provide insight into how the cinematic whole is greater than its parts.

Diana Deutsch in her Paradoxes of Musical Pitch states:⁴⁸

Research into the way individuals hear particular sequences of tones reveals how the brain uses different cues to make sense of ambiguous sounds. Indeed, the latest studies suggest that perception of certain musical paradoxes is related to the processing of speech. It appears that during childhood individuals gradually acquire a representation of pitch that is peculiar to a particular language or dialect. Hence, a

Cinematic Transcendence from a Synaesthetic Perspective

native of California will perceive a certain pattern of tones differently from a native of the south of England. Such studies have revealed that a common influence on perception of both speech and musical pitch exists in individuals. Furthermore, the research has over-turned some assumptions, particularly one concerning perceptual equivalence for musical patterns. This assumption states that a musical passage remains identifiable even if it is presented in a different key from that in which it was originally heard. But on the contrary, certain pitch paradoxes show that this principle is not universal. Rather, the brain may completely reinterpret the relations between tones transposed to another key. This notion is as paradoxical as the idea that a visual shape might undergo a metamorphosis if shifted to a different location in space.

I find the notion that humans from different parts of the world will hear a certain pattern of tones differently intriguing. Does this information provide insight into the way a film is perceived - considering the film's sound track to be an essential constituent of the film? Many more questions spring to mind when understanding a film as a visual and aural unity. These questions point to synaesthetic analysis as a possible starting point. It would be a challenge to continue this line of investigation in another paper.

NOTES

1. Richard E. Cytowic, *Synaesthesia: A Union of the Senses* (New York: Springer-Verlag, 1989), p. 1.
2. Mary Ann Doane, *Ideology and the Practice of Sound Editing and Mixing, Film Sound: Theory and Practice* (New York: Columbia University Press, 1985), p. 54.
3. R. Buckminster Fuller, *Synergetics I* (New York: MacMillan, 1975), P.801.09.

Lonergan Review

4. *Ibid.*, 801.

5. John W. Yolton, *Locke and the Compass of Human Understanding; A Selective Commentary on the Essay* (Cambridge: Cambridge University Press, 1970), pp.34-45.

6. W.H. Auden, *Collected Longer Poems* (London: Farber, 1968), pp.13-14.

7. Aristotle, *The Works of Aristotle*, ed. and trans. W.D. Ross (Oxford: Clarendon Press, 1958-68), chs. 1-7.

8. Stillman Drake, *Galileo Studies: Personality, Tradition, and Revolution* (Ann Arbor: University of Michigan Press, 1970), p.56.

9. Thomas Hobbes, *Human Nature, The Fundamental elements of policy*, ed. Ferdinand Tonnies (London: Cass, 1969); originally published, 1656.

10. John Locke, *An Essay Concerning Human Understanding*; ed. A.S. Pringle-Patterson (Atlantic Highlands, N.J.: Humanities Press, 1978).

11. Immanuel Kant, *Critique of Pure Reason*, trans. Wemer S. Pluhar (Indianapolis, Ind.: Hackett Pub, Co, 1996; originally published, 1781), pp. 150-67.

12. David Hume, *A Treatise of Human Nature*, ed. L.A. Selby-Bigge (New York: Clarendon Press, 1978; originally published, 1739), pp.84-85.

13. John Stuart Mill, *An Examination of Sir William' Hamilton' s Philosophy and of the Principal Philosophical Questions Discussed in his Writings* (New York: H.Holt, 1884; originally published, 1865).

14. E.M. von Hombostel, "Unity of the Senses," *Psyche* 7, (1988): 83-89.

15. Carlye Ferren MacIntyre, *French Symbolist Poetry* (Berkeley: University of California Press, 1958), p.1 19.

16. Cytowic, *Synaesthesia*, pp. 32-33.
17. *Ibid.*, pp. 120-27.
18. *Ibid.*, pp. 91-146.
19. Kevin B. Korb, "Synaesthesia and Method," *PSYCHE*, (Internet Journal - ISSN: 1039-723X), 2(10), 2(24), 1996. 2.2.
20. S. Baron-Cohen, J. Harrison, L.H. Goldstein, and M. Wyke, "Coloured Speech Perception: Is Synaesthesia What Happens When Modularity Breaks Down?" *Perception* 22, (1993): 419-26.
21. Lawrence E. Marks, Robin J. Hammeal and Marc H. Bornstein, *Perceiving Similarity and Comprehending Metaphor* (Chicago: Society for Research in Child Development, Inc., 1987), p. 8.
22. *Ibid.*, p. 52.
23. *Ibid.*, p. 2.
24. Leonard Shiain, *Art and Physica* (New York: William Morrow, 1991), p. 223.
25. Marks, Hammeal, and Bornstein, *Perceiving Similarity*, p. 3.
26. Voltaire, *The Elements of Sir Isaac Newton's Philosophy*, trans. John Hanna (London: Frank Cass, 1967).
27. Johann Wolfgang von Goethe, *Theory of Colours*, trans. from the German (*Zur Farbenlehre*) with notes by Charles Lock Eastlake, introd. by Deane B. Judd (Cambridge: M.I.T. Press, 1985; originally published 1840).

Lonergan Review

28. Olivier Messiaen, *The Technique of my Musical Language*, trans. John Satterfield (Paris: A. Leduc, 1966).

29. Rose-Carol Long and Kandinski Washton, *The Development of an Abstract Style* (Oxford: Clarendon Press, 1980), pp. 51-52.

30. *The Grove Concise Dictionary of Music*, ed. Stanley Sadie (London: MacMillan, 1988).

31. *Ibid.*

32. Shain, *Art and Physics*, p. 398.

33. *Ibid.*, p. 400.

34. N. O' Connor and B. Hermelin, *Seeing and Hearing and Space and Time* (London: Academic Press, 1978), p. 14.

35. John Gilmow, *Picturing the World* (Albany: State University of New York Press, 1986), p. 58.

36. Jeremy Campbell, *Grammatical Man* (New York: Simon and Schuster, 1982), p. 241.

37. "Michael Snow and Bruce Elder in Conversation," *CineTracts* 17 (Summer/Fall 1982): 4.

38. Bruce Elder, "Michael Snow's 'Wavelength'," in Seth Feldman and Joyce Nelson, (eds.), *Canadian Film Reader* (Toronto: Peter Martin, 1977), pp. 308-323.

39. *Ibid.*, p. 315.

40. Claude E. Shannon, *The Mathematical Theory of Communication* (Champaign: University of Illinois Press, 1949).

Cinematic Transcendence from a Synaesthetic
Perspective

41. Samuel Pellman, *An Introduction to the Creation of Electronic Music* (Belmont, CA.: Wadsworth Publishing Company, 1994), p.329.
42. *Ibid.*, p. 359.
43. Bernard Lonergan, *Insight: A Study of Human Understanding* (New York: Philosophical Library, 1957).
44. Moira Carley, *Chart of Lonergan's Levels of Consciousness*, (LUCC 200/3 The Creative Experience Class Hand-out), 1997.
45. Peter Harcourt, class lecture, LUCC 399C/3 *Contexts of Canadian Cinema* 1996.
46. Al Razutis, "David Rimmer: A Critical Analysis," pp. 275-86 in Seth Feldman (ed.) *Take Two* (Toronto: Irwin, 1984).
47. Harold A. Innis, *The Bias of Communication* (Toronto: University of Toronto Press, 1964), p. 64.
48. Diana Deutsch, "Paradoxes of Musical Pitch," *Scientific American*, (August 1992):88.