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The historical relationship of musical form and the moving image in the current context of the digitisation of media

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Abstract

Contemporary developments in the medium of the moving picture, particularly in relation to the general digitisation of media, are bringing about substantial changes to long-held conceptions of both its theory and its practice. This thesis asserts that a significant factor in these, both historically and in terms of potential development, is the influence of musical form. Currently underappreciated, the strong interrelationship of musical form and film goes back to the very early days of cinema.
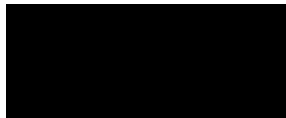
The consideration of information in multidirectional form (mosaic; rhizomatic; database), rather than linearly, is directly relatable to concepts in seminal media-studies that equate multilinearity to the acoustic, and linearity to the visual (sound coming to us from all around, and vision from one direction only). The traditional role of music, the art of sound, as the quintessential expression of multiplicity, is an important subject for consideration in this context, and in terms of its ongoing formal relationship to the moving image.

Taking a long historical view of this relationship, the research aims to provide a useful perspective on the 'pre-history' of current multimedia/intermedia, thereby indicating certain nascent directions of innovation.

Declaration

This thesis contains no material which has been accepted for the award of any other degree or diploma at any university or equivalent institution and that, to the best of my knowledge and belief, this thesis contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

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Introduction

This thesis focuses on several historical aspects of the musical form/moving image relationship, in order to trace their influence in the current context. The term *form* is used here in the most general, overarching way possible. It intends to refer not only to the sequence of sections in a given piece of work, but to the various ways in which all the elements are combined: the manner in which it is *composed*. The 'music theory' employed here is deliberately at the simplest, most generally accessible possible level without distorting the accuracy of the descriptions attempted; this is sometimes a rather challenging relation. The thesis as a whole is concerned with the relationship of database and narrative; through examination of the work of important theorists and artists at each stage, a version is assembled of the story of how musical form has consistently provided a central model for the moving image, even as the general recognition of this historical relationship has dwindled.

In general, the emphasis is deliberately steered away from examination of the direct relationship of film scores to their corresponding imagery, so as to focus as sharply as possible on the broader compositional influence of musical form whereby the actual music employed in a soundtrack is one element among many in the compositional texture of a moving-image work. (This is not to deny that the two things may often be intertwined.) The one substantial exception to this is the case of 'visual music' animation, in which of course the musical influence on the visual form is generally overt and often absolute.

The 'musical analogy', whereby the formal characteristics of music are compared to those of film, the other most pervasive temporal art form in modernity, originated at almost the very

beginning of cinema's existence. In addition to the inherent dealing with the playing out of specific lengths of time, among the most significant characteristics that can be identified in this respect are: the capacity for several separate elements (*voices*) to combine, enabling coherent multiplicity; rhythmic patterning as a primary structuring device; the representation of movement. These characteristics are of course interrelated.

The term 'analogy' can be somewhat misleading in this context. Much of the time, the musical influence functioned through various degrees of formal inspiration, and even direct modelling. This can be seen in the 1920s milieu of early French cinema where musical form was widely compared to film's structural patterns and emotional effects, but where also filmmakers themselves, particularly the Impressionists and early Surrealists, described their very practical applications of musical inspiration. Thus, in many cases, ideas drawn from music regarding patterns of movement and combinations of elements were directly applied to the filmmaking process rather than an 'analogy' being posited after the fact. While the use of terms such as *polyphony* and *counterpoint* suggests analogy (since the musical and cinematic versions are clearly not identical), the results of the practical application of such inspirational techniques are entirely concrete. For Dziga Vertov and Sergei Eisenstein also, musical influence played a large part in practice. Eisenstein continued to refine his theoretical ideas throughout his life, with musical form consistently the primary reference in developments of the conception of the *audiovisual*. In fact, perhaps the central employment of musical reference in certain theoretical works can tend to somewhat obscure the use of musical form as a practical model in the early cinematic period. In cases where serialism has been seen to be significant to particular films there is also a dichotomy of theoretical and practical influence. In general, this influence can be seen as coming about through its permeation of the zeitgeist of, particularly, the '50s and '60s (although Noël Burch, especially, sees it also in aspects of much earlier films). Also, though, there are examples of quite detailed applications of serialist-influenced methodology to the

filmmaking process. In the milieu in which improvisation, indeterminacy, and aleatoricism were predominant, the innovative films of the time tended to be part of an artistic atmosphere particularly inclined to the cross-fertilisation of forms. The borders between artforms were being deliberately relaxed, largely through the expansion of the traditional notion of musical composition, resulting in the advent of performance art and 'events'/'happenings'. While this was most overtly seen in live performance forms, it was felt in film also, particularly where theatrical influence was strong.

The strong connection of musical form to certain fundamental issues in seminal media studies is useful in highlighting aspects of the current media environment. In tracing the moving image/musical form relationship as above, a complex and longstanding, even ancient, interrelationship is formed. The particular relevance of this to the current context of digital media can be briefly outlined by reference to certain aspects which were touched on above from a historical perspective, and which also can be seen as having renewed relevance in the contemporary context: a direct *musicality* applied to moving-pictures; concern with structural factors as related to altering the conventional approach to narrative; *audiovisuality* and the hybridity of artforms (as inherent to conceptions of multimedia/intermedia).

Chapter One briefly outlines aspects of the historical relationship of musical form to Western culture generally, in order to provide context for the discussion to follow. While the musical character of moving imagery was widely recognised in early writing on film, this recognition became much less general as time went on. Certain studies in subsequent periods, and recent ones also, when taken together demonstrate that this has always been a significant dynamic. We see that in fact music's connection to a kind of 'multimedia' — a hybrid artform — has ancient origins, and that this is a core element of our social history. Over time, the capacity of music for

expression without denotation — without the need to refer to anything beyond itself — comes to be inspirational both philosophically and for the arts generally. In the early modern period a strong connection to the expression of the 'stream of consciousness' is seen. An overview of the philosophical question of 'musical meaning' outlines issues of form, introduces the importance of the musical relation to classical rhetoric, and brings up the contemporary sociological aspect. The cultural associations engendered by particular musical references are very often subconscious — meanings embedded in the culture itself rather than the individual. The development of Western musical form may be seen as corresponding very closely to the major changes in social organisation historically. Technological developments have always been integral to musical ones, and this is very pronounced in the electronic age.

Chapter Two concerns the widespread tendency in the arts in the early twentieth century, in particular in much early cinema, to look to musical form as the model for simultaneity and multiplicity; new perceptions and experiences of space and time stimulated the desire for such expression. In the French Impressionist and Surrealist cinematic schools, and in the Soviet milieu, this influence was overtly and widely felt. In this period Baroque and Classical forms, particularly *fugue*, provided the primary inspiration, although Impressionist music also had early influence on French film. Rhythmic visual patterning, sometimes very detailed, was directly musically inspired. In the pervasive desire to distinguish the capacities of cinema from theatrical presentation, music provided the primary structural model. The French milieu was intensely active, both practically and intellectually, and featured detailed discussion as to the potentials of the new form, particularly in terms of degrees of 'realism' or otherwise.

'Visual music' animation, instigated by the early developments of Richter and Eggeling, extended into motion the pursuit of analogous form between music and painting. This highly

craft-related form was the vehicle for intense technical innovation, both in the creation of moving imagery and in electronically-produced sound.

Vertov's extensive musical background casts a valuable light on his approach to his filmmaking. His conceptual and practical methods appear to be more directly related to an inherently compositional approach, in a musical sense, than is generally appreciated. It seems clear that Vertov used a kind of 'scoring' technique to achieve the complex rhythmic patterning of many of the sequences in *The Man with a Movie Camera*.

Eisenstein's entire classification of what he regards as the various forms of montage uses musical analogy as its primary descriptive device. This use of musical reference continues throughout his entire career becoming more and more nuanced as time goes on; his notion of cinematic 'counterpoint' moves from the facilitation of dialectical opposition, through conceptions of organic unity, to one in which the individual elements are deliberately enabled to maintain their distinctiveness through the very strength of the overarching form imposed by the artist. The influence of Vsevolod Meyerhold, whose version of 'total' theatre was very much inspired by musical composition, is significant. Eisenstein's work has renewed contemporary resonance, particularly in the tendency towards stylistic patterning as a structuring device separate from narrative.

Chapter Three begins with an examination of the musical issues surrounding the advent and development of atonality and serialism, in order to then endeavour to coherently demonstrate their broader cultural influence, on film and film-studies in particular.

Certain eminent philosophical/theoretical positions, prominently incorporating serialist influence

and which also have strong connections to the film-theory of the time, are considered. Theodor Adorno, drawing from Arnold Schoenberg's revolutionary compositional methodology, developed an aesthetic in which the relation of subject and object is configured according to the dialectic of individual expression and socially-prescribed form. Inspiration is taken from Miriam Hansen's contention that Adorno's musically derived aesthetics have greater value for film-studies than has been heretofore appreciated. The very substantial serialist influence on Gilles Deleuze and Félix Guattari's *Thousand Plateaus,* largely through Pierre Boulez, is traced; this can be seen as continuing through into Deleuze's cinema books, where atonality/serialism is regarded as a significant aspect of the cinematic turn to the *time-image*. David Bordwell's writing on 'the musical analogy', and particularly on the serialist influence on what he describes as *parametric* cinema, is perhaps the most detailed relatively contemporary work on the overall topic of the importance of musical form to film. Bordwell cites Noël Burch as the instigator of serialist film analysis, and the latter's *Theory of Film Practice* is essential to consider in this light. While serialism has a clear relationship to structuralism, there are very important distinctions. In the course of these theoretical investigations many examples are encountered of serialist influence on cinema practice, of various degrees of directness and rigour.

Chapter Four deals with improvisation, indeterminacy, and the aleatoric. There are many intersecting strands to this topic, but all appear to relate to a desire to reach beyond the predetermined and the rigidly stratified.

Again, this chapter begins by outlining the primary musical issues of the time — in this case the 1950s -'60s — before describing their broader relevance. The innovations of John Cage are an inevitable focus. The conception of rhythm as the fundamental structural parameter (and thus of music as primarily expressing the passage of time) becomes widely influential across artforms,

particularly through the emphasis on musical presentation as a form of 'performance art'. Cage's intellectual relationship with Boulez dramatises the often tumultuous dynamics of certain schools of thought, most prominently concerning rigorously systematic compositional control on the one hand, and the use of chance procedures on the other. This period is marked by a vigorous interrelationship of the arts generally; this may be particularly seen in the milieu of New York City. Film is at this time very much part of the cross-fertilisation of visual art, literature and drama, and music. The pervading atmosphere is one of a 'culture of spontaneity', to borrow Daniel Belgrad's phrase. A brief background to the development of the jazz of the time — *bebop* (*bop*)*,* the development generally acknowledged as the advent of 'modern' jazz — aims to provide a degree of socio-musical context to this strong and most widely permeating cultural influence. Beyond the obvious aspect of demonstrating (and inspiring) spontaneity, this influence manifests particularly as an expression of multiplicity deeply related to the rhetorical. The connection of this to contemporary media is outlined in the following chapter. The New York City school of independent filmmakers, leading to the formation of the *New American Cinema Group*, is often described as the first phase of the development in the 'new' American cinema which brought about alternatives to the traditional studio system, and many innovations of theme and style. 'Beat' culture, inspired by the spontaneity and eloquence of bebop, infused both the literature and film of the surrounding milieu. Radical reworking of existing forms, improvisational style, and a tendency towards 'circular' variations on theme, are obvious aspects of this bebop via beat influence. Siegfried Kracauer, working in NYC at this time also, provides a valuable connection between this period and the earlier twentieth century. An overview of his earlier work, and certain recent reevaluations of it, display several aspects with contemporary relevance, particularly in establishing continuities between issues concerning the photographic in earlier modernity and in the digital era. The book *Jacques Offenbach and the Paris of His Time* is an interesting reflection on the function of popular music in an earlier period, and can be read as making broader commentary on the role of popular culture. Improvisation and contingency

are essential themes for Kracauer; in *Theory of Film* he describes the ability of moving pictures to capture the 'flow of life', with its inherent, inevitable unpredictability. Historicity, the view that events 'progress' in a linear fashion, is in Kracauer's view a contrivance, failing to acknowledge the truly random and coincidental nature of occurrences.

Variations in the experience of time, caused by the myriad contingencies of modern life, have resulted in increased multiplicity and simultaneity in expressive forms. Straightforward linear narrative is increasingly unable to accurately encapsulate contemporary experience. Even more fundamentally, Bergsonian conceptions of time have implications for the inherent abstraction or otherwise of the photographic (irrespective of recording medium). The moving-picture, cinema particularly perhaps, has especial capacity for the manipulation of subjective temporality. While music always necessarily unfolds temporally, there are certain senses in which it may express non-linearity; whereas in functional tonality each harmonic element has implications in relation to those preceding and following, in many other cultural traditions, and where these have had modern influence in the West, musical sounds are intended to be appreciated 'in the moment' rather than as elements in a 'progression'. The desire in much twentieth-century composition to reach beyond rigidly stratified parametric conceptions brought about new, more fluid methods for temporal structuring. In film also, techniques of multiplicity and of variation in tempo assist in the achievement of more accurate expression of contemporary experience. Greater awareness of temporal issues — and the deliberate varying of pace — may be helpful in developing methods to assist in dealing with increasingly multiple information sources.

Chapter Five takes its primary emphasis from Lev Manovich's influential text *The Language of New Media*; while that work does not itself deal with music, the theorists and artists presented there as being most significant in relation to 'new' media perfectly serve the topic of this study.

Seminal media theorists Harold Innis and Marshall McLuhan, 'database' filmmakers Dziga Vertov and Peter Greenaway (as Manovich presents them), and pioneering computer-artist John Whitney, all enable discussion of matters directly relevant to musicality. Additionally, the musical influence on the theoretical work of Vilem Flusser is outlined; this work provides a further and provocative context to the social effects of digitality.

Innis's seminal influence on the conception of the *form* of media communication being of fundamental importance to any given society is often unappreciated. His notions of 'space bias' and 'time bias' are the precursors of McLuhan's identification of the 'visual' as linear as with print, and the 'acoustic' as non-linear in the sense that it enables the perception of information in 'mosaic' form. The 'pre-literate' ability to appreciate the latter form relates strongly, in Western culture, to classical rhetoric. This relation, which involves the capacity to recompose modular segments as required, also establishes a strong connection to music. As well as the traditional rhetorical aspect of much classical form, there is a close relationship of musical improvisation (baroque/classical; jazz) and rhetorical technique; both essentially involve the building of a 'database' of reconfigurable modules. Examination of this in relation to the influential mid-century research connecting still-extant oral culture to ancient Western rhetoric establishes connections to contemporary media-studies generally. Psychological aspects of music, relatively extensively researched, provide interesting and useful perspectives on other aspects of media, including film.

Database form, clearly, is the default structural mode of computer-based digital media. Manovich outlines what he sees as ramifications of this and relates it to cinema, which he believes is the primary source of contemporary expectations of 'sequential narrative'. He suggests that database and narrative form have always been mutually hybrid. In any given database, numerous potential narratives exist, which can be realised through the establishment of a chain of *links* between

individual elements. Digital databases tend to resemble Deleuzian/Guattarian *assemblages* in that, as they tend to acquire additional content, they (and the narratives potentially formed from them) are modified. Greenaway uses lists and other database-like sequencing devices to create structures other than conventional narrative. Aspects of his *Eisenstein in Guanajuato* (2015) suggest the relation of contemporary visual developments to Eisenstein's innovations. Manovich believes that, in *The Man with a Movie Camera*, Vertov manages to 'merge database and narrative into a new form'[1]. Pioneering 'computer-artist' John Whitney provides detailed documentation of his application of serialist technique to his development of methodologies for systematic visual permutation.

Flusser details his concept of *technical images*, which he sees as a development from the purely photographic into a form incorporating audio and movement as well as images in the conventional sense. He sees an urgent need for the linear, 'conceptual' thought facilitated by writing to be incorporated into the 'surface', or 'imaginal' thought (as engendered by film, television, pictorial forms…) which is rapidly taking over social experience and in fact, he says, becoming a substitute for reality. As individuals generally become able to create *technical images*, individually and collaboratively, the potential may arise for unprecedented freedom; the model for this behaviour is that of 'chamber music'. The great danger, however, is that this does not come about in time to avoid totalitarian corporate/governmental control.

Chapter Six relates the main themes of the previous sections to the contemporary context. A profound musicality may be seen in both moving image production and theoretical work. In film writing, there are differing views regarding the extent to which greatly increased expression of

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[1] L. Manovich, *The Language of New Media*, Cambridge, MA and London: The MIT Press, 2001, p xxviii

multiplicity, simultaneity, and temporal variation represents the development of alternatives to 'classical' style. There is general recognition of increased segmentation and 'modularity', often involving stylistic variation between sections, along with other tendencies including faster cutting rate. These characteristics are noted as being markedly similar to common aspects of early cinema, as well as being related to the advent of a widely absorbed 'database aesthetic'. Some writers see such changes as increased 'audiovisuality', and as part of a pronounced 'musicalisation'. This is seen as manifesting through unconventional formal structures, textural density, and the tendency towards the mixing of diverse elements into new works. The use of multiple divisions of screen space again recalls early cinema and the 'polyphonic' influence. A certain tendency to theatricality, in some cases, also indicates musical influence.

The phenomenon of 'composed theatre' treats the organisational structure of live performance along the lines of a musical composition, often employing score-like plans as the primary text for all involved. Through Meyerhold, particularly, a historical connection of this concept to cinema may be discerned. In installation art, audiovisual elements have come about largely as a result of the introduction to the art-gallery of elements originally developed through musical compositional innovation.

The *media archaeology* approach offers a means to reevaluate the current context in relation to both historical developments and likely futures. Wolfgang Ernst's *Sonic Time Machines* (2016) emphasises the importance of music as an epistemological model in the study of contemporary media. The concept of *sonicity*, an extension of McLuhan's *acoustic space*, encompasses all vibrational and frequential phenomena (not only actual sounding audio), as these can all be analysed in terms of their temporality. Digital technology is seen as enabling study of audiovisual, and much other, material in a manner much more 'technologically immanent' than traditional methods. Ernst's emphasis on the sonic and the musical relates the field of *media*

archaeology very closely to the topic of this study, and examination of his themes assists in exposing the contemporary resonance of several issues of concern to earlier chapters. The book is highly generative, and provides opportunity to interrogate several issues.

Sergei Eisenstein's *Notes for a General History of Cinema* (1946-48) has recently become available in English for the first time. In this work, a late refinement of his conception of audiovisuality is outlined, in which the individual strengths of the various elements are retained, yet forced into fulfilling the artist's vision by the strength of the overarching form.

All of the factors outlined above in relation to the contemporary context suggest the possibility of a newly envigorated appreciation of the role of musical form, both as a general cultural influence and with particular regard to 'new' media. A recurring theme is the importance of serious experimentation as the basis for genuine innovation, with the desirability of an interdisciplinary approach very much associated with this. The work of the theorists discussed throughout the study all concerns, in various ways, the fragmentation of modern experience, emphasising a certain continuity into contemporary preoccupations.

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1. Historical overview – music and culture

It is almost a cliché to speak of all artforms looking to music as the ultimate inspiration for expressive form, and theoretical writing generally acknowledges this influence. In film theory, however, this is much less the case. Possibly the very predominance of the 'musical analogy' in early, particularly French and Soviet, film writing caused it to largely fall away following the rupture brought about by the introduction of synchronised sound recording. However it was the temporal similarity in rhythm and movement between music and the moving image which brought the analogy about, and very little if anything to do with the lack of film sound. The coming of synchronised sound, though, certainly appears to have curtailed the development of that aspect of film theory dealing with the musical-poetic qualities of moving imagery. (A notable exception is Eisenstein's otherwise broadly influential theoretical writing which maintained, if anything more overtly, its musical referencing through the early sound period and throughout his later work.) Perhaps, whereas initially association to the unimpeachable artistic credentials (especially then) of music, via the similarities in rhythm and movement, was a very desirable asset in the quest to prove film's artistic value, the later desire to prove its 'medium specificity' produced a kind of overcompensation in this respect. Despite important instances then, which will be dealt with in subsequent chapters, there is much less theoretical work on music's formal relationship to the moving image than there is about music and the other major artforms. The aim of this initial chapter, therefore, is to provide an overview of what have been seen as primary issues in the relationship of music to culture and to society, with an emphasis on those that will be seen as particularly significant in the forthcoming discussion.

In ancient Greece, the artistic form of *mousike* combined music, poetry, and dance. This constituted the basis of culture generally, and included a wide range of performance types from

small spectacles to large events involving the whole community. (The poetry component of this cultural activity facilitated 'collective memory' and required constant recitation to ensure retention. It was this socially-prescribed character of which Plato was particularly critical.) It formed 'the backbone of a traditional education'[1], and a level of musical ability, typically being able to tune and play the lyre, was considered a marker of cultural proficiency. With the rise of democracy and literacy from the fifth century BC, these aristocratic skills began to be spread more widely, and *grammatike* (reading and writing) became integrated with *mousike* in educational practice. Professionalism in music began to rise at this time also; instruments such as the *aulos*, a wind instrument using a reed, required greater technique than the simple lyre, and were generally played by professionals. There was an 'intimate connection'[2] between *mousike* and *gymnastike* — music accompanied exercise and actual athletic events; a dancelike grace was considered desirable in athletic endeavour. In the 4th century BC, Aristotle wrote of the importance of *mousike* as a leisure activity distinct from 'play'. Rather than merely for amusement, it is regarded as important for intellectual, physical, and emotional well-being; to engage in performance as well as listening is considered crucial[3]. The advent of writing removed the necessity of oral performance as the means of preserving culture, so that poetry and music began to separate. Among the effects of this are that poetry may be seen as losing its direct connection to the voice, and music as losing its direct relation to verbal meaning.

In the Renaissance, with the near absolute power of the church waning, Aristotelean mimesis came into intellectual fashion again, whereby music is said to imitate 'character, emotion, and action'[4]. It is unclear, though, exactly what a given piece of music might be said to be 'imitating'. Other philosophical views, such as that of Jean-Jacques Rousseau, held that rather

[1]   S. Bundrick**,** *Music and Image in Classical Athens*, New York: Cambridge University Press, 2005, p.49

[2]   ibid., p.74

[3]   P.L.P., Simpson, (ed.), *The Politics of Aristotle*, University of North Carolina, 1997, p.164 (Aristotle's 'Politics', 1340b20)

[4]   E. Prieto, *Listening In: Music, mind and the modernist narrative*, Lincoln: University of Nebraska Press, 2002, p.4

than representing objects or circumstances as such, music brought about similar emotional responses to those that would be felt through direct experience. This mimetic thought was in force through the 19th century; many composers in this period looked to literature as a model for music. Program music and tone poems — pieces deliberately composed to try to represent specific 'stories' — were popular; chromatic harmony (a broadening of the chordal palette), and technical instrument-making innovation, created the possibility for greater tonal colour from orchestral music during this period. Opera, very much a popular entertainment form as well as 'art music', can be regarded as the *multimedia* of the time. Richard Wagner, championing the ancient Greek notion of *mousike*, argued that all the various elements of the operatic spectacle should be organically unified into a single form.

Musicality can be seen as being of the utmost importance to the poets of the *Symbolist* movement in the late 19th century. Many of these writers were very much influenced by Wagner who was in turn influenced by Arthur Schopenhauer, the first major philosopher to place *absolute*, purely instrumental music among the 'fine' arts. He in fact placed it above the others; in this view, by manifesting expression without denotation of anything extraneous to itself, music could actually approach *the thing in itself*: Immanuel Kant's conception of unknowable ultimate truth. The Symbolist connection to music worked in the other direction also: Claude Debussy took many themes and texts from Symbolist works (including for his famous *Prelude to the Afternoon of a Faun*, based on the poem by Stéphane Mallarmé); Alexander Scriabin is often described as a Symbolist composer; Arnold Schoenberg's *Pierrot Lunaire*, a very well-known, relatively early *Expressionist* piece uses poems by Belgian Symbolist Albert Giraud. Often credited, including by no less a figure than James Joyce, as the literary originator of the interior monologue is Edouard Dujardin, author of *Les lauriers sont coupe* (1887). A trained composer, and a published music critic, Dujardin took a great deal of influence from Wagner, and believed that it was through Wagner that Symbolist poets came to incorporate the Schopenhauerian notion

of 'equating poetry with music in its realization of impulses stemming from the prerational

Self'[1]. Claude Lévi-Strauss actually credits Wagner as being 'the undeniable originator of the

structural analysis of myths', then stating, 'it is a profoundly significant fact that the analysis was

made, in the first instance, *in music*'[2].

Numerous significant 20th century writers have used music as a primary influence. T.S. Eliot

wrote of what he saw as the underlying musicality of poetic and dramatic structure, and is quoted

as saying, 'a "musical poem" is a poem which has a musical pattern of sound and a musical

pattern of the secondary meanings of the word which compose it, and that these two patterns are

indissoluble and one'[3]. Joyce is frequently described as deliberately applying musical principles

to the language in his writing, including 'experimenting with three properties commonly

associated with musical counterpoint: *simultaneity*, *repetition*, and *autonomy* versus

interdependence'[4]. Samuel Beckett is a particularly interesting case in this respect because of

both his stature, and the degree of influence of music on the philosophical background to his

work. Aiming to move beyond conventional denotation in language, he frequently mentions

music, particularly musical form, as a primary influence, and uses repetition and variation

extensively. Actors who worked with Beckett described the process as very much a musical one,

with the rhythmic and other detail of delivery of lines being very precisely specified[5]. Tempo,

also, is said to have been of great importance, Beckett even reportedly using a metronome in

rehearsals. This approach to the significance of music as a model is influenced by Schopenhauer.

Beckett is quoted as writing ...

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[1]   S. Huebner, 'Édouard Dujardin, Wagner, and the Origins of Stream of Consciousness Writing', *19th-Century Music*, Vol. 37 No. 1, Summer 2013, p.63

[2]   C. Lévi-Strauss, (1964), *The Raw and the Cooked: Introduction to a Science of Mythology, Vol.1*, New York: Harper & Row, 1969, p.15

[3]   D. Fuller, 'Music', in *T.S. Eliot in Context*, (J.Harding, ed.), Cambridge University Press, 2011, pp.141-142

[4]   D. Mosely, 'Music and Language in James Joyce's "The Dead" ', in *Allegory Revisited: Ideals of Mankind*, (Tymieniecka, A-T ed.), Kluwer Academic Publishers, 1993, p.191

[5]   M. Bryden, *Samuel Beckett and Music*, Oxford and New York: Oxford University Press, 1998, p.44

> Because it does not use concepts, music can, when interpreted correctly, remove the intellectual barriers that keep human understanding on the phenomenal surface of things and communicate an experience approaching the status of the contemplation of the thing-in-itself.[1]

Beckett's late work, from the 1960s, involved working with audiovisual media, and in these pieces he overtly integrated music into the drama on an equal footing with the words. The piece *Quad*, for instance, 'for four players, light and percussion' (currently accessible online), consists entirely of precise, patterned movement of the four performers, with a different percussion instrument associated with each performer. Such works indicate a form of *serialist* structure; in fact, the case has been put that Beckett's plays 'attain to formal coherence and relativity'[2] through the model of musical serialism. The background and more general influence of the serialist method are outlined in Chapter 3.

A significant structuralist aspect of the interest of 20th century writers in music is that of the approach to the organization of content. For *nouveau roman* writers for instance, such as Robbe-Grillet, the subject matter, the 'raw materials' used in a work, were to be treated in much the same way as composers in the classical tradition (which in this sense includes serialist composers) use their materials. Rather than particular elements — tunes in music, or descriptions of events in literature — being, in themselves, the end product of the compositional process, they are the building blocks from which the composition is made. Formal structural processes are thus emphasised, and in fact become to a great extent inextricable from the content of the work. This approach may be seen to result from the desire to achieve a more accurate depiction of real experience, from the view that 'the conventions of traditional realism can impede our access to reality, since they tend to perpetuate a nineteenth-century worldview, blinding readers to those

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[1]   E. Prieto, *Listening In: Music, mind and the modernist narrative*, Lincoln: University of Nebraska Press, 2002, p.173

[2]   H. White, 'Something is taking its Course', in Bryden, 1998, op. cit., p.163

aspects of reality that can't be accommodated within the epistemology that gave rise to realism'[1].
Rather than the 19th century form of 'realism', focusing on the outer, physical world, modernist
literature (as with art generally) became concerned to express mental and emotional states and
processes.

There is a 'scientific' dimension to the study of music's expressive properties, which in fact may
be seen as directly relevant to the quest to accurately express the process of thought. Musical
sound, like all sound, consists of precisely definable audio waves, occurring at precise
frequencies, resonating according to precise, physically determined, harmonic overtone series.
These travel through the air and strike our ear-drums, which register them with great accuracy.

The aural structure of music, and the exact patterns of its physical access to our consciousness
are thus precisely discernible, particularly with contemporary technological facilities. One
cannot help but notice the interesting apparent paradox that while music is often regarded as a
particularly abstract art, it is in fact, for the reasons outlined above, entirely quantifiable in
virtually every aspect. And yet, of course, this by no means renders its effects simple to describe.

The concern of many twentieth-century writers with the musical model may be seen as often
being a desire to discover 'a mechanism, the mechanism that governs human thought'[2]. Physical
and social scientists have been interested in this subject also; notable in this context is Claude
Lévi-Strauss, who drew parallels between music and myth in that both create meaning in ways
that do not rely on language. Music, in this analysis, is a kind of language without meaning —
thus listeners are inclined to create meanings of their own to correspond to their responses; myth,
analogously, may maintain its meanings though being potentially expressed in completely
different ways. Thus, 'it is valid to consider myth and music as closely related when observing

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[1] Prieto, 2002, op. cit., p.274
[2] Prieto, 2002, op. cit., p.257

their specific sign structure'[1].

Modernist music often drew upon folk traditions, and used their energy, 'expressive power', and 'spirit of an organic community'[2] to facilitate some of the most radical innovations of their time; examples can be seen in Igor Stravinsky (notably in *The Rite of Spring*, 1913), and very much in Béla Bartók. Other, particularly nationalistic, instances include Jean Sibelius (Finland) and Charles Ives (U.S.). This may correspond to a similar preoccupation with popular forms — circus and vaudeville for instance — among practitioners and theorists across the arts generally.

Musical meaning

… the nexus of musical meaning, both positive and negative, involves itself with the formative conditions of modern subjectivity in its diverse registers, historical, social, and symbolic...[3]

The question of in what sense music may be said to have *meaning*, given its separation from direct verbal signification, is perhaps the most widely discussed musico-philosophical issue. Attempts to answer this uncover issues of form, of the socio-political role of music, and of certain kinds of non-verbal signification.

In attempting to uncover the nature of musical meaning, particularly in relation to literature, and how this may help us to understand the general nature of 'meaning' and 'communication', Eric Prieto examines the writings of several theorists. For some, music is a representation of mental states — emotions, moods etc. For others, such as Monroe Beardsley, rather than being symbolic of anything at all, music embodies process itself — 'a catalyst for abstract (formal) thought'[4].

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[1] E. Tarasti, *Myth and Music: A Semiotic Approach to the Aesthetics of Myth in Music*, The Hague: Mouton Publishers, 1979, pp.29-30

[2] B. Gendron, 'Music', in *A Companion to Modernist Literature and Culture*, (Bradshaw, D, and Dettmar, K, eds.), Carlton: Blackwell, 2008, p.261

[3] L. Kramer, *Musical Meaning: Toward a Critical History*, Berkeley: University of California Press, 2002, p.8

[4] Prieto, op. cit., p.30

Nelson Goodman, using the concept of *exemplification*[1], describes music is as signifying

qualities which are not able to be identified verbally (denoted). So music is said to exemplify,

rather than to denote. Various views of music's relationship to semantics are examined. Some

theorists, including Thomas Pavel and Paul Ricoeur, are said to outline the view that the

denotative function of language is separate from its meaning. Metaphor, for instance, is said to

be able to 'describe aspects of reality that remain inaccessible to the literal, directly descriptive

mode of philosophy'[2]. It is suggested that music may function in this way also — that ...

> music is not an other of literature, but, rather, a semantic horizon of literature, that point
> at which literary statement, having traded directions and literality for an ever-increasing
> semantic range, gains access to meanings completely inaccessible to direct verbal
> predication[3].

Other theories, directly musicologically derived, regard musical meaning as something entirely

other than semantics. The notion that the *meaning* of music consists entirely in its *form* is

pervasive in musical aesthetics of the modern period. Perhaps the most influential extrapolation

of this view is Eduard Hanslick's *On the Musically Beautiful* (1891). Hanslick became

convinced that the association of music with other cultural or worldly elements, as was

popularised at the time by composers such as Wagner and Franz Liszt, was tending to rob it of

its true expressive meaning. In a sense, then, he is rejecting the notion that music's ideal role is

as the central element of a 'total art', and advocating its autonomy. It is this view of music as

autonomous, removed from connection to specific worldly reference, that enabled it to become

so widely regarded as 'an ideal model for the other arts'[4]. Whatever view of these matters one

ultimately wishes to take, Hanslick's book is very useful as a detailed consideration of the role

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[1] ibid., p.35

[2] ibid., p.44

[3] ibid., p.48

[4] A. Mollaghan, *The Visual Music Film*, Basingstoke: Palgrave Macmillan, 2015, p.42

of form. For Hanslick, while the fundamentals of musical art may be usefully defined in mathematical terms, aesthetics begins where these basics end. Furthermore, music is in reality no more 'mathematical' than any other art, though it may initially appear so. Whereas in verbal language the sound *signifies* meaning, in music 'the sound is an object, i.e., it appears to us as an end in itself'[1]. Hanslick believes that it is therefore the beauty of the *tones* themselves (by which he chiefly means the particular notes of the Western scale and their artful combination) which create any *meaning* music possesses, rather than the crafting of particular sounds in such a way as to effectively achieve any specific linguistically identifiable expression, as in verbal forms; thus 'music speaks not merely by means of tones, it speaks only tones'[2]. Architecture and dance are cited as examples which, likewise, have no content separate from their form. Hanslick regards musical *forms* as being compatible with 'mind'; he disagrees with Hegel who is quoted as claiming that music can only articulate an 'unindividuated inner self'[3], saying that individual tonal structure/s may display human individuality, interestingly describing such composition as resulting from '*spontaneous* creation of mind'[4]. Hanslick claims that the characteristic that music has in common with emotional states (rather than the capacity to directly represent any particular state) is *motion*, and that it is able to shape this with great capacity for nuance. As Nicholas Cook points out, Hanslick's approach is not, as widely misunderstood, 'a denial of music's capacity to support expressive meaning'[5]. The musical world assumed here is, of course, that of the Western tonal system, which has a particular and fundamental attachment to the expression of motion through harmonic progression, although Hanslick also intends the inclusion of other means of achieving its expression such as gradations of increase and decrease (of texture, volume, etc.).

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[1] E. Hanslick, *On the Musically Beautiful* (1891), Indianapolis: Hackett Publishing, 1986, p.42
[2] Hanslick, 1986, op. cit., p.78
[3] ibid., p.83
[4] ibid., *emphasis added.*
[5] N. Cook, 'Theorizing Musical Meaning', *Music Theory Spectrum,* Vol 23, Fall 2001, p.174

M. E. Bonds outlines the historical relationship of musical form to *rhetoric*. He points out that there is a particular ambiguity in the general usage of the word 'form'; it is commonly used to refer to the basic features which a work shares with many others, and also to refer to those structural characteristics which make a work unique. These two usages are in fact contradictory, and represent 'fundamentally different attitudes to the relationship between form and content'[1] — the first assuming that the content of a work can be distinguished from its form, the second precluding this. While comparison of music to rhetoric has a very long history, it was in the 18th century that a conception developed of music as a 'language' in its own right, separate from verbal text. It came to be widely regarded as 'a kind of wordless oration whose purpose was to move the listener'[2], using rationale directly parallel to that of formal rhetoric. In the 19th century, this metaphor of oratory was gradually replaced by a conception of the 'organic'. The earlier form emphasised the possibility of its recognition by the audience, the later 'the autonomy of both the artwork and its creator'[3]. The former is not generally a precise, literal alignment of the structural elements of music and rhetoric (despite certain instances where this was attempted). In any case, in Aristotle's definition of *rhetoric* — much broader than that concerning specific oratorical technique — persuasion of the audience is emphasised, and '[c]onventional patterns, by providing listeners with points of reference and predictability, facilitate the presentation of a content that necessarily varies from work to work'[4]. Both of these methods of conceiving of form — the rhetorical and the organic — are of course metaphorical; Bonds points out that such metaphors can become 'so pervasive as to fashion our view of the world'[5]; rather than looking for their literal meanings we should consider what reasons there may be behind the use of the

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[1]   M.E. Bonds, *Wordless Rhetoric: Musical form and the Metaphor of the Oration*, Cambridge, MA: Harvard University Press, 1991, p.1
[2]   ibid., p.4
[3]   ibid.
[4]   ibid., p.5
[5]   ibid., p.7

particular metaphors — what conceptual social needs were being met? The classical use of rhetorical form, emphasising the listener as it does, has a striking contemporary parallel with reader/viewer-centred theories and with genre theory's conceptualising of structural stereotyping. The important connection of rhetoric to media-studies, and the further relation of this to music is outlined in Chapter 5.

Theodor Adorno concurs with the view that music's meaning is expressed through its formal structure, but believes that this is inevitably and profoundly linked to its sociological context. This is not to say that it necessarily accurately reflects its society, but when it fails on that score this in itself is sociologically telling. The way in which music is most valuable, for Adorno, is by reflecting the great social issues of its time in its own structure. 'The task of music as an art', he says, 'comes thus to be a kind of analogue to that of social theory'[1]. The use of music as mere decoration, as superficial entertainment, is regarded as dangerous in the extreme (and subject to insidious political exploitation) through engendering the psychological state of complacent enjoyment without any suggestion of danger, or of the inevitable complexities of life. Adorno draws on Henri Bergson's criticism of the contemporary conception of time as mechanical and segmented, relating this to the industrial system of 'conveyor belt' production. Music at its best (its most 'meaningful' perhaps?) fully uses its nature as a temporal form to express the possibility of change, development, and improvement. As outlined by Tia DeNora, Adorno saw Schoenberg's ' 'liberation' of tones from functional tonality … as analogous to the utopian 'association of free men' '[2], and furthermore as a musical basis for a philosophy with the same intention. Adorno's musical philosophy, and its relation to broader culture including its relevance to film, is more fully dealt with in Chapter 3, *Atonality & Serialism*.

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[1]   T. Adorno, 1962, *Introduction to the Sociology of Music,* New York: The Seabury Press, p.70
[2]   T. DeNora, *After Adorno: Rethinking Music Sociology*, Cambridge: Cambridge University Press, 2003, p.70

Susan McClary describes a tendency for music to be held separate from its place in the actual, social world through its 'mystification' by both experts and lay-listeners[1]. Both, she says, recognise music's manipulative power. Experts, as a kind of 'priesthood', find it to their advantage to encourage the mystery; general listeners prefer to think of such power as beyond human control, and/or as not really of any truly *meaningful* significance. Eighteenth-century, truly *classical*, music is compared in terms of its social symbolism to that which precedes and follows it historically. In seventeenth-century music, structural fragmentation and unpredictable harmonies may be seen as reflecting the vigorous emergence of the bourgeois class. In the eighteenth-century, an image of a kind of formal 'perfection' is presented, of a system where any degree of harmonic tension can be 'worked through' and finally contained. This model of the bourgeois individual functioning effectively within societal constraints is still, says McClary, a significant influence on our general cultural thought; in a period in which intellectual certainties are particularly slippery, we may tend to hold on to 'shreds of evidence for the universal truth-content of bourgeois ideology'[2]. In reality though, this model may be viewed as being as ideologically based as any other. An aspect of the formidable compositional skill of J.S. Bach, the progenitor of *classicism* in this sense, is his ability to present musical material derived from earlier, modal traditions and, by reworking these 'through tonal harmonic syntax' with singular ingenuity, enabling them to be 'taken as paradigms of tonal propriety'[3]. At the end of the *Classical* period (and the beginning of the *Romantic*), Beethoven's breaking through the structural, conventional constraints of the eighteenth-century may be seen as exposing the pretence of objective perfection and truth which they represented. Referring to Adorno in this context, without opposing the general validity of this interpretation, McClary puts the view that

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[1] S. McClary, 'The blasphemy of talking politics during Bach year', in R. Leppert & S. McClary, *Music and Society: The Politics of Composition, Performance and Reception*, Cambridge: Cambridge University Press, 1987
[2] ibid., p.57
[3] ibid., footnote 49, to p.56

one should bear in mind that he regarded the German musical canon as 'a repository of truth' when one considers his criticisms of, for instance, jazz and the music of Stravinsky.

Examining various contemporary theories of musical meaning, Nicholas Cook mentions the view that music can express 'gross' emotions (happiness, sadness...) but not more nuanced, more specific ones (joy, elation, grief, abjection...). Deferring back to Hanslick, however, he suggests that the more accurate view may be the reverse: that 'music conveys not unnuanced emotion but emotionless nuance'[1]. In other words, this argument, and Hanslick's, is *not* that music cannot evoke depth of emotion, but that the emotion is *unspecific* — that the same passage may even be either deeply grief-stricken or deeply joyful — but is highly *nuanced*. In this sense of 'potential' meaning, specific semantic translation (putting the meaning 'into words') is clearly not possible. Cook suggests the very useful example of listening to a conversation in a language which one cannot literally understand; despite the semantic lack it is quite possible that one may get a detailed impression of emotional content, albeit very likely unspecific. Roland Barthes is quoted as saying 'the "obtuse" meaning of visual images … defies explicit formulation or representation', so that perhaps it is not only musical meaning that is not entirely translatable into words. Cook suggests that perhaps musical (and other) texts signify/have meaning in the same way that material objects do: '[t]hrough the social construction of meaning'[2]. Cook also mentions criticisms of Adorno-influenced so-called 'New Musicologists' (such as McClary and Leppert) and also of John Shepherd, which posit that their view that society is accurately reflected in musical form relies on an overly objectified conception of social structure. Another widespread criticism is that the 'New Musicology' uses conventional musicology/theory in its own critical analyses; however, as Cook points out, McClary herself emphasises the 'provisional' nature of all interpretation. In fact, she is surely primarily demonstrating the way in which

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[1]   N. Cook, 'Theorizing Musical Meaning', *Music Theory Spectrum,* Vol 23, Fall 2001, p.180
[2]   Cook, 2001, op. cit., p.178

conventional analysis is provisional and in fact can be used to demonstrate very non-traditional theses.

Lawrence Kramer believes that examination of the question of musical meaning has a special potential to cast valuable light on the character of the production of meaning generally, particularly in the modern era. Whereas narrative and visual forms *exemplify* 'scenarios of subjectivity'[1], music, rather than creating identification with a specific dramatised subject, actually provides listeners an experience through their own, 'everyday', subjectivity. Semantic qualities are medium-specific, distinctly musical or linguistic; *meaning,* however*,* is created through their 'higher-level' formal organisation. This inevitably entails some level of ambiguity and makes the issue of meaning constantly subject to critique. Any particular individual interpretation is selective, and inevitably imperfect. Meaning is in fact produced through the process of mediation, not contained within a work itself. In other words, it is only through the possibility of manifesting an expression from one medium in terms of another that any *meaning* can be conceived. This inherently involves paraphrase and should always be recognised as being culturally contingent; this recognition needs to include the work's own cultural context, relevant contexts post-dating the work's origin, and the current context. Any resulting frameworks must always be regarded as interpretations/constructions and should avoid as much as possible 'fictions of universality'[2].

Kramer cites Richard Leppert when describing the importance of the visual in determining the *social* meaning of music. In the 19th century the figure of the piano virtuoso, Franz Liszt in particular...

> imparted to sound the otherwise purely visual power of perfect correspondence between

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[1]   L. Kramer, *Musical Meaning:Toward a Critical History*, Berkeley: University of California Press, 2002, p.7
[2]   ibid., p.20

reality and representation, the contemporary criterion for which was the supposedly unimpeachable fidelity of the camera … The "transcendent merit" of such playing was to annul or even reverse the relation of conception and performance, original and copy.[1]

Referencing Heinrich Heine and Slavoj Zizek/Jacques Lacan, Kramer outlines the theory that the 'blood-red' roses which came to be the traditional tribute following a virtuoso performance represent a 'stain' of the desire to actually be 'touched' inside by the performer, as if there was a kind of 'revolution' in group psychology under way at this time, one 'basic to the dynamics of the modern mass entertainment that Franz Liszt's virtuoso career helped to launch'[2]. Also, the seated audience could be considered to be enjoying the highly physical performance as a 'carnivalesque' pleasure (referencing Bakhtin). Referencing Stanley Cavell, Kramer outlines the way in which *A Night at the Opera* (Wood, 1935), while it lampoons the pretensions of grand opera in vaudevillian fashion, actually also features operatic-style love themes, the interweaving of which (in a 'musical' fashion) contributes to the overall social satire.

In the modern period, '[m]usic has by and large been cut off from the communications system by which meaning in Western cultures is produced'.[3] While verbal language is the essential tool through which humanity creates the sense of having 'a world', it is unable to fully 'grasp' reality, and requires other means to supplement it. Visual image is undoubtedly preeminent among these, particularly so in the modern period. Referencing Gilles Deleuze and W.J.T. Mitchell, Kramer outlines the view that 'the general Western system of meaning operates on the basis of an opposition between … the verbal and pictorial description of reality'[4]. Mitchell's concept of the *imagetext* concerns this interplay of 'telling and showing, diegesis and mimesis'[5]. Mitchell does refer, briefly, to the relationship of music to this dynamic: 'It is a commonplace in intellectual

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[1] ibid., p.73
[2] ibid., p.75
[3] ibid., p.145
[4] ibid., p.146
[5] ibid.

history that the relation of the "sister arts" of poetry and painting underwent a basic shift in the early nineteenth century, a shift in which poetry abandoned its alliances with painting and found new analogies in music'[1]. Kramer argues that the separation of music from this dynamic is historically constructed and that it artificially removes music from meaning. He posits that the primary historical form of music is in combination with imagetext as a form of *mixed media.* The 'vision of music as a resistance to or surmounting of meaning'[2] is a powerful cultural construct, such that one must continue to bear it in mind and balance it with the notion that music is in reality a natural part of human communication. Musical meaning (in the semantic sense) in the light of its relationship with the imagetext may be seen as being in fact gained through its very use in this way rather than inherent — so that, strangely, 'the musical meaning precedes the music itself'[3]. However, while music tends to 'absorb' meaning from the imagetext, it also 'holds over' a *remainder*, an additional meaning. The cultural primacy of the imagetext limits the extent to which this process can occur in reverse. It may do so however, particularly when the music 'involves quotation, stylistic allusion, parody, or the social typecasting of style or genre; that is, when it is less the music ' 'itself' that contributes meaning than traces of the lore surrounding it — traces that is of earlier ascriptions'[4]. (The significance of such culturally determined factors to the question of musical meaning will be discussed in the following section of this chapter.) The relationship of music and imagetext is complex and multifaceted; the meaning which music may impart is interrelated with that of the imagetext and they reconstitute each other dynamically. Kramer does not disagree with Schopenhauer's view of music as relating closely to 'the true nature of things', but regards this as its ability to ' "assume" appropriateness'[5] contextually.

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[1] W.J.T. Mitchell, *Picture Theory: Essays on Verbal and Visual Representation,* Chicago: University of Chicago Press, 1994, p.115
[2] ibid., p.147
[3] ibid., p.148
[4] ibid., p.149
[5] ibid., p.154

Referring to E.M. Forster's short essay *Not Listening to Music* (1939), Kramer briefly outlines two commonly contrasted modes of listening to music which may be called *associative* and *structural*. Associative listening refers to the very common mode in which one conjures up images of 'scenes, narratives, styles, ideas, turns of phrase, and so on'[1], corresponding in some way to the effect of the sound. Structural listening consists in concentrating on the formal patterning of the music; traditional musicology has tended to regard the unfolding of this formal structure as the essence of musical *meaning*. Some degree of 'association' is probably inevitable however, even during quite disciplined structural listening. Undoubtedly it is when actually playing music that one can be closest to focusing purely on the sound and the technique of its production, which may also tend to enhance awareness of structure. Kramer points out that the way that Forster's amateur enthusiast's concern to integrate the two forms of listening, continuing to find some relief from the tragic contemporary circumstances, 'is consistent with the then century-old desire to cultivate an independent ethical sphere through musical aesthetics'[2]. What are also at play in this dichotomy of listening modes are two distinct approaches to the appreciation of culture: in the case of the structural mode, strict, *classical*, and disciplined, appreciation results from effort; the associative mode, more accessible, less demanding, might be regarded as more 'utopian' or 'escapist'. However the ascriptions which are applied to musical works — necessarily based on 'speech acts', often complex, vague, historically contingent — are always important parts of their meaning. Musical meaning is thus perceptible in just the same way as is meaning in life in general, 'amid a dense network of social, cultural, and historical forces'[3]. The relationship of music and the imagetext is especially 'dynamic', as music both enhances the meaning created through the combination and brings about further possibilities through the *remainder*. Kramer claims that musical hermeneutics is necessarily ascriptive; this 'thus renders music's lack of a rich referential system irrelevant to the

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[1]   ibid., p.160
[2]   ibid., p.161
[3]   ibid., p.163

question of meaning … Musical meaning emerges along a shared continuum of ordinary,

effective processes of ascription that are basic to the shared experience of music, as they are to

shared experience in general'[1]. Kramer:

> … even with the imagetext, the contents of a complex representation never fully
> determine its meaning. To arrive at meaning, one must redescribe, resignify, place in
> context, put into relation, and in so doing one always exceeds what can be strictly derived
> from the representation's semantic units. The units do not even fully "have" their own
> meanings until they are referred to a higher-order meaning, an organizing process or
> pattern.[2]

Wittgenstein's concept of the *nest*, a grouping together of several 'diverse bits and pieces', is

related to hermeneutics generally as both 'lived experience' and 'improvised assemblage';

interpretation is always ascriptive, always improvised, and music exemplifies this.

Kramer states that 'an understanding of how music works in the context of mixed media can

supply a general model of musical meaning'[3]. (Contemporary instances of productions of

various kinds, in which a musical influence can be seen the primary structural factor, will be

described in Chapter 6: *The Contemporary Context*.) The musical *remainder* creates a desire for

further interpretation, resisting the closure towards which semantic meaning tends. The culture

of the 'modern' period (perhaps now a historical one itself) has been particularly concerned with

the tension between mixture and purity. Such forms as collage and cinema exemplify mixture,

although many traditional forms often also involve it, even though it may be only on reflection

that this is apparent (illustrated books, vocal music …). Late modernity found a certain loss of

purity 'traumatic'; early postmodernism recognised that the mixture was in fact in the true nature

of things. The notion of the 'total work of art' might be seen as revitalised through the various

contemporary mixtures of artforms, lifestyle choices, 'high' and 'low' culture, etc.

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[1] ibid., p.166

[2] ibid., p.169

[3] ibid., p.173

The distinction is made between 'assortment', where diverse entities are gathered together, and 'mixture', where blending occurs: mass culture predominantly features assortment, as with magazines, albums/CDs, shopping malls, the Web, etc., and may be coming to dominate culture generally; mixture requires structure in order to facilitate 'the crossing or negotiation of boundaries'[1]. Kramer describes avant-garde artworks as typically involving assortment, with mixed-media being in reality more typical of traditional forms. Writing in 2002, he sees the danger of 'mixture' losing its sway, with culture becoming more and more divided into 'niches'; however recent developments suggest that web-based forms may be heading towards greater degrees of mixture (integrated information streams etc).

Music may be seen as 'preeminently that which mixes, the master solvent among the arts'[2]. It can 'distill' narrative or affective experiences from cinema or theatrical performance in such a way that, for example, repeated themes can summon them up ever more strongly through repetition. This capacity is related to the modernist conception of musical 'purity' as a defence against overriding heterogeneity; as part of media mixture, music is exquisitely vulnerable to either debasement or revitalisation. Kramer uses the example of Grieg's musical motive as used in *M* (Lang, 1931) to describe the possibility of fluid and multi-contextual meanings being suggested by a musical fragment, entirely outside itself as simply a piece of sound. A further useful cinematic example of a musical *remainder* is cited: that of the obscured soprano practising scales in *Rear Window* (Hitchcock, 1954). Here, the visual boundaries of the film do not completely enclose the musical element of the singing which is therefore heard with an imprecise added meaning.

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[1]   ibid., p.177-178

[2]   ibid., p.179

There are instances where the musical meaning generally registered in response to particular musical elements is straightforwardly culturally produced. Raymond Monelle outlines the phenomenon of the musical *topic*; this is a recurring motif with particular cultural connotations which may be seen as bringing about particular meanings. Particular instrumentation, or particular melodic figures, may represent or 'signify', for example, hunting, weeping, militarism, countryside, and so on. (In ancient classical rhetoric, topos, plural — topoi, refers to general argumentative forms which any rhetorician might use in developing a theme; Aristotle's 'Topica' is the most famous reference.) The phenomenon is originally a literary one; in ancient literature 'the signifier and the signified are not necessarily contemporary or local to each other … the topical signified may be wholly imaginary, a reflection of cultural fantasies'[1] — thus a poem might refer to lions in English forests, or an idyllic pastoral scene with refined, musical shepherds relaxing. It is therefore important to recognise that the entity being signified may never in fact have existed, materially or socially.

Whereas Ferdinand de Saussure, as a 'nominalist', believed that 'every property of the real world was attributed to it by language'[2], I.A. Richards (an influential teacher of McLuhan who emphasised the 'communications' aspects of English studies) and C.K. Ogden, as 'realists', believed that words refer ultimately to material objects; however, in this latter conception, a *word* initially 'means' a *thought*, which may then subsequently become associated with an actual material object ('tree', 'dog', …) — symbol and referent are not connected directly, but indirectly. But language need not always refer to the real world — for instance 'a dragon has

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[1] R. Monelle, *The Musical Topic: Hunt, Military and Pastoral*, Bloomington and Indianapolis: Indiana University Press, 2006, p.13

[2] ibid., p.21

four legs' is as linguistically meaningful as 'a cat has four legs'. Context and practicality are

necessary in order for communicative meaning to be discerned, in verbal language as in music:

'Ultimately, all signs, including musical signs, operate across the nexus of signifier and signified,

expression and content'[1]. Monelle favours a conception of musical meaning whereby a

'correlation', or 'association', of a particular musical figure with a particular emotional response

is culturally ingrained to the extent of bringing forth the response without any reference to the

original 'iconic' connection; 'in Peircian terms, it is symbolic, based on rule or convention'[2]. An

example is a falling minor second (two adjacent keys on a keyboard for instance — the upper

sounded, then the lower), representing the emotion of grief. Such musical symbols may be akin

to Eco's concept of 'cultural units', which 'have their being within a culture, rather than within

language'[3]; examples given include 'uncle', 'progress', 'art'.

Monelle examines musical signification with close reference to C.S. Peirce's classifications. He

classifies musical 'topics' as being either iconic or indexical according to whether the

signified/object is 'natural, social, cultural and historical'[4], in the iconic case, or actually already

musical in the indexical case. The example is given of the 'noble horse' topic: the

signified/object (the horse itself) is not musical; Monelle says that the *ground* in this case — the

sound of a gallop — is also not musical, so this is 'iconic' — only the signifier, a kind of 6/8

rhythmic pattern, is musical. (Peirce's 'ground' — which may be an 'icon', an 'index', or a

'symbol' — is the particular aspect of the signified/object which links the

signifier/representamen to it.) In another example, that of the military trumpet-call topic, the

signified/object is already musical; this, according to Monelle, makes the signification indexical.

In both iconic and indexical topics, 'there is a world of associative signification beyond the

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[1]   ibid., p.22
[2]   ibid.
[3]   ibid., p.24
[4]   ibid., p.28

musical repertoire, of course, embedded in literature and social history'[1]. A certain 'heroic' character is often suggested by reference to hunting sounds; although the literal reference is unlikely to be meaningful to most contemporary listeners, the culturally embedded suggestion of this particular quality is generally still strong. An exciting, racing character is given by the use of 'galloping' speed and rhythm, even though horses are rarely used in the traditional ways nowadays, and once again the original reference is unlikely to be registered. These kinds of meanings are semiotic rather than hermenuetic, and not dependent on who is hearing the music; the meaning is embedded in the culture rather than the individual.

McClary describes how the development of tonality (broadly speaking, the standard system of harmony used in classical music and most popular music to the present day) not only reflected the broader social, intellectual, and artistic movements of the times, but 'participated actively in shaping habits of thought on which the modern era depended'[2]. A tonal composition, beginning in the tonic or 'home' key — moving through other key areas, before returning 'home' — 'thereby traces a trajectory something like a quest narrative, with a return to and affirmation of original identity guaranteed in advance'[3]. Tonal harmonies, through the use of cadences (standardised movements of one chord to another) create expectations of 'closure'. McClary:

> The self-motivated delay of gratification, which was necessary for the social world coming into being in the eighteenth century, worked on the basis of such habits of thought, and tonality teaches listeners how to live within such a world: how to project forward in time, how to wait patiently but confidently for the pay-off.[4]

These patterns became ingrained in the social fabric, to the extent that they became accepted as 'normal' and 'natural' rather than being recognised as having been culturally constructed.

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[1] ibid., p.28
[2] S. McClary, *Conventional Wisdom: the content of musical form*, Berkeley: University of California Press, 2000, p.65
[3] ibid., p.66
[4] ibid., p.67

McClary says, 'In appearing to have transcended meaning, these [tonal] conventions signify utterly'[1]. Tonality's 'cause and effect' quality combines 'imaginative, risk-taking agents' with... 'the approval of a supportive environment … into a single coherent trajectory, so that we experience as virtually inevitable both the exuberance of the solos and the periodic arrivals at consensus. Even if it proves difficult (if not impossible) to implement in the real world, this is still one of our most cherished models of social interaction'[2]. In the eighteenth century, binary oppositions such as stability versus progress, and collective versus individual introduced 'the kind of emplotment Paul Ricoeur associates with narrative forms'[3]. In the nineteenth century, 'the heroic narrative of bursting open the conventional dimensions of an inherited style became itself a dominant convention'[4], so that each new development must immediately be overturned by the next, compromising the very possibility of communication. In the early 20th century, McClary points out[5], Schoenberg 'drew on images of madness as means of severing all those tenuous links with conventional communication'. Even atonality/serialism is controlled by tonality, because it specifically consists of the avoidance of tonal reference.

Rose Subotnik outlines what she sees as failings in the assumptions of traditional musicology surrounding *structural listening*. While the emphasis on formal patterning, the subjecting of 'all music to the same disinterested structural standards of judgement'[6], did express the moral ideal of enabling all music to be judged without subjective prejudice, the equating of musical 'logic' with the tonal system has meant that in practice the music of other cultures was excluded from serious consideration. Although Subotnik believes there is still great value in studying the

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[1] ibid., p.118
[2] ibid., pp.81-82
[3] ibid., p.82
[4] ibid., p.116
[5] ibid., p.135
[6] R. Subotnik, *DeConstructive Variations: Music and Reason in Western Society*, Minneapolis: University of Minnesota Press, 1996, p.187

Western musical canon, and in structural listening in itself, it is essential to combine the latter with other criteria and to 'recognize the ongoing tension between the benefits of standardization and diversification, and to do our best to harness that tension'[1].

Contrary to the Platonic and Kantian views, which regard music as among the lowest forms philosophically, Subotnik suggests that it may be particularly valuable 'for developing a concrete conception of reason'[2]. Unlike other artforms, music cannot be 'summarized' or 'reduced' (as with copies of paintings or summaries of literary plots/themes); when 20th century art and literature eschew representation, and thus also become less reducible, what they do, 'in the words of Walter Pater, is simply to aspire to the condition of music'[3]. The nature of music is thus especially *particular,* 'like individual people; this may make it useful in conceiving of a more dialectical form of reason than one which insists on the application of inflexible rules, a form which thus may be capable of encompassing various cultural norms.

While acknowledging the strength and sincerity of Schoenberg's and Adorno's conception of structural listening and its value, Subotnik points out its own problems of cultural contingency. The form of structural analysis to which ultimate value is attached in this conception is not applicable to Western music prior to the advent of functional tonality; from the late seventeenth century to the late nineteenth this system continually developed, and it could even be claimed that this structural theory as now understood 'did not obtain fully until that point in the nineteenth century when improvisation was decisively excluded from the concept of art composition and a compositional ideal of precision arose'[4]. It is claimed that structural listening

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[1] ibid., p.205
[2] ibid., p.198
[3] ibid., p.199
[4] ibid., p.158

of this kind reduces the significance of the *actual sound of the music* — even to the extent of favouring the visual! It is certainly the case that the printed score is essential to the practice of 'classical' music in the broadest sense. Andrew Ford mentions the visual aspect of 'classical' music, pointing out that written notation facilitates levels of organisation that enable it to 'function in ways that other music cannot'[1]. There is even a school of thought which advocates a 'sound-art' whose structural practices do not depend on aural production[2]. It has been said that there has traditionally been a lack of emphasis on *timbre,* on actual sound-quality; Pierre Boulez, prominent among those who extended serialism to cover aspects of music beyond the structural, is quoted as criticising both Schoenberg and Webern in this respect. Subotnik relates this 'dialectical opposition between structure and sound … [to] a tension between essence and appearance'[3] that has been present throughout the history of Western thought. In Romantic music, instrumental tone 'colour' was emphasised and extended, and associative listening deliberately encouraged (through the use of specific cultural references — hunting horns, bucolic reed instruments etc.); strictly structural listening might therefore be said to be in this case culturally inappropriate. In the twentieth century one might compare, along these same lines, Schoenberg and those he influenced on one hand, with the focus on structural characteristics above all, and Debussy and Stravinsky and their descendants on the other, where tone-colour and (particularly in the case of Stravinsky) *style* as a formal property are emphasised. In analysing Adorno's critical process, Subotnik points out that, far from regarding narrowly formal analysis as being without cultural construction, he 'scorned the very notion of an actual nonideological music'[4]. He consistently emphasises 'sociohistorical context', and has a great ability to verbally (metaphorically) describe musical characteristics rather than relying on conventional formal technique. This 'metaphorical criticism … is not a "supplement", in Derrida's sense (as Subotnik

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[1]   A. Ford, *In Defence of Classical Music*, Sydney: ABC Books, 2005*,* p.20 .

[2]   See S. Kim-Cohen, *In the Blink of an Ear: Towards a Non-Cochlear Sonic Art*, New York: Continuum, 2009

[3]   Subotnik, 1996, op. cit., p.162

[4]   ibid., p.164

describes it), to the possession of detailed structural knowledge but rather the very means of getting to the heart of such knowledge[1]. Much as Schoenberg's music is infused with traditional compositional methods, even though the systems through which these originally manifested are not literally 'present', so in Adorno's writing 'intelligibility depends … on a knowledge of absent subtexts'[2]. Structural possibilities are drawn from the stylistic conventions with which a composer begins rather than pre-existing; this is related to the notion 'the medium is the message'. If one were to apply to music a literary theory such as Mikhail Bakhtin's, which states that active textual engagement requires consciousness not only of formal characteristics but also of 'culturally interactive aspects of style'[3], then structural listening would be seen as tending to prevent the active engagement possible for those with relevant insight ('cultural insiders'). This focus on *style* requires constant awareness of one's own cultural predilections, and openness to the possibility of appreciating other cultural styles; self-criticism is essential to accurately consider 'the dialectic between medium and structure'[4]. Music

> … confronts us always with the actuality of a medium that remains stubbornly resistant to strategies of abstract reduction. In this respect, it provides an ideal laboratory for testing the formalistic claims of any knowledge against the limits of history and experience. To ignore such an opportunity is to handicap musical study needlessly, and to consign music itself to a status of social irrelevancy that it does not deserve.[5]

John Shepherd makes the case that 'music as a social medium *in sound'*[6] can help us more accurately understand our communications/sociality, which has been distorted through lack of awareness of the 'crucial quality of arbitrariness'[7] in expressing the experience of the world

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[1]   ibid., p.165

[2]   ibid., p.167

[3]   ibid., p.169

[4]   ibid., p.172

[5]   ibid., p.176

[6]   J. Shepherd, *Music as Social Text*, Cambridge: Polity Press, 1991, p.6

[7]   ibid.

through language. This frame of reference is credited to McLuhan and Ong, particularly 'their bringing into play of an awareness of cultures of other times and other places'[1]. Shepherd presents a quite detailed historical overview of the development of Western tonality, indicating the relationship of each major phase to its sociopolitical context. In the medieval church music known as *plainchant*, a basic pentatonic (5-note) scale was developed by adding the degrees of the 4th and 5th [2] to a starting note ('fundamental'), and then adding the same degrees again to these two added notes (resulting in, for example, C – D – F – G – Bb). Other notes were, at this time, inserted between these main ones in a manner which varied widely, much as society was in a state of development in the spaces between certain rigid fundamental institutions. Following the collapse of the Roman Empire, and with the development of the feudal system, each individual in a community had quite precise relationships to those both 'above' and 'below'. This is reflected in the pentatonic system, and furthermore the relationships of each element (note) are made *directly* with those with other, clearly definable, roles — which is very much *not* the case with functional tonality — much as feudal communities were localised, with individual members known to each other. In the Renaissance, and as industrial society developed, so did the concept of 'progress', and of things being achieved within particular time-segments corresponding to peoples' lives. The development of harmonic movement — *progression* — to particular structural goals reflects this outlook. Also, while there is a single note of fundamental importance (the *key note*), with all other notes defined in terms of their relationships to it, movements of focus may occur whereby the balance of importance can shift temporarily (through *modulation* — changes of *key*); in other words, individuals other than the chief one may function as the centre in particular sections, but always with a view to ultimately returning authority to where the piece began (the *home key*).

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[1]   ibid., p.7

[2]   *These notes (eg C-G and F-C) are related through the natural harmonic series, and the 4th and 5th together encircle the precise centre of the octave.*

'Neopositivism' in musicology/music-analysis has compromised the potential for a more accurate consideration of the place of the study of popular music. Drawing on an analysis of school music curricula in Britain in the '70s and '80s, Shepherd demonstrates in practical terms what he regards as the importance of establishing musical 'meaning' to some degree. He concedes that there are genuinely felt concerns of materiality and reification which lead mainstream musicology to resist regarding music's social aspect as relevant — a concern that 'serious' music should be regarded a 'asocial'. However the equation of the 'classical', tonal tradition with the ultimate in 'musicality', and resistance to any criteria of the social which is increased by 'the difficulty of denying the obviously social character of meaning and signification in many genres of popular music'[1], have brought about distortions of contemporary music study. (Such distortions may be seen as having also affected the accurate cultural assessment of 'classical' music.) While contemporary popular music generally uses a very simple version of tonality as its harmonic and melodic framework, arguments are outlined which hold that it is in *timbre* — actual tone-quality of sound — that its individuality of expression is to be found.

Academic study of popular music is fraught with several conflicted approaches — sociological, musicological, cultural etc. Much analysis of popular music has been done entirely from perspectives of cultural theory or sociology, and has very often examined lyrics and ignored the music itself. While the 'idealism' of traditional musicology must be eschewed, it is also essential to recognise that, in seriously examining a medium which essentially and entirely consists in sonic form, one must recognise that it 'does not inevitably involve visual, connotative and referential levels of signification'[2]. Shepherd quotes Frith as saying, 'Lack of 'musicological competence' *can* translate into a resistance against developing theoretical protocols suitable for

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[1] Shepherd, op. cit., p.202
[2] Shepherd, op. cit., p.207

analysing social meanings as manifest within the sonic materials of music themselves'[1]. Methods must be developed which enable music of all cultures to be accurately analysed. It is not that music is a 'universal language', somehow beyond culture, but that its very freedom from 'denotative and referential modes of signification'[2] enables it to communicate cultural specificities across cultural borders.

While the development of recording technology has been absolutely integral to the study of folk and popular music, such developments have been intertwined with extensions of the 'classical' tradition. Timothy Taylor presents the issue of musical meaning as being central to the historical development of technology as applied to music in the 20th century[3]. This may be seen in the dichotomy, in the period following World War Two, of *musique concrete,* primarily French, and 'electronic music' or *Elektronische Musik,* primarily Austro-German (plus Boulez). *Musique concrete* used 'found sound', tape-recordings of the 'real-world', generally treated in such a way as to be unrecognisable, which were arranged in collage form; primary techniques included speed-change, reversal, looping, echo. *Elektronische Musik* used synthesized sound, and was very much influenced by serialism in that it tended to aim for total control of the parameters of the sound. The concept of *ecriture* ('the written') carried a strong Western notion of superiority to the oral — the 'primitive' — and *Elektronische Musik* carried this notion even when not notated. For Boulez and others of this school, *musique concrete* 'was in the position of oral music rather than written; bricolage not science; post-modernity not modernity', an oppositional relationship Taylor relates to Levi-Strauss's conception wherein 'the bricoleur begins with the materials at hand and makes a structure out of them. The scientist, on the other hand, begins with

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[1]   ibid., p.208
[2]   ibid., p.217
[3]   T.D. Taylor, *Strange Sounds: Music, Technology & Culture*, New York: Routledge, 2001

an overall structure, a concept [and fashions elements so as to bring them about]'[1], thus relating to *musique concrete* and *Elektronische Musik* respectively. For Pierre Schaeffer, who with Pierre Henry pioneered *musique concrete,* cinema recording and montage techniques were an important influence, and particularly Jean Epstein whom Schaeffer is said to have credited with having imagined the use of sound recording in a manner at once 'symphonic' and 'cinematic'[2]. Henry is said to have liked to retain the signification of his sound sources, to express 'communication' rather than 'art'. Taylor sees in these differences the continuation of a much older debate about the nature of musical meaning; one one hand, proponents of a 'signifying', 'narrative' instrumental music, particularly that of Richard Wagner — on the other, those of an 'absolute' music, explicitly without such meaning, notably that of Johannes Brahms, and championed by Hanslick, wherein *form* was paramount.

Referencing Frederic Jameson and Jean Baudrillard, Taylor posits that cultural forms currently manifest always as pastiche or parody, unoriginal and inauthentic. He believes that Walter Benjamin's notion of 'aura' never applied to popular musics, 'and that extensions of his argument into the realm of the popular are ignorant of audiences, reception and ethnographic perspectives generally, perspectives that Benjamin himself did not seek out either'. However he points out Benjamin's having drawn attention to the increased potential for individual authorship, and that this aspect is more rarely picked up from *The Work of Art in the Age of Mechanical Reproduction* than 'fetishizing or reifying 'aura' ''[3]. Taylor expresses concern that the 'discourse or interchange' between author and audience is decreasing in the digital era; the circumstances surrounding this view may have altered since 2001.

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[1]   Taylor, 2001, op. cit., p.58
[2]   M. Battier, 'What the GRM brought to music: from musique concrète to acousmatic music',
      Organised Sound, Volume 12, Issue 03, December 2007, p.192
[3]   Taylor, 2001, op. cit., p.161

It is suggested that a more balanced view of the act of cultural consumption is required, one neither overly dismissive nor overly celebratory. Requiring both practical and theoretical engagement, technology is a unique structure 'that consists of both schemas (rules) and resources, not one or the other as structures are taken to be'[1].

In summary:

The cultural origins of music can be traced to a 'multimedia' form. With this aspect revived in the nineteenth century, its qualities philosophically exalted, music became the formal ideal for the arts generally. In its freedom from denotation, and its inherent multiplicity, it has in fact always functioned and developed in this way. Particularly through modernist literature, this became closely associated to the endeavour to express patterns of human thought. *Classical* form, directly related to rhetorical form, uses structural devices in order to be recognisable to audiences, thereby highlighting idiosyncratic elements. Certain schools of twentieth century musicology recognised the sociological content of musical form; music's temporal nature, in this view, enables it to express social development. The entire history of the development of Western music may be seen as reflecting changes in social structure. While not 'denoting', music can 'signify' in a way directly comparable to verbal language — conventions are culturally registered, without general recognition of their original reference. As in society generally, technology has played a major role in musical developments in the past century.

These aural technological developments have often coincided very closely with visual ones. In the early part of the twentieth century, as cinema was beginning to play a part in the general

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[1] ibid., p.204

culture, European and Russian writing on this new phenomenon makes clear that an informed awareness of the Western musical tradition was very much part of the relevant milieu. The recognition of certain shared formal characteristics between film and music played a major role, perhaps the primary one, in conceptions of the potential of the emergent artform.

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2. Polyphony & Counterpoint

Around the time the nineteenth century turned into the twentieth, several preoccupations were pervasive in Western culture which can be identified as major influences on early cinema and film-theory. These preoccupations also display, and can help to explain, the close association of musical and cinematic form. Perhaps the most widespread of these was the inclination for artforms to be combined; as already mentioned, this appears to stem at this time primarily from the influence of Wagner, whose concept of the *Gesamkunstwerk* or 'total work of art' was inspired by ancient classical performance art. Wagner believed that all the various elements of the operatic spectacle (the 'multimedia' of its day) should be organically unified into a single form. Eisenstein often acknowledges the influence of Wagner; M.W. Smith quotes him as saying 'The cinema is that genuine and ultimate synthesis of all artistic manifestations that fell to pieces after the peak of Greek culture'[1]. (Brecht, whose interest in montage is said to have been very much influenced by early cinema, argued for a separation of art-forms rather than their closer integration; Smith suggests that this may actually have been intended as a reconfiguration of the 'total art-work' rather than its elimination.)

At this time, new developments and new perceptions of the nature of space and of time, and of the relationship of the two, are abroad in science, in philosophy, and in the various arts. The concept of thought itself as a 'stream', in particular, brings about a new conception of the human experience of time. Henri Bergson's philosophical conception of this experience follows on from William James' description of the mental process as a 'stream of thought' (1884)[2], and holds that

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[1] M.W. Smith, *The Total Work of Art: from Bayreuth to cyberspace,* New York: Routledge, 2007, p.79
[2] S. Kern, *The Culture of Time & Space, 1880-1918*, Cambridge, MA: Harvard University Press, 2003, p.24

the attempt to grasp the nature of time by 'freezing' it into discrete divisions is artificial and entirely misleading. Bergson notoriously uses the analogy of the cinematograph to demonstrate this[1]. Bergson's original article — *The Cinematographical Mechanism of Thought …* (1911) — is not concerned with articulating in any detail a view of the effect of cinema; it uses the analogy of 'cinematographical thought' as a means of describing the dividing of supposed motion into discrete 'snapshots' which may then be given the appearance of true motion — like the projection of film frames; this leads, he believes, to inaccuracy in traditional forms of both philosophy and science. This view of time is very important in Deleuze's work on cinema, as will be outlined in the next chapter.

These conceptions have already, in this period, a connection to musical form. As we have seen, the increasing desire to represent 'inner', psychological experience, rather than 'outer', 19th century-style realism led many artists — literary and visual — to look to music for structural inspiration as an alternative to traditional narrative and conventional representation. A major concern of the period in this context is that of simultaneism, related to the structuring of artistic material in collage and mosaic forms. This involves the presentation of several perspectives at once, or of events occurring at the same time. There is clear *Cubist* influence here, but also very strong musical derivations. The early *Dada* manifestations of this, derived in part from *Futurist* 'noise-music', took the form of spoken-word pieces in which several voices sounded simultaneously, in clear imitation of musical organisation; these were often described as *polyphonic*, and in fact were sometimes presented in the form of musical *scores*[2]. ('Polyphonic' simply means, of course, 'having many voices', but more often than not makes a musical reference.) The simultaneism in the poetry of writers such as Blaise Cendrars and Guilliame

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[1]   * H. Bergson, (1911) "The Cinematographic Mechanism of Thought and the Mechanistic Illusion — A Glance at the History of Systems — Real Becoming and False Evolutionism", in *Creative Evolution*, London: Macmillan & Co, 1913.
    * R. Abel (ed) 1984, *French Cinema: The First Wave, 1915-1929*, Princeton, NJ: Princeton University Press, p.22.
[2]   *Such works include some by Tristan Tzara, Henri-Martin Barzun; see, for instance,* A. Curtin, *Avant-garde Theatre Sound: Staging Sonic Modernity*, London: Palgrave Macmillan, 2014, p.118*, re. Tzara's 'The Admiral Looks for a House to Rent', of 1916.*

Apollinaire, and the painting of artists like Robert Delaunay may be seen as directly drawing on the influence of musical *counterpoint*, meaning that independent parts (vocal or instrumental) have equal status in the musical texture. The new technologies of the time undoubtedly underpinned these new perceptions. Telegraph was in a sense 'shrinking' the world and was beginning the process whereby events could be experienced virtually simultaneously in widely distant places; electric light changed tremendously the way in which human activity was divided according to the hour of the day; and cinema rapidly became the technology that most graphically expressed the experience of these changing perceptions, and most widely propagated such expression.

In the arts, music and cinema may perhaps be seen as the two great influences that essentially concerned these primary preoccupations of the period — music because it had already, for centuries, inherently expressed both simultaneity and the flow of thought, and cinema because it expressed simultaneity, as well as many other aspects of time and space, in entirely new ways. Music's traditional combination of several voices (vocal and/or instrumental) is generally the inspiration for simultaneity in other artforms. Additionally, much early 20th century music extended simultaneism in various ways, combining material in two keys at once ('bi-tonality') and extending the use of polyrhythm; an early example of this is Charles Ives' *Putnam's Camp* (1912).

The enthusiasm for new technologies involved a pervasive fascination with machinery itself, stemming particularly from *Futurism*. This corresponds to a particular interest in *movement* and in *rhythm,* and of course many early films feature footage of moving machinery cut into rhythmic patterns. **'Organic'** vs. 'mechanical' rhythm is a dialectic which develops in films from

this time onwards, and is discussed by theorists[1]; it perhaps has new resonance currently in terms of the increased speed of media experience/ general pace of life. The specifically time-based rhythm of film — the fact that it takes place over a specific duration, as distinct from visual artforms such as painting and sculpture — creates a particular association with music as well as with dance and, to some extent, poetry. Also, there was a strong interest, especially amongst the artistic avant-garde of the time, in popular forms such as vaudeville and circus performance, particularly in relation to dynamic movement, as though this could reinvigorate artforms that were seen as stale and static. The notion of representing 'inner life' or 'stream of consciousness' is also related to the preoccupation with rhythmic patterning. As well as the obvious application in literature, this is a significant feature of early thinking about film.

French Impressionists & Surrealists

Richard Abel describes the way in which, in the first decade or so of the 20th century, although the majority at first did not take cinema seriously, certain French writers saw the emerging cinema as being capable of combining all the existing art-forms[2]. In Ricciotto Canudo's influential text *The Birth of a Sixth Art* (1911), says Abel, 'a Wagnerian concept of the *Gesamkunstwerk* meshes uneasily with a Futurist faith in machine dynamism'[3]. In this article, Canudo refers to cinema as pointing the way to the development of an art which, like music and poetry, by its very means of physical manifestation, creates rhythmic patterns in the atmosphere within specific durations — patterns of light in the case of silent cinema, rather than patterns of sound as in music and poetry. Canudo predicted a 'wholly new art', related to the desire for a

[1] *See Hansen's chapter on Adorno* — M. Hansen*, Cinema and Experience: Siegfried Kracauer, Walter Benjamin, and Theodor W. Adorno,* Berkeley: University of California Press, 2012, pp.207-250

[2] R. Abel (ed), *French Film Theory and Criticism: a history/anthology, Volume 1: 1907-1929*, Princeton, NJ: Princeton

[3] ibid., p.21

new form of *festival,* 'the paroxysm of the spectacle'[1]. This notion of 'festival', or 'carnival' is also prevalent in the Russian milieu of the time, and into the 20s, particularly in the *Formalist* school. The most notable of these writers include Viktor Shklovsky (whose conceptions also include 'defamiliarization', where ordinary objects, situations, events are seen in an unfamiliar light, the idea being that this requires effort to come to terms with and thus brings about increased engagement and understanding), and Mikhail Bakhtin, who developed a concept of literary 'polyphony' — the utilisation of several voices — inspired by the musical device; Bakhtin proposed that 'truth' required the presentation of several voices, in dialogue, even where they did not agree with each other.

Several French writers of this period emphasised what they saw as the significance of *rhythm* in defining the essential nature of the new art of film and its potential, and several made direct comparisons with music. Leopold Survage was apparently one of the earliest of these, saying 'form and rhythm are bound together inseparably'[2]. Survage was a painter, whose 1913 series of illustrations also called *Coloured Rhythm* were inspired by music, and intended to be animated on film, although he was unable to get funding for the animation idea. The first substantial analogy between musical and cinematic composition appears to have been drawn by Emile Vuillermoz. Vuillermoz, was a trained musician, prominent music critic in Paris, and early film writer (and apparently one of the initiators of the idea for what became the Cannes Film Festival, in 1939[3]). He wrote:

> ... it is exactly like a symphony! The cinema orchestrates images, scores our visions and memories according to a strictly musical process: it must choose its visual themes, render them expressive, meticulously regulate their exposition, their opportune return, their measure and rhythm, develop them, break them down into parts, reintroduce them in fragments, as the treatises on composition put it, through "augmentation" and "diminution". More fortunate than painting and sculpture, the cinema, like music,

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[1] ibid., p.62

[2] ibid., p.91 — *in Survage's article* 'Colored Rhythm' (1914)
     See also http://www.moma.org/collection/artist.php?artist_id=5735

[3] http://www.cannes-select.com/grands-venements/festival-du-film.html

possesses all the riches, all the inflections, and all the nuances of beauty in movement: cinema produces counterpoint and harmony...[1]

Vuillermoz continued Survage's conception of the visual rhythm of a film constituting the primary motivator of emotional response, and initiated the description of a filmmaker as a 'composer' and/or 'conductor', which was then taken up by numerous others, notably Abel Gance. In the hugely influential film *La Roue* (1923), Gance developed a new form of montage based on rapid, and accelerating, highly rhythmic editing. Gance was very direct in his description of the influence of musical form. Abel quotes a late interview (1972, with Armand Panigel) in which Gance says …

> that the images had syncopations, accelerating movements, pauses, simultaneities, all of which produced, ultimately … [a form of] musical writing … In La Roue I constructed my montage without any aids, without an editing machine … and I cut as if one image was a violin, another was a flute, a third an oboe, that's to say, everything was organized in my head according to this concept of the musicality of light.[2]

While some writers regarded poetry as the more appropriate analogy to make to cinema, Vuillermoz referred to this also, emphasising 'collage/montage construction', and describing the ability of the juxtaposition of images to enable a 'mosaic' and 'simultaneism'[3]. Relating his discussion to the influence of Apollinaire, Vuillermoz very plainly expresses a belief in the interrelatedness of various forms — poetry, visual art, and music — with cinema. Peter Wollen describes 'a pioneering simultaneist work' by poet Blaise Cendrars, in collaboration with painter Sonia Terk (wife of Robert Delauney), called *La Prose du Trans-Siberien,* in which a long poem is printed down one side of a long scroll and an abstract painting down the other side, the resulting correspondences described by Apollinaire as being like 'musical chords'[4]. This is said to have been the inspiration for Viking Eggeling's creation of his own musical/graphic scores[5].

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[1]   ibid, p.131 —*from 'Devant l'Ecran', Le Temps, 29th November, 1916, p.3*

[2]   R. Abel, (ed) 1984, *French Cinema: The First Wave, 1915-1929*, Princeton, NJ: Princeton University Press, p.332

[3]   R. Abel (ed), *French Film Theory and Criticism: a history/anthology, Volume 1: 1907-1929*, Princeton, NJ: Princeton University Press, 1988, p 131; p.134

[4]   P. Wollen, *Paris Hollywood: Writings on Film*, London and New York: Verso, 2002, p.48

[5]   ibid., p.54.
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Eggeling's *Symphonie Diagonale* (1924) is one of the very first examples of abstract film, animation, and what is sometimes called 'visual music' (dicussed further below). Peter Wollen says of Eggeling that he was 'not simply a pioneer film-maker but, in more general terms, as a visionary committed to a synthesis of the arts (music, poetry, painting, dance) for which film provided a dynamic, technological vehicle, much as experimental artists today are drawn towards the new media'.

Throughout the '20s, Vuillermoz's film writing continued to be prominent, as part of what came to be regarded as an *Impressionist* school of film theory, with Canudo and Germaine Dulac as the other most notable participants. This approach saw cinema as ideally a form of high art which expressed 'inner life'. Abel describes Vuillermoz's attitude as that of an 'educator', but of a distinctly 'elite' kind; he regarded the effects of cinema on the mass audience as exploitative. Abel says, 'If by the end of the war, it [cinema] had become a "genuine 'night school' for the workers," he [Vuillermoz] noted, the "education" it provided, for the most part, was intellectually tyrannical, emotionally intoxicating, and ultimately enslaving'[1]. This view is contrasted to that of filmmaker/theorist Louis Delluc, who was enthused by cinema's capacity to engender in the populace appreciation for dramatic presentation. Delluc is quoted as saying, 'The screen's charm has expanded the taste of the masses who have been so resistant to letting themselves be cultivated by any of the other arts'[2].

Schools of thought, other than Impressionist, at this time included what might be called *Poetic-Realist*, including Delluc and Leon Moussinac particularly, and early *Surrealist*, including Robert Desnos and Jean Epstein most prominently. The *Realist* school, given impetus by early Soviet films, believed in 'authentic' depictions of life; the *Surrealists* wanted to change the

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[1]   R. Abel *(ed), French Film Theory and Criticism: a history/anthology, Volume 1: 1907-1929,* Princeton, NJ: Princeton University Press, 1988, p.100 — quoting from Vuillermoz, 'Devan l'ecran: Intolerance', *Le Temps*, 4th June, 1919

[2]   R. Abel (ed), *French Film Theory and Criticism: a history/anthology, Volume 1: 1907-1929*, Princeton, NJ: Princeton University Press, 1988, p.162 — quoting from 'La Foule', *Paris-Midi*, 24th August, 1918

perception of reality. Several of these writers, across these categories, expressed interest in the concept that film could become a synthesis of the other arts, and even that its rhythmical construction might be precisely codified (in a manner comparable to music); the release of Gance's *La Roue* in 1923 was a particular spur for this kind of discussion. In general, at this time, music was the primary model used when attempting to explain developments in filmic technique. Abel states that there was a broad acceptance of 'Vuillermoz's "musical analogy" as perhaps the crucial principle of editing continuity ... Here the shot was analogous to a musical chord, in which the notes corresponded to specific features of the mise-en-scene and framings; thus a sequence of shots or a scene was analogous to several bars of music or even a stanza or a movement'[1]. In his review of Gance's *Napolean* in 1927, Vuillermoz describes as 'counterpoint' the interplay of the images on the three screens, and further details his 'analogy'; he says, 'Synchronism, delayed rhythms, stylization, consonance, dissonance, chords, arpeggios, and syncopation, are all now available to musicians of the screen who were until now restricted to elementary harmonization and orchestration'[2]. In 1929, Moussinac advocated the investigation and precise calculation of film's 'rhythmic expression', rather than only, as was already the case at this time, the enrichment of 'figurative expression', saying, 'For film is first of all a construction'[3].

Germaine Dulac stresses the musical analogy especially strongly, actually questioning cinema's suitability for the presentation of stories/narrative, and suggesting that it should rather be based on feelings and sensations; she asks if cinema may not be 'music for the eyes, and shouldn't we envision the subject serving as its pretext as comparable to the sensitive theme that inspires the

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[1] R. Abel (ed), *French Film Theory and Criticism: a history/anthology, Volume 1: 1907-1929*, Princeton, NJ: Princeton University Press, 1988, p.210
[2] ibid., p.407
[3] ibid., pp.427-428 *(in 'Technique and the Future', 1929).*
In the same article, Moussinac also makes some predictions about television ('radiocinematography') which appear remarkably prescient in the present context: he says, 'If at present one person can participate in events with others from a distance, this means we will soon be able to receive at home — with music — any film we might want to choose from among the offerings of various broadcasting stations in the world.'

musician?'[1]. Dulac developed the idea that cinema should draw on music as a structural model. She made several 'semi-abstract' films in the late 20s based directly on musical forms. In *Etude Cinegraphiqë Sur une Arabesque*, inspired by the music of Debussy, Dulac uses devices including superimposition, blurring, and changes of speed to abstract the natural images used as subject-matter. While the elements of the film consist of variations on kinds of 'arabesques' — arc shapes, webs, flowers and trees, other curved shapes, 'the film as a whole tends … towards abstraction'[2]. (Specifically, the film is apparently based on Debussy's *Deux Arabesques*, completed in 1891, a very early piece of Impressionist music.)

The artistic avant-garde generally in this period tended towards strong interest in popular arts, particularly, as noted earlier, the more spectacular forms such as vaudeville/music-hall and circus, which emphasise movement. David Bordwell points out that movements such as 'Futurism, Constructivism, Vorticism, and Dada' essentially involved movement in their work; many of these artists saw the connection of cinema with this, particularly American films, which tended to emphasise physical movement. Bordwell suggests that the conception of art favoured by the Impressionists is largely derived from the *Symbolist* movement in poetry. While this conception is said to be largely unexamined in strictly philosophical terms (by both the Symbolists and the cinematic Impressionists), the basic premise may be expressed thus: 'Art is the transformation of nature by the human imagination, evoking or suggesting feelings and presenting "truth" to such feelings'[3].

In the context of the central desire, at the time, to convince the world of cinema's legitimacy as a new form of 'Art', there were two main contentions. Firstly, there was the view that film is a 'synthetic', that is, a 'synthesizing' art; in other words, it is able to combine other arts into a

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[1]   ibid., p.395 — quoting from 'Aesthetics, Obstacles, Integral Cinegraphie', 1926
[2]   T.M. Williams, 'Dancing with Light: Choreographies of Gender in the Cinema of Germaine Dulac' in *Avant Garde Film*, pp.121-130, Amsterdam: Rodopi, 2007, p.127
[3]   D. Bordwell, *French Impressionist Cinema: Film Culture, Film Theory, and Film Style,* Arno Press, 1980, p.98

version of the Wagnerian *Gesamtkunstwerk*. Secondly (and more commonly according to Bordwell), there was the *purist* view that cinema has unique qualities and capabilities of its own. This view is particularly concerned to distinguish the characteristics of cinema from those of theatre and literature (although it can be seen as being influenced by a 'purism' movement in poetry). This version of *Impressionism* generally encapsulates the view that theatre is essentially verbal while cinema is essentially visual.

Abel describes the origin of the notion of *photogenie*, which became a widely circulated one, and which was significant in later theories including those of André Bazin. This initial conception, pioneered by Louis Delluc in approximately 1919-20, regarded film as dealing with reality captured by the camera, 'the factual, the natural'[1], but cinematic presentation as facilitating a quality whereby fresh revelations occur through the viewing of this filmed reality (as with the *Formalist* notion of *defamiliarization*).

Although the *Impressionist* conception of cinematic structure may be seen as exploratory rather than fully developed and philosophically coherent, two generally consistent overarching characteristics may be identified: cinematic structure should not 'owe anything to dramatic or literary structure', and it 'should be based on "visual rhythm" '[2]. In desiring to conceptualise the inevitably temporal structure of cinema as something other than (theatrically derived) narrative, the *Impressionist* theorists looked to music. And rather than looking to the overarching forms of classical music it is the rhythms created through the juxtaposition of the images themselves which are the main musical influence and the main principle involved in Impressionist theoretical conceptions of cinematic construction. This rhythmical conception, expressed in practice particularly through editing, contributes to the overall *Impressionist* style — presenting

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[1]   R. Abel (ed), *French Film Theory and Criticism: a history/anthology, Volume 1: 1907-1929,* Princeton, NJ: Princeton University Press, 1988, p.110

[2]   D. Bordwell, *French Impressionist Cinema: Film Culture, Film Theory, and Film Style*, Arno Press, 1980, p.122

the *impression* of either the filmmaker or a character of a particular situation. Two components of *style* are identified: *Structural* — relatively large-scale relations between main parts; and *Textural* — relatively small-scale relations amongst subsidiary parts[1]. Rhythmic, 'quasi-musical', editing is frequent in Impressionist narrative films, in common with 'abstract' films of the period (*Ballet Mechanique*, etc)[2]. In addition to suggesting 'memory and fantasy by means of intercut flashbacks or fantasies', and utilising the 'glance/object pattern to define space as well as to indicate psychological space'[3], Impressionist editing provides an impression of the *tempo* of a character's experience. Overall, therefore, both *photogenie* and musically-derived rhythmic editing contribute to Impressionist cinema's expressive transformation of the 'nature' recorded by the camera.

The work of filmmaker and theorist Jean Epstein concerns many of the central issues of the time, and also has several resonances currently. Guido describes Epstein's approach to the central Impressionist concern with *rhythm* as being its relationship to 'movement and *photogenie*'[4]. 'Epstein's thoughts about cinematic rhythm … lay at the intersection between art and science, and refer as much to a recognition of modernity's most revolutionary aspects as to the persistence of traditional philosophical ideas and values'[5]. Writers and filmmakers of this milieu — including Faure, Epstein, L'Herbier, Moussinac, Canudo, Delluc, Dulac — are 'hostile' to 'plastic' arts such as painting and sculpture (and in some cases also to still photography) for their immobile 'stability'. Dulac and the later Epstein[6], while recognising the mechanical means by which cinematic movement is created, seem to regard the spectator's *perception* of movement as

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[1]   ibid., p.142
[2]   ibid., p.206. *The example is given of Epstein's 'Fall of the House of Usher' (guitar sequence).*
[3]   ibid., p.207
[4]   L. Guido, ' "The Supremacy of the Mathematical Poem": Jean Epstein's Conceptions of Rhythm', in S. Keller, & J.N. Paul, 2012, *Jean Epstein: Critical Essays and New Translations*, Amsterdam University Press, 2012, p.143
[5]   ibid., p.143
[6]   ibid., p.144

the significant aspect rather than the individual stills from which the illusion of movement is created; this is in common with other well-known theorists including Arnheim. In fact, cinema's ability to reveal otherwise invisible beauty and meaning is specified (by Delluc, Moussinac, Arroy and Epstein) as the defining character of *photogenie*. Often though, and notably in the case of Epstein, movement and rhythm are considered essential for *photogenie* to be effective. While there is a more general sense of the nature of *rhythm* involved here, one which can identify patterns in movement be it 'related to philosophy, science, society, or culture'[1], for Epstein, and others, cinema's ability to express movement both spatially and temporally is definable and controllable primarily through a concept of cinematic *rhythm*. Epstein is quoted as describing, in specifically musical terms, the cinema's capacity to display rhythmic relationships in the movements of people and animals — 'both the fundamental and its harmonics' of rhythm[2]. This concept is using the analogy of the technical construction of sound: every sound consists of a 'fundamental' tone and several further 'harmonics', or 'overtones'. (This is an analogy used prominently by Eisenstein also.) Epstein is saying here that the rhythmic behaviour (of people and animals) naturally falls into even rhythmic patterns, with subsidiary rhythms overlaid on the fundamental ones, and that cinema is uniquely able to capture and use these expressively.

Epstein has, in common with many others of the time (including, as described in the next section, prominent Soviet filmmaker/theorists), a strong inclination to take advantage of the new technologies available so as to quantitatively organise filmic elements for the purpose of expressive artistic control. He himself writes '[T]he cinematographic camera is first and foremost an integrating, calculating machine'[3]. Wild notes a 'correspondence' between Epstein's 'modern technological sublime' and Walter Benjamin's concept of 'aura', both being concerned with the way social and aesthetic perceptions are influenced by technological developments at

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[1]   ibid., p.146

[2]   J. Wild, 'Distance is [Im]material: Epstein versus Etna', in Keller and Paul, 2012, op cit,, p.132

[3]   J. Epstein, (1955) 'Rapidity and Fatigue of the Homo Spectatoris', in Keller & Paul, 2012, p.339

different historical stages[1]. The *close-up,* for Epstein, is of particular interest due to its emphasis on cinema's capacity to magnify, to 'mediate perception across distance'[2]. Epstein regards as a highly significant development the ability of the closeup to display 'interior', psychological, movement — through the magnification of facial responses[3]. Slow-motion, for Epstein, enables a similar capacity, but in that case of 'external' movement. Epstein describes eloquently the significance he sees of the new technological capacity to include temporal variation — through accelerated and decelerated motion — as a creative variable with similar expressive capacity to that of spatial distance[4]. He discusses at length what he sees as the potential of deceleration for the magnification of sound[5], the capacity to examine in detail aural characteristics otherwise indiscernible. He outlines the various ramifications of the, then inevitable, pitch changes produced by altering the playback speed of recorded audio. Significantly, perhaps, in very recent times, relatively speaking, it has become possible to readily slow down recorded audio without lowering the pitch at the same time. This capacity is now a standard feature of audio-processing software.

As with so many of his contemporaries, Epstein uses the musical analogy frequently in his writings. In another late piece of writing[6], he addresses the issue of 'counterpoint' in the relationship of cinematic vision and sound. He criticises 'nine out of ten films' for too literally and unsubtly duplicating with the soundtrack the meaning imparted by the vision, saying:

> The play of image and sound, of sight and hearing, may and should also achieve a sort of two-part counterpoint, in the harmony of more complex significations, which evidently constitute the true art of a language involving two registers of expression[7].

Epstein spells out what he sees as the reasons for the necessity of a degree of conflict between

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[1] Wild, op cit, p.116

[2] ibid., p.129

[3] J. Epstein, (1955), 'Rapidity and Fatigue of the Homo Spectatoris', in Keller & Paul, 2012, op.cit., pp.333-340

[4] J. Epstein, (1955), 'The Close-up of Sound', Keller & Paul, 2012, op.cit., pp.365-372

[5] ibid.,
    also J. Epstein, (1955), 'The Delirium of a Machine', in Keller & Paul, 2012, op.cit., pp.372-380

[6] J. Epstein, (1955), 'The Counterpoint of Sound', in Keller & Paul, 2012, pp.362-364

[7] ibid., p.363

image and sound; much as actors will often use a certain degree of contradiction between their words and their visual or active expression, a similar kind of conflict between cinematic sound and vision is useful so that the audience is required to engage, forced to make an effort in order to understand. Expanding on this topic, he suggests the desirability of film developing the capacity for the inclusion of greater subtleties of auditory meaning — such fragments and suggestions as one hears in real life.

Early 'visual music' animation

From its beginnings as an integral part of the development of early film techniques, the genre of 'visual music' animation may be traced all the way through to the present day. Whereas the formal musical influence in film generally became considerably less well appreciated in subsequent periods, in these films the precise relationship of music and image has always been overt.

The earliest 'visual music' films, notably those of Hans Richter and Viking Eggeling, are significant in several ways: they are among the first uses of film as a medium by visual artists as such, and the first examples of abstract filmic animation. (There were already by this time numerous instances of cartoon-style film animations.) Richter and Eggeling's films were silent, although primarily inspired by musical form (thus making them exemplary as instances of the cross-fertilisation of the two artforms). While the influence of movements such as cubism is often acknowledged, the importance of musicality, and particularly its instigation of the desire for movement, is often not sufficiently recognised[1]. Aimee Mollaghan makes the case that, rather than a symphonic structural influence, Eggeling's *Symphonie Diagonale* (1924) is more

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[1]   A. Mollaghan, *The Visual Music Film*, Basingstoke: Palgrave Macmillan, 2015, p.20

accurately regarded as akin to a serialist mode of composition[1], particularly in the rigour of its permutational development. Richter and Eggeling (introduced by Tristan Tzara in 1918) were each 'already separately pursuing the analogy between music and painting'[2] — pursuing a 'universal language of art', a form wherein, as with 'formal absolute music', it is the relationships between the elements of a piece that are significant. In Richter's *Rythmus 21* (1921), for instance, elements are ordered through systematic rhythmic patterning rather than overall formal structure; Mollaghan suggests a similarity to a kind of Webernian 'total serialism'.

The animated films of this time were not exclusively silent however. Walther Ruttman's *Lichtspiel, Opus 1* (1921), has a score by Max Butting for string quintet, reportedly composed following completion of the animation[3]. Image and music are quite precisely aligned; screenings at the time were accompanied by live, carefully synchronised, performances. The music has a definite expressionist flavour, though not atonal as such. The movement of the abstract animated figures in the film is remarkably smooth and intricately timed, often reminiscent of living creatures, such as fish swimming. The technique apparently involved painting on glass plates, and also painting colour directly on the celluloid. The images are very closely aligned with both the temporality and the expressive mood of the music, tempting one to assume this to be the progenitor of the many subsequent films which set out specifically to provide visual expression to particular music. Ruttman also made documentary and dramatic films, at times blending these two forms. In 1927, he made *Berlin: Symphony of a City*, one of the best-known of the 'city symphony' films[4] along with Vertov's *The Man with a Movie Camera* (discussed below)*,* and something of a precursor to it. Many aspects of the two films are quite similar — the changing activities in the city throughout the course of a day, the juxtaposed rhythms of human and

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[1]   ibid., from p.28
[2]   ibid., p.45
[3]   ibid., p.64
[4]   *One of the earliest, 'Manhatta' (Sheeler and Strand, 1921), is currently viewable online.*

machinic movement, stylised quick intercutting at times, emphasis on highly rhythmic montage, sequences with multiple dissolves. The film's apparent socialist sympathies inevitably give more the impression of a critique of capitalist society than a celebration of a revolutionary one — the juxtaposition of people's working lives with shots of captive animals, a sequence emphasising money (*geld*) as a roller-coaster alongside juxtaposition of wealth and poverty. (However, Ruttman remained in Germany during the Nazi period, collaborating with Riefenstahl on *Triumph of the Will*, and making other propaganda pieces.) Another 'docu-drama', *Melody of the World (Melodie der Welt,* 1929*)* also features rather idiosyncratic, highly rhythmic editing. This film also features very innovative soundtrack design, in which real-world sounds are carefully integrated with the musical score. Also in 1929 Ruttman made *Weekend,* a piece for radio using the audio from *Berlin: Symphony of a City*; using the original film stock and applying montage-like techniques to the sound production, this is a truly pioneering work, even now sounding quite modern[1].

Often cited as the progenitor of this form of 'visual music' (although influenced by Ruttman), Oskar Fischinger made abstract films from the early '20s, using various animation techniques including models, drawings, cutouts, and painting on film. He was also very much involved in technical production, developing numerous innovations involving both equipment and processing methods. In the '20s, he also produced 'multimedia' shows featuring multiple projections and various forms of musical accompaniment — including 'the first known simultaneous performance of abstract film, color organ light projections, and music', in 1926[2]. Cindy Keefer outlines the development of this early form of mixed media, and describes these

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[1] M. Ovadija, *Dramaturgy of Sound in the Avant-garde and Postdramatic Theatre*, p.221, retrieved 1-5-17 from https://www.academia.edu/6911356/Dramaturgy_of_Sound_in_the_Avant-garde_and_Postdramatic_Theatre *Ovadija also relates this to Luigi Russolo's earlier graphic notation for audio composition, and his early sound composition 'Awakening of a City' (1914).*

[2] C. Keefer, *"Space Light Art" — Early Abstract Cinema and Multimedia,1900-1959*, unnumbered. (First published in White Noise exhibition catalog, ACMI Melbourne 2005), accessed 26-9-16 at http://www.centerforvisualmusic.org/CKSLAexc.htm .

shows as being integrally inspirational for later versions of mixed media, such as the 'psychedelic' projection form that developed in the 1960s. Fischinger was also one of the early innovators of 'graphical sound', whereby shapes were drawn directly onto film, or drawn and copied onto the film, and then mechanically reproduced. The loudness and timbre could be altered through altering the size and shape of the symbols. Others doing this at the time (very early 1930s) included several Russian experimenters, and also fellow German Rudolf Pfenninger; the latter developed a detailed method for using actual waveform shapes in such a way that particular tones could be reproduced by subsequent composers and animators[1]. Fischinger worked in the US from 1936 onwards, including for Paramount, MGM, and Disney. While Fischinger's visual music animations, notably *Allegretto* (1936-43), were generally made to be viewed in conjunction with specific music soundtracks, and very precisely synchronised, *Radio Dynamics* (1942), one of his most 'mature' works[2], is specifically designated 'No music please — an experiment in colour rhythm'. Fischinger's last 'visual music' animation, *Motion Painting No. 1* (1947), directly painted on film with oil paint, is made as visual accompaniment to J.S. Bach's *Brandenburg Concerto No. 3*; while it reflects the temporal development of the music, it does not make visual representation of every musical gesture as his earlier pieces generally do. The genre of 'visual music' of this kind has continued right through to the present day. More recent examples will be described in Chapter 5 (*Background to 'New' Media*).

The Soviets

Following the revolution of 1917, the Russian film industry was taken very seriously by government, with film regarded as a major tool for both propaganda and genuine education.

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[1] * A. Mollaghan, *The Visual Music Film*, Basingstoke: Palgrave Macmillan, 2015, p.121
     * T.Y. Levin, 2006, ' "Tones from out of Nowhere": Rudolf Pfenninger and the Archaeology of Synthetic Sound',
     in W.H.K. Chun and T. Keenan, 2006, *Old Media, New Media*, New York and London: Routledge, 2006, pp.45-81
[2] W. Moritz, *Optical Poetry: The Life and Work of Oskar Fischinger,* Indiana University Press, 2004, p.229

Experimentation was supported and this led to considerable technical innovation, and to the development of the concept of *montage*. Two of the major innovators of this period, and two of the great figures in film history, were Dziga Vertov and Sergei Eisenstein. Both of these filmmakers drew significant influence from musical form.

Vertov

Dziga Vertov's interest in audio is evident from quite early in his life. From 1914 he studied at the Petrograd Psychoneurological Institute where, in the course of studying human perception, he experimented with dividing up aural phonemes in such a way as to create new ways to represent sound. In one variously cited instance he recorded a sawmill, while also transcribing an approximation of it onto paper using word fragments, and then created a version of the sound by recording voices onto a wax cylinder[1].

John MacKay provides very useful detail regarding Vertov's musical experience prior to his involvement in film. It seems that music was cited by many of his contemporaries as perhaps the primary model for his filmmaking practice[2]. In approximately September of 1916, having been drafted into military service, he successfully qualified for entry as a music student/military bandsman at the Chuguev Military School. As in many parts of the world, the technical musical standards at such institutions were generally high. Vertov was clearly very interested in Alexander Scriabin's music — and could play it on the piano, requiring substantial ability! This in itself indicates the likelihood of interest in the interrelationship of the aural and the visual[3], as Scriabin is the most noted exponent of the practical application of the notion of musical/visual-

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[1] *See, for instance,* https://monoskop.org/Symphony_of_Sirens *, last viewed 18-10-17*

[2] J. MacKay, The Beating Pulse of Living Life: Musical, Futurist, and Newsreel Matrices (1916-1918), 2016, pp.9-10 accessed 24-8-16 *at:* https://www.academia.edu/s/b2ac45cb59/chapter-3-vertov-the-beating-pulse-of-living-life

[3] ibid., pp.13-14

chromatic synaesthesia. Similarities may be seen in that both artists were concerned to 'divide up

and recombine the phenomenal world in different ways, and to startle the senses themselves out

of their reified inertia'[1]. Vertov also wrote several spoken-word 'etudes' in honour of Scriabin,

which he intended as both poetry and music[2].

Vertov's concept of the 'interval', developed early in his cinematic career, aimed to address the

perceived problem of the static, separate nature of cinematic shots/frames 'by conceptualizing

film's basic unit as a fluid differential between shots or frames'[3]. Correspondences or clashes of

shape and/or movement between shots, and also of camera movement in contiguous shots, were

held to be the fundamental element for the eliciting of audience response in cinema (bringing

about kinesthetic, sensory-motor responses, in fact). In the following excerpt from *We:Variant of

a Manifesto* of 1922 — apparently the initial description of the notion of the interval — the

musical derivation of the concept could hardly be clearer (here, Vertov's layout is

approximated):

> Kinochestvo is the art of organising the necessary movements of montage objects in space as a rhythmical artistic whole, in harmony with the properties of the material and the internal rhythm of each object.
> Intervals (the transitions from one movement to another) are the material, the elements of the art of movement, and by no means the movements themselves. It is they (the intervals) which draw the movement to a kinetic resolution.
> The organisation of movement is the organisation of its elements, or its intervals, into phrases.
> In each phrase there is a rise, a high point, and a falling off (expressed in varying degrees) of movement.
> A composition is made of phrases, just as a phrase is made of intervals of movement.
> A kinok who has conceived a film epic or fragment should be able to jot it down with precision so as to give it life on the screen, should favourable technical conditions be present.
> The most complete scenario cannot, of course, replace these notes, just as a libretto does not replace pantomime, just as literary accounts of Scriabin's compositions do not convey any notion of his music.
> To represent a dynamic study on a sheet of paper, we need graphic symbols of movement.

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[1] ibid., pp.14-15
[2] ibid., pp.15-19
[3] ibid., p.23

WE are in search of the film scale.[1]

Notes organised into phrases, defined by their intervals, rising and falling, thus defining movement — and the scale as the fundamental structuring device; Vertov is hardly being cryptic here. Musical notes by themselves mean very little; it is the distance between them — described in Western music theory as *intervals* (precise frequency relationships in fact, denoted as 'major 2nd', 'perfect 4th', etc.) — that create melodic and harmonic structures. So Vertov is saying here that the progression (and combination also, perhaps, given his innovative superimpositions) of individual shots in sequence is the significant aspect. Further than this though, which in itself may seem a rather straightforward description of montage, he is describing a very concrete modelling of scripting/shot-listing on musical scoring. He is surely suggesting that it may be possible to find structural methodologies for cinema comparable to those developed (over centuries) in musical composition. And still in 1929, the year of *Man with a Movie Camera*, the musical model can be seen to be at the forefront of Vertov's thinking; in a piece called *From the History of the Kinoks*, he refers to his use of '[e]diting tables containing definite calculations, similar to systems of musical notation, as well as studies in rhythm, "intervals", etc.' (although he also describes his concern that such methods run the risk of being 'indiscriminately applied', resulting in 'nonsense')[2]. This editing method of Vertov's (with editor Yelizaveta Svilova) can furthermore be seen as very much a contrapuntal technique. In fact, there are several passages in *The Man with a Movie Camera* which exhibit this almost literally; the intercutting in several sequences approaches the impression of simultaneity. In certain sequences — notably that featuring a close-up eye intercut with rapidly panned street scenes (from approximately 30:00), and the sequence where the titular cameraman is seen intercut with moving machine parts (from approximately 41:30)[3] — where the shot length is progressively reduced between two alternating

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[1]   A. Michelson (ed), *Kino-eye: The Writings of Dziga Vertov*, Berkeley: University of California Press, 1984, pp.8-9
[2]   ibid., p.100
[3]   *The shots of rapidly moving machinery just before this sequence have in themselves displayed a similar effect (two images visible, one behind the other), suggesting the relationship between such industrial technology and the visual capacity of the*

shots until (it seems) single frames alternate, the two images appear to the viewer as simultaneously present. (The shots of rapidly moving machinery just before this sequence have in themselves displayed a similar effect — two images visible, one behind the other — suggesting the relationship between such industrial technology and the visual capacity of the movie camera.) This technique results in perhaps the closest similarity to actual musical counterpoint in cinema, other than multiple screens/frames. In fact, although multiple screens/frames are more literally simultaneous, this technique of Vertov's might be considered more simultaneous in relation to the viewer's attention, as it presents the different images within the one line of sight. Superimposition, of course, provides another version of multiplicity, although in this case the effect is rather that of a single, composite image.

Vertov tells us that, rather than a piece of visual music, he regards the film as a 'higher mathematics' of 'facts recorded on film … an organic whole … 100 percent cinematography'[1]. However there are aspects of the film's formal construction which strongly suggest musical influence. And in fact his outline of the film[2] is subtitled *A Visual Symphony*. The quickly moving, machinelike, rhythms of certain sections of the film are complexly and precisely structured. MacKay points out, also displaying a copy of a handwritten section of Vertov's own 'notation', that the structuring of rhythmic patterning in evidence here, while extraordinary for cinematic practice, was (and is) standard musical compositional procedure. The included section of Vertov's chart is indeed strongly suggestive of the influence of musical scoring[3]. R.B. Wedgewood outlines the way in which Vertov's audio work on *Enthusiasm* (1930) is an early example of extensive use of *musique concrete*. This is truly remarkable as Pierre Schaeffer's development of the techniques of tape manipulation which led to the recognised form of *musique*

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movie camera.

[1] A. Michelson (ed), *Kino-eye: The Writings of Dziga Vertov*, Berkeley: University of California Press, 1984, pp.83/84

[2] ibid., p.283 *(reproduction of Vertov's outline).*

[3] J. MacKay, *Man with a Movie Camera: an introduction*, 2013, p.27
    accessed 28-2-14 at: http://www.academia.edu/4090580/_Man_with_a_Movie_Camera_An_Introduction

concrete began in approximately 1942. Although there had been theoretical discussion of using 'real-world' recorded sounds as the elements of creative composition, Vertov's work in this area must be one of the very earliest examples of substantial practical application of this. And, according to Wedgewood's account, 'Vertov and his technicians had to invent many sound recording and editing methods in order to realize Vertov's aesthetic ideas'[1], including superimposition (as with the images), speed changes, cutting the sound (removal of attack or decay), distortion, looping, and echo. Vertov himself tells of the aim in *Enthusiasm* of 'complex interaction of sound with image'[2], despite very difficult production circumstances. Vertov writes of his wish to be able to establish a film 'laboratory' to enable serious experimentation; he describes his desire to create films 'directly with image and sound'[3] rather than by pre-scripting, likening this to the methods of visual artists and composers.

Eisenstein

The various trajectories of Eisenstein's unrealised ideas have only rarely been attempted since. If he had achieved even his initial plans for sound experimentation it might have changed the terrain of subsequent cinema, music and sound arts.[4]

[T]he fugue and the principle of polyphony, as we have understood them here, both strive to give the most complete expression to one of the main basic principles lying at the basis of the phenomena of reality in general.[5]

In the process of examining the background to Sergei Eisenstein's influences around the time of his first becoming a filmmaker, Robert Robertson's account centrally positions the influence of music on the culture of modernist innovation. The concept of polyphony, particularly, in

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[1] R.B. Wedgewood, 1983, 'Dziga Vertov's "Enthusiasm": Musique Concrète in 1930', *College Music Symposium*, Vol. 23, No. 2 (Fall, 1983), p.121

[2] Michelson, op. cit., p.111

[3] ibid., p.201

[4] D. Kahn, http://tmckosky.asp.radford.edu/thea180/SergieCarSound.htm , last accessed 23-10-17

[5] S. Eisenstein, *Nonindifferent Nature*, Cambridge: Cambridge University Press, 1987, p.279

combination with music's temporal nature, may be seen as being fundamental as an influence on the advent of abstract painting, on the development of interiority in literature, on several early experiments by filmmakers concerned to make use of film's capacity to animate images temporally, and on Eisenstein himself. In addition to its literal meaning — 'having many voices' — in music 'polyphony' also implies 'counterpoint', which means that each voice has its own independent trajectory — though still harmonising with the others — rather than there being one primary part with several subsidiary 'accompanying' parts. Robertson details the background to Eisenstein's concern with using layering and juxtaposition of visual and aural elements to achieve multi-vocal, contrapuntal/dialectical effects, including the context of his score-like graphical plans for scenes in his films[1]. In the later part of his career, Eisenstein describes what he terms 'audiovisual montage'[2] as 'the very highest stage of montage'. Also referring to the related concepts of vertical montage and polyphonic montage, Eisenstein's discussion makes quite clear that musical composition is the primary influence on the development of this idea. In this conception, the numerous motifs in a sequence — movement, music, other sound, lighting, etc, as well as plot stages — unfold in a contrapuntal fashion, in other words like the independent, yet complementary, voices in a piece of polyphonic music.

Bordwell points out that Eisenstein's entire classification of forms of montage abounds with musical analogy — and each form, or level, of his categorisation of montage essentially involves 'contrapuntal conflict'. 'Montage may be metric, rhythmic, tonal, or overtonal. Each type, he claims, rests upon collision and conflict: rhythmic montage is seen to negate metric beats, tonal montage creates "dissonance," the overtone must sharply oppose the dominant tone'[3]. This use of the term *counterpoint* — equating it with conflict — is a simplified version of its

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[1]   R. Robertson, *Eisenstein on the Audiovisual*, London and New York: Tauris Academic Studies, 2009. *See, for instance,* pp.73-74

[2]   M. Glenny, and R. Taylor, *S.M. Eisenstein, selected works volume 2: towards a theory of montage*, London: British Film Institute, 1991, p.332

[3]   D. Bordwell, 'The Musical Analogy', *Yale French Studies*, No. 60, Cinema/Sound, 1980, p.148

musicological meaning. For Eisenstein, the term implies conflict, the notion that two elements

are deliberately at odds with each other; this is by no means the case in musical counterpoint.

Vladimir Messman pointed this out at the time[1]. (What is an accurate analogy is the idea that two

(or more) 'voices' (vocal or instrumental lines) are independent, equal parts of the whole.)

However, this is the sense in which Eisenstein uses it in his early writings, and it is the sense

included in the 1928 *Statement on Screen Sound.* While there is certainly a rhetorical aspect to

musical counterpoint (as discussed in Chapter 5), it seems that perhaps Eisenstein's dialectical

requirements necessitate 'upping the ante' from equal, independent voices which nevertheless

harmonise (even as they may battle for supremacy), to unequivocally opposed ('dissonant'?)

statements. (Chion puts the view that Eisenstein is really more accurately referring to 'dissonant

harmony' rather than counterpoint.[2]) In Eisenstein's later writings (in the '40s) the concept of

counterpoint has become more nuanced; while still involving contrast, it is concerned with a

notion of 'organic unity'. Kristin Thompson criticises Eisenstein's use of the analogy of

counterpoint, finding that he achieves 'conflict' in the juxtaposition of sound and image less

often than his own descriptions would suggest. R.S. Brown addresses this directly, positing that

Eisenstein is allowing for the retention of image and sound in short-term memory, so that it is not

a question of each correspondence occurring at precisely the same instant. Brown says:

> What Eisenstein's critics fail to perceive here . . . are the nonliteral implications of this
> director/theoretician's enthusiastically literal analysis. In attempting to establish a
> "vertical" montage that creates a quasi-contrapuntal simultaneity across the various senses,
> Eisenstein is not suggesting that each sense reacts in the same way over exactly the same
> period of time. Inheriting his aesthetics from French and Russian symbolism, Eisenstein
> posits the existence of a kind of synesthesia, correspondences between the senses in which,
> a la Baudelaire, les parfums, les couleurs et les sons se repondent (smells, colors and
> sounds answer each other). In other words, during the time it takes that fourth shot [for
> example] from the Alexander Nevsky sequence to go by, the eye perceives a particular
> graphic rhythm that corresponds to a particular rhythm in the Prokofiev score.[3]

 In fact, Eisenstein's own description emphasises that he is not really talking about simple

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[1]   V. Messman, 'Sound Film' (1928) in R. Taylor and I. Christie, (eds.), *The Film Factory: Russian and Soviet Cinema in Documents, 1896-1930*, Cambridge, MA: Harvard University Press, 1988

[2]   *See* Mollaghan, 2015, op. cit., pp.16-18 *for a discussion of this*.

[3]   R.S. Brown, *Overtones and Undertones: Reading Film Music*, Berkeley: University of California Press, 1994
       p.136

'correspondences' at all; he says, describing the temporal development of both music and pictorial sequence as 'movement':

> [A]n understanding of the structure, of the process and rhythms by which both music and visual depiction come into being and develop, will give us the only firm foundation forestablishing a unity between them.
> This is not only because movement, understood in this way, is capable of being 'materialised' through the specific features of any art form, but chiefly because a structural law such as this is above all the first step towards expressing a theme through the image and form of a work, regardless of which medium is used to express it.[1]

Thompson goes on to say that Eisenstein's films do, at times, combine 'all the cinematic devices'[2] into a form which functions much as though they were elements of a musical score, the actual music used in the film being only one of these. Danijela Kulezic-Wilson finds in the famous the ice battle sequence from 'Alexander Nevsky' that moments of static music and 'kinetic' image contribute most to the tension of the scene, as opposed to Eisenstein's own description, and other interpretations, which emphasise the reverse relation between these two main elements[3].

It is particularly the baroque and classical musical form of *fugue* (wherein the instrumental parts develop through imitative counterpoint) which originally influenced Eisenstein's thinking in terms of form, in common with that of numerous other major artists of the time including Joyce, Eliot, Kandinsky, and Klee. It seems that Eisenstein found the way to use the influence of musical fugue through its application to literary text by Joyce — notably in the 'Sirens' section of *Ulysses*. (A single line implying multiple voices has precedent in music. Robertson gives the example of J.S. Bach's *Sonatas for Solo Violin Nos. 1&2*, the 2nd movements of which are in fugue form[4].) Referring to an analysis, influential on Eisenstein, of the contrapuntal aspects of

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[1]   M. Glenny, and R. Taylor, R, *S.M. Eisenstein, selected works volume 2: towards a theory of montage,* London: British Film Institute, 1991, pp.373-4

[2]   K. Thompson, *Eisenstein's Ivan the Terrible: a Neoformalist Analysis*, Princeton: Princeton University Press, 1981, p.259

[3]   D. Kulezic-Wilson, *The Musicality of Narrative Film*, Basingstoke: Palgrave Macmillan, 2015, pp.82-85

[4]   R. Robertson, *Eisenstein on the Audiovisual*, London and New York: Tauris Academic Studies, 2009, p.40

this text of Joyce's, Robertson says a 'key aspect' of this influence is '… the presence of two to four parts in the episode, overlapping and interweaving through he same sentence, sometimes closely juxtaposed to heighten the vertical and harmonic aspect of this fugue'[1]. Eisenstein himself describes this analysis (S. Gilbert, *James Joyce's Ulysses:a study*, 1930) of the musical influence on this text of Joyce's as 'compelling and scrupulous'[2]. Reflecting on this specific topic, he relates how he saw similarities between music and architecture, seeing a form of 'counterpoint' in the way the various elements of the buildings are structured as 'the harmony of movements in space and in time'; he relates this to 'the fugue, shown in the paradoxes of Joyce's prose' and says '[a]ll these enriched and expanded my films'[3].

Eisenstein's early theatrical work, prior to becoming involved in film, also imparted significant musical influence. He was greatly influenced by his early mentor and collaborator Vsevolod Meyerhold, who had trained as a musician before becoming involved in theatre. Eisenstein writes of 'the magical creativity of this unique wizard of the theatre'[4]. For Meyerhold, the influence of traditional Japanese theatre was very strong, particularly the emphasis on rhythmical movement, and music. This, and a substantial Wagnerian influence also, led him to develop a conception of 'total theatre' which aimed to utilise music and sound rather than the text as the means by which to combine all the elements of a production into an organic whole. Bordwell describes how Eisenstein picks up strongly on the Wagnerian influence, in the period after 1930, in both his films and his theoretical writings:

> Just as Wagner bent music, gesture, language, scenography, lighting, even architecture to one expressive end, so does Eisenstein seek to fuse the various "lines" of cinema into an audiovisual totality. The most famous example of Eisenstein's impulse remains his essay on Alexander Nevsky's battle on the ice, which seeks to show how music can synchronize precisely with even static image. [5]

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[1]   ibid., p.37
[2]   S. Eisenstein, *Beyond the Stars:The Memoirs of Sergei Eisenstein*, (R. Taylor, ed.), Calcutta: Seagull Books, 1995, p.666
[3]   ibid, p.668
[4]   ibid., p.106
[5]   D. Bordwell, 'The Musical Analogy', *Yale French Studies*, No. 60, Cinema/Sound, 1980, p.146

Meyerhold is quoted as saying, 'The solution adopted for the composition of a piece of music can often help you to find the principles for the construction of a production'[1]. This serious experimental form, a kind of contrapuntal multimedia, was clearly profoundly significant for Eisenstein. Meyerhold also applied his methods to filmmaking; he describes his preparations, in 1915, for a film version of *The Picture of Dorian Gray* as 'a special kind of script: everything in it is divided into distinct spheres — dialogue for the actor, instructions for the director, the designer and the lighting technician. This kind of *score* is essential and I shall publish my work as a model script'[2].

'Music-hall' is cited by Eisenstein as being 'needed' for the development of montage; comedians particularly, and also circus, and early 'jazz' are for him associated with this[3]. (The role of jazz was also recognised as a significant part of the American influence in France at the time of early cinematic development[4].)

Eisenstein's *Nonindifferent Nature*, although less frequently cited than other works, contains his most thorough descriptions of the intertextual, cross-artform influences on his concept of audiovisual montage (certainly of those thus far published in English). He puts forward the view that there are three stages of cinematography/editing: silent, sound, and then 'audiovisual'; the third of these (audiovisual) is an 'organic' continuation of the first (silent), while the second ('sound') is 'the least cinematographic, consisting mainly of "dialogue" '[5].The silent and audiovisual stages both tend towards 'the fusion of different spheres of effect into one *unity*'[6]. Eisenstein explains the relationship of landscape to his conception of 'audiovisual' cinema

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[1] R. Robertson, *Eisenstein on the Audiovisual*, London and New York: Tauris Academic Studies, 2009, p.53

[2] ibid., p.39, *emphasis added.*

[3] S. Eisenstein, (1949), *Film Form,* New York and London: Harcourt, Brace, Jovanovich, 1977, p.12

[4] *See* J.H. Jackson, *Making Jazz French: Music & modern life in inter-war Paris,* Durham: Duke University Press, 2003*, especially regarding awareness of 'the relative roles of control and freedom, calculation and spontaneity',* p.120

[5] S. Eisenstein*, Nonindifferent Nature*, Cambridge: Cambridge University Press, 1987, p.226

[6] ibid., p.226

through a comparison to Chinese/Japanese scroll painting, a relationship he says he became

aware of in retrospect while looking back on his own use of landscape in film[1]. He describes

Chinese and Japanese art as utilising a particular 'music of the eye' (partly as a result of a kind of

ancient Chinese poetry which was entirely graphic — the written characters had no relation to

the *sound* of the words for the things depicted, as they do in Western language). The 'panorama'

unfolding on a painted scroll — involving sequences of action, simultaneity of elements at times,

varying textures — is described in terms of a *musical* form of composition, and Eisenstein uses

this concept as the means of explaining his own approach to landscape in his films, even

sketching diagrams depicting time-based visual patterns. Eisenstein relates this discussion to

examples from his own work — for example the 'mist' scenes in *Potemkin*.

'Eisenstein's concept of nonindifferent nature', says Robertson, 'comprises what could be

termed a 'total' experience, one which involves a unity of mind, landscape and the body'[2].

Conceptually combining Chinese landscape scroll painting (which feature a sequenced series of

'shots'), the musical symphony (with *movements* derived from motivic figures), and film

(similarly composed in his thinking), Eisenstein devised a model of artistic structure in which the

various elements are woven together in an organic, polyphonic, audiovisual form. In Chapter 4

of *Nonindifferent Nature,* titled 'The Music of Landscape'*,* he outlines these relations in

considerable detail. As Bordwell describes, Eisenstein's model of montage and form mutates

from one emphasising conflict primarily, to one of organic unity. He says, 'Eisenstein's organic

conception of the artwork and his specific elaboration of this along the lines of musical analogies

must be reckoned as one of the major accomplishments in the history of film theory'[3]. Eisenstein

believes that this may be traced to two elemental human activities: hunting and weaving

(particularly basket-weaving). In these 'instinctive' activities he finds a connection to the fugue,

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[1]   ibid., p.252
[2]   R. Robertson, *Eisenstein on the Audiovisual*, London and New York: Tauris Academic Studies, 2009, p.120
[3]   D. Bordwell, 1993, op.cit., p.190

'whether it be spatial in the etchings of, let us say, Giovanni Battista Piranesi, or musical in the works of Johann Sebastian Bach'[1]. Even at this stage, however, there is an element of the dialectical; Eisenstein describes the philosophical conceptions involved in Chinese landscape art as 'similar to the principles of the dialectic'[2]. All phenomena are in this context seen as dividing into opposites — male/female; yin/yang — and it is through the interrelationship of these opposites that the 'visual music' in this form of art is formed[3]; he says, 'The play of interaction, change, and mutual penetration of these opposite principles … lies at the basis of the dynamics of the structuring of the visual music on which landscape is built'. Eisenstein also outlines, using primarily literary examples (including Zola, Shakespeare, Dostoyevsky), the way in which he believes artistic 'pathos' to be created through a dialectical 'merging of opposites into a unity'[4], the dynamics of which nevertheless can lead to a kind of ' "divine frenzy" in which all the depths of their *pathos* is revealed'[5]. Interestingly, Eisenstein warns of concentrating too much on a complex 'harmonic perfection' at the expense of engaging the viewer — 'the audiovisual polyphony must diligently avoid degrees of fusion where all outlines composing its features disappear completely, totally, and forevermore'[6].

Andrew, as part of his overview of Eisenstein's theoretical work, discusses his (Eisenstein's) attitude to the nature of art in terms of a dichotomy between art and rhetoric. The conception of rhetoric being used here is one in which the only aim is success in convincing one's audience of one's point of view; this 'point of view', which may be equated with the theme of a film, must in this case be pre-determined, known prior to the film being produced. Andrew describes a tension in Eisenstein's writing between this — where the artist begins with a particular image in mind and endeavours to create this same impression in the minds of the audience — and the concept

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[1]   S. Eisenstein, *Nonindifferent Nature*, Cambridge: Cambridge University Press, 1987, p.278
[2]   ibid., p.235
[3]   ibid., p.235
[4]   ibid., p.102
[5]   ibid., p.104
[6]   ibid., pp.386-7

of the theme of a piece of work somehow being fully developed only through the process of the artist's manipulations of the various elements of the piece. This is said to relate to Eisenstein's interest in 'inner speech, that pre-linguistic patterning of phenomena which proceeds by the juxtaposition of bursts of attractions'[1] and in 'the mental processes of primitive cultures and children [which] stems from his belief that, by avoiding the claims of verbal logic to which we are doomed, they are naturally linked to a more real world, one in which the mind naturally patterns the stimuli it finds in the world.'[2] Andrew characterises this as being the functioning of an artistic approach, as distinct from a rhetorical one, avoiding 'verbal logic' and achieving a more fundamental, natural truth. However, there are other, more detailed, possible conceptions of the nature of rhetoric which could cast a different light on this phenomenon. If one were to apply the Innis/McLuhan conception of rhetoric (as described further in chapter 5) — related to the consideration of information reception in mosaic form rather than linearly — to this subject, the apparent contradictions in Eisenstein's conception may be considerably diminished. Rather than the single-minded, pre-determined, application of a thematic message being equated with a rhetorical approach (its intention to sway audience opinion notwithstanding), this might be seen as a linear, 'logical', way of proceeding; the value placed on pre- linguistic patterning on the artistic side of Andrew's equation may certainly be seen as corresponding very directly to this more refined conception of rhetoric. This conception of the rhetorical analogy is fundamentally related to the dichotomy of the visual (linear) and the aural (multi-directional), as noted elsewhere also. Further nuance may be added to this matter through consideration of Martin Lefebvre's discussion of rhetoric in relation to Eisenstein's work. He points out that, for Aristotle, rhetoric is 'a counterpart of dialectics'[3], its function being not merely to persuade but to persuade of a position as close to the real or the true as any particular situation will allow,

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[1]   J.D. Andrew, *The Major Film Theories*, Oxford University Press, 1976, p.72

[2]   ibid., pp.73-74

[3]   M. Lefebvre, 'Eisenstein, rhetoric and imaginicity: towards a revolutionary *memoria*', *Screen,* Winter 2000, Vol. 41 Issue 4, 2000, p.351

dialectics in fact being 'limited to more scholarly or philosophical practice'[1]. He describes the passing into disuse of the ancient *memoria* — 'art of memory' — once an integral part of the practice of classical rhetoric, and the element which particularly facilitated the skill of improvisation. This creative form of memory is said to have disappeared almost completely between the advent of writing and the Renaissance. In modern times rhetoric has again lost the essential link to the imagination, becoming merely akin to the use of a 'vast storehouse' of data. Lefebvre links Eisenstein's fascination with Renaissance thought with the resurgence in rhetoric at that time, and the rediscovery of *memoria*. Rather than being 'tools for memorizing speeches', in this period the arts of memory 'are powerful means for understanding the world and for semiotically constructing it through 'imagistic' or 'imaginistic' representations ... the foundation for rhetorical practice and all forms of discourse production.'[2] The significance of these issues regarding the nature of rhetoric, and its further relation to music, film, and media generally, are discussed in Chapter 5.

Eisenstein's conception of audiovisual montage is certainly related to this kind of representation of mental 'image'; he writes of a conception in our 'consciousness' as being 'derive[d] from the most widely various fields'[3], meaning that it includes gestural movement and sound as well as visual image. The reproduction of the right combination of these elements is what enables the audience to accurately experience the sensation that the filmmaker wants to express. Eisenstein says that this brings about a 'dynamic process'[4] whereby each audience member creates his/her own 'image' from the same elements as those used by the filmmaker. Eisenstein very straightforwardly finds musical composition the best analogy for this audiovisual/polyphonic montage; referring directly to the example of an orchestral score, he describes the notion of

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[1] ibid., p.351
[2] ibid., pp.253-4
[3] S. *Eisenstein, S (1942),* Film Sense, *New York: Harcourt, Brace, Jovanovich, 1975,* p.71
[4] Lefebvre, op. cit., p.361, *quoting from* 'Montage 1938'. *(This piece of Eisenstein's is reproduced as 'Word and Image' in 'The Film Sense', but in altered form.)*

several cinematic aspects — 'movement, or light values, or stage in the exposition of the plot, or the like' — progressing 'through a *simultaneous advance* of a multiple series of lines, each maintaining an independent compositional course and each contributing to the total compositional course of the sequence'[1]. This notion of dealing with such compositional elements (parameters?) individually seems to prefigure Burch's concept of 'parametric' cinema (so named by Bordwell). Perhaps the cinematic 'affect' produced by the precise compositional alignment of elements is in an important sense comparable to that of music — too precise, and yet paradoxically too individual for each recipient, to be adequately explained verbally — this somewhat indescribable feeling of cinematic 'affect' being similar in that respect to that sometimes experienced through music.

Such emotional, psychological aspects have been found to connect Eisenstein to the current context. Pia Tikka relates Eisenstein to 'new' media by 'scrutinizing the theoretical structures of Eisenstein's cinema montage as a complex systemic model of the psychophysiology of human experience'[2], also outlining the philosophical background to the early 20th century interest in reexamining the 'mind-body problem' in relation to such matters. She points out that, while Eisenstein is significant in Deleuze's Bergsonian conception of the development of cinema, Eisenstein's own theory is always directly related to practice, to 'a concrete connection with a definite system of images'[3]. Eisenstein is presented as the primary influence on an approach to new media, particularly in terms of the role of 'cinema', which incorporates concepts derived from Marshall McLuhan, Noel Burch, David Bordwell, Lev Manovich, and Sean Cubitt, among others. It is posited that Eisenstein's theory of the sensory effect of the 'audiovisual' combination was more complex than a simple, binary 'image plus sound' dynamic, making him still considerably more advanced than the current norm. Eisenstein's compositional conceptions are

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[1] S. Eisenstein (1942), *Film Sense*, New York: Harcourt, Brace, Jovanovich, 1975, p.75 .
[2] P. Tikka, *Enactive Cinema: Simulatorium Eisensteinense*, University of Art and Design Helsinki, 2008, p.26 retrieved 21-9-2011 from https://www.taik.fi/kirjakauppa/images/1b7b742430984b4606da5793515d14d8.pdf
[3] ibid., p.26 *(quoting from* 'Nonindifferent Nature'*).*

reevaluated in the light of contemporary psychological knowledge; Tikka says '[a] potential new cinema theory might gain new insight from the complex organizational system of autopoiesis, for example, in a reinterpretation of Eisenstein's descriptions of polyphonic montage orchestration, this in terms of multiple dimensions of the senses'[1]. It is argued that Eisenstein's conception of montage, in its fully-developed form, is capable of replacing narrative as the fundamental artistic structuring device, potentially freeing cinema from 'rigid', literature-derived sequencing. This, of course, was precisely the intended result; as was the case for Vertov and for many of the French *Impressionists* and *Surrealists*, Eisenstein believed in the desirability of formal experimentation in order to 'more productively' bring about cinematic impressions. He says, 'The plot is no more than a device without which one isn't yet capable of telling something to the spectator'[2]. (These issues will be revisited in the final chapter, *The Contemporary Context*.)

Eisenstein's, and also Vertov's, notions of *compositional* approaches to filmmaking, of musically-inspired structuring in which the relationship of individual elements is always conceived in relation to the piece as a whole, were most directly drawn from classical influences, as was also the case for the French filmmakers discussed (although the resulting works were innovative in the extreme). In this same period, structural and expressive concerns, similar in some ways to those of these filmmakers, were leading practitioners in other artforms to reach beyond conventional form altogether and to find entirely new methods of composition.

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[1]   ibid., p.161

[2]   S. Eisenstein, *Film Form,* (1949) New York and London: Harcourt, Brace, Jovanovich, 1977, p.61

3. Atonality & Serialism

Musical composition in the 'classical' tradition underwent radical changes in the early 20th century which may, broadly speaking, be compared to the increasing abstraction in artforms generally at that time. The primary instances of these musical developments may be referred to with the overarching descriptive term *atonality*. Before attempting to outline some of the ways in which these musical developments have had influence on the broader culture, particularly aspects of these especially pertinent to film-studies, it will be necessary to undertake an explanation of some of the primary terms and concepts involved.

In attempting to describe the phenomenon of atonality, one must initially describe what is meant by the term *tonality;* this is not entirely straightforward, as there are numerous senses in which the word is used. Two of these, the most common, are essential here. Firstly, in the most general sense, a piece of music may be said to be tonal if it has the aural characteristic of being 'centered' around one particular note; in this sense the vast majority of the musics generally encountered in contemporary Western society are tonal, including 'classical', jazz, pop, etc. — and early Western music was also. The second sense of the term refers to the system of *functional tonality* (also referred to by various other names, including *major-minor tonality*, *harmonic tonality*, *diatonic tonality*, *common practice tonality*) that developed through the 17th and 18th centuries, and which led to the tuning system[1] known as *equal-temperament*; this refers to the division of the octave into equal partitions — in other words, the distance between each note (each *semitone*) is the same in every case. Whereas in a 'natural' tuning system (one based on precise mathematical frequency relationships — Pythagorean, in Western historical terms), these distances would vary so that each *key* (each set of notes constituting a major or minor

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[1] *Many different tuning systems are used in traditional musics in different parts of the world.*

scale) would feature a somewhat different set of *intervals*, in the 'compromise' system of equal-temperament each key is constituted from precisely the same set of relationships[1]. This development enabled *transposition* — movement of otherwise identical musical material from one key to another — and facilitated a dimensional increase in the capacity for formal complexity of Western composition. These two senses of the concept of tonality overlap considerably. The contemporary musical instruments commonly used in Western music assume equal-temperament — indeed music thus composed would often sound strange to most of us otherwise. Also, many pieces of music, in many different genres, use elements which may be defined as functionally tonal as well as having characteristics which may be seen as deriving from other sources, such as scalar modes other than the classical major/minor system (the 'blues' scale, for instance).

In aiming to expand the expressive palette of musical materials, certain composers of the late nineteenth century, most notably Claude Debussy, used scalar modes other than the classical major/minor system (the 'whole-tone' scale, for example), and reduced the tendency of their music to unequivocally draw the ear to a definite tonal centre. Whereas in fully functional tonality *dissonance* is used as the means to emphasise this centre, by creating the aural desire for *resolution*, in Debussy's 'impressionist' music certain degrees of dissonance were utilised for their own 'colouristic' effects. (The function of the dominant 7th chord — eg, G7 in the key of C — in functional tonality is to 'pull' strongly to its tonic chord — to *resolve* to the 'home' tonality. As time went on, however, the degree of dissonance that was culturally registered on hearing its sound progressively reduced, and the necessity for resolution was correspondingly lessened.)

Around the turn of the century, numerous composers were devising means of moving beyond the

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[1]   E. Campbell, *Music after Deleuze*, London: Bloomsbury, 2013, *from p.81 gives a detailed description of the issue of equal temperament.*

constraints of tonality — to be *atonal*. Some of these used the strategy of specifically avoiding anything that could recall tonal referencing. Often, this was a conscious expression of equality — each of the available notes having equal relationship to all the others rather than being arranged hierarchically. While many such pieces utilised their own idiosyncratic structural devices, there was no common system, no atonal equivalent to functional tonality, structurally speaking. Arnold Schoenberg, having composed several pieces in this freely atonal manner, developed a system called the *twelve-tone* technique; this involves establishing a *set*, or *series* — a particular ordering — of all the twelve available pitches in the Western chromatic scale[1]. In the twelve-tone system, these pitches may be transposed, inverted, used forwards or backwards, but must all be used before any is repeated. Importantly, this is a system for ordering the materials for composition, not for the actual composition process itself[2]. This innovation marks the beginning of what became known as *serialism*, which developed several different varieties and had influence in many different cultural areas, as will be outlined further.

Adorno

Theodor Adorno, as well as being a significant philosopher and cultural theorist, was an important musicologist who dealt extensively with atonality and serialism, and with the sociology of music. Adorno's aesthetics (including his views on film) consistently reflect his belief that true art essentially expresses the social dynamics of its time. Indeed, objections to aspects of his theories regarding the 'culture industry' arise partially because of the perceived severity of his 'high modernist' views[3]. When taken as a whole, however, his aesthetic writings are more nuanced than this impression allows for. While Adorno uses examples from all major artforms in his aesthetic writings, it is music, perhaps the most autonomous art to his way of thinking, from which he draws his most detailed discussion.

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[1]   *A, A#/Bb, B, C, C#/Db, D, D#/Eb, E, F, F#/Gb, G, G#/Ab*
[2]   T. Adorno, (1970), *Aesthetic Theory*, London, New York: Continuum, 2004, pp.195-6
[3]   M. Hansen, *Cinema and Experience : Siegfried Kracauer, Walter Benjamin, and Theodor W. Adorno*, Berkeley: University of California Press, 2012, pp.207-8

Adorno believes that in the modern period a 'rupture' exists between *self* (autonomous artistic expression) and inherited, preestablished, socially determined *forms*; this may be seen as corresponding to the division between subject and object[1]. He believes that there is an inevitable tension between these (individual expression and social 'totality'), and that it is through the means it finds of expressing this very contradiction that an artwork can find its true value. Adorno is contemptuous of the view that form and content can be neatly divided, believing that — in what he regards as a genuine, or successful, work of art — inherited form is necessarily modified according to the requirements of the materials (content) at a particular historical point. The materials are thus 'self determining'[2], and the ultimate shape of the form emerges from this process; a dialectic of parts to whole constitutes the process of 'becoming' in artworks[3]. Adorno found Schoenberg's methods to be the most sound example of dealing with this problem which he also characterised, when considering the practicalities of composition, as *expression* versus *construction*. The twelve-tone technique established form 'from the bottom up', according to the relationships inherent in the materials (musical notes in this case), rather than 'top down', through the imposition of an externally derived template[4]. In later works, however, Adorno reflected that perhaps Schoenberg's earlier, free atonality was the more successful method[5]. In fact, Adorno comes to see in serialism the danger of sacrificing creative spontaneity to a kind of superstitious belief in numerical precision. Numerous writers have pointed out that Schoenberg's methods of 'freeing' musical tones from their traditional restraints provided a concrete model (not merely an analogy) for Adorno's philosophy[6]; this is not least because of what is seen as the necessity for the listener/reader to actively participate in the process of composition, rather than

[1]   M. Paddison, 1993, *Adorno's Aesthetics of Music*, Cambridge: Cambridge University Press, p.62
[2]   T. Adorno, (1970), *Aesthetic Theory*, London, New York: Continuum, 2004, p.199
[3]   ibid., p.244
[4]   T. Adorno (1949), *Philosophy of New Music*, Minneapolis: University of Minnesota Press, 2006 pp.90-91
[5]
     * T. Adorno, (1970), Aesthetic Theory, London, New York: Continuum, 2004, p.294
     * T. Adorno, & R.Leppert, *Essays on Music*, Los Angeles: University of California Press, 2002, p.534
[6]   T. DeNora, *After Adorno: Rethinking Music Sociology*, Cambridge: Cambridge University Press, 2003, pp.70-73

being able to rely on familiar patterns and pathways.

Miriam Hansen argues that the value of Adorno's musical aesthetics for film studies is due to film's 'constitutive combination of heterogenous visual, graphic and acoustic materials of expression, each with its own registers of temporality and mobility, organized to varying degrees of integration, continuity, balance, and closure or, conversely, tension, dissonance, disjunction, and openness'.[1] As Hansen points out, Bordwell makes this point in relation to 'the musical analogy' and 'the drive of film form toward multiple systems'[2].

In considering the application of Adorno's aesthetics to film, it is useful to bear in mind that he applies to the new artform standards established over many centuries in older forms. The very fact that the motion picture comes about as a result of, and is reliant on, modern technology is a fundamental problem for Adorno in considering questions of film aesthetics; film's inevitable dependence on industrial technology for its production and exhibition makes for a very skewed dynamic in terms of the dialectic of autonomous expression and a socially prescribed form requiring substantial capitalist investment. In his 1967 reflection on his and Horkheimer's well-known analysis of the *culture industry* from 23 years earlier, Adorno draws a marked distinction between 'technique' as used by cultural industries, particularly the film industry, and as used in traditional production of artworks. It is through 'distribution and mechanical reproduction'[3] that the owners of industry products exercise their skills, while deliberately restricting artistic potentials inherent in the medium. As Hansen points out, '[t]he obvious example would be the containment of montage in favour of continuity editing'[4]. Through this control of the means of cultural production, Adorno believes, the industry is able to distort the aesthetic, ideological, and

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[1]   M. Hansen, *Cinema and Experience : Siegfried Kracauer, Walter Benjamin, and Theodor W. Adorno*,
      Berkeley: University of California Press, 2012, p.240

[2]   D. Bordwell, 'The Musical Analogy', *Yale French Studies*, No. 60, Cinema/Sound, 1980, p.156

[3]   T. Adorno, & A.G. Rabinbach, 'Culture Industry Reconsidered', *New German Critique* No. 6, Autumn 1975, p.14

[4]   M. Hansen, 2012, op. cit., p.215

sociological effects of its products. Referring to Walter Benjamin's notion of *aura*, the special individual 'presence' generated by traditional artworks which is lost when cultural artifacts are mass-replicated, Adorno says that the culture industry dishonestly maintains a 'foggy' image of the same concept[1].

In a position formulated through consideration of arguments by both Benjamin and Siegfried Kracauer, Adorno accords film a special status in contemporary art in respect to its capacity to question the separation of 'art' from ordinary life[2]. He identifies, in the modernist tendency for the various artforms to relax their own boundaries, a questioning of the nature of art itself. It is the phenomenon of *montage* that introduces this 'erosion', initially through certain experimental forms and through cubism according to Adorno[3]. It is in the very capacity to fragment and undermine 'meaning' in the artwork and thus, to this way of thinking, to reflect the experience of modern social subjectivity, that the value of montage as a general artistic phenomenon can be seen; Adorno says, 'For the first time in the development of art, affixed debris cleaves visible scars in the work's meaning'[4]. In film, the 'sudden, discontinuous juxtaposition of sequences'[5] of montage encapsulates most ideally the artistic manipulation of pieces of empirical reality; this functions to express the dialectic of parts to whole, as it both 'disavows …[and] reaffirms unity'[6]. In respect of this capacity, film is said to resemble both written language and the internal flow of mental imagery. In writing, each word is a discrete piece of information but, as the eye moves from one to the next, a larger form may be perceived — yet it is in the *dis*continuity of the words and of individual mental images that the relationship to filmic montage is identified. Adorno goes on to say:

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[1]   Adorno & Rabinbach, 1975, op. cit., p.15.
      For Adorno's critical view of Benjamin's 'aura', see Adorno, 2004, op. cit., p.60
[2]   * T. Adorno, *Art and the Arts*, 1967, p.386 accessed 11-5-15 at http://www.scribd.com/doc/43350732/Adorno-Art-and-the-Arts
      * Hansen, op. cit., pp.220-221
[3]   T. Adorno, 1967, *op. cit.,* p.385
[4]   T. Adorno, *Aesthetic Theory*, London, New York: Continuum, 2004, p.211
[5]   ibid., p.211
[6]   ibid., p.210

> Such movement of interior images may be to film what the visible world is to painting or the acoustic world to music. As the objectifying recreation of this type of experience, film may become art.[1]

This imposed trajectory of viewers' attention also has concerning ramifications according to this view, as the tendency is seen to be 'to fall into step as if in a parade'[2], as well as being similar to the effect of written language; Adorno sees this as being comparable to the effect of music on the general listenership. He goes on to suggest that 'film's most promising potential lies in its interaction with other media'[3], implying that the integration of extra-musical sound into musical composition is an example of what he means. The contemporary filmic example given is Mauricio Kagel's *Antithese* (1965), now accessible online.

Despite the obvious significance he sees in this multi-artform intertextuality, Adorno nevertheless places the utmost importance upon the individual characteristics of specific artforms, and here it is from music — specifically, the tradition of Western composition — that the detail of his arguments is drawn. The 'materials' of musical art, for Adorno, include everything available to artists to work with[4]; not only pitch relationships then, but also 'timbres, durations, dynamics … [connection systems] melody, harmony, counterpoint, rhythm, texture … [integrational means] forms, genres, and also styles … compositional procedures, techniques and technology'[5]. All of these elements and systems are seen as variously 'pre-formed' as they all arise from culturally mediated norms and conventions. A genuine work of art creates a new form by dialectically adapting these to new historical requirements. Adorno uses the example of the advent of the fugue, in which a new form was developed by 'integrating tonality into polyphonic space and at the same time introducing contrapuntal and harmonic concepts'[6]. In the modernist

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[1]   T. Adorno, 'Transparencies on Film', *New German Critique*, No. 24/25, (Autumn, 1981 — Winter, 1982), 1982, p.201

[2]   ibid., p.203.
      This is virtually identical to McLuhan's point on this matter.

[3]   ibid.

[4]   T. Adorno, *Aesthetic Theory*, London, New York: Continuum, 2004, p.202

[5]   Paddison, 1993, op. cit., p.151

[6]   T. Adorno, 2004, op. cit., p.274

period, Schoenberg's reconsideration of classical forms (especially Beethoven's innovations) 'brought about that expansion of counterpoint that proceeded to revolutionize musical material as a whole'[1]. Adorno's critique of 'younger twelve-tone composers' included the point that they do not, as do '[t]he innovators, Schoenberg, Bartok, Stravinsky, Webern, Berg, even Hindemith', fully appreciate the classical tradition ... 'In its place they turn what is in itself a critical musical ideal into an artificially positive one, without summoning up the spontaneity and effort that it requires'[2].

In the 1950s, numerous composers, including Pierre Boulez, Karlheinz Stockhausen (influenced primarily by Anton Webern, and then Olivier Messiaen), redeployed Schoenbergian serialism, which originally applied to melodic and harmonic structure, to systematically control the various other *parameters* of a composition also (volume, duration, attack, timbre etc), according to precise proportional relationships. This approach became known as *total serialism* or *integral serialism* and, as well as being an influential form of composition for conventional instrumental ensembles, was a significant factor in the development of electronic music. Total serialism also had a broader cultural influence. As with the philosophical, especially linguistic, movement known as *structuralism*, serialism involves 'the relation of local structure, or stylistic events, to large-scale structure'[3], and in this extended version aimed to systematise all parameters of a piece according to a single underlying order. Literary developments of the time, such as the *nouveau roman*, are often described as being similar in their structural innovations to serial music; an important aspect of this is the concept that the outline of a piece is one of many possible permutations that may have been constructed from the underlying set of structuring materials. (In literature, this aspect could tend towards the non-linear, with several examples of

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[1] ibid., p.275

[2] T. Adorno, 'The Aging of the New Music' (pp.181-202), in Adorno & Leppert, 2002, p.196.

[3] D. Bordwell, *Narration in the Fiction Film*, Madison: University of Wisconsin Press, 1985, p.276

works with multiple possible itineraries — notably Marc Saporta's *Composition No. 1*, 1962).

In his discussion of the application of serialist structure to film, using the term *parametric cinema*, David Bordwell emphasises the role of *style*, the patterning of choices in relation to various filmic parameters becoming capable of replacing narrative as the essential structuring device. This is discussed further below. There are significant differences between serialism and structuralism. Whereas structuralism aims to apply extrinsic norms of linguistic formation in such a way as to analyse works and arguably constrain the boundaries of possible meaning, serialism in fact aims to transgress such conventional boundaries in the process of composition, requiring a work to develop its own unique structure, and may in fact be said to be actively negating the possibility of pre-existing signification. Bordwell states that when parametric cinema emerged it 'owed more to serialism and the *nouveau roman* than to structuralism'[1]. He acknowledges Noël Burch as the initiator of the first 'serialist theory of film'.

Writing in the 1950s, Burch believed that film was in the process of gradually breaking free of the 'literary or pseudo-literary' structural forms which had dominated it throughout the '30s and '40s. He suggested that by systematically experimenting, dialectically, with cinematic parameters such as subject distance, camera angle, direction and speed, movement within shot, etc, film could ...

> be liberated from the old narrative forms and develop new 'open' forms that will have more in common with the formal strategies of post-Debussyian music than with those of the pre-Joycean novel.[2]

It is important to emphasise that this is a suggestion for the ongoing development of cinema, in the spirit, perhaps, of the serialist impulse of its time. Although there are extensive examples from existing films where Burch identifies instances of the kind of stylistic patterning he is describing, he is ultimately proposing deliberate practical experimentation. While he is careful to

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[1]   D. Bordwell, *Narration in the Fiction Film*, Madison: University of Wisconsin Press, 1985, p.278
[2]   N. Burch, *Theory of Film Practice*, Martin, London: Secker and Warburg, 1973, p.15

point out the limitations of a direct comparison of musical and cinematic practice (as Bordwell

points out also), his concept is in fact more a model than an analogy. Dialectical opposites are

outlined, concerning all the various parameters which can be seen as the constituent parts of a

film: dialogue, acting style, setting, costumes, audio etc. Burch regards audio as particularly

important, saying, 'the fundamental dialectic in film, the one that at least empirically seems to

contain every other, is that contrasting and joining sound with image'[1]. Also seen as especially

significant is the dialectic of the on-screen space and what is suggested about the 'off-screen

space', which is often indicated through the use of audio. Further potential audio dialectics

include 'apparent microphone distance' — which can create 'structural interactions between

auditory and visual space'[2] — and that contrasting different 'colours' of relative silence ('dead

air' on the soundtrack, studio 'silence', soft ambience in a rural setting, etc). In the

'photographic' parameter, softness and sharpness of focus, and varying depths of field are

juxtaposed, and said to thus constitute a further dialectic. Burch cites examples (particularly

from French cinematic Impressionists such as Dulac, Epstein, Gance, L'Herbier) where the use

of gauze and vaseline on lenses causes some portions of the same screen distance to be sharp and

others soft. This parameter also includes the juxtaposition of different shades, including

coloured/tinted shots contrasted with monochrome. The 'organic' parameter is said to consist in

the presence or absence of an image; also, there is the opposition of a purely white screen and a

purely black one — with the gradation in between the two extremes, the extent of fade in/fade

out of an image in other words, also being capable of forming a dialectic. Backward/forward

motion centring around the stationary image, and fast/slow motion centring around normal

speed, are also potential devices in this respect. Burch puts the view that the parameter of

duration exposes a limitation of the comparison of this kind of cinematic structuring with that of

serial music; while musical structure can be outlined with mathematical precision, the

'perceptible' duration of cinematic shots is dependent on 'legibility' — in other words, static

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[1]   ibid., p.90

[2]   ibid., p.93

shots will appear longer than ones with more action. It might be argued however, that passages where very little movement in the musical parts occurs will tend to seem longer than those which are 'busier' and have more variation per unit of time, so that much the same thing can be seen as in fact applying in music also. Also, as Jonathan Kramer points out, this perception is largely affected by the amount of new material being presented; the more new information requiring cognitive processing, the longer a musical segment will seem[1]. Burch puts the view that only a few filmmakers — Eisenstein, L'Herbier, Resnais, Markopoulos — displayed the concept 'that the relationship between duration and legibility in itself constitutes a dialectic'[2]. Shots which are too short for the information within them to be comfortably processed, juxtaposed with shots containing relatively little information which are held for relatively long durations, result in sequences which are comparable to those of the avant-garde music of the time.

The rhythmic structure of cinema is constituted by the interrelationship of all these many and various factors; the complexity of the patterns thus formed make a literal application of musical composition to cinematic construction appear problematic. (Even very complex musical compositions are constituted entirely by specific pitches and tones.) However, in observing the development of music itself, one can see that principles originally applying to these fundamental aspects have been effectively extended to other parameters — from twelve-tone serialism, to 'total' serialism, to electronic music, for example. These topics are discussed later in this chapter. Burch extends his ideas about the application of serialism to film to consider the introduction of chance elements into cinematic form, saying:

> The formal strategy involved in creating a work with multiple itineraries, regardless of whether or not the soloists are given any initiative, is a logical extension of the serial approach in general and, through it, of the entire history of Western music ...[a serious experiment] might take the form of creating a film with multiple interchangeable facets, using differently edited versions of the same material, for instance, or perhaps by filming works with multiple itineraries on videotape, incorporating some sort of technical

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[1] J.D. Kramer, *The Time of Music: New Meanings, New Temporalities, New Listening Strategies*, New York: Schirmer Books, 1988, p.337

[2] N. Burch, *Theory of Film Practice*, Martin, London: Secker and Warburg, 1973, p.50

> improvisation while they are being made … the sort of work we suggest … will be one of a complexity and richness unprecedented in the entire history of art.[1]

The important issue of the use of chance procedures is dealt with in the following chapter.

Bordwell outlines a mode of narrative structure which emphasises the role of style. He gives this form the name 'parametric cinema', though he suggests that various other names could be used, including 'poetic cinema'. The fundamental feature of this concept is that structural patterns may be utilised in a film which are independent of the requirements of its surface narrative, in the manner initially outlined by Burch. A useful example of where this type of thing occurs in other forms is that of a song or narrative poem. In that case, the narrative structure of the story must accommodate the requirements of verse and/or music in that rhyming schemes, and rhythmic, melodic and harmonic patterns, will determine the possible linguistic choices available. Films, however, rarely use formal structures outside of the immediate requirements of the *syuzhet* (the particular means chosen for the telling of the 'story'). Cinematically, Eisenstein was interested in the possibility of creating structural patterns independently of the overt narrative requirements of the surface story, but such ideas were not applied until many years later. This line of thought implies that 'mixed media' entails the combining and juxtaposition of discrete structural patterns. As we have seen, one of the primary influences on this mode of thought is that of serial music. Bordwell says, 'For our purposes, the crucial aspect of serialist doctrine is the possibility that large-scale structure may be determined by fundamental stylistic choices'[2]. Serialism and structuralism have important similarities in that both 'involve the relation of local structure, or stylistic events, to large-scale structure'[3]. This leads to the conception of style as a structuring device, particularly useful in that it can create recognisable patterns which are not governed by their representational, or denotative, function. Bresson's *Pickpocket* (1959) is often cited as an

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[1]   ibid., p.108
[2]   D. Bordwell, *Narration in the Fiction Film*, Madison: University of Wisconsin Press, 1985, p.276
[3]   ibid.

exemplary instance of parametric cinema[1]. The film's *minimalist* style, with idiosyncratic

cutting, enables radical time-shifting. Bresson uses an austere, restricted visual palette, as

though to de-clutter the entire mis-en-scene, to enable the clear identification of parameters, —

'a series of almost still images'[2]. Burch identifies the use of dialectical parameters of

'empty'/occupied screen-space and on-screen/off-screen space (through the use of sound in the

latter case). He also describes Bresson's use (in other films also) of the *dissolve* as 'an

autonomous formal device' in dealing with the same/similar image (eg, hands in *Pickpocket*)[3].

Initially, there was a direct connection between literature and those films made with deliberate

attempts to utilise serialist technique. Prominent examples of this are Resnais's *Last Year at*

Marienbad (1961), made with writer Alain Robbe-Grillet, and Pollet's *Méditerranée* (1963),

written by Phillipe Sollers. These two films are described by Bordwell as 'landmarks in the

cinema of parametric narration'[4] . Examples from the work of Ozu, Renoir, Mizoguchi, Dreyer,

Tati, Godard, Fassbinder, and many others are mentioned; Bresson's *Pickpocket* (1959) is

analysed in detail. *Mediterranee* uses the repetition of a number of shots in a constantly

changing order, and interspersed with various other scenes that gradually unfold. On viewing the

film now, it is rather difficult to imagine the effect it apparently had at the time[5] — innumerable

much earlier films are as visually 'poetic', surely? Yet for the French *Tel Quel* group (including

Sollers, Kristeva, and Baudry) it clearly marked a significant point in film theory. Burch notably

criticises *Mediterranee*[6]; this is chiefly founded on what he sees as a lack of underlying

compositional structure[7] — the arbitrariness of the selection of the images and their juxtaposition

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[1]   ibid.
     Bordwell presents an extensive analysis, pp.289-310

[2]   A.B. Kovacs, *Screening Modernism: European Art Cinema*,1950-1980, Chicago: University of Chicago Press, 2007, p.144
     Kovacs sees the direct influence of Bresson in Straub, who is overtly interested in presenting a form of atonal
     cinema (*see* p.148).

[3]   N. Burch, *Theory of Film Practice*, Martin, London: Secker and Warburg, 1973, p.42

[4]   Bordwell, 1985, op. cit., p.278

[5]   *See* A. Ritchey, 2012, 'Lines of Flight: Jean-Daniel Pollet, Mediterranee, and the Tel Quel Group', in *SubStance*, Volume 41,
     Number 2, 2012, *for a detailed discussion of this.*

[6]   Burch, 1973, op. cit., pp.71-73

[7]   *Burch by no means criticises the film 'for too exactly applying the principles of serial composition to filmmaking' as Ritchey,*

with the words, music and other sounds. He finds Pollet's later film *Le Horla* a more satisfactory structuring of the relationship between the various elements. The voice-over in *Le Horla*, while still poetic in tone, spells out an easily comprehensible overall narrative (based on a Maupassant story). Burch claims that, although he does not believe 'that only a conventional narrative can provide a valid framework', the relationship between a verbal text and visual imagery 'must necessarily be *temporal*'[1].

Serialism in its original musical form rejected outright the conventional (tonal) version of 'reality'; this is rather different from the derived literary form whereby conventional 'meaning' itself is rejected. No doubt this is due to the fundamental problem faced by all modernist artists dealing with verbal language — all are inevitably restricted by the cultural connotations of the linguistic materials. In music, it is the *combinations* of musical tones in which the most pronounced cultural connotations inhere, rather than the tones themselves (although, on a deeper level, the particular division of a sound spectrum into specific, striated pitches is itself culturally derived). The imperative point here is that musical serialism aims to provide an alternative means of establishing coherence, while rigorously negating the conventional means of doing so which is seen as falsely all-encompassing. It is perhaps in the very difference between music and verbal language that the value of this musical model for cinematic innovation may be seen. It seems clear that the film-makers who were initially attracted to using serialist-influenced techniques tended to do so via the literary version. Burch's conception of a potential experimental cinematic form is directly drawn from a more rigorous musical model, and thus arguably more concerned with releasing underlying meanings or perhaps, rather, with *creating* meaning, through systematically negating culturally-contrived conventions, than negating meaning as such. (Adorno would definitely not agree with this interpretation. However

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*(*Ritchey, 2012, op. cit., pp.90-91*) claims; he says, in fact, '[w]hether concerted or not, this may represent something of an attempt to apply principles similar to those of serial music'* (Burch, 1973, op. cit., p.72*)*.

[1]   Burch, 1973, op. cit., p.74

Schoenberg himself did not share all of Adorno's views, and certainly believed in the possibility that his music could achieve general appreciation.)

Eisenstein was greatly influenced, as we have seen, along with other highly innovative early modernists, by classical musical forms, particularly fugue. This led to a 'polyphonic' formal conception which may be seen as being directly related to modernist developments in other artforms. Although serialism in music was being developed at much the same time (the 1920s), it was not this musical innovation that had such broad cultural influence until the much later version was developed in the '50s and '60s. It is thus perhaps all the more interesting that, in cinema, the influence of Eisenstein is so clearly connected to the late modernist innovations which may also be seen as being very much brought about by the permeation of the European cultural milieu by serialism. It seems, in other words, that Eisenstein's ideas were in certain ways comparable to those of the musical serialists, but that this was not apparent until much later. Eisenstein's conception of montage[1] emphasises the relationships of the various cinematic elements, the overall compositional form of a piece; 'organic' form at both local and global levels was to be striven for[2]. Burch says 'Eisenstein was probably the first film-maker to have conceived of frame composition as a function of the overall relationship between a film's separate images'[3], and mentions Eisenstein's interest in 'polyphonic' montage, the concept of representing several views (or 'voices') at once; this can include the cutting together of various shots of the same subject from different angles and/or distances. In the context of describing Eisenstein's approach to the close-up, and its capacity to create an affective impression of a film's overall theme, Gilles Deleuze describes the ability of facial expressions in close-up (of the same or of several different faces) to 'carry out a qualitative leap' as resulting from a 'series', as

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[1]   S. Eisenstein, *Film Form*, New York and London: Harcourt, Brace, Jovanovich, 1977, pp.72-83 ('Methods of Montage').
[2]   ibid., p174
[3]   Burch, 1973, op. cit., p.38

having 'a serial aspect'[1], though he does not deal with the influence of classical musical form on Eisenstein's work.

Michel Foucault cites musical serialism, through Pierre Boulez in particular, as a fundamental influence on his philosophical development. Despite this, there is little reference to music in his work. According to Mary Rorich, it is through Deleuze that serialist music's influence on Foucault is primarily interpreted. In the 1982 essay *Pierre Boulez, Passing Through the Screen*, however, Foucault gives some impression of the nature of this influence. He describes his fascination with the 'total serialism' being promoted by Boulez and his circle in the '50s as being largely due to its very inaccessibility, in the sense that he felt that it was utterly uncompromising even in the face of almost total lack of assimilation, at that early stage, into general aesthetic, philosophical, and political discourse. It is in this uncompromising formalism though that 'to encounter Boulez and his music was to see the twentieth century from an unfamiliar angle'[2]. Foucault describes the way the analysis of form has become, in the 20th century,

> a remarkable object of moral hostilities, of aesthetic debates and political clashes … A whole history of the formal in the twentieth century remains to be done: attempting to measure it as a power of transformation, drawing it out as a force for innovation and a locus of thought, beyond the images or the "formalism" behind which some people tried to hide it.

It has been noted that the role of large and mid-scale form as such, as opposed to small-scale 'structure', in the music of Boulez and other 'avant-garde' composers in the mid 20th century was largely being rejected as an organising device, with structuring forces not necessarily directly concerned with the succession of events in time determining the final shape of each piece[3]. Rorich outlines Foucault's own distinction between 'structuralism' and concern with form: he is said to have regarded structuralism as 'a "minor episode" in the longer formalist

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[1]   G. Deleuze, *Cinema 1: the Movement-Image*, London: Athlone Press, 1986, p.92

[2]   M. Foucault, 'Pierre Boulez, Passing Through the Screen', in *Aesthetics, Method, and Epistemology: Essential Works of Foucault*, 1954-1984, New York: The New Press, 1999, p.242

[3]   R.L Junchaya., 'Musical form after the avant-garde revolution: A new approach to composition teaching', *Beyond the Centres: Musical Avant-Gardes Since 1950*, Conference Proceedings, Thessaloniki, 2010

project' — with the formal regarded as 'a way of reading history and experience differently; of shadowing and tracking culture, and interrogating its subject-based understanding of itself … Foucault is not interested in contents per se, but in the structures that make these contents possible'[1]. Deleuze is said to have based his analysis of Foucault's *The Archaeology of Knowledge* on the notion of 'atonal logic'; Rorich presents Deleuze as being aware of a profound serialist influence which enabled Foucault to develop a non-sequential, non-narrative (perhaps one might say 'non-linear') approach to discourse. For Deleuze, just as a serial composition uses various 'sets' (permutations of the particular 'tone-row' on which the piece is based), in a 'diagonal polyphony of polyphonies', various *epistemes* may be seen as similarly inter-connected — apparently utterly incompatible, but in fact 'made up of the same body of statements'[2].

Although Deleuze's *Cinema* books (1983-85) only obliquely refer to any of the complex of concepts outlined in *A Thousand Plateaus* (1980), and although the latter does not deal with issues of cinema except rarely, as passing examples, the influence of these concepts may be traced in the later works. The many sections in all these books which use music as a model provide one way of observing this; they also amount to a particularly detailed example of the influence of musical serialism on broader cultural endeavour. Perhaps the most prominent musical ingredient in these books, a theoretical/ philosophical influence stemming primarily from practical musical issues, is that of Pierre Boulez. As well as a significant composer and conductor, Boulez was a widely influential author and (often aggressively polemical) promoter of the importance of modernism. In the very early 1950s Boulez was a fervent proselytiser for serialism, developing and practising the form of *total serialism* outlined previously; his own practice of this very strict, quite mathematical, form was quite brief however and he became very

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[1]   M. Rorich, 'Passing through the Screen: Pierre Boulez and Michel Foucault', *Journal of Literary Studies*, Vol.22 (3-4), December 2006, p.307

[2]   ibid., p.309

critical of those who pursued it more devotedly, regarding it as having gone too far in doing

away with subjective creativity. Boulez's fully mature conception of innovative structure became

critical of the 'sterility and academicism'[1] of rigid numerical composition, using serialist

technique instead as a method of constant development; at this point he himself describes his

approach as 'dialectical', saying 'invention without discipline is very often inept, in the literal

sense of the word; but discipline without invention is no less inept, since it is not applied to

anything.'[2] Boulez was instrumental in the development of electronic and tape-based music, and

also (largely through the influence of Messiaen) in the integration into Western music of other

cultural influences, notably Balinese, African, and Japanese music. He was also very significant

in the use of 'controlled chance' in music, as will be discussed in the next chapter. (The same is

true, in all instances — electronic, tape, cross-cultural, aleatoricism/indeterminacy — of

Karlheinz Stockhausen).

One of the concepts in *A Thousand Plateaus* most directly derived from music is that of *smooth*

versus *striated* space. Deleuze and Guattari explain this thus:

> [T]he striated is that which intertwines fixed and variable elements, produces an order and
> succession of distinct forms, and organizes horizontal melodic lines and vertical harmonic
> planes. The smooth is the continuous variation, continuous development of form; it is the
> fusion of harmony and melody in favour of the production of properly rhythmic values, the
> pure act of the drawing of the diagonal across the vertical and the horizontal.[3]

This concept of Boulez's is discussed quite extensively, describing the way in which it is used to

outline the notion of a compositional 'space' not rigidly divided into specific *intervals* (particular

pitch divisions, as in conventional musical practice), nor specific, regular divisions of time

(bars/measures, time-signatures, etc.)[4]. This is extrapolated into a generalised conception of

[1]   P. Boulez and C. Deliege, *Boulez: Conversations with Deliege*, London: Eulenburg Books, 1975, p.64
[2]   ibid., p.65
[3]   G. Deleuze, and F. Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia,* Minneapolis: University of Minnesota
       Press, 1987, p.478
[4]   * Deleuze & Guattari, 1987, op. cit., p.477
       * E.W. Holland, *Deleuze and Guattari's A Thousand Plateaus: a Reader's Guide*, London: Bloomsbury Academic, 2013,

thought, with examples from visual art, geometry, mathematics, and oceanography/geography as well as music. Smooth thought-space enables *nomad* thought, which is capable of continual movement and able to deal with multiple interpretations; striated thought-space is associated with *state philosophy,* whereby the state, controlling movement across borders — conceptual and intellectual as well as physical — restricts and segments potential connections. Within this smooth thought-space comes about the widely permeating concept of the *rhizome*. Whereas conventional conceptions of thought may be represented as *arborescent,* hierarchical in structure as with the tree, Deleuze and Guattari posit a structure whereby a rhizome (a 'subterranean stem'[1], like a bulb or tuber) can connect to any other, and 'ceaselessly establishes connections between semiotic chains, organizations of power, and circumstances relative to the arts, sciences, and social struggles'[2]. Musical form generally, with its inherent developmental 'sending out' of 'lines of flight' (see below), is regarded as a kind of rhizome[3]**.** Deleuze and Guattari equate smooth and striated space to their notion of the *plane of consistency* (also called the *plane of immanence*) versus the *plane of organisation* (also called the *plane of transcendence*), respectively. To describe it very broadly, this refers to conceiving of entities and phenomena (physical, behavioural, or purely conceptual) being either freely and equally available for combination as required in any given circumstance (smooth space/plane of consistency), or consisting in pre-existing combinations of many different kinds — biological/behavioural for instance, such as birds delineating their territories — or socially-determined, such as the relations of production, exchange and debt in capitalist society (striated space/planes of organisation). These combinations of 'connections' are referred to as *assemblages*; to use Colebrook's examples:

> A human body is an assemblage of genetic material, ideas, powers of acting and a relation to other bodies. A tribe is an assemblage of bodies. Deleuze and Guattari refer to 'machinic' assemblages, rather than organisms or mechanisms, in order to get away from

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p.42
[1] Deleuze & Guattari, op. cit., p.6
[2] ibid., p.7
[3] ibid., p.12

the idea that wholes pre-exist connections.[1]

In *Cinema 2*, Deleuze often uses the notion of 'planes'; in his discussion of Orson Welles' 'deep focus', for instance, it is used to describe both the simultaneity of physical, perspectival 'planes', and also 'sheets' or 'regions' of time. Along a 'diagonal', Welles is said to connect elements within the planes, both of location and of duration/time[2]. The concept of the *diagonal* is another drawn from Boulez. Developed from Webern's innovative method of treating his serial tone-rows, this can be thought of as moving beyond the traditional distinctions of melody and harmony, and more freely structuring 'musical space'[3]. The term derives its name from the idea of an imagined grid (an abstraction of a musical score) with 'melody' running horizontally and 'harmony' running vertically, and then a diagonal 'line' suggesting the creation of idiosyncratic coordinates. Deleuze and Guattari describe Boulez's diagonal[4] in such a way that it becomes much more general than in its original application, even as they discuss its particularly musical manifestations. Campbell points out that the conflation of Boulez's diagonal with smooth space[5] is problematic in purely musical terms since the diagonal concept may apply to either conventional intervallic (striated) music or to the (smooth) pitch space enabled by electronic music[6]. Deleuze and Guattari use this concept to describe the way they see all creative musicians as proceeding by 'drawing their own diagonal, however fragile, outside points, outside coordinates and localizable connections'[7]. While 'the Viennese school'[8] are an 'exemplary' instance of such innovation, the fact that the next generation moved their ideas still further demonstrates the inevitability of constant flux. This is associated with the further conceptual

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[1]   C. Colebrook, *Understanding Deleuze*, Crows Nest: Allen & Unwin, 2002, p.xx
[2]   G. Deleuze, *Cinema 2: the Time-Image*, London: Athlone Press, 1989, pp.102-112
[3]   * E. Campbell, *Boulez, Music and Philosophy*, Cambridge: Cambridge University Press, 2010, p.221
      * J. Goldman, *The Musical Language of Pierre Boulez: Writings and Compositions*, Cambridge : Cambridge University Press, 2011, pp.43-44
[4]   Deleuze & Guattari, 1987, op. cit., p.296
[5]   Deleuze & Guattari, 1987, op. cit., p 478
[6]   Campbell, op. cit., pp.75-76
[7]   Deleuze & Guattari, op. cit., p.297
[8]   ibid.
      Actually normally called the 'Second Viennese School' — serialists Schoenberg, Berg, Webern, etc. are clearly intended here.

terms *deterritorialisation* and *reterritorialisation* which, considerably more general again, refer to the areas that are formed through particular groups of 'connections'; once again, these may be biological, social, conceptual[1]. (A territory is a form of assemblage, though an assemblage is necessarily always in a process of reconfiguration, of 'becoming'.) However, numerous classical to modernist musical examples are given[2], and the discussion of these includes two further conceptual terms (of the very many included in the book) which seem important to describe: *refrain* and *line-of-flight.* The notion of the *refrain* originates with a bird-song identifying a territory; while the concept is extended to many versions of territorial behaviours other than aural ones — animal, human, even 'cosmic' — sound, and particularly music, is said to have a special power to *de*territorialise, to marshal forces for the changing of territorial boundaries[3]. It should be noted that deterritorialisation is not necessarily seen as a positive force; for instance, capitalism moves beyond the territorialisation of traditional states by commoditising labour (and 'develops an economic order that could do without the State'[4]!) A musical *refrain* is said to tend to retain its autonomy when deterritorialised, whereas a visual *refrain*, a colour for instance, 'tends to dissolve, to let itself be steered by other components'[5]. Bartok's development of folk melodies into longer forms is mentioned as an example of how simple refrains may be deterritorialised, and then reterritorialised as part of 'the great cosmic machined refrain'[6]. The *line-of-flight* describes an action of deterritorialisation (seemingly very similarly to the *diagonal* in the musical example) which brings about new sets of connections and thus new assemblages.

Martin Scherzinger gives a very detailed account of the influence of Boulezian serialism on Deleuze and Guattari's concepts of the interval, lines of flight (leading to deterritorialisation),

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[1] ibid., p.323.
[2] ibid., pp.299-309 ('Becoming-Music')
[3] ibid., pp.347-348
[4] ibid., p.454
[5] ibid., p347
[6] ibid., p250

and the rhizome. He argues that 'certain failures and fissures produced in the process of intersemiotic transposition between music-theoretical arguments and philosophical tropes has consequences for the politics implied by their amalgamation'[1]. In this account, it appears to have been the earlier, Webernian mode of Boulez's serialist concept that is a primary influence on the 'diagonal', 'polyphonic' notion of deterritorialisation. The notion of the significance of the interval in Deleuze and Guattari appears to derive from Webern's particular method of serialism (as interpreted by Boulez in the context of the period following WW II), which '[compresses] the music's field of motivic play to fewer intervals than that of the music of the past'[2]; as Adorno objected, this negates music's capacity for 'dialectical creativity'. Scherzinger says 'Boulez's language of absolutes … tarries awkwardly with the nomadism of Deleuze and Guattari's philosophy'[3]. Scherzinger also describes how Deleuze and Guattari's 'synthesizing hermenuetics of an abstract machine' is in fact based on the conception and advent of the physical musical synthesizer.

It is not possible to entirely extricate the specifically 'serial' elements from the various other aspects of modernist thought which influence most of the more innovative films of the 1950s and '60s. However, there are certainly identifiable pervasive tendencies which may be traced to serialist influence on culture generally (particularly through the French milieu). Having said that though, there are also instances of more direct, fully intentional, applications of serialist technique to film-making.

In describing a new form of montage, one emphasising the cut itself, or the interstice between

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[1] M. Scherzinger, 'Enforced Deterritorialization, or the Trouble with Musical Politics', in Hulse and Nesbitt, *Sounding the Virtual: Gilles Deleuze and the Theory and Philosophy of Music*, Surrey: Ashgate Publishing, 2010, p.103

[2] ibid., p.114

[3] ibid., p.121

shots, Deleuze refers to 'a serial or atonal cinema'. In the context of discussing a new, 'intellectual' cinema, a 'cinema of the brain', he says:

> Instead of one image after another, there is one image plus another, and each shot is deframed in relation to the framing of the following shot. We saw this in Godard's intersticial method, and, more generally, it is the relinked parcelling that is found in Bresson, in Resnais, and in Jacquet and Techine. It is a whole new system of rhythm, and a serial or atonal cinema, a new conception of montage. The cut may now be extended and appear in its own right, as the black screen, the white screen and their derivatives and combinations …[1]

In *Cinema 2: The Time-Image*, Deleuze outlines his belief that the most significant change in cinema of the modern period (post World War II) is its representation of *time.* Whereas in earlier (and conventional) cinema, time is subordinated to movement, through the editing together of shots in such a way as to show linear, chronological sequences, 'modern' cinema found ways to subordinate movement to time. Deleuze's particular way of conceiving of this is related to the deep influence of Bergson; the experience of time is regarded as a constant reconfiguration of recollections, immediate experiences, and anticipations. Modern cinema presents time in the 'pure state', previously present only in music[2]. The 1961 film *Last Year at Marienbad* (*L'Année dernière à Marienbad*), directed by Alain Resnais in collaboration with author and screenwriter Alain Robbe-Grillet, is perhaps the most widely discussed and cited example of such temporal ambiguity. The various sequences in the film are contradictory, giving the impression that there may be a 'true' version of events, a 'false' one (a character being untruthful), and/or perhaps a fanciful, imagined one. The passage of time is thus not directly chronological, from scene to scene, nor does it contain 'flashbacks' in the usual sense as it is never clear in which direction time may be moving[3]. In this respect the form of the film perhaps has a *serialist* aspect in that the succession of events as presented are just one version of many potential combinations of elements, one variation (albeit, in this case, potentially entirely imaginary) of an original which

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[1]   G. Deleuze, *Cinema 2: the Time-Image*, London: Athlone Press, 1989, p.206
[2]   ibid., p.260
[3]   ibid., p.113
     Deleuze writes of the 'productive ambiguity' of Resnais's & Robbe-Grillet's views — evoking memory, 'coexistent levels of past'.

is never stated. Robbe-Grillet, who became a director in his own right as well as an author, and who was directly interested in applying serialism to both fields, is given great significance by Deleuze. He is actually credited as being the 'pioneer' of the innovations in both modern literature and modern film that constitute their philosophical significance; this stems from the notion that the 'pure optical image' is a *description* of an object, rather than the object itself[1]. Deleuze also sees Robbe-Grillet's 'time-image' as a particularly 'powerful' replacement of the 'movement-image' — a 'new' form of narrative — through the 'simultaneity of a present of past, a present of present and a present of future'[2]. Burch sees Robbe-Grillet's literature as particularly important for film because of its technique of proliferating narrative from a 'cell' (which in itself suggests a musical influence)[3]; *Marienbad,* he says, 'reflects its subject in miniature at every moment'[4]. Burch sees this 'concern for organic unity' as providing an alternative to the traditional literary models for cinema, which are obsolete. He finds in *Marienbad* a 'dialectic of ambiguity'[5], supporting his notion of recognisable structural parameters separate from those concerned directly with narrative (similarly, the use of repetition, progressive alteration[6]). Rather than being 'obscure', Burch finds the film's character 'innocent', without hidden meaning[7].

Deleuze sees Resnais's cinema as portraying *thought* itself, as the 'non-chronological' connection between various disparate 'sheets of past'[8]. Rodowick describes the process being portrayed in *Marienbad* as that of the mental process of memory itself, so that it is not that the characters are seen remembering, but that they actually 'are functions in a memory machine'[9]. Several of Resnais's films are concerned with displaying shifts and ambiguities in time; various

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[1] ibid., p.43

[2] ibid., p.98

[3] *Burch also regarded the structure of Jacques Tati's 'Playtime' (1967) as being generated from a dialectical 'cell'.*
     D. Bordwell, *Narration in the Fiction Film*, Madison: University of Wisconsin Press, 1985, pp.287-288

[4] N. Burch, *Theory of Film Practice*, Martin, London: Secker and Warburg, 1973, pp.145-146

[5] ibid., p.62

[6] ibid., p.65

[7] ibid., pp.147-148

[8] G. Deleuze, *Cinema 2: the Time-Image*, London: Athlone Press, 1989, pp.120-121

[9] D.N. Rodowick, *Gilles Deleuze's Time Machine*, Durham: Duke University Press, 1997, p.108

creative conceits are employed in the various cases. In *Providence* (1977)*,* differing scenarios are played out, depicting the story possibilities imagined by a fiction writer in such a way as to create uncertainty as to whether or not some of them may be 'real'. In *I Love You, I Love You* (*Je T'aime, Je T'aime,*1968), the plot involves actual experimental time-travel. In *Muriel* (1963), a relatively straightforward narrative is interspersed with other, stylistically diverse material in such a way a to create ambiguity about the veracity of the characters' versions of events; this creates an interesting and unusual instance where a 'serial' element may be seen as actually supporting a narrative presentation. As A.B. Kovacs says 'A continuous narrative and a serial composition are opposed to one another in Muriel and together they provide narrative meaning'[1].

Robbe-Grillet's own films as director provide some of the most direct applications of serialism to film (serialism as such, directly derived from its original, musical, conception). *Eden and After* (*L'Eden et apres,* 1971) supposedly attempts to negate narrative, in a similar way to serialism negating tonality[2] Robbe-Grillet clearly did in fact use a version of the underlying nature of musical serialism as the basis for the film; he is quoted as saying, '[A]s in music, where the Schoenbergian series represents the suppression of the very idea of tonality, so that there is no longer any dominant, no longer any tonic, serialism in a narrative would be a completely equal treatment of a certain number of themes.'[3] In Royal S. Brown's (1990) very detailed description of the application of serialism to the film's structure, he finds a definite 'parallel' to the negation of tonality in Robbe-Grillet's sequencing of twelve distinct 'themes'. As there are still certain recognisably narrative elements running through the film's progression, however, it may be more accurate to describe the effect as a negation of *classical* narration (rather than the complete negation of narrative as such) — thus Brown suggests that a closer musical similarity might be to Alban Berg than to Schoenberg, as the former composer typically

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[1]   A.B. Kovacs, *Screening Modernism: European Art Cinema*, *1950-1980,* Chicago: University of Chicago Press, 2007, p.139
[2]   Kovacs, op. cit., p.110
[3]   R.S. Brown, 'Serialism in Robbe-Grillet's l'Eden et Aprés: The Narrative and Its Doubles' in *Literature/Film Quarterly*, Vol. 18, No. 4, October 1, 1990, p.210

enabled elements of recognisably tonal construction to be perceived amidst the predominantly atonal texture[1]. The soundtrack of this film has particularly noteworthy characteristics; as with another of Michel Fano's collaborations with Robbe-Grillet, *The Immortal* (*L'Immortelle,* 1963)*,* 'real world' sounds are used in ways similar to contemporary music[2]. In *Eden and After* there is an attractively whimsical scene in which the actors are shown 'playing' some of the objects used in this way (bottles, cups, baking trays etc, in combination with a few atonal figures played on guitar and piano — 'death march for Boris', approx. 14 minutes into the film). A.B. Kovacs points out a similar 'serial repetition and variation'[3] in the structure of Tarkovsky's *Mirror* (1974). This film does indeed also use a number of recognisably distinct 'themes' which are sequentially rotated. Perhaps similarly to *Marienbad, Mirror* suggests that the presentation of versions of past events may in fact be memories, and thus inconsistent or potentially contradictory; there is a strong sense of associational 'logic', suggesting the representation of the flow of thought.

The films of Jean-Luc Godard are something of a special case in terms of their perceived relationship to serialism. He is often described as serialist by several accounts (including Deleuze's), as having his own, idiosyncratic, structural stylistic approach by others, notably Bordwell. Deleuze regards Godard's deliberate 'irrational' 'unlinking' of images as equating to the 'dissonance' of the serial method[4]. He also equates Godard's use of *genre* to serialism — 'we should call every sequence of images *in so far as it is reflected in a genre* a series … the general rule is that there are several genres, hence several series'[5]. A systematic usage of all possible parametric possibilities has been cited by several writers; this is most clearly found in *Vivre sa vie* perhaps, but generally his films exhibit a less rigidly systematic mixture. Brown discusses

[1] Brown, 1990, op. cit., p.216
[2] Burch, op. cit., p.97
[3] Kovacs, op. cit., p391
[4] G. Deleuze, (1985), *Cinema 2: the Time-Image*, London: Athlone Press, 1989, p.177
[5] ibid., p.178

this, with particular regard to *Pierrot le Fou*, saying that the film suggests 'a kind of serialism ... in the way the diverse component parts of the film, including its music, are *composed'*. Brown describes how Godard's 'cinematic serialism' 'dehierarchializes' various elements of the film, including montage — mixing 'noncontinuity' editing with conventional editing of the image, as well as the various elements of the audio (music, dialogue, other sounds...), much as musical serialism negates the hierarchical nature of the system of tonality. While the various combinations of these various elements with one another may suggest systematic 'permutational mixing' of a Boulezian kind (Bordwell makes a similar point), Brown concludes that in Godard's case it results from a Brechtian distancing along with 'a kind of joyful improvisation'[1] rather than formal systemisation. He posits that, in most of Godard's films, elements are linked mainly through the pervasive sense of presence of the auteur/narrator.

A comparison of Deleuze and Adorno in relation to the issue of the aesthetics of temporal experience shows points of common concern and certain different perspectives. Deleuze refers to a phenomenon he calls *time as series* — the 'before and the after' become organised as 'potentials' rather than absolute truths, like a particular instance of a musical series. Godard's cinema, he says, like Boulez's music, has 'put everything in series, having brought about a generalized serialism'[2]. Serialism in this sense is inherent to the modern image, for Deleuze[3]. The *time-image* uses 'irrational', 'delinked' images — not connected by physical movement nor necessarily by proximity — which are then 'relinked' as autonomous entities[4]. (Perhaps this sense of the capacity to jump from place to place, forming idiosyncratic patterns, may be seen as having relevance to the contemporary online environment.) Hansen points out that while Adorno also wants to see an aesthetic reconsideration of the nature of temporal experience — in his case

[1] R.S. Brown, *Overtones and Undertones: Reading film music*, Berkeley: University of California Press, 1994, p.211
[2] Deleuze, 1989,op. cit, p.264
[3] ibid., p.266
[4] ibid..

particularly in reaction to what he sees as the presentation of redundancy as inevitable — a major difference between the case of music and film in this respect is that music 'does not have to surrender sensory-motor links to become modern'[1]. Michelangelo Antonioni's films, says Deleuze, display 'the interior *through* behavior … This is a time-image, the series of time'[2]; modernity is critiqued, according to this analysis, by the presentation of bodies as exhausted, but brains (particularly as aided by technology), as fully capable of dealing with the contemporary world[3]. Adorno cites the 'static character' of Antonioni's *La Notte* (1961) as an example of a negative commentary on the contemporary experience of time, by its being deliberately 'uncinematic'[4]. This interpretation can be seen as being consistent with Adorno's stated belief in the necessity for reconfiguration of inherited form to suit contemporary circumstance.

Serial influence may be seen as part of the overall tendency towards a structuralist aesthetic. One might question the statement that **'**As far as our interest in the simple schematic artwork is concerned, Schoenberg's key innovation was to make melodic and expressive qualities secondary to the systematic permutation of the tone row'[5], yet this may well be an accurate description of the interpretation that tended to be applied in structuralist film. It might be argued that these qualities were not in fact made secondary — no more than they are made so by the use of tonal systems; a particular tone-row may well be selected for use because of its potential in exactly these respects. Ironically, the effect of this influence on this genre of film was to engender a form of *minimalism*, which in music was largely a reaction against the perceived formalism and 'difficulty' of serialism. The high-mindedness of British Structural/Materialism brings to mind an Adornoesque seriousness of purpose, despite the implication that any

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[1]   M. Hansen, *Cinema and Experience : Siegfried Kracauer, Walter Benjamin, and Theodor W. Adorno*, Berkeley : University of California Press, 2012, p.239
[2]   Deleuze, 1989, op. cit., p.182
[3]   ibid., p.197
[4]   T. Adorno, 'Transparencies on Film', *New German Critique*, No. 24/25, 1982, pp.200-201 .
[5]   J. Peterson, *Dreams of Chaos, Visions of Order: understanding the American avant-garde cinema*, Detroit: Wayne State University Press, 1994, p.98

comprehensible structure is equivalent to a narrative and thus politically dubious. Of course, the extent of comprehensibility of serial music is contentious at best in any case. John Croft presents a critical analysis of a much-cited work (F. Lerdahl, 1988, '*Cognitive Constraints* on Compositional Systems'), the latter positing the impossibility of total serialist music being structurally perceived:

> Not only can inaudible structures be meaningful and relevant in themselves, but collateral knowledge of the music, including the knowledge that it was composed using a certain technique, tends to affect the way we hear. It is surely not unreasonable to say that if, having analysed the score, I become aware of hidden structures of which I was previously unaware, then I am able, in a straightforward sense, to hear these structures as I listen to the piece, and that this might add another level of interest to the music, albeit one that may be of less importance than those discernible without such collateral knowledge. My point is not merely that we are able to have the (admittedly limited) pleasure of knowing that a piece we are listening to is serial; but that if we also know something about how it is serial, then we may even come to hear a certain passage as, say, a simultaneous exposition of the row and its retrograde inversion. If one is prepared to admit that one is more likely to hear a recapitulation if one knows a little about sonata form, then one should have no trouble admitting the pertinence of collateral knowledge in serial music as well.[1]

No doubt this view can also reasonably be applied to the viewing of a Structural film. Once one is aware of the structure of a piece (of music, film, or other artform), one's appreciation of it is inevitably altered, surely? So that in a more complex Structural film, knowledge of the structure, whether through repeated study of the film itself or through reading theoretical analysis, or both, will inevitably affect one's appreciation of the film as a whole. Analysis of this kind may also yield historical context. Peter Gidal relates Vertov to serialism via his influence on the formal films of Peter Kubelka (*Adebar*, 1957; *Schwechater*, 1958; *Arnulf Rainer,* 1960), through the manner in which the various structural elements of a piece are made to interrelate[2]. Another aspect of similarity to a serialist impulse in Vertov is his apparent conviction that meaning may be created from the deliberate artistic manipulation of segments of pro-filmic 'reality'.

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[1]   J. Croft, *Musical memory, complexity, and Lerdahl's cognitive constraints,* Masters thesis, University of Sheffield, 1999, p.17, accessed 1-5-17 at http://johncroft.eu/Memory_complexity.pdf

[2]   P. Gidal, *Materialist Film*, New York: Routledge, 1990, pp.171-174

Scott MacDonald characterises the 'avant-garde' films he analyses as providing a deliberate critique of conventional film techniques — so that their form and style are in fact directly determined as a response. Thus, whereas the term 'avant-garde' 'suggests that the films so designated lead the way for more conventional types of cinema … [this] is only true in a most limited sense'[1]. How does this compare to the 'avant-garde' music often referred to in structural discussion of this cinema? It seems there is another disjunction here — not so much just in relation to the use of the term 'avant-garde', but a particular difference between the effect of the music and that of the cinema of this period. It is not clear exactly what type of music would play the role of the mainstream cinema of the mid-twentieth century if one wanted to draw a direct analogy. Strict serialism is surely not a critique in the same way as in experimental film; though it is, in a sense, a reaction to the mainstream — to the entire tonal system in fact — it is a serious attempt at revolution rather than a suggestion of alternative options. And again, minimalist music is, as much as anything else, a reaction to this single-minded seriousness, in fact embracing aspects of popular musical language. Films such as Hollis Frampton's *Palindrome* (1969) and *Zorn's Lemma* (1970), are perhaps most accurately thought of as hybrids of extreme minimalism of overall form with serially-derived content grafted on; this technique effectively emphasises the visual patterning, and the films are perhaps thus less inaccessible to a general audience than Webern's music. MacDonald quotes Frampton himself:

> My own reading of the forty-five minute central section of Zorn's Lemma, in which the image that is statistically before one passes gradually from a language-dominated one to a continuous non-language- dominated one, is a kind of allegory, an acting out of a transference of power from one hemisphere of the brain to the other. Of course, that was nowhere in my thinking of the film when I was making it.[2]

There is a possible resonance here with Schoenberg's own aesthetic sense. He outlined a dialectic of tradition vs innovation — 'all art must be new' (but not novel for its own sake) — and also a dialectic of 'heart' vs 'brain' (intuition/inspiration vs rationality)[3].

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[1] *S. MacDonald, Avant-garde Film: motion studies, Cambridge: Cambridge University Press, 1993,* p.15

[2] ibid., p.75

[3] H. Danuser, 'Schoenberg's Concept of Art in Twentieth-Century Music History', in *Constructive Dissonance: Arnold*

A further significant filmmaker very much concerned with serialism is pioneering computer-artist John Whitney. However, because of the significance of his work in relation to the introduction of digital technology, and its corresponding chronological position, this is dealt with in Chapter 5 (*Background to 'New' Media*).

As has already begun to emerge in the discussion above, the rigour, and the perceived severity, of serialist methodologies brought about numerous reactions and stylistic hybrids. Perhaps the next most significant development, and one arising directly from this climate of radical innovation, was a marked impulse to remove cultural boundaries of space and time.

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Schoenberg and the Transformations of Twentieth-century Culture, (Brand & Hailey, eds.), 1997, pp.179-187

4. Improvisation, Indeterminacy, and the Aleatoric

The cross-fertilisation between artforms that, as we have seen, was a major feature of cultural activity from the late nineteenth century onwards can be seen as reaching a high point in New York City in the period around the middle of the 20th century. Jazz, the quintessential artform of spontaneity, may be seen as pervading the entire culture of the time. Composers, writers, visual artists, and filmmakers were exchanging ideas and collaborating vigorously, and the effects of this had worldwide and still resonant consequences. If one character were to be chosen as the figurehead of the artistic influence stemming from this milieu, it would surely have to be composer John Cage. Examination of the development of his highly innovative work, particularly in the 1950s and '60s, outlines many of the major influences of the time in the arts generally, including in film.

Cage had studied in the 1930s with Henry Cowell (prominent composer in the American *ultra-modernist* musical movement), and then with Arnold Schoenberg. Schoenberg famously later said of Cage that he was not really a composer, but an inventor — one of genius. Around the time of his studies with Schoenberg, Cage devised and used his own versions of tone-row (serial) technique. However he came to be dissatisfied with what he found to be the restrictions of serial methodology, reportedly saying 'Once you begin, you only have one choice'[1]. From the late '30s onwards, Cage's compositional technique began to make *rhythm* the most important formal aspect; this was a development with several important aspects. Cage had come to regard rhythm as the primary parameter of all musical structure, the one to which all other aspects of sound were subsidiary. Further to this, music should be viewed primarily as the expression of time passing. Many of Cage's works during this period were for percussion ensembles; this enabled

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[1]   S. Smith, 'The Early Percussion Music of John Cage', in R. Kostlanetz, *Writings about John Cage*, Ann Arbor: University of Michigan Press, 1993, p.39

him to use a wide variety of unconventional sounds. A quotation from 1937 is telling:

> Percussion music is a temporary transition from keyboard-influenced music to the all-sound music of the future. Any sound is acceptable to the composer of percussion music; he explores the academically forbidden "non-musical" field of sound insofar as is manually possible.
> Methods of writing percussion music have as their goal the rhythmic structure of a composition. As soon as these methods are crystallized into one or several widely accepted methods, the means will exist for group improvisations of unwritten but culturally important music. This has already taken place in Oriental cultures and in hot jazz.[1]

('Hot' jazz refers to the original New Orleans style which was enjoying a revival of interest at this time.)

As with Edgard Varèse, whom he acknowledged as the 'father' of this in contemporary practice, Cage became increasingly concerned to include the 'technological' sounds of modern life in new forms of music, and became very interested in the new technological possibilities for doing so[2]. This concern can be traced to Debussy and Ives, however. Cage became concerned to extend this further, in such a way as to allow sounds to be appreciated 'in their own right' rather than as expressions of the artist's imagination. Both Varèse and Cage are often cited as defining music as 'organised sound'. One of Cage's best-known, most influential innovations, first developed in 1938, was the *prepared piano,* involving the insertion of screws and other material between the strings of the piano, thus enabling the keyboard to be used as a kind of percussion ensemble; earlier examples of similar techniques for altering the piano's tone are variously cited, including in works by Delage, Villa-Lobos and Ravel. Cage himself credited Cowell's technique of plucking the piano strings manually as his primary inspiration. Cage's innovation in this respect, it seems, is in employing a variety of objects, and thereby using the instrument as though it were an ensemble. As Cage's music began to embrace all sounds as compositionally valid, it became a demonstration of the concept that 'sound is not the primal parameter in music; time is'[3]. Cage

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[1]   J. Cage, *Silence*, Middletown: Wesleyan University Press, 1973, p.5 ('The Future of Music: Credo', 1937)
[2]   See Cage, 1973, op. cit., p.69 ('History of Experimental Music in The United States', 1959)
[3]   Smith, 1993, op. cit., p.44

had studied Oriental music with Henry Cowell, and the rhythmic structures, particularly of

Indian music, were a strong influence. He became increasingly involved in Eastern culture, with

his general aesthetic becoming very much influenced by Zen Buddhism. This, as well as his

interest in Bergsonian concepts, led to a preoccupation with the nature and function of *silence* —

the necessary opposite of sound, it 'has only duration'[1]. Duration, as the essential characteristic

shared by silence and sound, becomes emphasised in terms of structure. (Cage had great

admiration for Satie, who structured his music primarily through time-length rather than pitch

and harmony. The score for Clair's film *Enre'acte*, for instance, uses 'time-frames' — units of

eight measures in length — each filled with one phrase repeated eight times.[2]) At the same time,

perhaps seemingly somewhat paradoxically, Cage became convinced of the impossibility of

complete silence. In a Zen sense, 'beyond the opposition of Nothing and Something, it is their

necessary interpenetration, as well as their constant state of change, which must be considered'[3].

Also, in an oft-cited incident, Cage experienced a completely soundproof room (an *anachoic*

chamber) at Harvard University, wherein he became aware of the sound of his own heartbeat and

other bodily system sounds, thereby becoming convinced that 'silence' could never consist of the

complete absence of all sound. In 1952, he presented his most famous piece, *4'33"* in which the

performer sits 'silently' throughout each of three 'movements' of precisely specified lengths,

indicating the divisions by closing and opening the lid of the piano. The 'music' of the piece thus

becomes the various ambient sounds in the performance space and its surrounds, and sounds

made by audience members. The conception of 'music' being presented here is that of attracting

attention to the real-life experience of time passing. Cage was apparently emboldened to present

4'33" by Rauschenberg's *White Paintings*[4]. Increasingly, musical performance became for Cage

integrated with a kind of 'performance art' as such. This aesthetic concept was explored by

[1]   Cage, 1973, op. cit., p.80 ('Erik Satie', 1958).

[2]   See M. Nyman, *Experimental Music: Cage and Beyond*, New York: Schirmer Books, 1974, p.31

[3]   E. de Visscher, 'There's no such thing as silence …', in Kostelanetz, 1993, p.121

[4]   See P. Vergo, *The Music of Painting: Music, Modernism and the Visual Arts from the Romantics to John Cage*, London and New York: Phaidon, 2010, pp.335-336

Michael Snow in his film *Presents* (1981), featuring the sounds of an audience watching the film as the primary soundtrack element. Snow, famous particularly for *Wavelength* (1967), was a professional jazz-player for many years; his early film *New York Eye and Ear Control* (1964) featured music by Albert Ayler, Don Cherry, Gary Peacock, Roswell Rudd, Sonny Murray, and John Tchcai.

Chance

Cage's interest in *indeterminacy* — very broadly speaking, the use of chance — stems from a number of different influences: from Mellarmé, from Satie, from Duchamp (whom he knew, and collaborated with, writing the music for Duchamp's segment of Hans Richter's 1947 compilation film *Dreams That Money Can Buy*[1]), from his immersion in Zen Buddhism, and also from his interest in Bergson. In the early '50s, Cage began to develop methods for systematically incorporating chance procedures into his compositions. *Music of Changes* (1952) used the *I Ching* (or *Book of Changes*) to make specific selections from each of 26 charts, detailing the parameters of pitch (8 charts), amplitude (8), duration (8), tempo (1) and superposition (1); these were further divided into rows and columns so as to correspond to the 64 cells of the *I Ching*[2]. Each sound in the composition was then specified through a painstaking process of selection from each chart. Subsequently, Cage began to devise ways to select sounds from sources entirely removed from the mind of the composer, such as marking the imperfections on a blank piece of paper, and then transferring the resulting patterns to musical notation; this enabled selection of sounds from a limitless 'sound-space' or 'field', and was related by Cage to the capacity of the new technology of magnetic tape delivering the ability to treat (and thus conceive of) sound as a

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[1] *Featuring pieces by Max Ernst, Man Ray/Darius Milhaud, Fernand Leger, and Richter himself, among others.*

[2] See B.W. Joseph, 'Chance, Indeterminacy, Multiplicity.' in *The Anarchy of Silence: John Cage and Experimental Art,* Museu d'Art Contemporani de Barcelona (MACBA), 2009, p.215

continuum of possibilities rather than in discrete steps[1]. This is directly relatable to Deleuze and

Guattari's version of 'smooth space' — not surprisingly, as Cage and Boulez were actively

exchanging ideas in this respect at this time, as will be outlined shortly. Cage's recognition of the

multiplicities of potentialities that exist within such 'fields', and the direct relationship of this to

Bergson and Deleuze, is outlined by B.W. Joseph. In this conception, a *possibility* is pre-

conceived — when *realised,* it remains identical to its pre-realised state; a *virtuality*, on the other

hand, comes fully into being only once *actualised* — this is thus a *creative* process. As Joseph

puts it,

> Cagean possibilities and potentialities are by and large equivalent to Bergsonian
> virtualities as more strictly defined by Deleuze and as they line up on the side of
> actualization, continuous multiplicity, and the unforeseen nature of experimental actions.[2]

Cage and Boulez met in Paris in 1949, and established a friendly relationship that they

maintained thenceforth largely through written correspondence. They were very interested in

each others' work at that time on alternative structural organisation; Cage was fascinated by the

complexity of *total serialism*, and Boulez admired the *frequency complexes* which could be

produced by the prepared piano, and also Cage's methods for temporal, rhythmic structuring.

In a letter to Cage in 1951, Boulez usefully articulates his conception at that time of the way in

which serial methodology might be used. He describes a 'dialectic of musical development'

whereby structure is dictated, on the one hand, by 'automated' numerical sequencing and, on the

other, by the composer's choice as to how to combine the various resulting segments. Also, he is

regarding the serial method as a means to deal with musical sound in such a way that it could

ultimately be conceived and produced purely in terms of frequency and duration, freeing it from

the restrictions of conventional musical parameters (striated pitch systems, tonal harmony, etc.).

He describes this as 'dissolv[ing] the horizontal-vertical duality'[3]. This provides a direct instance

of the original form of Deleuze's concept of the *diagonal*, and clarifies its connection to musical

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[1]   Cage, 1961, op.cit., p.157 ('45' for a Speaker', 1954)
[2]   Joseph, 2009, op. cit., pp.224-225
[3]   J-J. Nattiez, (ed.), *The Boulez-Cage Correspondence*, Cambridge: Cambridge University Press, 1993, p.102

innovation.

The correspondence of these two composers over the first few years of the 1950s makes clear that they were very influential on each other in that period of intensely innovative development. Both were at this time investigating ways to separately but systematically control the fundamental parameters of sounds; both wanted to expand the range of timbres available for musical composition; both wanted to create continuous ('smooth') rather than striated capacities in, particularly, the treatment of pitch and time; both were fascinated by the potential of new technologies in these respects. It can in fact be seen that Cage had an unintended influence upon the development of *total serialism*, and that Boulez's ideas influenced Cage in relation to the use of chance procedures[1]. There were also significant differences in the attitudes and approaches of the two. One example is in their opinions of Schoenberg. Boulez was highly critical of Schoenberg's serial method in that it maintained an adherence to 'classical' forms so that, although the harmonic language was entirely revolutionised, large-scale structure maintained a (potentially) perceptible traditional connection. Boulez, preferring Webern's methodology in this respect, believed that the overall form should be derived from the structure of the original series, so that all remnants of tonality could be done away with. Cage saw Schoenberg's system as largely of *social* significance, a representation of the equality of individual elements and their roles within the whole, an attitude with which Boulez had little if any sympathy. The main point of contention between the two however, and the cause of their ultimate intellectual falling-out, was the question of the role of chance procedures in compositional methodology.

Boulez quite quickly came to regard *total serialism* as overly 'chance-like'; in its 'automatism' — the inevitability of the requirements resulting from its strictly arithmetical procedures — it

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[1]   ibid., pp.12-15

negated the possibility of deliberate compositional choice. From this point, approximately 1954, he became stridently critical of the tendency of certain composers to use elements of pure chance (stemming primarily from Cage's influence). In the essay *Alea* of 1957, Boulez is vehemently disparaging about such methods, describing them as resulting from 'a philosophy tinged with Orientalism that masks a basic weakness in compositional technique'[1]. Also, he regards the tendency to allow performers to make their own, relatively 'free', decisions in the course of a piece as running too great a risk that they are likely to rely on memory and thus cliché. He outlines his own version of 'directed chance', whereby 'formal virtuality' can be achieved through the construction of 'a sort of labyrinth with several circuits'[2], meaning that various orderings of several precisely-composed sections may be used, assuring that each performance will be somewhat unique. This, then, is the kind of conception that comes to be described as *aleatoric*. Up until this point, the term *aleatory* had been used primarily in a more technical context, as applied to the modulation of electronic waveforms. R.Y. Kim describes the background to this, and points out the tendency of certain European composers at the time to associate their innovations with scientific research[3]. Cage's *indeterminacy*, in contrast, is 'experimental', in that the outcome is deliberately unknown. The philosophical intention here is a sociological one, the performance conditions intended as practically and expressively 'humane'[4]. Cage responded to *Alea* with his own article, titled *Indeterminacy* (actually originally delivered as a lecture)*,* positing that 'form unvitalized by spontaneity brings about the death of all the other elements of the work'[5]. At the conclusion of this piece, while outlining what he regards as the necessity of expressing the fluidity of time, as opposed to its rigid division into segments, he emphasises modern technology, in particular communications — the need ...

> to show a musical recognition of the necessity of time which has already been
> recognized on the part of broadcast communications, radio, television, not to mention

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[1] P. Boulez, 'Alea' (1957), *Perspectives of New Music*, Vol. 3, No. 1, Autumn - Winter 1964, p.42

[2] ibid., p.45

[3] R.Y. Kim, *In No Uncertain Musical Terms: The Cultural Politics of John Cage's Indeterminacy,* PhD thesis, Columbia University, 2008*,* pp.61-62

[4] ibid., p74

[5] Cage, 1973, op. cit., p.35

magnetic tape, not to mention travel by air, departures and arrivals from no matter what point at no matter what time, to no matter what point at no matter what time, not to mention telephony[1].

(Cage was very interested in McLuhan's media theory and stated in a number of contexts that it was an influence on his work. McLuhan reportedly drew a comparison between his concept of *space* and Cage's *silence*[2]. It seems that Cage subscribed to McLuhan's view of the potential of electronic media to eventually engender a global, cooperative 'intelligence'[3].) In *Alea*, Boulez seems to echo Adorno in relation to the responsibility of the composer[4], which Boulez regarded as being abnegated through reliance on chance methods. However, Adorno acknowledges the desirability, in fact the necessity, of artistic experimentalism; he says, 'Actually, art is now scarcely possible unless it does experiment'[5]. Whereas for Cage this is a means for going beyond the self, for Adorno it is a response to a rather desperate situation, the willing subjection of oneself to a form of technologically administered power rather than merely passively accepting it[6].

Steve Tromans relates Cage's interweaving of disparate texts to a Bergsonian/Deleuzian notion of temporality, an experience of a kind of interpenetrative multiplicity/simultaneity more like the true experience of life than can be provided by a single linear narrative. The particular example used is *Where are we going? And what are we doing?* (1961) a 'lecture' consisting of four superimposed voices, later reproduced in print[7]. This is seen as a demonstration of the desirability of combined theoretical/practical experimental research; Tromans says:

> Cage's interpenetrative compositions and performances function on the level of artistic research — in other words, they were, and are, practice as research experiments

[1]   ibid., p.40 ('Indeterminacy', 1958)

[2]   K. Silverman, *Begin Again: A Biography of John Cage*, Evanston: Northwestern University Press, 2012, p.214

[3]   D. Bernstein, 'John Cage and the "Aesthetic of Indifference" ', in S. Johnson, (ed.), *The New York Schools of Music and Visual Arts*, London: Routledge, 2002, p.125

[4]   Kim, 2008, op. cit., pp.47-49

[5]   T. Adorno, *Aesthetic Theory* (1970), London, New York: Continuum, 2004, p.50

[6]   * ibid.
      * R. Mitchell, *'Cage and Adorno on Art and Experiments', in 'Experimental Life: Vitalism in Romantic Science and Literature',* 2013, pp.22-26

[7]   Included in Cage, 1961, op. cit., pp.194-239.

undertaken in the medium of music-making[1].

Cage is cited as referring, in the context of describing the potential of taped sound, directly to Bergson's conception of *disorder* as being in fact an alternative order, simply one other than the one anticipated[2]. In a later piece, Cage relates the same concept to harmony, saying '[t]his disharmony, to paraphrase Bergson's statement about disorder, is simply a harmony to which many are unaccustomed'[3]. Joseph describes Cage's conception of a 'field' of sound, rather than a closed set of precisely striated steps, as being extended into the field of the arts in general, so that music would be seen as blending into 'the multisensory, multimedia, and multidisciplinary realm he termed "theater" '[4]; composition thus became extended 'to include the visual as well as the audible, objects and environments as well as sounds'[5]. Deleuze and Guattari posit that Cage 'first and most perfectly deployed' such 'floating time', and that Godard does similarly in a visual sense, creating cinema 'where forms dissolve, and all that subsists are tiny variations of speed between movements in composition[6]'.

While Adorno was by no means wholly sympathetic to the degree of Cage's relaxation of formal structures within music itself, he nevertheless saw positivity in the hybridity of various artforms[7]. It has been pointed out that, in important respects, the effects of total serialism on the one hand, and largely indeterminate composition on the other, are in fact the same. Referring to composer Gyorgy Ligeti's similar comments on the matter, Adorno expresses the view that both these compositional extremes bring about a listening experience that is both automatic and arbitrary[8].

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[1] S. Tromans, 'Cagean interpenetration and the Nature-Artifice Distinction' in *Artistic Experimentation in Music: An Anthology*, (Crispin & Gilmore, eds.), 2014, p.200

[2] *Joseph, 2009, op. cit., pp.220-221
   * Kim, 2008, op. cit., p.221

[3] Cage, 1973, op. cit., p.12, ('Experimental Music', 1957)

[4] Joseph, 2009, op. cit., p.231

[5] ibid.

[6] Deleuze and Guattari, 1987, op. cit., p.267

[7] * Hansen, 2012, op. cit., p.245
   * T. Adorno, *Art and the Arts*, 1962, accessed 30-5-17 at
   https://www.scribd.com/document/43350732/Adorno-Art-and-the-Arts

[8] * T. Adorno, & R. Leppert, *Essays on Music*, Los Angeles: University of California Press, 2002, p.658 (Adorno,

Though rejecting what might be seen as Cage's aim to fully integrate art with everyday life, Adorno imagines what he terms *musique informelle* (inspired by Schoenberg's earlier, freely atonal works)[1], sufficiently open and flexible to accommodate contingency, and produce genuine originality. Hansen sees in this rather 'utopian' idea 'implications for an aesthetics of impure cinema and questions of cinematic temporality and mobility'[2].

From his early attitude of crediting jazz as a particularly valuable source of innovation, particularly in relation to rhythm (largely due to his association with fellow student of both Cowell and Schoenberg, the composer and jazz archivist/enthusiast William Russell), Cage thereafter became ambivalent, at times dismissive. Collaborations with jazz musicians appear not to have been particularly successful. In relation to improvisation as such, in fact, Cage had serious misgivings. Providing a detailed outline of the permutations of Cage's attitude to jazz over the years, R.Y. Kim quotes him as saying in 1977:

> … improvisation is rarely a discipline . . . it's one of my concerns, how to make improvisation a discipline . . . . I mean doing something beyond the control of the ego. Improvisation is generally playing what you know, and what you like, and what you feel. But those feelings and likes are what Zen would like us to become free of.[3]

Adorno & Jazz

Adorno's writings on jazz have become quite notorious, and have in the past been used as evidence of an idiosyncratically elitist bias in his aesthetic and his cultural critique generally. There are a number of issues which need to be taken into account in order to accurately assess

'Difficulties', 1964-66)
* Hansen, 2012, op. cit., p.244
[1] Paddison, 1993, op. cit., p.275
[2] Hansen, 2012, op. cit., p.245
[3] R.Y. Kim, 'John Cage in Separate Togetherness with Jazz', *Contemporary Music Review*, Vol. 31, Issue 1, 2012, p.64

his views on the matter.

The precise nature of what he means by the term *jazz* varies over time; although he does not acknowledge these changes himself, careful reading of his writings on the subject makes this clear. In fact, these varying meanings actually to a great extent reflect common usages from the various periods and contexts in which he uses the term. As Richard Leppert details[1], the *jazz* referred to in Adorno's earliest writings on the topic (1932-33) is the kind of dance-band music, firstly primarily European in style and then (after 1926) typically of the Paul Whiteman[2] variety, with very little genuine content remaining of the predominantly African-American form from which all varieties of jazz stem. Nevertheless, Adorno already recognises a certain sophistication in the syncopated rhythmic figures and 'impressionistic flourishes'[3] of the instrumental writing, but regards these, and also the appearance of 'improvisational freedom and immediacy'[4], as psychological tricks designed to obscure the fact that the underlying harmonic and rhythmic system remains unchanged. Given Adorno's views on artistic form as a reflection of societal relations, one can see that this objection is consistent with his general cultural/aesthetic theory. In a response to the Nazi government's banning of jazz in 1933, Adorno makes clear his appreciation of the fact that the music understood as *jazz* in this context 'no more has anything to do with authentic Negro music, which has long since been falsified and industrially smoothed out here, than it is possessed of any destructive or threatening qualities'[5]. By 1936, Adorno references the *cakewalk* and *ragtime* (potentially referring to considerably more genuine stylistic genres than those of the early commercial dance bands) in a consideration of the rather amorphous definition of *jazz*, and concedes that some syncopations 'occasionally in virtuoso

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[1] Adorno & Leppert, op. cit., from p327 *(Commentary to the section 'Music and Mass Culture')*
[2] *Though he is often justifiably criticised for taking the title 'King of Jazz', Whiteman's orchestra is certainly noteworthy for its innovative blending of popular and 'classical' musical influences, having premiered both George Gershwin's 'Rhapsody in Blue' and Ferde Grofé's 'Grand Canyon Suite' (both arranged by Grofé himself).*
[3] Adorno & Leppert, op.cit., p.431 (Adorno, 'On the Social Situation of Music', 1932)
[4] ibid., p.430
[5] Adorno & Leppert, 2002, op.cit., p.496, ('Farewell to Jazz', 1933)

pieces yield an extraordinary complexity'[1]. Still, however, he finds the underlying structural 'authority' unchallenged. In the much later *Introduction to the Sociology of Music*, Adorno is much more measured in his tone than in the earlier writings on the subject, even hinting at a degree of respect for genuine jazz artists. Rather than insisting that all jazz is equally hopeless, he now says, '[a]n overwhelming portion of whatever the public regards as jazz ought to be classified as pseudo-individualization'[2], and on the same page goes on to say, '[w]ithin pop music, jazz has its unquestioned merits … it developed the faculties of tonal and rhythmical differentiation'. But he considers that '[t]ime and again, however, jazz became a captive of the culture industry and thus of musical and social conformism'[3].

As we have seen previously, form is crucial in Adorno's aesthetic. For him, the apparent rebelliousness of jazz merely disguises the 'banality' of the underlying form to which it in fact adheres. (Perhaps it should be remembered that in this respect he is equally critical of much 'contemporary classical' music.) The harmonic structures used in most forms of jazz (including the currently contemporary), whereby a specific chord sequence is repeated over and over (even though all the actual notes played over these 'changes' may be completely different each time) thus preclude, for Adorno, any genuine social progressiveness. Exceptions to this system, particularly in the 1960s, such as the 'free' jazz of such musicians as Ornette Coleman, Cecil Taylor, and John Coltrane could not be criticised on this basis, so that it would have been interesting indeed to see how Adorno may have responded to such innovations had he been aware of them.

Much of Adorno's writing on jazz, as many have pointed out, is emotive, polemical, and

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[1]   ibid., p.470, ('On Jazz', 1936)

[2]   T. Adorno, *Introduction to the Sociology of Music,* New York: The Seabury Press, 1962, p.33

[3]   ibid., p.34

undialectical. He is ignorant of significant musicians in the early, pre-swing era (one can only speculate how he may have reacted had this been his initial experience of jazz), and he does not acknowledge in any detail any of the important subsequent developments in the music; he does not, for instance, take any note of innovations in the bebop era which in fact extended the harmonies of 'standard' tunes by the very manner in which material was superimposed on them. A great deal of jazz was never mass-marketed, and thus, in this respect, was more similar to the 'avant-garde' than to the commercial dance-bands[1]. Adorno's primary objection however, that regarding form, is not inconsistent with his aesthetic position generally.

Jazz – Bebop

As posited earlier, infusing the entire creative atmosphere of America in the mid-20th century was the sound and spirit of jazz. From the very outset of the 1940s, a revolutionary development in jazz began — becoming known by the onomatopoeic term *bebop* (or *bop*) — and this took place in the centre of New York City. This form is unequivocally the primary inspiration for the 'beat' movement, which in turn may be seen as an essential element in the development of the 'new American cinema'; these topics will be described further.

While jazz in NYC at this time drew on the influences of musicians from many different parts of the country, the most direct source was the style developed in Kansas City, Missouri. There, the entertainment industry in the '30s had benefited from very *laissez faire* governance, much as in New Orleans in an earlier period; extremely liberal attitudes to recreational activities were encouraged in its precincts. The city, by encouraging alcohol (even during *Prohibition*) and gambling, attracted large numbers of those seeking pleasurable diversions of all kinds. With

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[1]   Adorno & Leppert, 2002, op.cit., p.356

work opportunities very tight in most parts of the country, many of the most prominent jazz musicians of the time were attracted to the city as well. Kansas City by this time already had its own distinctive style of jazz — steeped in the blues, and with a 'loose' style of swing. Musical education in the African-American public schools (educational segregation was practised) was quite extensive, and had been so since early in the century[1], making instrumental literacy the norm in this milieu. One of Kansas City native Charlie Parker's most significant early influences, a prominent soloist in the Count Basie band (originally Kansas City-based), was tenor-saxophonist Lester Young. Young (described by Marshall Stearns as 'the Cezanne of modern jazz'[2]) whose melodic and harmonic conceptions influenced the development of bebop, particularly through Parker, was also a major precursor of the later style of 'cool' jazz, especially through the subtlety and understatedness of his approach. As the '30s came to a close, so did the 'open slather' approach in Kansas City, with authorities moving to impose regulation on civic affairs. Musicians gradually moved on to other centres. In particular, New York City was beginning its rise as the major centre of jazz, as with artistic activity generally.

The area of NYC known as Harlem had been becoming gradually more populated by African-Americans, and also immigrants largely from Caribbean countries, since the late 19th century. The area was increasingly safer and more congenial for them than the still more disadvantaged parts of the city in which their recent forebears had settled, largely from the southern states[3]. Their continued support of originally southern forms of music such as blues, jazz, and gospel led to new stylistic genres, such as the *Harlem Stride* piano style. Harlem was a centre of contrasting political movements concerned with the culture of black peoples in America and beyond. The 'Harlem Renaissance' (approximately 1918 to mid-'30s), had leaders who aspired to 'high'

[1]   R.T. Buckner, 'A History of Music Education in the Black Community of Kansas City, Kansas, 1905-1954', *Journal of Research in Music Education,* Vol. 30, No. 2, Summer 1982, pp.91-106 (*Kansas City is half in Missouri, half in Kansas; the Kansas side is primarily residential while the commercial/entertainment district is in Missouri.*)

[2]   M.W. Stearns, *The Story of Jazz* (1956), London, Oxford and New York: Oxford University Press, 1974, p.236

[3]   E.S. Meadows, *Bebop to Cool: Context, Ideology, and Musical Identity*, Westport: Greenwood Press, 2003 *Meadows describes in detail the historical/sociological background to the development of bebop in Harlem.*

culture, and wanted to 'craft a way to achieve parity, using the arts as their vehicle'[1]. On the other hand, the United Negro Improvement Association (UNIA, formed in 1914, established in NYC in 1917), headed by Marcus Garvey, believed in international cooperation among the 'negro' race, in order to advance its interests. Exponents of Islam (including The Nation of Islam, founded in 1930), aimed to unite African-Americans through religious separation from mainstream society, aiming in this way to assist in alleviating their position of exploitation. This was very much the artistic and social milieu in which jazz musicians in NYC in 1940 found themselves, and many prominent participants in the development of bebop were directly influenced by these social factors; numerous jazz musicians adopted Islam at this time, for instance[2].

There are many different accounts of the relationship of bebop to the forms of jazz which preceded it. It is generally agreed, however, that it marked a decisive development from an entertainment form to a primarily intellectual artform. Of course, this was not a clear-cut division[3]; indeed, some very distinguished bebop players retained aspects of the purely entertaining — prominently Dizzy Gillespie, at times. But whereas previously even the most profound artists functioned in a context that was at least as 'entertainment'-related as primarily 'artistic', bebop was unequivocally primarily about listening to the players' creative ideas.

Rather than an *atonal* solution to the issue of moving beyond the constraints of traditional tonal harmony, bebop *extended* the harmonies of 'standard' tunes by adding further notes onto the pre-existing chords. The quite sophisticated chromatic harmony[4] used in the chord progressions of many musical-theatre tunes — the genre from which the 'standard tunes' for the jazz of the time were drawn — provided an already somewhat detailed canvas for these

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[1]   Meadows, 2003, op.cit., p.8
[2]   Meadows, 2003, op.cit., pp.32-39
[3]   See Deveaux, op.cit., p.173, *on the differences between Parker and Gillespie in this respect; also,* p.204, *on the culture of the 'jam session' being generally free of commercial pressures, and thus more purely artistic.*
[4]   *In simple terms, this means moving through key areas other than the main, 'home', key.*

innovations. There was an undoubted influence of such composers as Debussy, Ravel, Stravinsky, and Bartok on many of the foremost innovators — notably Parker, Thelonius Monk, and Bud Powell. Although the actual extent and nature of this influence is difficult if not impossible to precisely determine, there are certainly examples of techniques which may be traced to such composers, particularly the use of complex chordal structures (adding notes higher in the harmonic series). In any case, rather than aiming to move beyond tonality[1] (through reduction of the necessity for resolution), the harmonic innovations of bebop extended harmony and, perhaps most notably in the work of Charlie Parker, rigorously maintained the imperative of resolution. Parker, in fact, did so on multiple levels; Henry Martin, through close analysis of the musical structure of Parker's solos, finds 'throughout that Parker's improvised line implies an almost continuous three- to five-part polyphony … Parker often increases suspense and creates complexity by delaying structural tones through elaborate and ingenious ornamentation'[2]. Martin's analysis shows that where Parker makes use of typically bop-style extended-chord tones, he consistently resolves them (in each of the several strands of this 'implied polyphony') to notes closer to the fundamental harmonies. Martin says that Parker's style 'is firmly rooted in the Western tradition of voice leading based on triadic consonance … [it] finds its original inspiration more in the musical outlook of a Bach than of a Cage'[3]. Thus, although the new sound of this stylistic form sounded like a substantial increase in abstraction to many at the time, it may in fact be seen as maintaining the traditional connection to conventional musical form. Nevertheless, there are parallels to developments in other artforms which may be seen as having been moving towards abstraction (extended harmony, rhythmic accents more variable, melodies more complex). This very emphasis on form may be seen as being related to the modernist impulse for social critique — a reaction to the separation of art from the social reality of life[4].

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[1]   *Although, in another light, bebop can be seen as a step towards this, especially through John Coltrane's progression to his own, particularly virtuosic, version of 'free' playing.*

[2]   H. Martin, *Charlie Parker and Thematic Improvisation*, Boston: The Scarecrow Press, 2001, p.111

[3]   ibid, p.113

[4]   J. Stewart, *'*No Boundary Line to Art: "Bebop" as Afro-Modernist Discourse', *American Music,* Vol. 29, No. 3, Fall 2011, p.337

Bebop could not be easily copied; it required great skill initially, then dedicated practice. It used familiar harmonic structures ('standards') so when necessary could be readily played by professional jazz players without rehearsal, but original melodies so that the tunes could be claimed as 'originals' — very practical considerations. It is clear that there was to an extent a desire to react to the appropriation of jazz by white performers, certainly in terms of commercial advantage; by setting the technical bar very high, and by finding a way to claim composition royalties, the innovators aimed to ensure that they themselves were able to benefit to some degree.

The phenomenon of improvisation appears to constitute a thread which demonstrates a connection between the linguistic and musical arts, and also a rhetorical/mosaic concept of informational organisation. The latter may be seen as an important aspect of the issue of digitality; its relationship to musical improvisation will be discussed in Chapter 5 (*Background to 'New' Media*).

Gary Peters presents a philosophical discussion of improvisation grounded in the work of Martin Heidegger. The fundamental concept which informs this background is said to be that, from Socrates and Plato onwards, Western society has neglected and ignored the consideration of the question of Being, and considered instead notions of a being, or beings. Philosophy has ignored the very question of the world's existence and concentrated on the existence of the beings within it, making mankind the centre of such thought. Heidegger thus has a certain focus on early, pre-literate, ancient Greece; this is something common to him and the Havelock, Innis, McLuhan, Ong line of interest in the effect of print culture which, particularly in terms of its recognition of the importance of rhetorical tradition, also acknowledges the role of improvisation. From a Heideggerian perspective, each truly new, original utterance is a manifestation of a genuine

recognition of our place in the world — a glimpse of the nature of 'Being'. Once the utterance has come into existence, it is immediately subject to an inevitable degredation, as with the increasing sullying and trivialisation of the meanings of words over time — 'love', 'truth', 'beauty', for instance. This Heideggerian perspective leads Peters to claim that the reproduction of an improvised performance similarly degrades its meaning. Heidegger is said to be engaging with language in an improvisatory fashion — and to have developed a 'poetic' form of writing for his philosophical work, one in which, in fact, the process of thinking takes place as the writing is done, so that 'the labor of thinking … is not hidden behind a self-satisfied thoughtfulness, but is played out on the surface of the text'[1]. The same process is described in relation to his teaching method — speaking while thinking.

The NYC artistic milieu & US experimental/avant-garde film

The artistic community in New York City was, as mentioned previously, in a remarkably active and collaborative period in mid-century. The term 'The New York School' is often applied to both a group of painters and one of composers[2]. Members of each of these groups established relationships with those of the other. The painters, the famous *abstract expressionists*, included Jackson Pollock, Willem De Kooning, and Mark Rothko; a somewhat younger group within the same circle included Jasper Johns, and Robert Rauschenberg, often credited as the progenitors of *pop art*. The composers included Cage, Morton Feldman, Earle Brown, and Christian Woolff. Other particularly important composers in this context were Edgard Varèse and Stefan Wolpe. It is said that Varèse, particularly, was highly regarded by the New York painters as a representative of 'the "heroic generation" of early modernism'[3]. This movement was intellectually engaged as

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[1] G. Peters, *The Philosophy of Improvisation,* Chicago: University of Chicago Press, 2009, p.154
[2] S. Johnson (ed.), *The New York Schools of Music and Visual Arts*, London: Routledge, 2002
[3] O. Mattis, 'The Physical and the Abstract: Varèse and the New York School', in Johnson, ibid., p.60

well as practical; the Eighth Street Artists' Club, for instance, hosted philosophical lectures, and screenings of experimental films, as well as being something of a centre for discussion and the exchange of ideas[1].

Cage taught a summer course at the Black Mountain College, North Carolina in 1948, 1952, and 1953. This institution had the policy of fostering experimentation and interdisciplinary collaboration, and became a very influential centre of activity for many artists aiming to revolutionise the arts in America. The arts curriculum was coordinated by Josef Albers, formerly of the Bauhaus, and it attracted numerous distinguished European artists to the faculty. In 1952 Cage presented a performance at the college in collaboration with fellow teachers of the time Merce Cunningham and Robert Rauschenberg; called *Theatre Piece No.1*, it has since often been described as the first 'Happening', and as the inception of performance-art as such. It also marked the beginning of a long series of collaborations by these artists — joined in 1954 by Jasper Johns — on similarly multidisciplinary and deliberately experimental, Dada and Surrealist-inspired, performance-based works[2]. Peter Vergo's observation regarding this phenomenon provides an interesting sense of continuity, describing it as …

> the logical outcome of that inclination towards the *Gesamtkunstwerk* which had coloured the aspirations of so many artists, composers and designers for the theatre ever since Wagner had first employed that ill-defined but intriguing term almost exactly a century earlier.[3]

Other distinguished European émigrés had great influence on the film community at this time. Hans Richter for example, arriving in 1940, was instrumental in reviving interest in early abstract films such as his own and Viking Eggeling's, and organising screenings of these and

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[1]   A. Clarkson, 'Stefan Wolpe and Abstract Expression', in Johnson, ibid., p.79

[2]   * Basualdo, Battle & Tomkins (eds.), *Dancing around the Bride: Cage, Cunningham, Johns, Rauschenberg, and Duchamp,* Philadelphia Museum of Art, Yale University Press, 2012
      * *Welch, J.D., The Other Fab Four: Collaboration and Neo-dada, undated, accessed 15-5-17 at* www.jdwelch.net/writing/TheOtherFabFour.pdf

[3]   P. Vergo, *The Music of Painting: Music, Modernism and the Visual Arts from the Romantics to John Cage*, London: Phaidon, 2010, p.347

new works by such filmmakers as Maya Deren and Kenneth Anger[1]. Richter also founded the

film course at City College of New York, attended by Jonas Mekas who was, as A.L. Rees puts

it, 'soon to be the energetic magus of the 'New American Cinema' '[2] – and also Shirley Clarke[3],

also soon to become a significant figure. There was a quite general kind of retrieval and

reworking of European artistic ideas from earlier in the century (cubism, surrealism, etc) taking

place in America during this period[4]; a comparison may be drawn between this and the

reappropriation and reconfiguration of *serialist* music taking place at the same time.

Maya Deren, a pioneer of independent film in New York (from 1943), was also an active

promoter of film as a 'poetic' artform. Her own films, now generally regarded as classics of

experimental cinema, often appear to draw on her experience as a dancer in their fluidity both of

motion within the frame and of camera movement. In 1963, she described her understanding of

filmic montage — as with dream, and with poetry — as tying together even disparate images in

a 'vertical' relationship of common emotions, meanings, or ideas (as opposed to a causal,

'horizontal' relationship). Thus, she believed, film lends itself particularly to the poetic

statement. She expresses the view that where words in film derive directly from the image (as in

theatre) they are in fact redundant, although they may be brought in 'on another level' in order to

add to the poetic effect[5]. This has obvious resonance with Eisenstein's concerns[6], and

particularly, one might add, those derived from a notion of *polyphony.* Lauren Rabinovitz

describes this as a refiguring of Soviet film theory with a new emphasis on contemporary

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[1] A.L. Rees, *A History of Experimental Film and Video: From the Canonical Avant-Garde to Contemporary British Practice* (1999), London: BFI, 2005*,* p.55

[2] ibid., p.56

[3] L. Rabinovitz, *Points of Resistance: Women, Power & Politics in the New York Avant-garde Cinema, 1943-71*, Urbana: University of Illinois Press, 2003*,* p.42

[4] Rees, 2005, op.cit., p.60

[5] P.A. Sitney (ed.), *'Film Culture Reader',* Praeger, 1970, pp.178-179, (Transcription of 'Poetry and the Film: A Symposium', 1963), accessed 9-9-15 at http://coronagraph.pastelegram.org/Poetry-and-the-Film-A-Symposium. *(Audio recording also available, on YouTube.)*

[6] Michelson, A, 'Poetics and Savage Thought: About Anagram', in B. Nichols (ed.), *Maya Deren and the Avant-Garde*, 2001, pp.26-27

psychological thought, and quotes Deren as writing that 'the chronology of the past, present, and future has also increasingly lost its meaning'[1]; her version of 'vertical' and 'horizontal' is said to derive from Eisenstein, but '[h]er argument, original in its thinking, shifts the dominant emphasis from the horizontal to the vertical axis as the way to reorganize cinematic material more subjectively and to break from Hollywood mimesis'[2]. Deren also stated her interest in presenting an expression of 'becoming' (which she regarded as a particularly characteristically female concern), this manifesting filmically as the 'metamorphosis' from one image to another[3].

The Bergsonian connection to Deren's theoretical work has been noted[4].

Beat

> '*When you're filming, do you see the camera as an extension of your consciousness?*'
>
> > '*Not so much an extension of my consciousness as an extension of my fingers! Like when a jazz musician plays a saxophone — the instrument is an extension of the fingers. And fingers are transmitters — extensions of your mind, your heart, your whole body and everything that you are. That's what my camera becomes.*' Jonas Mekas[5]

There is much evidence that bebop was a major influence on both literature and film in postwar America and beyond. Not that it was by any means an entirely separate strand; as Daniel Belgrad describes, it was part of a general cultural development towards 'cultural spontaneity', evident also particularly in visual art. Yet the intellectual influence of this music, arguably the preeminent African-American artform of its time, was especially intense.

The best-known of the 'beat' writers (Jack Kerouac, Allen Ginsberg) were tertiary students in the

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[1] Rabinovitz, 2003, op.cit., p.75
[2] ibid.
[3] https://www.youtube.com/watch?v=MhEOOpbJKEc — *audio recording.*
[4] R. Jackson, 'The Modernist politics of Maya Deren', in Nichols, 2001, op.cit., pp.57-59
[5] J.J. Lanthier, 'Film and Film and Film: An Interview with Jonas Mekas', in *Bright Lights Film Journal,* October 31, 2009, retrieved 18-8-10 from http://www.brightlightsfilm.com/66/66mekasiv.html

mid-1940s, at the height of the bebop era — and were profoundly influenced by that music. Ginsberg says that '[t]he entire Beat literary movement was based, to some extent, on Kerouac's estimate of bebop as an improvised, spontaneous form'[1]. For Kerouac himself, it was undoubtedly a primary influence; it is well documented that he thought of his work as 'spontaneous bop prosody'. Furthermore, his oeuvre as a whole has been described as a repetitive cycle — each time around inventing new versions of the main themes. For Ginsberg, modern jazz was clearly also of personal significance; he is said to have described *Howl* as being primarily influenced by Lester Young[2], (as mentioned earlier, a significant tenor-saxophonist, and early and fundamental influence on Charlie Parker). There are several examples where Kerouac, and others, compare his technique of spontaneous writing to film, as an attempt to capture, in real time, the images passing through his mind like a movie. Interestingly, he is known to have revised the writing that resulted from this method, although he preferred to keep this to a minimum. This is more comparable to a theatrical or cinematic rehearsal technique, then, than to a musical improvised performance. However, Kerouac is said to have worked on his 'chops' (technique) as a vocal improviser, much like a contemporary rap performer. The concept of building improvisatory technique is important if one wants to make the comparison to jazz — or to rhetoric for that matter. William Burroughs apparently described his cut-up/fold-in technique as enabling a 'cinematic' dimension[3].

David Sterrit outlines the significance of Mikhail Bakhtin's work in this context: 'dialogism'[4] rather than dialectic — exchange of ideas rather than the imposition of meaning; stylistic polyphony, multifaceted and multivocal. This is related to the use of bebop as a model by

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[1]   J. Sargeant, *The Naked Lens: An Illustrated History of Beat Cinema*, London: Creation Books, 1997, p.164 ('An interview with Allen Ginsberg')

[2]   D. Belgrad, *Culture of Spontaneity: Improvisation and the Arts in Postwar America,* Chicago: University of Chicago Press, 1998, p.215

[3]   D. Sterrit, *Screening the Beats: Media Culture and the Beat Sensibility*, Carbondale: Southern Illinois University Press, 2004, p.79

[4]   D. Sterrit, *Mad to be Saved: The Beats, the 50s, and Film*, Carbondale: Southern Illinois University Press, 1998, p.49

innovative writers and filmmakers in the period following World War II; through 'dialogically' contrasting thematic statements and ideas, existing forms and styles could be made to show entirely new potential[1]. Robert Stam relates Bakhtin's 'predilection for aural and musical metaphors'[2] to an acoustic rather than a visual conception of space whereby, in place of images of boundaries and exclusions, 'voice suggests a metaphor of seepage across boundaries which redefines spatiality itself'[3]. (This appears to correspond to Marshall McLuhan's concept of 'acoustic space', which will be discussed in the next chapter.) This change in emphasis from the visual to the aural is seen as tending towards enabling the restoration of 'voice to the silenced'[4]. Bakhtin's main concepts include *dialogism*, *heteroglossia* (not merely a diversity of voices, but the multifaceted aspects creating a specific contextual meaning for any given utterance)[5], and the possibility of engendering a kind of cultural/political polyphony in which the various 'voices' are not only paid 'lip-service', but are able to express themselves fully. Stam describes this as a 'multivocality, one that would abolish social inequalities while heightening and even cultivating social difference'[6]. Furthermore, Bakhtin believed in the necessity of the presence of several voices in order to constitute 'truth'; through the engagement of one with another, in a particular real-life context, truth may be formed. This confluence of many stratifications of socio-ideological 'languages'/dialects, each and all affecting the others, demonstrates language 'in the process of becoming'[7]. Stam relates Bakhtin's ideas to film- and cultural-studies in terms of their potential to 'deprovincializ[e] … nineteenth-century conventions of verisimilitude'[8]. Rather than a straightforward, mimetic form of realism, he favours one 'in the quasi-Brechtian sense of revealing the 'causal network' of events, of communicating the profound sociality and historicity

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[1] ibid., p.52

[2] R. Stam, *Subversive Pleasures: Bakhtin, Cultural Criticism, and Film,* Baltimore: Johns Hopkins University Press, 1989, p.19

[3] ibid.

[4] ibid.

[5] Holquist, M (ed), intro to *The Dialogic Imagination: 4 Essays*, University of Texas Press, 1982, unnumbered, accessed 7-10-15 at http://utpress.utexas.edu/index.php/books/bakdia

[6] Stam, 1989, op.cit., p233

[7] Holquist, 1982, op.cit.

[8] Stam, 1989, op.cit., p.235

of human behaviour'[1]. Ginsberg's work is described by Sterrit as weaving speech patterns, jazz-influenced sounds etc 'into what amounts to a Bakhtinian heteroglossia'[2]; apparently Ginsberg wanted his poetry to be a true 'graph of the mind'[3]. Sterrit describes bebop as 'a model' for both writers and filmmakers post-WWII. He mentions, as examples of 'polyphonic' film, works by Bruce Connor, Ken Jacobs, Stan Van Der Beck, Stan Brakhage, and Peter Kubelka, seeing in their radical rejection of conventional cinema, and the strategy of using 'dialogic interactions among diversified elements', a particularly strong analogy to bebop's 'weav[ing] diverse strands of material into heterogeneous and often surprising fabrics'[4]. Douglas Sirk's films are mentioned as an example of those with an interest in circularity, as well as having other 'Beat' sensibilities.

By the early 1960s, the new school of filmmakers were often part of the same artistic milieu as the painters and musicians. Rees mentions a weekly collaborative dance-based event, presided over by Cage and including prominent composers, jazz musicians, painters, and choreographers, where the young Brian de Palma took part by shooting a film[5].

Jonas Mekas has been described as 'the godfather of avant-garde cinema'. Though initially quite disparaging of the experimental film scene, following contact with Maya Deren and others he was converted to the cause and became an active advocate for it. A prolific filmmaker himself, he is particularly known for the highly personal, filmic 'diary' form which most of his work takes. Mekas established the journal *Film Culture*, and wrote a weekly column in the *Village Voice*. He, Shirley Clarke, and others, established *The New American Cinema Group* in 1960,

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[1]   ibid., p.236
[2]   Sterrit, 1998, op.cit., p.131
[3]   *This brings to mind rhetorician Richard Lanham's concept of right brain/left brain, rhetoric/logic oscillation ultimately potentially able to be displayed as a 'waveform'.*
      R. Lanham, *The Electronic Word: Democracy, technology, and the arts*, Chicago: University of Chicago Press, 1993, p.76
[4]   Sterrit, 1998, op.cit., p.52
[5]   Rees, 2005, op.cit., p.70

with a manifesto that concludes 'We don't want false, polished, slick films—we prefer them rough, unpolished, but alive; we don't want rosy films—we want them the color of blood'[1]. Ever since that time, Mekas has been an active and successful promoter of experimental film. By 1965, the *New American Cinema* was getting quite serious mainstream attention. Mekas had established the *Film Makers' Cooperative* two years previously, and it was successfully distributing experimental films to noncommercial outlets[2]. Writing in 1959, Mekas describes several films of the period which he regards as displaying 'a long-delayed reaction against puritanism and the mechanisation of life'[3].

John Cassavetes' *Shadows* was apparently initially largely improvised rather than precisely scripted, but following a response that Cassavetes found less than satisfactory, it was largely reshot and reedited in a pre-structured manner. Mekas's comments about the film in this article are referring to the initial version, and obviously written prior to the release of the remake in late 1959; he later expressed the view that 'whereas the second version of Shadows is just another Hollywood film — however inspired, at moments — the first version is the most frontier-breaking American feature film in at least a decade'[4]. It was the casualness and spontaneity that Mekas found in the first version that he regarded as bringing about its authenticity and significance. The film is currently only available in the second, reshot and reedited version. Elsewhere, Mekas described what he saw as the film's psychological 'turn inwards'[5], and says that 'Cassavetes and his actors created a work that moved freely in what Siegfried Kracauer has called "camera reality" — a film free from literary and theatrical ideas'[6]; rather than through

[1] J. Mekas, *The Film-maker's Cooperative: a Brief History*, undated, accessed 10-09-15 at http://film-makerscoop.com/about/history ('The First Statement of the New American Cinema Group', September 30, 1962)
[2] Rabinovitz, 2003, op.cit., p132
[3] J. Mekas, 'NY Letter: Towards spontaneous cinema', in *Sight and Sound* 28, No. 3-4, 1959, p.119
[4] R. Carney, 'The Searcher', accessed 7-10-15 at http://www.theguardian.com/film/2004/feb/21/features (*quoting from Mekas's Movie Journal column, published in the Village Voice on January 27, 1960*)
[5] J. Mekas, 'Notes on the New American Cinema' (1962), in Dixon, WW & Foster, AF (eds.), *Experimental Cinema: The Film Reader*, London: Routledge, 2002, p.56
[6] ibid.

'realistic' narrative, he sees the value of the presentation as being in the capturing of psychologically revealing expressions, vocal characteristics, and movements. An actor as well as a director, Cassavetes developed a style of filmmaking which was centred very much on the performer. As outlined by Carney, Cassavetes' film work was characterised by the desire to achieve 'realistic' as opposed to 'artificial' performances; grounded in theatrical practice, improvisation was integral to the development of character in this mode of working. (The milieu in which jazz and beat writing both flourished also included substantial theatrical innovation, notably New York City's *Living Theatre*, among whose primary influences were Artaud and Brecht.) Although Cassavetes apparently generally scripted his dialogue quite precisely, the manner of delivery was left to the actors' own sense of character development, and would often be improvised on set, at which point lines might be altered. Flexibility of physical movement entailed a fluid, improvisational technique from technical crew also, which contributed very much to the overall style of the films. Using a very high shooting ratio of up to 50:1, Cassavetes stated that this would then enable him to 'improvise' in the edit room, having an extensive database of possibilities to work with[1]. He compares filmmaking to musical composition, saying '[y]ou have to get involved in that secret theme, know what its rhythms are, and you don't care what happens with the story'[2]. Cassavetes was also somewhat influenced by several of the filmmakers involved in the NYC independent milieu, including Lionel Rogosin and Shirley Clarke.

Mekas calls Robert Frank and Alfred Leslie's *Pull My Daisy* (1958) 'the first truly "beat" film'[3]. Based on a scene from a play of his, Jack Kerouac provides the soundtrack as an semi-improvised narration — there is a kind of narrative story, but he extemporises around the basic

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[1]   R. Carney, *Cassavetes on Cassavetes*, London: Faber & Faber, 2001, p.178
[2]   ibid., p475
[3]   * Mekas, 1959, op.cit., p.120.
      * Sargeant, op.cit., pp.13-53 ('Searching for a free vision')

outline. Allen Ginsberg, Gregory Corso, and Peter Orlovsky play characters based on themselves and depict a version of the 'beat' lifestyle. There are differing reports as to the actual extent of the improvisation in the performances, but there is certainly an impression created of spontaneous movement and behaviour. Sara Villa responds to criticisms, made around the time of the film's release, that it was deceptive in that it pretended to be improvised; she makes the case that, in the same way that bebop extended upon the themes and structures of 'standard' tunes, the film transformed a pre-established structure through improvisation[1].

A relatively early film of Stan Brakhage, *Desistfilm* (1954) is described by Mekas as exemplary in its spontaneity, 'all improvisation'[2]. Brakhage, along with Mekas himself, is perhaps the best-known exponent of highly-personal, autobiographical, self-made films. Brakhage was associated with the circle of filmmakers in NYC who initiated *The New American Cinema Group*, though many of his best-known films were made in later years when he lived in Colorado. He had a musical background, having substantial performance experience as a vocalist as a young person. Then, while in NYC, contact with Varese and Cage is cited as of major importance to him. While he used a kind of *musique concrete* sound collage technique at times in his films, the main influence of these composers was to apply their aesthetic ideas regarding sound to his visual constructions. Randolph Jordan says 'the music that Brakhage wanted us to experience is not that of the "noise" of the audience, but that music contained within the visual elements of the film itself'[3]. Brakhage's editing processes, and other aspects of his work, have been 'inspired' by

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[1] S. Villa, 'Pull My Daisy. A Bebop Revolution', in *FORUM:University of Edinburgh Postgraduate Journal of Culture and the Arts*, Special 01, Summer 2006, unnumbered, accessed 20-9-15 at http://www.forumjournal.org/article/view/570

[2] Mekas, 1959, op.cit., p.120

[3] * R. Jordan, 'Brakhage's Silent Legacy for Sound Cinema: Re-thinking the art of hearing through Brakhage's silent filmmaking', in *'Offscreen'*, Volume 7, Issue 2 / February 2003, unnumbered, accessed 8-10-15 at http://offscreen.com/view/brakhage3 *(Jordan's article goes into the notion of the visual and aural senses being, in reality, two pathways to the same cognitive destination.)*
* * T. Gunning,'Doing for the Eye What the Phonograph Does for the Ear', in *The Sounds of Early Cinema* (R. Abel and R. Altman, eds.), Bloomington: Indiana University Press, 2001

Cage, particularly in the use of chance operations[1].

Come Back Africa (Rogosin, 1959), a film exposing some of the realities of life under apartheid in South Africa, is described by Mekas as 'balanc[ing] between improvisation and a consciously imposed plot'[2]. As with Lionel Rogosin's earlier film *On the Bowery* (1956) (to which Mekas also refers), and also Sidney Meyers' *The Quiet One* (1948), there is a particular blending of documentary and dramatic presentation. The main characters are actually in a sense 'playing themselves'; they are apparently depicting situations very close to the reality of their own genuine experiences. In *Come Back Africa*, scenes of this kind are intercut with actual documentary footage. Some of the scenes featuring live music in the film, particularly the sequences with a large ensemble of young Africans playing recorder-like instruments in the street, are quite remarkable. The music in *On the Bowery* (comp. Charles Mills) and *The Quiet One* (comp. Ulysses S. Kay) is also interesting in this context, using classical chamber-music instrumentation, 'contemporary classical' style — but also, while the melodic and harmonic figuration is very fluid, the individual gestures use quite tonal, one might say 'popular', musical language. This lends a sense of 'contemporary-ness', 'modernity' perhaps, while remaining recognisably 'musical' to the general ear. There are 'jazzy' figures also, particularly in Kay's score for *The Quiet One*.

Have I Told You Lately That I Love You? (1958, dir. S. Hanish) is a kind of visual essay on the nature of mechanisation of the modern world, and a commentary on its effect. It exemplifies perhaps most immediately Mekas's initial comment about a reaction to mechanisation. Viewed now, while many of the actual machines themselves are dated, it is striking to notice just how 'technologised' people's daily lives already were. Somewhat surprising also, perhaps, is the

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[1]   S. Ganguly, 'Stan Brakhage: the 60th birthday interview', in Dixon & Foster, 2002, esp. pp.153-155
[2]   Mekas, 1959, op.cit., p.121

film's social critique, already suggesting the capacity of the technology to induce banality and loneliness.

Cry of Jazz (1959, Bland) presents a dramatised version of an explanation of the sociological nature of jazz from an African-American perspective. Mekas describes it as making 'a complete about-face in American documentary, from a passive, objective, democratic or "simplistic humanist" approach to a personal, passionate, active one'[1]. The film marks an interesting historical point, both sociologically and in terms of corresponding musicological developments; at this time in the US the civil rights movement was gathering force, and 'free' jazz was just in the very early stages of development. The main socio-musicological thesis outlined in the film is that the repetitive nature of the form whereby the chord 'changes' are continuously repeated represents the inescapable 'futureless' plight of the African-American experience, while the constant renewal of ideas being superimposed represents the desire to make 'the moment' of constant interest. This view of the formal constraints of jazz is actually very similar to Adorno's (as outlined earlier). In both cases, the fact that the underlying harmonic pattern is a pre-existing and repetitive form is regarded as preventing the expression of any possibility of social progress.

Shirley Clarke, also with a background in dance, and having in 1953 begun to make films featuring dance, met Maya Deren and was influenced by her approach to film[2]. However, she began to use various techniques to deviate from straightforwardly realistic imagery and to incorporate improvisation into her work, as other experimental filmmakers were also then doing[3]. Her early films, notably *Bridges Go Round* (1958), had a great fluidity of motion; she

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[1]   ibid.

[2]   Rabinovitz, 2003, op.cit., p.97

[3]   ibid., p.99

often collaborated with jazz musicians, and her work came to be strongly associated with a kind of general 'beat' sensibility, and with improvised dance. Clarke's 1961 film *The Connection*, an adaptation of a play originally produced at the *Living Theatre*, which includes a live bebop band as part of the on-stage action, features a kind of commentary on the process of documentary filmmaking as part of its particular manner of presenting the story. She describes how, of necessity, she improvised the camera movements on the set of the film, resulting in an appropriate style[1]. It seems that the association of *The Connection* with 'hipsterdom' was capitalised on when the film was premiered at Cannes; Clarke's entourage apparently included 'beat' poets Allen Ginsberg, Gregory Corso, and Peter Orlovsky[2]. The piece is indeed infused with a 'beat' sensibility, with the music — both from the live musicians, and through dramatic use of a recording of Charlie Parker — providing a sense of transcendence of the otherwise abject setting. Clarke's 1967 documentary *Portrait of Jason* is widely regarded as something of a seminal work in the development of documentary. Consisting of an edited version of a single long interview, the film pursues the notion that a documentary is inevitably influenced by whoever is making it — and further, that one's presentation of oneself to others is inevitably, to one degree or another, a performance. Clarke's later work, in the 1970s and early 80s, was video based, often highly experimental in its use of the new capabilities of that medium, and included stage productions in collaboration with playwright Sam Shepard, among others. *Ornette: Made in America* (1985) her last film, was a feature on the famously innovative jazz musician Ornette Coleman. It uses video art techniques, in combination with more conventional documentary ones, to stylistically interpret Coleman's approach to his work.

Kracauer

Another significant figure writing in NYC at this time — another who immigrated there to

[1] L. Rabinovitz, 'Choreography of Cinema: an interview with Shirley Clarke', in *Afterimage,* December, 1983, pp.9-10
[2] Rabinovitz, 2003, op.cit., p.118

escape the Nazi regime — was Siegfried Kracauer. Kracauer produced his lattermost work on film during the period under discussion here, and it has a particularly idiosyncratic resonance with the topic of this chapter. To place this in context, however, requires consideration of his earlier work as well; this also provides useful perspectives on several matters of central concern in other parts of this study.

Following training in architecture and engineering, Kracauer worked briefly as an architect, but then moved into full-time journalism in 1921. He was clearly already well-versed in philosophy, in fact mentoring the young Theodor Adorno in this respect from approximately 1918. From 1924 to 1937 he was arts and culture editor for the *Frankfurter Zeitung*, a prominent newspaper. Several of his best-known articles from this period are collected in the volume named for one of these pieces, *The Mass Ornament: Weimar Essays.* The essay 'Photography' (1927) sets out several of the issues in relation to which Kracauer is now noted: the imprecision of photographic 'indexicality'; the relationship of 'historicity' to photographic technology; the effect of the photographic image on memory; the relationship of photography and art; the danger that the flood of mass-produced images tends to prevent adequate reflection; the capacity of film to combine 'parts and segments to create strange constructs'[1] and thereby to expose the contingency of modern experience.

Miriam Hansen states that in 'Photography'*,*

> Kracauer does not simply puncture the ideologically available assumption that the meaning of photographs is given in their analog, iconic relation to the object depicted; rather he examines how meanings are constituted at the pragmatic level, in the usage and circulation of photographic images in both domestic and public media practices[2].

Pointing out the obvious, yet seldom noted fact that a digital photograph of any actual physical

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[1]   T. Levin, 'Introduction', in S. Kracauer, *The Mass Ornament: Weimar Essays*, Cambridge, MA: Harvard University Press, 1995, p.62

[2]   M. Hansen, *Cinema and Experience : Siegfried Kracauer, Walter Benjamin, and Theodor W. Adorno,* Berkeley: University of California Press, 2012, p.27

object or organism comes into being through 'the physical impact of light'[1] to precisely the same extent as does an analog one, Lutz Koepnick suggests that Kracauer's work can 'help realize critical continuities between analog and digital forms of photographic practice'[2]. Kracauer emphasises that a photograph is already an abstraction of reality 'into minimal units — halftone dots, a precursor to pixels'[3] as Hansen puts it, by no means in any sense the object itself. While it is certainly the case that digitality affords considerably more accessible capacity to introduce artificial elements (to put fairies into the garden, perhaps), this should surely be regarded as a quite separate matter from the 'indexicality' of a straightforwardly exposed photograph, either analog or digital.

Kracauer outlines a connection between the advent of photographic technology and the 'historicist' view of history whereby an event may be regarded as being completely understood in terms of the succession of events leading up to it. He says, '[p]hotography presents a spatial continuum; hisoricism seeks to provide the temporal continuum'[4]. Hansen relates this to the Bergsonian concept of *duration* (*durée*)[5] which questions the notion that experiential time can be accurately divided into discrete segments. For Bergson, the function of memory is essential for consciousness at every level since without it every event, object, and organism would be unrecognisable. (Thus, we are essentially temporal beings, and it is the expression of this temporal experience which music and motion-pictures uniquely share.) For Kracauer, the true 'history' of persons is the detailed memories others retain of them; these are in fact compromised by photographs, particularly when the pictures outlive the person — photographs 'make visible not the knowledge of the original but the spatial configuration of a moment'[6]. '[T]he flood of

[1]   L. Koepnick, 'In Kracauer's Shadow', in Gemünden & von Moltke, *Culture in the Anteroom: The Legacies of Siegfried Kracauer*, Ann Arbor: University of Michigan Press, 2012, p.113
[2]   ibid., p.115
[3]   Hansen, 2012, op. cit., p.29
[4]   Kracauer, 1995, op. cit., p.49
[5]   Hansen, 2012, op. cit., p.31
[6]   Kracauer, 1995, op. cit., p.56

photos', says Kracauer, 'sweeps away the dams of memory'[1]. However Hansen points out that, in dialectical consideration of the topic, he finds that the very contingency of photographic meaning points to its particular value for the modern world[2]. Particularly through its deployment as the basis of film — with its dreamlike, jumbled fragmentation — Kracauer sees photographic imagery as potentially making clear the possibility of alternative constructions.

Another of Kracauer's famous early articles, also from 1927, is *The Mass Ornament*. Fore-shadowing Adorno and Horkheimer's *Dialectic of Enlightenment* by many years[3], Kracauer's 'mass ornament' describes a process, typified by the female dance troupes of the time, of using bodies as interchangeable, commodified units in a manner directly related to the use of workers on industrial assembly-lines. Audiences, likewise, are organised en masse, and their responses are predictably uniform. This piece sets up a concept of *nature* as being in opposition to *reason* in modern culture, *nature* as deeply related to *myth*; '[i]n serving the breakthrough of truth', Kracauer says, 'the historical process becomes a *process of demythologization*'[4]. This process has enabled revolutionary bourgeois activity to undermine religious and aristocratic power structures, however with modern capitalism this process has stalled; capitalism 'rationalizes not too much but rather *too little*'[5]. Here again Hansen emphasises the dialectical aspect of Kracauer's approach:

> Against a bourgeois humanism to which the mass ornament gives the lie, Kracauer seeks to delineate the contours of a modernist humanism that would combine the precarious and anonymous subjectivity of mass existence with the principles of equality, justice, and solidarity, a humanism aware of its contingency[6].

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[1] ibid., p.58

[2] Hansen, 2012, op. cit., p.34

[3] * Hansen, 2012, op. cit., p.49
* T. Trifonova, 'From Distraction to Indeterminacy to Distraction: Kracauer and contemporary film realist discourse', *European Film Theory*, Routledge, 2009, p.274

[4] Kracauer, 1995, op. cit., p.80

[5] ibid., p.81

[6] Hansen, 2012, op. cit., p.52

In contrast to other cultural theorists of the time (notably Adorno), who believe that only 'autonomous' artworks, deliberately expressing their alienation from socially-prescribed forms, can find a coherent way forward, Kracauer believes that popular forms, and especially cinema, have the potential to show the way to a democratised public sphere, doing away with the outdated, supposedly 'high' cultural values of the bourgeoisie[1].

A series of articles in the *Frankfurter Zeitung* in 1929 (subsequently published as *The Salaried Masses*), focused on the new category of salaried white-collar workers. Kracauer describes these people as 'spiritually homeless'[2], lacking either the sense of class solidarity of the proletariat or the capacity for self-autonomy of the bourgeoisie. They are particularly prone to seek diversion from the bleakness of their existence in the entertaining 'distractions' of live shows, and especially cinema. This had been prefigured a few years previously in 'Cult of Distraction', another of the articles included in the *Mass Ornament* collection. Hansen points out that '[w]ith the impact of the international economic crisis, the employees' self-delusion and frustrated ambition, as Kracauer was one of the first to warn, made them vulnerable to National Socialist propaganda'[3]. Kracauer points out the pervasiveness in mainstream cinema of a narrative of class mobility — the popularity of stories of female secretarial workers marrying their millionaire bosses for instance — as an example of its powerful capacity as a means of influencing the general zeitgest. The form Kracauer adopts for this study is particularly interesting; describing it as 'mosaic', and likening it to an assemblage of photographs[4], he combines personal observation, quotations from conversations with workers themselves, facts and figures, descriptions, and metaphors. Hansen says:

> The fragmentary and citational character of the textual material also recalls Kracauer's earlier affinity with avant-garde practices of collage, in particular their valorization of ordinary, discarded and found objects, and his explicit endorsement of modernist

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[1] ibid., p.55
[2] S. Kracauer, *The Salaried Masses: Duty and Distraction in Weimar Germany*, London: Verso, 1998, p.88
[3] Hansen, 2012, op.cit., p.58
[4] Kracauer, 1998, op.cit., p.32

aesthetics in the visual arts and music.[1]

One may also see in this form a direct relationship to the filmic techniques of cutting and montage[2].

In 1937 *Jacques Offenbach and the Paris of His Time* was first published (in German — the English translation followed a year later). In this book Kracauer uses the story of Offenbach's life and work to examine the socio-political background to the 'Second French Empire' (the reign of Emperor Napoleon III, 1852–1870). Offenbach's musical productions — *operettas* — were hugely popular and commercially successful light entertainment. While their subject-matter was deliberately fanciful, Kracauer emphasises that they also contained an important element of satire. As Stefan Müller-Doohm puts it, he believed that 'because Paris society during the reign of Napolean III was itself 'operetta-like', it could find its apt expression in Offenbach's music'[3]; Kracauer regarded the sociopolitical milieu of the period as farcical, and intended the book to outline this. One can see in Kracauer's analysis of the period a comparison being drawn between the role of the popular music of the time and that of film in the 20th century — in this passage, for instance:

> This cultivation of somewhat facile emotionalism throws a light on the tremendous importance that music came to assume in the eyes of society. Its function, like that of romantic literature, was to compensate bourgeois youth, without embarrassing them politically, for the emptiness and meaninglessness of the atmosphere in which they lived — the atmosphere of the Golden Mean. The greater the outward triumph of materialism, the greater the inner need for emotional upsurgings. Music satisfied this yearning ...[4]

Several of Kracauer's fellow theorists were deeply critical of his approach in this book, notably his old friend Adorno. Criticising the lack of serious discussion of the music itself, and also what

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[1]   Hansen, 2012, op.cit., p.58

[2]   I. Mülder-Bach, 'Introduction' to Kracauer, 1998, op. cit., pp.14-15

[3]   S. Müller-Doohm, *Adorno: A Biography*, John Wiley & Sons, 2015, (not numbered), excerpt viewed 25-1-16 at: https://books.google.com.au

[4]   S. Kracauer, *Jacques Offenbach and the Paris of his time,* New York: Zone Books, 2002, p.81

he regarded as the lack of proper social analysis, Adorno actually questioned whether Kracauer should any longer be considered a writer worthy of inclusion in the company of himself and the other 'critical theory' intellectuals. Gilloch makes the case that Kracauer deliberately does not focus on Offenbach's music in isolation but rather treats it as part of the multiplicity of urban elements of its time and place, arguing that this is an instance of his 'cinematic imagination'[1] (as opposed to Adorno's dialectical one). In fact, Kracauer hoped to have a film produced from his Offenbach story, writing a treatment and eliciting a certain amount of interest, although ultimately not successfully[2]. As Gilloch points out, the music to be used in the film is generally presented as though being performed on stage in Offenbach's actual productions but, rather than the camera focusing on the performances, it takes the audience through 'digressions and diversions … the alternation of concentration and distraction'[3], and thereby continually places the music into its social context. The book can perhaps be read as a demonstration of Kracauer's belief that popular forms of expression may both indulge the foibles of their times and, in the very act of doing so, critically expose their deeper nature.

Improvisation/Chance – Theory of Film

Kracauer makes reference to a notion of 'improvisation' at various stages of his written work. An early instance of this, in the essay *Cult of Distraction* (1926), is used in the context of a critique of the 'reactionary' tendency of German film (and society) in the '20s to attempt to force their expressions of 'uncontrolled anarchy' — legitimately drawn from social reality for Kracauer, and exemplary of his notion of improvisation — into artificially unified forms[4]. This conception of

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[1] G. Gilloch, 'Orpheus in Hollywood: Siegfried Kracauer's Offenbach Film', in *Tracing Modernity: Manifestations of the Modern in Architecture and the City*, Hvattum, M & Hermansen, C (eds.), London: Routledge, 2004, p.319

[2] Gilloch, 2004, op. cit., *outlines the process of Kracauer's attempts to get the film produced.*

[3] ibid., p.317

[4] S. Kracauer, *The Mass Ornament: Weimar Essays*, ed. Levin, Cambridge, MA: Harvard University Press, 1995, pp.327-328

improvisation is very closely connected to chance, to the genuinely unplanned and unforeseen. Kracauer sees this as being intimately connected to the nature of the modern city; configurations of the built environment that develop haphazardly, rather than entirely through contrivance, are comparable in this respect to natural landscape, and are more conducive to eliciting spontaneous behaviour from the people in them[1]. In art and entertainment, it is in the broad forms of comic performance that Kracauer finds the most telling expressions of this concept — circus clowns and silent film comedians. In attempting to fit into a world of imposed order, and humorously failing, slapstick artists demonstrate 'alterity in relation to the ongoing process of modernization'[2]. Hansen makes the point that this was a common view amongst European artists and intellectuals, notably dadaists and surrealists.

Kracauer's *Theory of Film* (1960) was written once he was living in New York City, interspersed with other projects through the period 1949 to 1959. (He had apparently made extensive notes in preparation for this work while in Marseilles in 1940.) One of its best-known elements is Kracauer's division of tendencies in film into *realistic* and *formalist*. He describes this as an extension of a division in the practice of photography, through the nineteenth century, between those who saw its proper role as the precise capturing of the detail of real objects and organisms, and those who saw it as creating, as aiming to influence art[3]. He actually suggested that the definition of 'art' might usefully be extended to allow for photographs which, though not 'artworks' in the usual sense, have aesthetic worth while also achieving the realism he regarded as the true value of the medium. He takes issue with a view of Emile Vuillermoz, who argued that filmed scenes that have been artistically interpreted would in fact be more 'real' than those made from straightforward, unadulterated, real-life shots, as they could then display the

[1]   G. Gilloch, 'Ad Lib: Improvisation, Imagination and Enchantment in Siegfried Kracauer', *Sociétés Revue des Sciences Humaines et Sociales*, No.110, 2010 /4, par.20-22, accessed 16-10-2015 at http://www.cairn.info/article.phpID_ARTICLE=SOC_110_0029#pa19

[2]   Hansen, 2012, op.cit., p.47. .

[3]   S. Kracauer, *Theory of Film: The redemption of physical reality*, New York: Oxford University Press, 1960, p.23

'essence' of the reality depicted; Kracauer believes that this would 'suppress the very camera-reality which film aims at incorporating'[1]. As the 'prototypes' of these tendencies in early filmmaking, Kracauer presents Lumière, the realist, and Méliès, the fantasist. In film, the *realistic* tendency takes on a whole new dimension, Kracauer believes. Movement can now be captured, and the particular significance of this is that it enables the presentation of material that can truly give the impression of real life — 'the flow of life'[2] — not merely an artificially frozen instant, as in a photograph. Perhaps significantly, Kracauer regards 'staging' as legitimate as long as the effect achieved 'evokes the illusion of actuality'[3]; one can only speculate as to whether this would remain the case in relation to contemporary graphics techniques. This 'camera reality' is particularly well catered for by the 'haphazard contingencies'[4] of urban settings — streets and other public spaces where people congregate and move around. As an extreme example of what he regards as film technology's apparent 'chimerical desire to present the continuum of physical existence', Kracauer mentions an idea of Leger's whereby every moment of a couple's life would be filmed for an entire day, without their knowledge (an extreme variety of 'reality tv' perhaps); he concludes that this would be unbearable to watch as it would strip away the illusions we carry as to the nature of our lives, and expose the true nature of our 'crude existence'[5].

Emphasising the modernist nature of Kracauer's version of realism, and its incorporation of contingency and indeterminacy, Hansen usefully places it in the precise context of our current discussion:

> [I]t might be productive to think of *Theory of Film* as contemporaneous with the magazine *Film Culture* (which published two sections of the book in advance), the New American Cinema Group (like *Film Culture*, cofounded by Jonas Mekas), and the emergence of independent venues of film production and exhibition with the breakup of

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[1] ibid., pp.34-35
[2] ibid., p.60
[3] ibid.
[4] ibid., p.62
[5] ibid., pp.63-64.

the Hollywood studio system as well as the beginnings of academic cinematology; with existentialism in philosophy and lifestyle, abstract expressionism and minimalism in the visual arts, and the aleatory music of John Cage; with Susan Sontag's essay "Against Interpretation," Miles Davis's *Kind of Blue*, and Lawrence Ferlinghetti's *A Coney Island of the Mind*.[1]

Kracauer's version of 'improvisation' invariably involves dealing with events that are completely unforeseen, even completely accidental, 'chance in the absence of provision'[2]. It is thus very much more related to pure chance and/or aleatoricism than to improvisation in the musical sense. Musical improvisation (certainly in the jazz or baroque/classical traditions) is in fact a means for the artist to maintain control of contingency while nevertheless creating spontaneously, whereas embracing chance as such is to deliberately forego such control. However, as Gilloch also points out[3], it is 'the image of improvisation, its invocation and representation' with which Kracauer is really concerned. The great physical comedians he holds up as exemplary constantly depict characters grappling with life's contingencies; perhaps some of them may in fact have improvised in a jazz-like manner at times, although undoubtedly their routines were generally precisely and rigorously prepared.

Though not exactly describing cinematic imagery *as* an expression of mental imagery as such, Kracauer does draw a very definite *parallel* between his 'flow of life' on the screen and the flow of thought in the spectator's mind. He believes that certain types of imagery can tend to cause the viewers to bring to mind their own imagery, which then sets up a relationship, running in parallel. Rather than sequences specifically produced to depict dreams in a fantastical manner, certain very realistic images are most likely to bring about this response; other factors may increase this tendency: 'sudden displacements in time and space, shots comprising "reality of another dimension," and passages which render special modes of reality'[4]. Kracauer describes

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[1] Hansen, op. cit., p.254
[2] Gilloch, 2010, op.cit., par.4
[3] ibid., par.6
[4] Kracauer, 1960, op.cit., p.164

the interplay of these two parallel 'flows' as jointly constituting a 'stream of consciousness'.

The most widely-cited instance where Kracauer uses a specifically musical example is quite telling at this juncture, and actually combines both musical improvisation and complete aleatoricism. The anecdote about the 'drunken pianist', related in *Theory of Film*, indicates quite neatly his feelings about improvisation/chance and the beneficial effect of an appreciation of contingency. The anecdote concerns a man who accompanies films with improvised piano music, but who is not at all concerned to match the mood of his playing in any way to the visual events on screen. Kracauer found that this method of indeterminacy actually enhanced his experience of the films, as it enabled them to be seen 'in a new and unexpected light'[1]. By *not* supporting a 'theatrical' plotline, and thus suggesting other possibilities, musical accompaniment can, he believes, enhance a film's 'cinematic' qualities; thus, even the completely random nature of this particular example had beneficial aspects.

It has been suggested that Kracauer's work provides an important means by which to connect Frankfurt School critical theory to the intellectual milieu of mid-century New York[2]. In this view, Kracauer's ultimate refinement of his theory of the significance of popular culture, particularly film, is underpinned by the importance of direct experience, and by a dialectic of individual and society.

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[1] ibid., p.137

[2] J. von Moltke, 'Manhattan Crossroads: *Theory of Film* between the Frankfurt School and the New York Intellectuals', in Gemünden & von Moltke, 2012

Time and Contingency

> *Temporality, the resemblance between the composition of film and music, has been much less investigated than the visual and narrative aspect, except perhaps in writings on the golden age of silent cinema.*[1]

The nature of *time*, and especially the way in which the *experience* of time may be varied, is central to the consideration of the importance of contingency (broadly defined: incorporating improvisation, aleatoricism, etc.) for modern culture generally, and for cinema in particular. Much has been written on this topic — in terms of pure philosophy, in relation to music, and in relation to cinema — and it will be valuable to compare various of the threads in each of these areas. Certain aspects of this relation have already arisen in the discussion thus far. The ascendency of rhythm as the fundamental formal element comes to emphasise the expression of the passage of time. Duration (Bergson's *durée*) of both sound and silence — necessarily interrelated — is thus the primary structural parameter. The multiplicity of potentialities in 'smooth space' (Bergson, Boulez, Cage, Deleuze) include 'possibilities' (pre-conceived) and also 'virtualities', requiring *creative* action to be brought into being ('actualised'). This may be seen as emphasising the importance of true experimentation, the results of which are inherently unforseen. The desire to artistically express the fluidity of time in modern experience was largely engendered by technological developments in media generally, communications, and transportation. The interweaving of disparate texts (relating to Deleuzian/Guattarian temporality) can result in more accurate depictions of the genuine experience of life than simple linear narrative; this may relate directly to contemporary cinema as can be seen in increased multiplicity of story threads and temporality. (The latter will be dealt with in Chapter 6, *The Contemporary Context*.) Such multitextuality may be seen as being related to a kind of (particularly, Cagean) broader hybridity — combining the major artforms — and thus to the desirability of combined theoretical/practical research.

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[1] Y. Biro, *Turbulence and Flow in Film: The Rhythmic Design*, Bloomington: Indiana University Press, 2008, p.xi

In Kracauer's final work, the posthumously published *History: the Last Things before the Last*

(1969), the relationship of chance to the common conception of time, and the social importance

of this, is emphasised. The conception of history as primarily linear is a modern phenomenon,

says Kracauer, and connected to the ascent of science to the position of ultimate social authority;

the ancient Greeks did not fully replace 'cyclic' time with linear[1]. Rather than a progression of

historical circumstance being their main determining factor, a variety of phenomena — modes of

art, historical events, ideas, ideologies — are in fact not primarily shaped by linear time. The

relationships between these things are not due to their being subject to the same temporal

progression, in fact any given period is 'a kind of meeting place for chance encounters'[2]. It is

therefore necessary to observe many small occurrences in order to come to an understanding of

history and society. Human 'progress', in the sense of constant development through

chronological time, is untenable in this view[3]. Kracauer seems to believe that something very

much akin to a Deleuzian/Guattarian *assemblage* concept applies in this context; he says that

'[s]imultaneity may enforce a rapprochement; random coincidences may jell into a unified

pattern'[4], and that 'general history … [is] concerned with virtually all the events that make up the

whole of a temporal sequence or a situation'[5]. Modernist art, says Kracauer, tends to question

whether there are really meaningful connections between the 'small random units'[6] that

constitute real life. In considering the problematic nature of an 'aesthetic' approach to history,

Kracauer is very much concerned to question the tendency of philosophy to presume that the

nature of the particular may be defined through its inclusion as part of the general. Overarching

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[1] *Early media-studies theorists (Havelock, Innis, McLuhan, Ong...) would say that this linearity was primarily due to the increasing ascendency of print culture.*

[2] S. Kracauer, *History, The Last Things Before the Last*, New York: Oxford University Press, 1969, p.150

[3] ibid., pp.149-150
Kracauer cites Benjamin in this regard.

[4] ibid., p.153

[5] ibid., p.165

[6] ibid., p.183

'philosophical truths … have a way of freezing into dogmas'[1]. Both history and photography, in their very resistance to subsumption by philosophy/aesthetics, offer a form of 'redemption'. As Rodowick puts it, Kracauer is saying here that 'historical and photographic "knowing" are to be valued for their ambiguity, their resistance to closure, and their elusiveness with respect to systematic thought'[2].

In the emphasis upon simultaneity and multiplicity in the consideration of temporal experience, particularly in the modern era, we inevitably trace the influence of Bergson, whose conception of time includes the necessity of recognising the constant simultaneity of past, present, and future. This recognition means to embrace the importance of 'intuition'. One's character is composed of all one's past experiences, unconscious as well as conscious; by a serious effort of considering one's 'inner life', and integrating this with external experience, one may mitigate the effects of the 'socialisation of the truth', the 'obligations, habits and static general ideas of social life'[3]. Doane quotes Peirce as saying, in this context, '[t]houghts, therefore, always take place within an interval in which they are enabled by the presence of other thoughts'[4]. Time must be regarded as a 'continuum' rather than a series of discrete moments — rational thought would otherwise be impossible, as more than one thought must be held in the mind at once in order that they may be compared. A photograph is a composite of innumerable 'intervals of exposure' rather than a single 'instant'. These issues were, and remain, central to consideration of the very nature of photography and film, particularly the nature of the 'truth' content of such representation. If the 'instant' of time represented in a photograph is in reality an 'interval', potentially infinitely

[1]   ibid., p.214

[2]   D.N. Rodowick, *Reading the Figural, or, Philosophy after the New Media*, Durham: Duke University Press, 2001, p.167

[3]   L. Lawler, *The Challenge of Bergsonism,* London: Continuum, 2003, p.70
      This may be seen as bringing one's 'senses in continuity with one another'. (This is reminiscent of McLuhan's description of the necessity to supplement the overwhelming 'visual' aspect of modern culture with the 'acoustic' — and related, in his account, to the philosophical origins of the concept of ratio-nality.)

[4]   M.A. Doane, *The Emergence of Cinematic Time: Modernity, Contingency, the Archive*, Cambridge, MA: Harvard University Press, 2002, p.90

divisible, is the picture then in reality as much of an abstraction, a contrivance, as a fixed point along the course of Zeno's arrow? And in film, the convincing illusion of movement is subject to the same question. Nor does digitisation alter this; as Cubbitt, et al. say:

> Cinematic movement as a whole is a statistical aggregation of moments averaged across time [recording rate/projection rate]. This is why it is important to realise that the unit of film is not the frame but a cluster of three frames: this one, the one presently vanishing, and the one about to appear, plus the framelines which separate them. In the case of the pixel-based digital screen, a similar truth is unavoidable: the unit is not the single pixel but the array, and the array itself is driven statistically by its refresh rate.[1]

Doane questions the traditional, 'classical' dichotomy drawn between Lumière and Méliès (as in Kracauer), saying that '[b]oth make contingency central to their representational practice in a medium in which the experience of temporality is crucial'[2]. A long shot of a real-life event in Lumière increases the likelihood of unexpected elements to appear; Méliès *dramatises* contingency through appearance/disappearance, transformation, exaggerations of scale, etc. (Elsaesser notes that the Lumières' 'realistic' films initially appeared more fantastical than those of Méliès, whose cinematic tricks were 'familiar from magic theater, circus and vaudeville'[3].) Rather than steps towards the 'inevitable' development of narrative form in cinema, as 'classical' film theory claims, these are instances of 'resistance' to the conservative stance taken by the classical cinema[4]. Cinematic mass culture has played an important role in the alignment of our perception of the 'normal' passage of time with modern management practices, particularly in relation to the usage of the human body, as Kracauer pointed out. The 'persistent production of events'[5] by mass culture ensures our constant inclusion in the process, and restricts the capacity to pause and reflect. Film produces the impression of temporality, but the genuine relation to time of any given piece of film is impossible to specify. For Deleuze, and also for Kracauer, the ability to disrupt temporal continuity through editing is the essence of film's capacity to deal

[1] S. Cubbitt, et al., *Transient Media*, 2007, accessed 17-5-17 at https://www.academia.edu/21905892/Transient_Media, p.12
[2] Doane, 2002, op.cit., p.136
[3] T. Elsaesser, 'Early Film History and Multi-Media', in Chun, W.H.K. & Keenan, T, 2006, p.15
[4] Doane, 2002, op.cit., p.138
[5] ibid., p.162

with time. Cinema is characterised then by a paradoxical (dialectical?) combination of subtle

coercion and the power to disrupt the inevitability of dictated events — '[t]he achievement of

modernity's temporality, as exemplified by the development of the cinema, has been to fuse

rationality and contingency, determination and chance'[1]. The *cut* commodifies time, and enables

its reshaping. The *indexicality* of film, has been refigured as 'indissociable from affect'[2] by virtue

of its inevitable guarantee of contingency — of movements, gestures, expressions too

idiosyncratic for planning or scripting.

Music's inherent capacity for simultaneity undoubtedly accounts to a great extent for its being

widely regarded as the traditional form of expression of the 'flow' of mental processes. This is in

addition, of course, to its unavoidably linear presentation. However, there are important senses in

which music may in fact enable the expression of a form of *non*-linearity. Jonathan Kramer

posits that the computer rather than, say, the railway, is the 'apt symbol for contemporary

temporality'[3]. The modern sense of time as involving simultaneity — that we are aware of

'many different and irreconcilable things in one and the same moment … [while] the same

things are happening at the same time in so many places'[4], considerably predates the

contemporary computer however — and is closely connected to the interrelationship of space

and time introduced by the cinema. While in traditional forms of music metrical regularity is

ubiquitous, musical composition in the twentieth century, as with other artistic and philosophical

forms, tended to react to contemporary life by embracing 'the static, the eternal, the sacred'[5].

Twentieth century art generally exhibits preoccupation with the questionable authenticity of the

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[1] ibid., p.208

[2] ibid., p.225
Doane refers here to writing of Hansen's from 1997. It is noteworthy that in her final work (2012), Hansen specifically plays down the significance of cinematic indexicality to Kracauer, and ponders the potential for new/digital media of his belief in the capacity of film to present alternative experiences of 'reality' (see Hansen, 2012, op.cit., p.279).

[3] J.D. Kramer, *The Time of Music: New Meanings, New Temporalities, New Listening Strategies*, New York: Schirmer Books, 1988 p.13

[4] A. Hauser, 'The Conceptions of Time in Modern Art and Science', in *Partisan Review*, 23, 1956, p.330
Hauser places modern aesthetic conceptions of time in a long historical context.

[5] Kramer, 1988, op.cit., p.17

traditional, rigid view of temporality. Cinematic examples include *Hiroshima mon Amour*

(Resnais, 1959), *Exterminating Angel* (Buñuel, 1962), and several of the films discussed in the

previous chapter. Until the twentieth century (with abstract painting, non-narrative film),

instrumental music was the only artform 'largely unencumbered by plot, character, or

representation … [it] *is* about time'[1].

In linear music, development occurs through 'cause and effect', in much the same way as in

conventional narrative; certain chords in particular contexts imply that they will move to certain

others, for instance. The system of functional tonality (as described in Chapter 3) can be

meaningfully associated with the philosophical notion of *becoming*; at any given point in a piece,

progress towards a goal (or a number of potential goals) may be discerned, until final resolution

at the end of a piece[2]. In 'non-linear' music, events occur relatively independently of those

preceding them. Music is in fact generally structured from a combination of linear and non-linear

characteristics. In the linear case, as predominant in a tonal composition, events imply various

possible consequences and thereby set up various expectations in the listener, which may or may

not be fulfilled as anticipated. There may be varying degrees of non-linearity present as

subsidiary characteristics in such pieces, such as rhythmic or textural characteristics which

remain constant throughout a section or an entire piece. Many non-European cultures provide

examples of predominantly non-linear music, reflecting a general cultural attitude to time.

Kramer describes how Balinese music, for example, reflects a culture in which activities 'are

understood and appreciated not as means towards goals but rather as inherently satisfying in

themselves'[3]. Time generally, in Balinese culture, is viewed in terms of several overlapping

cycles, so that the temporal nature of any given day has a particular quality according to its

particular position in relation to a number of variables. The Western tendency to regard tonal

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[1] ibid., p.167
[2] ibid., p.16-19
[3] ibid., p.24

listening as 'normal' and 'natural' is undoubtedly related to our cultural tendency to view progression towards goals in this way; it is, of course, 'learned behaviour, as the predominantly non-linear arts of several different cultures remind us'[1].

Non-Western music was the initial influence leading to the introduction of a degree of non-linearity into Western composition. Several European composers, and Claude Debussy particularly, were fascinated by the Javanese gamelan performances in the Paris exhibition of 1889. Its effect on Debussy's work was very significant; his were really the first Western compositions to 'contain extended moments of pure sonority, events that are to be appreciated more for themselves than for their role in linear progressions'[2]. The second Paris exhibition of 1900 featured for the first time a full gamelan orchestra, which is widely cited as having been of great interest to many European composers, including Debussy and Gustav Mahler. Other features, including scale patterns outside the Western major/minor modes, and timbres and textures reminiscent in certain ways of non-Western instrumentation, may also be seen as deriving from this influence[3]. The 'Second Viennese School' (Schoenberg, etc), by contrast, may be seen as attempting to preserve a particularly Germanic developmental linearity.

The other major influence on an increased interest in musical non-linearity was, as mentioned earlier, the advent of recording technology. As with the medium of film, the ability to cut and splice magnetic tape inspired composers to devise pieces that investigated the new capacity to express time more fluidly. As we have seen, certain relatively early film-makers contributed important innovations in this respect.

There are many examples of twentieth century compositions which exhibit new approaches to

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[1] ibid., p.25

[2] Kramer, 1988, op. cit., p.44

[3] *An early example of this influence is the 1st movement of Debussy's 'Pour le piano', titled 'Prelude' (1901).*

time, including works by Messiaen, Stravinsky, Stockhausen, Boulez, Cage, and Elliott Carter. In what is often described as *moment* form (initially conceived by Stockhausen), each separate segment of a piece has its own characteristics, which are not determined by events preceding them. There may be proportional relationships governing the overall form of a piece[1], but there is no narrative arc determining the nature of events or their ordering. This is often considered a form of non-linearity; the structure is non-linear, despite unavoidably being first heard as a consecutive sequence. This kind of music encourages concentration on the *moment*. Moment form remains influential, notably in electronic and *ambient* music; whereas the form's original application consisted of strong contrasts from section to section, ambient music 'most often contains only a single moment'[2]. In the style known as *minimalism*, the 'moment' is in a sense stretched out over the entire piece; this is not to say that there is never any structural development in such pieces, but development takes place within a generally constant rhythmic and textural setting, rather than through contrasting sections.

The subjectivity of the experience of time is a significant issue in consideration of factors which may influence the appreciation and understanding of various forms of music. There has been considerable controversy over the question of the importance of the perceptibility of musical structure. If listeners generally do not, or cannot, perceive the specific structural devices employed in a piece, what does this say about the value of those structures, and those pieces? As mentioned previously, the legitimacy of serial technique, particularly, has been questioned on this basis[3]. However, structural devices of all kinds, whether commonly perceived or not, are

[1] *The 'golden section' (1.62:1), for instance, has been found to have been frequently used by composers, notably Debussy and Bartok. Stravinsky is notable for the use of proportional structuring as the key formal device.*

[2] A. Eigenfeldt, *Exploring Moment-Form In Generative Music,* (p.3), accessed 30-5-17 at http://smcnetwork.org/system/files/SMC2016_submission_20.pdf
Eigenfeldt describes moment form as 'the only new formal model invented since the dissolution of tonality over one hundred years ago'. (p.5)

[3] L. Meyer, *Music, the arts, and ideas: patterns and predictions in twentieth-century culture* (1967)*,* Chicago: University of Chicago Press, 1994

nevertheless likely to be significant as factors in constituting the final effect of the music[1]. One

prominent cognitive model of time perception may be termed the 'information-processing'

model, in which, as applied to music, the greater the amount of (new) information being heard,

the longer the time the segment, or piece, will be perceived as lasting. 'Thus a two-minute pop

tune will probably seem shorter than a two-minute Webern movement'[2]. This is, naturally, very

much dependent on the previous experience of individual listeners. When the sense of temporal

development in music is done away with, past, present, and future are in a sense combined into

one 'timeless now', sometimes referred to as 'vertical time'. Kramer remarks:

> *Time frozen* temporarily in an eternal present is not an exaggeration of *time slowed*. People
> who have not cultivated the ability to enter deeply into vertical music tend to experience
> the latter: time slowed down, the time of boredom ... Listeners more sympathetic to
> vertical music are more likely to experience *timelessness* — the lack of time — than
> *stopped time*.[3]

J.T. Fraser's 'hierarchical theory of time' posits that time itself has evolved throughout the

development of the universe in such a way that several *levels* of time now coexist. The 'lower'

levels (unchanging, concerned with *being*), and the 'higher' levels (concerned with change,

temporality, and *becoming*), are today experienced by us concurrently. Kramer suggests that

modernist art has rediscovered the lower temporal level, while retaining higher ones.

Yvette Biro, making frequent use of musical analogy, makes the case for a greater concentration

on the issue of temporality in film studies. The chaotic mass of information confronting us from

all sides, on the world-wide-web in particular, in addition to older audiovisual forms and print,

has completely changed the general notion of structural stability. The inevitable complex

multilayered structures in modern life, and the increased speed with which we are presented with

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[1]   *See* Kramer, 1988, op. cit., pp.328-333*, for a fairly accessible discussion of several aspects of this issue.*
[2]   Kramer, 1988, op.cit., p.337
[3]   ibid., pp.376-377
      Philip Glass's 'Music in Twelve Parts' (1974) is cited as an example of this style of composition.

various stimuli, inevitably affect filmmaking practice. Simple 'cause and effect' is no longer technically adequate for the representation of this new reality; multiple viewpoints and other devices for more complex structuring and, especially, increased tempo, are employed with increased frequency. The relative characteristics of the 'fast' and the 'slow', however, necessitate the presence of both phenomena by their very nature. In life itself, as well as in film, it is important that we have an appreciation of the nature of temporality. Many films may be seen as using versions of a music-like theme-and-variations structure[1]. Referring to Bergson, Freud, and Lacan, Biro says '[m]emory demands repetition and the reinterpretation of the past'[2]. Thus, narratives which depict differing versions of the same situation, show events from differing points of view, or even portray different versions of the same character, may actually increase their sense of 'authenticity'. The use of numerous overlapping storylines enables a kind of 'polyphony' which, while very effectively expressing multiplicity, may not necessarily require fast pacing[3]. 'Mosaic' structures may be used, whereby multiple qualities and aspects of a story are juxtaposed without conventional developmental imperative. Memory, by its nature non-linear (consisting as it does of the reintroduction of the past into the present), is also intimately associated with contingency; the circumstances which trigger particular memories very frequently come about by chance, and it often seems unpredictable which particular aspects are thus recalled[4]. Deleuze writes of memory as consisting of numerous coexisting 'regions'; when trying to recall something we insert ourselves into a particular region and cast about to see if we can make it manifest a 'recollection-image'[5].

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[1] *Examples include 'Vivre sa Vie' (Godard, 1962), 'Rashomon' (Kurosawa, 1950), and 'Run Lola Run' (Twyker, 1998).*

[2] Biro, 2008, op.cit., p.147

[3] ibid., pp.51-52
Biro uses the example of Altman's 'Short Cuts'.

[4] *Notable cinematic expressions of these characteristics include Resnais's 'Hiroshima, mon amour' (1959), Marker's 'La Jetée' (1961), and Tarkovsky's 'Mirror' (1975) — see* ibid., pp.80-91

[5] G. Deleuze, *Cinema 2: the Time-Image*, London: Athlone Press, 1989, pp.95-96
*Deleuze says 'it is a conception that can be found in the first great film of a cinema of time, Welles' Citizen Kane' (*p.96*).*

In the present technological context in which multiple media sources constantly contend for attention, it may be useful to consider techniques for the deliberate varying of pace so as to enable greater consideration and reflection. In respecting the desire for inclusion and complexity, one may wish for methods by which to 'parse time'[1] so as to achieve a deeper, more meaningful engagement. The interrelatedness of music/audio, the moving image, and contemporary digital media will be further considered in Chapter 6; before this, however, a historical consideration of the background to current media technology will clarify important aspects of these relationships.

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[1]   Biro, 2008, op.cit., p.239

5. Background to 'New' Media

> *New media calls for a new stage in media theory whose beginnings can be traced back to the revolutionary works of Harold Innis in the 1950s and Marshall McLuhan in the 1960s. To understand the logic of new media, we need to turn to computer science. It is there that we may expect to find the new terms, categories and operations that characterize media that became programmable. From media studies we move to something that can be called "software studies" — from media theory to software theory*[1].

How is musical form relevant to issues of 'new' media/digitality? There are in fact important parallels between fundamental aspects of modern media and musical form, and the model of the latter may be seen as being as significant in the contemporary context as in those examined thus far. To attempt to outline this accurately it will be necessary to revisit certain historical periods and to trace certain lines of cultural development.

Innis & McLuhan

Marshall McLuhan believed that the linearity of alphabetical print, and the overwhelming reliance of Western culture upon it, had come to restrict our sensory perceptions in such a way that they were dramatically skewed towards the visual. This resulted, in this view, in our general cultural outlook becoming overly 'linear'. With the advent of electronic media, however, this unbalancing of the senses could be corrected through its presentation of material in 'mosaic' form (as in the experience of pre-literate cultures) rather than linearly. However, without general appreciation of the nature and importance of these developments, societal reaction to these inevitable changes could, he believed, compromise and even endanger positive aspects of the Western tradition. The influence on McLuhan of the work of Harold Innis casts an interesting and useful light on these matters.

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[1]   L. Manovich, *The Language of New Media*, Cambridge, MA and London: The MIT Press, 2001, p.48

Innis's studies in communications came about as a result of his work on the political economy of his native Canada. Developing a theory of 'staples' in relation to economic development, he studied in detail the industrial processes involved in the production of various commodities, such as fur, mining, and fish. Turning his attention to the paper pulp industry, and following the economic path through to newsprint, he became interested in the economics of media, and began his studies of communications history. It is from this work of Innis's that McLuhan derived the concept that 'the medium is the message', that the actual technological means of communications is itself of essential significance. Innis used the terms 'time-biased' and 'space-biased' to describe the media forms that he believed must be equalised in order for any given society to be 'balanced'. Such media as oral language (imparting knowledge dependent on traditional, generational transmission), or text on clay tablets, lasting indefinitely and relatively lacking in portability, are said to be 'time-biased', and to engender community. Such forms as television, radio and newspapers, intended to be widely propagated but without a view to permanence, are described as 'space-biased', and to be conducive to commercialism and imperialism[1]. Socio-political change was brought about by marginal groups developing new, typically more flexible, forms of media — for instance religious material printed on paper challenging the power of a Christian church reliant on Latin written on parchment. Innis very straightforwardly expressed his belief in the importance of oral communication, positing that impersonal, 'mechanized' communications media were actually 'cruel' in their removal of the necessity for consideration of others' feelings. He said that the tradition of oral culture inherited from the ancient Greeks had been negatively affected by the development of such modern media, and believed in 'the necessity of recapturing something of its spirit'[2].

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[1] Innis, H, *Empire and Communications*, Oxford: Oxford University Press, 1950, p.7
The lightness and portability of information stored on papyrus rather than clay, stone, or parchment, for instance, enabled administration of larger areas — as in the case of Rome.
[2] H. Innis, (1951), *The Bias of Communication*, Toronto: University of Toronto Press, 2003, p.190

This emphasis on orality also carries through strongly into McLuhan's work. He conceives of the social milieu of oral society as 'acoustic space' in which information is received from all directions at once, as with sound coming to our ears, rather than from one direction only, as with vision through the eyes. He postulates that electronic media enable this non-linear, 'mosaic' communication form to be retrieved, and in fact that they tend in that direction. The 'aural' (non-linear) thus implies multiplicity and simultaneity, and the 'visual' (linear) the singular focus of following a line of print; this corresponds, in Innis's terms, to the time-biased and the space-biased respectively. This distinction between the aural and the visual is equated to the different processing methods of the right and left hemispheres of the brain; print-dominated societies regard logic and precision as normal, and the holistic and metaphorical as fanciful. With the advent of electronic media, McLuhan sees the possibility of a correction to this imbalance[1]. This 'acoustic space' has frequently been equated to the digital realm[2] and, as early as 1964, McLuhan did specifically make clear that he regarded digitality as the means by which this 'balance' would be brought about:

> The "common sense" was for many centuries held to be the peculiar human power of translating one kind of experience of one sense into all the senses, and presenting the result continuously as a unified image to the mind. In fact, this image of a unified ratio among the senses was long held to be the mark of our rationality, and may in the computer age easily become so again.[3]

The modular style adopted by Innis and McLuhan (in common with several other theorists of modernity) was originally intended to enable the presentation of a multiplicity of aspects. But it was also, in McLuhan's case, a reflection of the multilinear tendencies of electronic media — at the time in the form of television rather than our contemporary online environment. This is not to say that McLuhan did not appreciate the nascent development of internet-like capacities. It is not

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[1]   M. Ryan, 'Introduction' to *Narrative across Media*, Lincoln and London: University of Nebraska Press, 2004, p.27
[2]   Notably in Levinson, 1999, op. cit.
[3]   M. McLuhan, *Understanding Media: the extensions of man* (1964), Corte Madera: Gingko Press, 2003, p.89

necessary to claim mystical powers of prophecy for him (nor even reverse causation) in this

respect; he took a keen interest in the information technology research of the time (such as the

work of Norbert Wiener), and had a singular capability in appreciating the social implications.

McLuhan 'grasped what the new [digital] form would do to communication studies'[1].

In McLuhan's 1962 description of Innis's work we can see the origin of this 'conversational'

method:

> In his earlier work … he had been a conventional arranger of evidence in perspective packages of inert, static components. As he began to understand the structuring powers of media to impose their assumptions subliminally, he strove to record the interaction of media and cultures … There is nothing wilful or arbitrary about the Innis mode of expression. Were it to be translated into perspective prose, it would not only require huge space, but the interplay among forms of organization would also be lost. Innis sacrificed point of view and prestige to his sense of the urgent need for insight. A point of view can be a dangerous luxury when substituted for insight and understanding.[2]

And then in McLuhan's foreword to the 1964 reprint of Innis's The Bias of Communication:

> He changed his procedure from working with a "point of view" to that of the generating of insights by the method of "interface," … the natural form of conversation or dialogue rather than of written discourse. In writing, the tendency is to isolate an aspect of some matter and to direct steady attention upon that aspect. In dialogue there is an equally natural interplay of multiple aspects of any matter. This interplay of aspects can generate insights or discovery. ... an insight is the sudden awareness of a complex process of interaction.[3]

McLuhan's *The Gutenberg Galaxy* develops Innis's literary style and, as Judith Stamps puts it,

'contributes to the project of experimenting with non-linear, sound-based epistemologies. And it

effectively analyses the visual character of modernity whilst highlighting the aural medium of

dialogue'[4]. The loss of the centrality of oral, sound-based, dialogue may be seen as central to the

way this school of thought views the nature of the modern world, and also constitutes a strong

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[1]   E. Lamberti, *Marshall McLuhan's Mosaic: Probing the Literary Origins of Media Studies,* Toronto: University of Toronto Press, 2012, p.64

[2]   M. McLuhan, *The Gutenberg Galaxy: the making of typographic man* (1962), New York: Signet, 1969, p.259

[3]   http://www.media-studies.ca/articles/trickster.htm accessed 3-6-17

[4]   J. Stamps, *Unthinking Modernity: Innis, McLuhan and the Frankfurt School*, Montreal: McGill-Queens University Press, 1995, p.122

connection to Frankfurt School philosophers Adorno and Benjamin[1]. Both 'negative dialectics' and 'acoustic space' involve the necessity for openness of dialogue. As with the Frankfurt School theorists, Innis showed how marginalised groups created new historical developments and insights[2]. The notion of a 'closed', linear, view of historical development (quite similar to Kracauer's critique of the 'temporal continuum' assumed in historicist theory) is also related by McLuhan to the advent of print[3]. McLuhan's 'mosaic' conception of information, the expression of the 'acoustic' as opposed to the 'visual', is presented as 'the only practical means of revealing causal operations in history'[4]. It is through 'pattern recognition' within the otherwise overwhelming plethora of stimuli in contemporary culture, that useful structuring can occur; it is the role of the artist, McLuhan believes, to create awareness of such significant patterns.

Rhetoric

McLuhan's view of these matters has a further, particularly significant, relation to ancient Greek culture: the nature of classical rhetoric. His conception of the tension between orality and print may be seen as being directly related to that between rhetoric and grammar on the one hand, and dialectic on the other[5].

'Rhetoric' in this sense is rather different from its common contemporary usage; while classical rhetoric can be described as the art of persuasion, of effective argument, it is much more than simply insincere, manipulative speech. A highly structured art of verbal performance involving

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[1] ibid., p.10

[2] ibid., pp.138-9

[3] McLuhan, 1969, op.cit., p.15

[4] * ibid., p.8
    * Stamps, 1995, op.cit., p.134

[5] *These (rhetoric, grammar, and dialectic) were the elements of the classical 'trivium'. For a discussion of McLuhan's early research into these issues, and its influence on seminal media-studies, see* J. Guillory, *Marshall McLuhan, Rhetoric, and the Prehistory of Media Studies*, 2015, accessed 15-6-16 *at*
    http://affirmations.arts.unsw.edu.au/index.php?journal=aom&page=article&op=view&path%5B%5D=81&path%5B%5D=85,

both rigorous formal training and improvisational skill, its techniques survive in copious written form though no longer in practice. There has been, throughout history, a tension between rhetoricians and traditional philosophers, with Plato seen as the most prominent opponent of the validity of rhetoric (despite his own use of its techniques). While the school of theorists including Innis and McLuhan concluded that Plato's stance was one of disparaging oral tradition in order to champion literacy, more recent research finds otherwise; according to this latter view, Plato's method was dialectical — actually presenting traditional oral structure in a written medium, creating its messages from the interplay of circular and linear forms[1]. Innis and McLuhan can in fact be viewed as doing something much along these lines also: 'a literary anticipation of the community of speakers in a world beyond modernity'[2]. For its adherents, a fundamental facet of the rhetorical view is that the way in which one says something contributes substantially to its meaning[3]. Gideon Burton uses the example of the word 'ornament' to demonstrate the overlapping relationship of form and content in this context. The original Latin *ornare* is said to mean 'to equip' — thus the ornaments of war are weapons and soldiers, for instance. Far from being incidental, the 'ornaments' of rhetoric are the very means by which meaning is achieved[4]. The role of *memoria* (memory), one of the basic 'canons' of classical rhetoric now no longer practiced, was not only to develop the capacity to reproduce long speeches without written aid; it was also concerned with the capacity to have a large repository (database) from which to facilitate improvisation. Arguments needed to be adapted to the particular audience and context, and practitioners needed to be able to respond in the moment to questions and counter-arguments.

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[1] See T. Gibson, 2005, *Epilogue to Plato: The Bias of Literacy,* accessed 5-7-16 at
http://www.media-ecology.org/publications/MEA_proceedings/v6/Gibson.pdf

[2] Stamps, 1995, op.cit., p.137

[3] P. Grosswiler, *Method is the Message: Rethinking McLuhan through Critical Theory*, Montreal: Black Rose Books, 1998, p.39
Grosswiler quotes Arnold Hauser as describing the meaning of the aphorism 'the medium is the message' as '...everything we have to say is the product of the way in which we can express it'.

[4] G. Burton, 'Content/Form', *Silva Rhetoricae*, accessed 22-6-16 at http://rhetoric.byu.edu

Richard Lanham presents an analysis of contemporary culture in terms of what he regards as the need for 'oscillation' between a 'logical' philosophical approach and a more flexible rhetorical one. The arts are said to have a crucial role in this — and the advent of digital technologies, through their 'quasi-mathematical' enabling of the representation of pieces of work in different 'sense-dimensions', are said to create new possibilities for this to be achieved[1]. The difference between the two positions — 'logical' on the one hand, 'rhetorical' on the other — relates to more than just styles of speech or discourse; it is, to this way of thinking, a difference in ways of regarding the true quality of human nature — naturally moderate, or inclined to both competitiveness and play. Lanham:

> Homo-sapiens is one kind of species — practical and sensible — if, as we usually do, we think the center the norm and the two extremes extreme. We are a quite different animal — obsessed by competitive games on the one hand and unmotivated play on the other — if the two "extremes" constitute our basic norms, the two buttons that make us dance. The Greek philosophers championed the first view, the Sophists the second, and we have been debating the issue ever since.[2]

This aspect of the nature of rhetoric casts a useful light on the often 'playful' nature of McLuhan's form of argument.

There is a very clear line of North American study — Havelock, Innis, McLuhan, Ong... — in which the dichotomy of oral and print culture, stemming from the introduction of writing in ancient Greece, is considered to have led to an 'unbalanced' quality in modern society. A large influence on this school of thought is the work of Milman Parry and Albert Lord on oral culture, particularly in relation to Homeric verse and the still existing tradition of Slavic oral poetry. This is a very important factor in demonstrating the connection between rhetorical and musical improvisation as will be outlined below. At the very opening of *The Gutenberg Galaxy*, McLuhan describes the work as 'complementary' to Lord's *The Singer of Tales*, the 1960 book

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[1] R. Lanham*, The Electronic Word: Democracy, technology, and the arts,* Chicago: University of Chicago Press, 1993, p.11
[2] ibid., p.15

which famously demonstrates the relationship to traditional oral form of Homer's verse through comparison to Slavic oral technique. McLuhan speculated that the reason the history of 'the divergent nature of oral and written social organisation' had not been written earlier may have been that it only became possible 'when the two conflicting forms of written and oral experience were once again coexistent as they are today'[1]. McLuhan also outlines the anthropological and biological sources of his view as to the desirability of altering our social responses to technological change — specifically opposing 'determinism'[2].

Music and Rhetoric

The close connection of music to rhetoric goes back to ancient times; in medieval times, and going back through Roman culture to ancient Greek origins, the academic 'quadrivium', which followed the preparatory work of the 'trivium' (rhetoric, grammar, and dialectic), consisted of arithmetic, geometry, music, and astronomy. In the sixteenth century vocal music was still the dominant form, and the analogy of musical composition to verbal composition, of speech and especially of oration and poetry, was generally recognised. Beyond simple analogy however, verbal rhetorical devices such as repetition or variations in intensity were often applied in various ways to instrumental music. From the sixteenth century through to the eighteenth instrumental music came more and more into its own, however the cultural connection to rhetorical structure continued; an instrumental work was regarded as 'a kind of wordless oration whose purpose was to move the listener … manifest[ing] certain basic parallels to the rationale behind the formal conventions of traditional, verbal rhetoric'[3]. So the use of such devices in music was largely due to the desire to present clearly perceptible ideas to an audience. As

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[1] M. McLuhan, *The Gutenberg Galaxy: the making of typographic man*, New York: Signet, 1969, pp.9-10

[2] ibid., p.11

[3] M.E. Bonds, *Wordless Rhetoric: Musical form and the Metaphor of the Oration*, Cambridge, MA: Harvard University Press, 1991 p.4

familiarity with formal rhetorical techniques became less ubiquitous in educated society, certain musical forms which were originally rhetorically based continued to be recognised. A primary example of this is that of *sonata* form; from its origins in the Baroque period, this form has been commonly used throughout subsequent history. While the strictness of the formal structure of a sonata has varied over time, the fundamental connection to rhetoric — the use of two contrasting themes which develop in relation to one another — has remained. Form comes to mean, in this context, the means by which a work's structure is made intelligible; conventional points of structural reference enable original content to be appreciated. Bonds points out that, while the Romantic conception of form as an 'organic' relationship of parts to whole became predominant, the Classical (rhetorical) conception has new resonance with more contemporary, audience-centred, approaches including genre theory[1].

The rhetorical aspect further demonstrates the historical through-line of music as an expression of multiplicity. As we have seen, this continued and perhaps in fact intensified in the twentieth century as increasing, largely media-induced, multiplicity found expression in new musical forms, particularly in jazz.

Improvised music and rhetoric

> *'[W]e also live in an electric or post-literate time when the jazz musician uses all the techniques of oral poetry.'*[2]

In ancient Greece, it seems that the techniques for both serious debate and artistic poetic expression were very closely aligned, suggesting that this area of study may have the potential to cast light on the relationship between the arts and other intellectual endeavour. (There are

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[1] ibid., pp.8-9

[2] McLuhan, 1969, op.cit., p.11

numerous published studies which relate artistic improvisation to other fields, particularly

psychology. These include examples where improvisational methods drawn from theatrical and

musical improvisational techniques are applied to group management.)

The pre-literate, rhetorical tradition involved both a system of formal devices and an essential

element of improvisation — as mentioned, the underlying basis of Homeric verse. Being

memorised rather than written down, it was constructed from '…a repertoire of ready-made

phrases that could be stitched together to suit the varying circumstances under which the poems

were performed'[1]. So, rather than being reproduced verbatim each time they were performed,

this tradition incorporated a deliberate flexibility, enabling the narrative to be put together in a

variety of different ways according to circumstance, but utilising standard formal structures. As

it is in written form that we have come to know of this tradition, the artistry of the improvisation

originally involved may have tended to be underestimated.

The similarity is striking, in this context, of these descriptions of rhetorical technique to certain

standard usages of musical structure. In baroque music some instrumental parts, particularly

keyboard accompaniments, were improvised. However, this was done through the use of a given

(written) sequence of harmonic guidelines and according to a very strict set of stylistic practices.

A very similar system is used in most forms of jazz improvisation; although in this case there

may be said to be a wider range of stylistic possibilities overall, in any given context it is

generally the case that stylistic guidelines are quite definable[2]. In the classical period many

prominent composer/instrumentalists were known for their ability to improvise in standard forms

such as the sonata. Henry Martin outlines similarities in the form of improvisation practised in

jazz (and by Parker particularly), and the use of *formulas* in verbal form. Certain formulaic

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[1]   J.C. Morrison, undated, *Marshall McLuhan: No prophet without honor,* accessed 12-7-13 at
       http://www.mit.edu/~saleem/ivory/ch2.htm
[2]   L.O. Gillespie, *'*Literacy, Orality, and the Parry-Lord "Formula": Improvisation and the Afro-American Jazz Tradition*'*,
       International Review of the Aesthetics and Sociology of Music, Vol. 22, No. 2, Dec 1991, p.158

techniques, or 'pathways' — ways of moving from one thing to another — are essential for competent improvisation. Much as in verbal language fundamental syntactical usages must be present for meaning to exist, even where expression may not be at all pre-planned, in musical improvisation also such thoroughly internalised techniques are essential for fluency and coherence. Using his analyses of Parker's solos, Martin describes how these formulaic movements are combined with other thematically developed melodic elements (from the original melody of the tune, and elsewhere) to create entirely original pieces. Similarities may be seen in Parry and Lord's conception of formula as used in epic poetry, and that in jazz improvisation. There are 'rules and musical-linguistic formulas which govern the realization of both jazz and the epic'[1]. In many improvising music traditions — Javanese gamelan, those of various Middle-Eastern and South Asian cultures, (as well as in South Slavic epic poetry, and in jazz) — formulaic patterns are initially memorised. These patterns, in all of these traditions, are learned specifically with a view to their facilitation of improvisation. Referring to the similarities in jazz improvisation and traditions of oral poetry, Martin mentions studies which have conceived of formulaic elements as being somewhat like chemical elements which may be combined into numerous different molecules[2]. He goes on to quote Taplin, referring to this aspect of Homeric verse:

> There has been a tendency, however — partly due to the molecular or 'building block' analogy — to reckon the range of combinations and possibilities of expression to be far more limited than they are.[3]

Rather than 'formula' necessarily implying lack of original content then, in this light it may be seen as a tool enabling creative expression.

The psychology of musical improvisational technique has been studied relatively extensively — in more precise detail, perhaps, than that of any other form of improvisation. In the process of

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[1] ibid., p.149

[2] H. Martin, *Charlie Parker and Thematic Improvisation*, Boston: The Scarecrow Press, 2001, p.121

[3] ibid.

improvisation, the individual improviser is of necessity not conscious of the detail of the mental processes taking place. With decisions being made by definition 'in the moment', there is literally no time for such awareness; in any case, the vast majority of all mental processing is unconscious at the best of times[1]. In improvisational forms of dance and drama, as well as in music, an underlying form is generally used, referred to in psychological study as a *referent* (it is possible that there may be no referent, or that the referent may be devised in real time — these cases being referred to as 'free' or 'absolute' improvisation — but this is relatively rare)[2]. In superimposing original material on this form, certain cognitive, mental, and then physical processes must take place: incoming stimuli are received; possibilities are considered; the decision as to how to proceed is executed[3]. (The execution may be carried out simultaneously with the consideration of the next action.) In order for these processes to occur sufficiently fast, particular mental patterns and physical responses (as with instrumental fingerings for instance) must be made 'second nature'. Jeff Pressing identifies two different forms of memory training whereby competence in musical improvisation is acquired: *object memory* and *process memory*. In the former, specific forms — scales, arpeggios, motives etc — are extensively practised; in the latter, various compositional techniques, 'transitions, development and variation techniques, and methods of combining and juxtaposition are practised in many musical contexts and with many different referents'[4]. This is how it is possible to acquire the ability to not merely reorder preexisting modules, but in fact to compose in real time. As in traditions such as Slavic oral poetry as described by Parry and Lord (and in classical rhetoric), skilled improvisation of this kind can combine existing elements into new creations, 'greater than the sums of their parts'[5].

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[1] P.N. Johnson-Laird, *'Jazz Improvisation: A Theory at the Computational Level'*, in *Representing Musical Structure*, London: Academic Press, 1991, p.292

[2] J. Pressing, *'Cognitive Processes in Improvisation'*, in *Cognitive Processes in the Perception of Art*, New York: Elsevier, 1984, p.346

[3] ibid., p353

[4] ibid., p355

[5] A. Berkowitz, *The Improvising Mind,* New York: Oxford University Press, 2010, p.183

A.J. Cohen argues that, as no other form has had as much experimental psychological research done in relation to it as has music, and as 'the sensory origin of multimedia information becomes less relevant at higher levels of analysis'[1], that cognitive research into higher-order structure in music is likely to be relevant to the study of other artforms, including film. Of course, there was much earlier interest in cognitive psychological approaches to the study of film — and the connection to music. Richard Abel describes how Bergson, referring to very early cinema, compares its 'series of images' to 'the thinking process', particularly in relation to the depiction of movement, and suggests that the implication of this is that 'cinema could simulate the analytical processes of perception, memory, and conceptualization, in a narrative form'[2].

Hugo Münsterberg's early comparison of film to music is not extensive, but it does appear to have been fundamental to his discussion of the psychological effects of film. Cohen says 'Münsterberg's references to music, when taken together, are substantial, and they may provide insight into the mental processes underlying film perception'[3]. While the prose of *The Photoplay* (1916) uses frequent musical allusions rather than detailed overt comparison, there are a few instances where Münsterberg makes explicit his view of the connection between music and film. He describes music as the most complete example of an art which is symbolic of the world and capable of arousing deep feeling, yet complete in itself and without any direct representation of 'practical life'. Thus he regards it as representing the 'inner world' and, in fact, the patterning of thought, our 'inner mental play'[4]. Münsterberg does not seem to intend a direct comparison of musical and cinematic form, but he says, drawing attention to the inadequacy of comparing film to visual art or to drama, 'we come nearer to the understanding of its true position in the esthetic

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[1]   A.J. Cohen, 'Music Cognition and the Cognitive Psychology of Film Structure',
       Canadian Psychology/Psychologie canadienne, 2002, Vol.43(4), p.228
[2]   Abel, R (ed), *French Film Theory and Criticism: a history/anthology, Volume 1: 1907-1929*,
       Princeton, NJ: Princeton University Press, 1988, p.22
       Abel here cites also Deleuze's discussion in 'Cinema 1' of Bergson, cinema, and movement.
[3]   Cohen, 2002 ,op.cit., p.217
[4]   H. Münsterberg, *The Film: a psychological study — The Silent Photoplay in 1916*, New York: Dover Publications, 1970,
       pp.72-73

world, if we think at the same time of … the art of the musical tones'[1]. He believed that this very

abstraction required of both music and film greater aesthetic constraints than is the case with

other artforms. He says, 'just as music is surrounded by more technical rules than literature, the

photoplay must be held together by the esthetic demands more firmly than is the drama'[2].

Münsterberg also believed that the artistic 'unity' of a film required its 'isolation' from any

reference to the audience's 'outside interests'. He says, 'We annihilate beauty when we link the

artistic creation with practical interests and transform the spectator into a selfishly interested

bystander … A good photoplay must be isolated and complete in itself like a beautiful melody'[3].

According to Noël Carroll, Münsterberg's conception of cinema as analogous to the processes of

human thought differs from most later such conceptions in that he was using analogies to

cognitive, 'rational', processes rather than to psychoanalytical, 'irrational'/subconscious ones.

Münsterberg contrasts the 'scientific' mode of thought which works by generalising from

particular case studies, with the 'artistic', in which 'it is the particular itself which is valuable'[4];

these two modes are not in conflict for Münsterberg, says Carroll, but complementary; he notes

here similarities to theories of Bergson and Kracauer. Carroll describes Münsterberg's

comparison of film and music — they are said to both be able, by virtue of a kind of replication

of our inner lives[5], to overcome 'what he calls the forms of the outer world, namely space, time

and causality ...this, in turn, is thought to result in a satisfying freedom from striving on the part

of the viewer'[6].

More recently, Iain McGilchrist combines historical examination of the development of Western

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[1]   ibid., p72

[2]   ibid., p80

[3]   ibid., p81

[4]
     N. Carroll, 'Film /Mind Analogies, The Case Of Münsterberg, Hugo', *Journal Of Aesthetics And Art Criticism,* Vol46, Issue 4, 1988, p.492

[5]   *Carroll says, 'The mention of the free play of the mind and separation from the practical again sound the Kantian chord while Schopenhauer looms in the phrase "freed from the physical forms of space, time and causality" ',* ibid., p.494

[6]   ibid., p.493

culture generally with explanations of contemporary developments in psychology and brain physiology. Without any reference to McLuhan or in fact to media studies as such at all, he reinforces the notion that Western society's reliance on print has brought about a skewing, an unbalancing, of the relationship between the hemispheres of the brain such that 'visual', linear, information processing dominates our capacity to consider a broader, multifaceted, (arguably more 'aural') view. Music is fundamentally significant here also: stating that music preceded language as we now think of it, and postulating that language developed from music, McGilchrist presents this relationship as being a primary key to observing the origin of left-brain dominance. He says...

> To the extent that the origins of language lie in music, they lie in a certain sort of gesture, that of dance: social, non-purposive ('useless'). When language began to shift hemispheres, and separate itself from music, to become the referential, verbal medium that we now recognise by the term, it aligned itself with a different sort of gesture, that of grasp, which is, by contrast, individualistic and purposive, and became limited to one modality.[1]

Database

This chapter thus far has primarily aimed to examine some of the likely issues relating to the attribution of the potential roots of a new 'software theory' to Innis and McLuhan, and to indicate their parallel association to music. We can now move towards outlining concrete connections between motion-pictures, as particularly relevant to new media, and music.

Lev Manovich believes that computer software has become the new primary medium, 'reconfigur[ing] most basic social and cultural practices'[2], and that the social effects of contemporary media usage cannot be properly understood without appreciating this. In relation to McLuhan's notion of medium as message, Manovich says, '[j]ust as adding a new dimension

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[1] I. McGilchrist, *The Master and his Emissary: the divided brain and the making of the western world*, New Haven: Yale University Press, 2009, p.119

[2] L. Manovich, *Software Takes Command*, New York: Bloomsbury, 2003, p.33

adds a new coordinate to every point in space, "adding" software to culture changes the identity

of everything that a culture is made from'[1]. Conversational and community-enhancing properties

might not be ones generally associated with computer programming, however the database

model of media organisation enables a flexible pathway to be taken from item to item, which

may be not unreasonably   considered more 'conversational' in nature than a rigidly linear one

(such as conventional print or film/video). Manovich elaborates on the relationship of database

and narrative in a historical context:

> Rather than trying to correlate database and narrative forms with modern media and
> information technologies, or deduce them from these technologies, I prefer to think of
> them as two competing imaginations, two essential responses to the world. Both have
> existed long before modern media. The ancient Greeks produced long narratives … they
> also produced encyclopedias … Competing to make meaning out of the world, database
> and narrative produce endless hybrids. It is hard to find a pure encyclopedia without any
> traces of a narrative in it and vice versa.[2]

Cinema, also, to this way of thinking, contains such a dichotomy; nearly all films, in one sense,

create a narrative from a database — editing together a linear piece from the 'database' of

available footage[3].

For Manovich, 'what was cinema is now the human-computer interface'[4]. The visually-based

(albeit relatively non-linear) trajectories of one's online information usage are, he believes,

applications of cinematic experience to the new technological environment and are

comprehensible because of the familiarity of that experience (cinema's mode of narration having

replaced all others with 'a sequential narrative, an assembly line of shots that appear on the

screen one at a time'[5]). Conversely, film may be seen as having always been something of a

precursor to digital media, being in fact produced through 'sampling'; much as digital audio

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[1]   ibid.

[2]   L. Manovich, *The Language of New Media*, Cambridge, MA and London: The MIT Press, 2001, pp.233-234

[3]   ibid., p237

[4]   ibid., p86

[5]   ibid., p232

recording takes samples of sound at a particular rate[1], film takes samples of visual image at the rate of 24 per second.

Manovich identifies Dziga Vertov and Peter Greenaway as the filmmakers he regards as particularly significant in terms of their conscious engagement with the relationship of database and narrative. Greenaway's method of ordering elements in a deliberately arbitrary manner is seen as a means by which to subvert narrative convention. Manovich regards Vertov's *Man with a Movie Camera* (1929) as being still the most significant work of 'modern media art' in terms of 'merg[ing] database and narrative into a new form'[2].

Greenaway has stated many times his belief that cinema has been, throughout its history, shackled to literary narrative form rather than developing its own, more appropriate, structural devices. (He would prefer an 'image-based' rather than a 'text-based' cinema.) He himself, while generally retaining, to varying degrees, recognisable plots (particularly in his full-scale features), very blatantly uses other devices so as to create structures quite different from the norm. Lists, numerical and alphabetical sequences, series of images — such clearly recognisable patterning methods are used to alter conventional audience perception of the narrative. Films which most obviously exhibit such techniques include *The Draughtsman's Contract, A Zed and Two Noughts,* and *Drowning by Numbers* in which, in each case, this sequential patterning might indeed be said to provide more in the way of discernible structuring than does the narrative as such. This kind of thematic patterning may also be seen as being related to *serialist* technique, particularly in that it creates the strong suggestion that the resulting narrative is but one of many possible outcomes, and is deliberately resistant to conventional signification[3]; serialism in its

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[1]   *Currently generally from 44,100 to 96,000 times per second.*
[2]   ibid., p243
[3]   See, for instance, M. Alemany-Galway, 'Postmodernism and the French New Novel: The Influence of Last Year at Marienbad on The Draughtsman's Contract' in *Peter Greenaway's Postmodern / Poststructuralist Cinema* (ed. Willoquet-Maricondi & Alemany-Galway), Scarecrow Press, 2008

original musical form is of course quite precisely a method for the ordering of a database. In Greenaway's most recent film, *Eisenstein in Guanajuato* (2015), the techniques employed relate to the topic of 'new' media in a different, even more direct manner. From the opening sequence this is graphically presented; the screen is divided in many different ways, the dramatic shots of the fictional Eisenstein are interspersed with documentary footage, historical photographs, and shots from Eisenstein's films, and smaller images are superimposed and animated within the main frame. In this way, Greenaway makes clear an intention to make comparisons of Eisenstein's experimental spirit, at the time of cinema's early development, to the current capacity for innovative approaches to cinematic imagery. References to the 'visual music' aspect appear occasionally, with shots of the fictional Eisenstein, presumably in his own imagination, conjuring up a grand orchestra (playing Prokofiev) which shares the stage with an giant screen showing swirling crowd scenes[1].

To Manovich, Vertov is unique in his ability to use the database form for artistic purpose. Vertov's own writings refer to a database-like approach to his production methodology; in a piece titled 'On the Organisation of a Creative Laboratory' (1936), outlining his proposal for a production 'laboratory' which he believed was necessary 'to organize our work correctly'[2], he writes of '[t]he inability to preserve, from one film to another, an author's creative stockpile on film' in the Soviet production system of the time[3]. While *The Man with a Movie Camera* could be re-ordered into a banal catalog of individual 'real world' shots — machinery, editing room, street scenes, cinema, etc., etc., it is in fact interleaved with precise crafting, and employs its dazzling array of visual effects as part of its very narrative purpose. The significance of musical form to Vertov was described in Chapter 2 (*Polyphony & Counterpoint*); he should surely be considered one of the most directly *polyphonic* and *contrapuntal* of filmmakers.

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[1]   I think from his film *October: Ten Days that Shook the World*, 1928

[2]   Michelson, A (ed), *Kino-eye: The Writings of Dziga Vertov*, Berkeley: University of California Press, 1984, p.138

[3]   ibid., p.139

Manovich posits that in 'new' media the traditional relationship of narrative and database (syntagm and paradigm) is reversed. Rather than — as in a literary narrative — a story having material, printed existence, and all the alternatives existing only in the author's mind, in digital media software all the database elements are physically stored, while the narrative exists only virtually, as *links* between them[1]. Katherine Hayles regards this conception as 'seriously flawed', on the basis that such databases are not paradigmatic in the same sense as the various alternative meanings for words in a linguistic text[2]. Hayles questions what she depicts as Manovich's conception of narrative and database as 'natural enemies', believing that they are in fact 'mutually beneficial'[3]; as time and space always coexist, narrative and database also in fact 'exist in symbiosis with one another'[4]. (While he does present them as being competitive, Manovich also emphasises their mutually hybrid nature, as we have seen.) Whereas databases can expand to accommodate additional data, narratives cannot do this without changing their 'story'; in the contemporary context of pervasive databases, narratives respond by multiplying — humanising the logical, technologically-based database form, and striving for meaning[5].

The other filmmaker Manovich particularly mentions in relation to database is John Whitney, described as 'the pioneer of computer filmmaking'[6]. Whitney's films are part of a genre which may be referred to as 'visual music' films. This form has a history reaching back to the very early stages of the development of filmic motion pictures. As outlined in Chapter 2, while the animations of Richter, Eggeling, and Ruttman are widely recognised as the first applications of film to visual art, the essential musicality of their rhythmic qualities, including the use of

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[1]   Manovich, 2001, op.cit., p.231

[2]   K. Hayles, *How We Think: Digital Media and Contemporary Technogenesis*, Chicago: University of Chicago Press, 2012, p.180

[3]   ibid., p.176

[4]   ibid., p.181.

[5]   ibid., p183

[6]   Manovich, 2001, op.cit., p.236

permutational structures directly derived from a musical influence, has been underappreciated. Before discussing Whitney's significance, including the particular value of his documentation of his methodology, it will be worthwhile to briefly fill in some of the intervening developments in the 'visual music' form. These may be seen as carrying on from the innovations of Fischinger, perhaps the figure who most clearly connects the early period, in Europe, to the subsequent one, most notably in North America.

'Visual music'

Len Lye, a New Zealander who, after extensive travels in the Pacific region, worked in Britain and then the US, began making 'visual music' films almost as early as Fischinger, with *Tusalava* (1929) which uses a technique of actually etching onto the emulsion of the film. He used combinations of etching, drawing and painting on his films, which are also noted for the particularly painstaking printing and colour grading techniques employed. He also sometimes interspersed 'real-world' footage with the animated forms, as in *Trade Tattoo* (1937). Lye generally used existing pieces of music as the basis for his films. He often matched particular shapes to particular sounds, for instance string-like for guitar, circular for bongos in *A Colour Box* (1935). He also often visually represented several different rhythmic elements of the music at once, rather than only one at a time.

Canadian animator Norman McLaren developed the use of 'graphical sound'. He initially scratched shapes directly onto the soundtrack edge of the film, and later developed a quite sophisticated method of representing on pieces of card specific pitches, volume-levels, and (by changing the shape of the representation of the waveform) timbres, and then photographically transferring various combinations of these onto the film so as to create his own music tracks[1].

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[1] *Mollaghan presents a quite detailed outline of his methods in this respect.*

McLaren made various different forms of animations, including several using human performers, notably *Neighbours* (1952). His 'visual music' films are among the most outstanding of the form. *Begone Dull Care* (1949), made with Evelyn Lambert, features a score by the Oscar Peterson Trio. The music is jazzy, but carefully arranged to create the sequences to suit the desired visual sequences — varying in texture and tempo, enabling a wide range of corresponding visual effects. *Blinkety Blank* (1955) is one of the most detailed of all 'visual music' animations in terms of the absolute integration of image and sound, both temporally and expressively. The score, 'contemporary classical' in style and instrumentation, also includes precisely timed sound effects; while descriptions of the film frequently describe the music score as 'improvised jazz', it is in fact mostly (likely entirely) precisely composed, by Maurice Blackburn, for flute, clarinet, oboe, bassoon, and cello. Most of McLaren's other films do in fact feature jazz scores.

Fischinger, Lye, and McLaren, as well as all using techniques of camera-free animation — drawing/painting/etching directly on film — also all made graphical notes of the 'dynamics and accents of music' to use as a guide for synchronising their visual production[1].

From about 1940, John Whitney and his brother James (who also later made significant films of his own), made several films based on the application of serial compositional technique to visual patterning. Using 8mm film, and then 16mm (largely to facilitate the addition of sound), they built their own optical printing machines to enable the systematic permutations they required. John Whitney's documentation of his approach to his innovations in graphical filmmaking amounts to perhaps the most detailed and precise outline of an application of musical form to visual art, certainly in modern history. Whitney had studied musical composition with René

A. Mollaghan, *The Visual Music Film,* Basingstoke: Palgrave Macmillan, 2015, pp.123-127

[1] Mollaghan, 2015, op.cit., p.109

Leibowitz (disciple of Schoenberg, teacher of Boulez) in Paris in 1937-38. The ambition to create a methodology by which to apply to visual art a similar structural rigour to that traditionally applied in music was the basis of all his subsequent work. What he saw as the fundamentals of music — that music represents motion, and that it is the *combinations* of notes and the measured relationships between them that create the possibility of music — provided him with 'certain fragments of insight with which to approach the problem of visual motion'[1]. As 'the supreme example of movement become pattern'[2], music was the model for what Whitney aimed to achieve for a temporal visual art. He developed a theory of 'graphic harmony' which aimed to achieve structured continuity from one visual permutation to the next. Dissatisfied with the 'film symphony' style of filming real world objects, he began to conceive of means by which to generate imagery of a more fluid nature. Going beyond the notion of creating visual 'scales' by simply creating colour sequences to correspond directly to the up-and-down movement of musical scales or melodies, Whitney devised precise incremental schemata for the systematic plotting of graphical shape and movement. This was further developed into a system of synchronisation whereby the animation machinery could be set so as to enable two or three motions to be produced in precisely the same time span, resulting in what Whitney called 'a method to compose polyphony'[3]. A sound generating device which read waveforms directly inscribed by adjustable pendulums onto the film, thus altering pitch and timbre, was also synchronised to the graphics machine; the effect of this may be heard/seen in *Five Film Exercises* (1944). In his book of 1980, Whitney refers back to these early experiments and posits that digitisation should be on the point of enabling a 'revolutionary' capacity to compose sound and image on the same machine[4].

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[1]   J. Whitney, *Digital Harmony: On the Complementarity of Music and Visual Art*, Byte Books/McGraw-Hill, 1980, p.38
[2]   ibid., p.44
[3]   ibid., p.81
[4]   ibid., p.95

Whitney continued to develop mechanical animation techniques through the 1950s, designing and building a sophisticated analogue computing machine in order to be able to produce the finely-calculated graphical movements he envisaged, and using it for commercial work, particularly in television. In 1958 he collaborated with Saul Bass on the famous title sequence for Hitchcock's *Vertigo*. In 1961, he produced the short film *Catalog* using this analogue machine; the film was always intended as an actual catalogue, and was used a show-reel, although it is often appreciated for its aesthetic qualities in any case. Whitney's mechanical 'slit scan' technique was apparently the inspiration for Douglas Trumbull's special effects in Kubrick's *2001* (1968).

Whitney expressed his belief in the importance of reestablishing the cooperation between art and science. He believed that the systematic control of the parameters of visual art, particularly of colour, was in its infancy, and that it would be able to be developed in such a way as to bring about a complete dynamic repertoire, a 'periodic' theory, which would enable visual composition of a kind truly comparable to the techniques developed over many centuries in music; he saw this as the continuation of an underappreciated 'musicalization' of visual art that had been the preoccupation of the previous one hundred years. He was of the opinion that, in comparison with music, 'we have not even begun to understand metrical or rhythmic organizations of time in cinematic terms'[1]. From 1966 onwards, he was able to use digital computers for his investigations; he regarded the computer as 'an instrument for graphics that is analogous to the variational power of all musical instruments and the mathematical foundations of all musical form'[2].

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[1] ibid, p.203
[2] ibid, p.168

Flusser

The production and dissemination of media in the broad sense has always been directly related to developments in technological innovation. From the latter part of the twentieth century though, the use of such devices became gradually much more widespread amongst individuals generally in many parts of the world, through digital cameras, desktop computers, smartphones, etc. A theorist who deals extensively with the development and social implications of digital imagery, and another for whom the model of music plays a very significant role, is Vilem Flusser. Flusser now appears to have accurately foreseen the increasing significance of digital technology in society generally.

Flusser's views arise fundamentally from the conviction that our culture's historicism, and linear mindset generally, are primarily the result of the pervasive influence of written form. Obviously here, and in fact in several other important elements of his work, there is a notable similarity to McLuhan. Flusser also believes that this linearity, the 'one-dimensionality of history'[1], is declining, leaving us without traditional certainties. This necessitates devising new means of consolidating chaotic cultural elements into graspable forms (making them 'concrete', in Flusser's terms), even though in certain important respects this also engenders a return to ancient cultural roots. His answer to this problem is the appreciation of what he terms *technical images;* this conception stems from his very detailed discussions of the nature and social significance of photography. The concept is outlined and developed in the book *Into the Universe of Technical Image* (written in 1980, the English translation published in 2011). An unusual work, this is a fantasy presented in non-fiction form (with occasional disclaimers); a projection of possible developments, it is at once playful and deadly serious. The writing is 'flamboyant and polemical'[2], and could perhaps be described as dialectical, particularly in its presentation of

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[1]   V. Flusser, *Into the Universe of Technical Images*, Minneapolis and London: University of Minnesota Press, 2011, p.15
[2]   M. Poster, 'Introduction' to Flusser, 2011, op.cit., p.xxiv

likely social developments as alternately utopian and decidedly dystopian.

For Flusser, whereas writing brought about a transfer of belief systems from an 'iconic' (including magical) mode to a linear narrative one, mechanical/chemical/electronic apparatus-based technologies have brought about a return to the perceived significance of the image. Mechanical/chemical photography marks the first stage in the development of *technical images*; all forms of photographs are 'envisioned surfaces computed from particles'[1]; this is very similar to Hansen's point in relation to Kracauer, regarding the 'precursor to pixels'[2]. Printed photographs differ from traditional, pre-industrial, pictures in that they are generally not valuable as objects in themselves; their *information* is contained on their surface rather than in their material being and it is not destroyed when they themselves are destroyed (there is generally a separate original, and there may be other copies). The progressive development of the *technical image* is traced in 'an increasingly better automated apparatus'[3]. Cameras have always been to some degree 'automated'; they are 'programmed' to function in particular ways. Automation quickly slips beyond human control; in using these standard functions, human users are in fact 'programmed' by the apparatus. Even where a photographer wishes to deviate from these normal functions, it is only ever possible to achieve what is 'virtual' within the camera program. When photos become 'electromagnetized' rather than chemically based they are no longer subject to entropy (potentially can last 'forever'), can move and sound, and can be altered by those who receive them; thus 'information abandons its material basis'[4].

In an essay written over a decade earlier[5] than *Into the Universe ...*, Flusser outlines his views

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[1]   Flusser, 2011, op.cit., p.33
[2]   Hansen, 2012, op. cit., p.29
[3]   Flusser, V, 'The Photograph as Post-Industrial Object: An Essay on the Ontological Standing of Photographs', *Leonardo*, Vol. 19, No. 4, 1986, p.330
[4]   ibid., p.331
[5]   'Line and Surface' (1973), in V. Flusser, *Writings*, Minneapolis: University of Minnesota Press, 2002, pp.21-34

regarding the relationship of the linear, historicist mindset engendered by print, and the 'surface thought' involved in viewing both images and moving-pictures. In this outline he treats all representations — everything other than direct experience of the world — as 'fiction', even if factually based. Writing is 'linear fiction' — associated with elite culture, objective, conscious, deliberately specific and thus restricted in its message. Film, tv, pictorial representations are 'surface fiction' — subjective, unconscious, rich in messages. Linear fiction is becoming less able to adequately represent contemporary real-life experience; surface fiction, as it becomes more and more technically perfect and rich, is more and more able to effectively substitute for real-world phenomena. Thus we lose our sense of reality and become alienated. This may be the result of a process whereby surface (or 'imaginal') thought begins absorbing linear (or 'conceptual') thought, which could result in its becoming clearer and more objective while remaining rich in meaning. Sciences and (non-pictorial) arts are increasingly utilising surface thought as a result of the increasing sophistication of surface media. '[T]he synthesis of linear and surface media may result in a new civilization'[1], enabling the rediscovery of a sense of reality. Flusser foresees the circumstance in which viewers will be able to compose their own programs — combining existing material in any order desired, and recording their own, including themselves and others, for inclusion. This leads to the kind of 'game' that is described in the later work as constituting 'telematic' society (telecommunication + informatics). The only alternative is said to be that imaginal thinking fails to incorporate conceptual thinking, resulting in general alienation and totalitarian mass-consumerism. In *Into the Universe …,* Flusser proposes that we are inevitably developing towards a 'telematic' society. While traditional certainties have currently eroded to the point where '[p]erception theory, ethics and aesthetics, and even our very sense of being alive are in crisis'[2], the potential exists for unprecedented levels of collaborative control of our very reality. With any sense of true 'meaning' as being inherent in

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[1]   ibid., p31

[2]   Flusser, 2011, op.cit., p.38

the world obsolete, we must grasp the opportunity to project our own meaning upon it. Flusser believes that the direction of technological development will make possible the emancipation of human beings from the workaday world, and enable their destiny as collaborative 'envisioners' and producers of information — and in this he appears to very presciently anticipate a world-wide-web kind of communications system. In combining all the arts (extending the fixed image to enable sound and movement), and reconciling the separation of science and art, technical images will facilitate the ultimate version of 'total art'[1]. The model for human behaviour in this conception of society is that of 'chamber music', as will be discussed shortly.

It is virtually impossible to escape the influences of *technical images* in the contemporary world, from television, magazines, computer screens, etc. Public space is severely diminished, and people largely take in such information in private contexts. *Technical images* thus tend to isolate people, yet Flusser points out that attempting to resist such influence would isolate them even more. In a further example of technological prescience, he describes a feedback loop between images and receivers such that receivers can choose content that they prefer, which then provides more marketing information to image providers, and so on[2]. More and more aspects of life, up to and including major political events, are designed primarily for the production of *technical images*. As they function in contemporary society, says Flusser, with a centralised broadcasting system of distribution, *technical images* tend, purely in technical terms, to fascism. A world-wide similarity in mass culture is symptomatic of 'a global totalitarianism of apparatuses'[3]. Our current nascent capacity for general input into media content, which is subsequent to Flusser's work, may be seen by some as moderating this effect, and this would support his further point: if the technology can be used to connect individuals one to another, and to enable dialogue

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[1]   Flusser, 1986, op.cit., p.331
[2]   Flusser, 2011, op.cit., pp.53-55
[3]   ibid., p.75

between them, it may facilitate genuinely democratic structures. He emphasises the importance of the system not being controlled by governmental or commercial interests, and that there must therefore be a consensus in the community at large that it is necessary to bring such changes about. Flusser did not see this consensus arising in 1985 but he saw a kind of social entropy, marking the breakdown of an obsolete society and potentially bringing about the impetus for a new, more humane system. He warned of the danger that this may not be able to be brought about in time to avoid the complete overwhelming of society by the apparatuses; in fact, banality in both chatter and imagery on a global scale are mentioned as symptoms of the lack of appropriate response[1].

Flusser outlines what he regards as the essential similarity of photography and telegraphy. Whereas these have generally been regarded as two entirely separate streams of technological development — film as chemical, telegraph as electromagnetic — he believes that they are both 'constructed … out of particles [and] … inherently dialogical'[2], and that the recent process towards their convergence is a tardy recognition of the fact that they are, technically, fundamentally the same. He predicts the ability for people generally to communicate universally using images, for social, commercial, and even political purposes. 'Dialogue', in this sense, is a form of play; it involves already existing, stored information being recombined in such a way as to create new information; there are strong resonances here with Deluezian/Guattarian rhizomatic assemblages, and the notion that various alternate narratives may be formed from within a given database. A telematic society, says Flusser, would involve everyone in a creative process of communication which could ultimately form a kind of world-wide 'inner dialogue'. (McLuhan, also, was hopeful that electronic communications technology could ultimately enable

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[1]   ibid., p.86
[2]   ibid., p.80

universal human spiritual connection.[1]) In fact, if telematic society were conscious of its 'brain-like', networked character, it could be the first to become truly free, through deliberate, collaborative, structural manipulation. Flusser expands the notion of 'the death of the author', saying that new information will arise through the linking of human memories to artificial ones which are capable of storing the vast amounts of data now routinely available. In a true telematic society, rather than as in the current situation people being programmed by apparatuses, increased artificial intelligence would lead to increasingly capable humans; this requires general awareness of the current problem however. The revolutionary, collaborative, creative power of telematic society would make all the culture of the past appear as 'a mere starting point'[2]. Furthermore, preserved in a telematic cultural memory, our information need no longer be in danger of dying with us.

This vision of telematic society is conceived as being similar to the human brain and nervous system. In the network structure of the society, information runs between what Flusser terms 'knots', in fact each separate human or artificial intelligence. In the kind of serious 'play' that is envisaged here, various projections, or models (assemblages?) can be constructed in order to investigate alternative socio-historical scenarios of all conceivable kinds. The creative passion that can result from such a system is purely cerebral and indicative of the already actual circumstance whereby images are gradually removing us from animal physicality. Ultimately, in this scenario, physical human bodies become gradually virtually superfluous, actual 'work' being done by robots, meaning also that economic infrastructure as we now know it is largely unnecessary. Flusser acknowledges that much of this is difficult for those of us living now to regard favourably. At certain points, Flusser emphasises that his primary goal in presenting this

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[1] See 'The Playboy Interview: Marshall McLuhan' (1969), pp.22-23, reproduced at:
http://web.cs.ucdavis.edu/~rogaway/classes/188/spring07/mcluhan.pdf , accessed 6-6-17

[2] Flusser, 2011, op.cit., p.101

work is to provoke consideration and discussion of these vital issues.

Chamber music

At the end of *Into the Universe of Technical Images*, Flusser presents for the first time his overarching model for his concept of 'telematic society': that of 'chamber music'. While the entire character of the concept is in a sense fanciful, it undoubtedly springs from an intention of the utmost seriousness. In the chapter *Chamber Music*, and in two lectures[1] from the 1965 series *The Influence of Existential Thought Today* delivered at the Brazilian Institute of Philosophy, Flusser makes clear the significance he attaches to the role of music. As with much of his work, he uses the original form of the relevant philosophical concepts in developing his own postulations; thus his view of the nature of music is primarily based on the ancient Greek *musiké techné*, considered the ideal model for all the arts[2]. In more modern times, Flusser believes, what he calls 'pure' music is 'the greatest contribution of the Modern West to humanity's treasure'[3], more significant in Flusser's view than that of science! The notion of 'pure' music raises questions in relation to Flusser's attitude to Romanticism[4], however it would seem that he does not intend the term to imply the sense of music being completely apart from the worldly events around it, though very much the sense of its being completely free of any obligation to *represent* anything. This somewhat Schopenhauerian view of music is very important here; as with mathematics, music is said to abstractly represent the process of thought itself. Flusser believes that music presents the 'beauty' of thought, while mathematics and logic present its 'rigour'[5]. Through the visceral nature of sound, music imparts a bodily reflection of the mathematical

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[1]   * V. Flusser, 'On Music', in Branco, et al, *Flusser Studies 17*, 2014, accessed 17-10-16 at
       http://www.flusserstudies.net/archive/flusser-studies-17-double-issue
       * V. Flusser, 'On Modern Music', in Branco, et al, 2014, op. cit.
[2]   V. Flusser, 'On Music', in Branco, et al, 2014, op. cit., p.1
[3]   ibid., p.3
[4]   A. Goh, 'The Dimension of Sound in Flusser', in Branco, et al, 2014, op. cit., pp.9-10
       The influential, Adorno-influenced, 'new musicology' from the 1960s onwards reacted against notions of 'pure' or 'absolute' music with interpretations based on socio-cultural factors.
[5]   V. Flusser, 'On Music', in Branco, et al, 2014, op. cit., p.4

patterning expressive of thought[1]. In these respects, electronic and computer-generated music may be seen as relating directly back to the very origins of musical and mathematical theory in ancient Greece[2]. Wolfgang Ernst relates this notion of 'pure' music to his (Ernst's) concept of musical/mathematical 'sonicity' as a theoretical/philosophical phenomenon separate from sound itself; this is discussed in the next chapter. Paulo Chagas points out that a likely model for 'telematic' cooperation might be seen in the *electroacoustic* studio, as developed in the 1950s, becoming such a major influence in the second half of the century, and promot[ing] the systematic exchange of information between different kinds of partners such as composers, performers, engineers, technicians, and listeners, all using apparatuses'[3]. The 'rhythm of life' — once obvious to us due to our close involvement with seasonal patterns — is still in fact the rhythm of our thought-patterns. Rather than merely an analogy or metaphor, the recognition of this musical/mathematical rhythmic patterning could constitute a 'realisation' of thought[4]. In fact, by making this patterning 'graspable', music is said to make what is abstract 'concrete'[5], enabling us to see a way to re-envisage our reality. Both 'pure' music and technical images, says Flusser, are based on mathematics; both are 'calculated and computed'[6]. With the advent of computer technology, the convergence of visual and aural art, prefigured in abstract painting and graphical musical scores, rapidly moves towards completion; the division of sound and vision is 'obsolete'. Technical images become 'pure' art — as with music, free of any semantic signification.

As mentioned earlier, 'chamber music' is the model for human behaviour in the conception of telematic society. The notion of chamber music used here is of a very particular nature, rather

[1]   M.C. Branco, 'Between Representation and Projection: Music in Vilém Flusser's Work', in Branco, et al, 2014, op. cit., p.3
[2]   W. Ernst, 'Discovering the Ears on Flusser's Face: A respectful revision', in Branco, et al, 2014, p.2
[3]   P. Chagas, 'Creativity with Apparatuses: from Chamber Music to Telematic Dialog', Branco, et al, 2014, op. cit., p.3
[4]   V. Flusser, 'On Modern Music', Branco, et al, 2014, op. cit., p.1
[5]   ibid., p.4
[6]   Flusser, 2011, op.cit., p.164

different from the one in conventional use; it is the relationships amongst the players in a chamber group that are significant; audiences are in fact undesirable. As in certain forms of Renaissance ensemble and in jazz, a score or 'program' is a guide or sketch for improvisation. Through consensus, the players both support each other and express themselves individually. In Flusser's vision of the future, people sit in their individualised spaces, pressing buttons to initiate automated functions, collaborating in the production of technical images. Telematics extends upon the musical model in that all 'players' make decisions about the content of the 'game' all the time, simultaneously, rather than the rules being such as to facilitate the creation of a linear piece; '[t]hat is the difference between pressing on a piano key and on the key of an apparatus'[1]. (Flusser sees the use of 'keys' of various kinds, switches, buttons etc. which enable the operation of apparatuses, as a movement of human culture to the fingertips.[2]) He describes his idea of the way citizens of the telematic society create as 'envisioning'[3]. 'Envisioners', pressing buttons to activate totally automated apparatuses, are prevented from having any direct control of their functions once activated, but by the same token thus freed to concentrate fully on the surface of the technical image. This is as opposed to operators of machines who work *through* the machines to their creative product, always focused on the underlying processes involved; the example cited is that of writers with their typewriters. Through 'aleatory play [which] has become strategic'[4], the telematic society will enable humans to become truly free for the first time. This sense of 'aleatory play' emphatically recalls the rhetorical aspect (as discussed earlier in this chapter) and, given Flusser's 'chamber music' analogy, again ties it quite concretely to music.

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[1] ibid., p162
[2] ibid., p29
[3] ibid., pp36-37
[4] Flusser, 2011, op.cit., p.94

6. The Contemporary Context

In contemporary production practice, as well as in theoretical work, one can see the pervasive presence of the issues with which we have dealt in previous chapters. In cinema itself, and in the multiplicity of newer forms in which the moving image is used, a profound musicality is a major influence on recent innovation. In academic work also, music and sound have recently come to the fore in such a way as to drastically reinvigorate certain issues at the very heart of the study of the moving image and media generally.

Contemporary cinema

Much cinema in recent years, including the relatively mainstream, has displayed increasing expression of multiplicity, simultaneity, and varying temporality. In many ways, these characteristics may be seen as having become continually more pervasive as contemporary experience generally has become more affected by these factors — somewhat overwhelmed by them some might say — through the sheer amount of media product of multiple kinds constantly surrounding one. The ubiquitous ability to select from an array of options — through remote channel switching on television sets, choosing DVD items, and particularly now the constant clicking from one thing to another online — has undoubtedly influenced general audience expectations of visual culture, including film. While film, and perhaps music also, still express the fundamentally linear nature of our existence (in the sense that we are born, we live moment to moment and hour to hour, and we die), contemporary cinema tends to contain the multiple layers, rapid changes, and variable time sensations of contemporary experience, and also expresses the altered sense of space in the contemporary world enabled through rapid travel and instantaneous communications.

Differing views have been put in relation to the effect of these developments on cinematic narrative. Bordwell has made the case that, while there have indeed been pronounced stylistic changes, these do not amount to a rejection of 'classical' film style. He gives this stylistic tendency the name 'intensified continuity', the primary features of which are described thus: 'fast cutting rate, the bipolar extremes of lens lengths [extreme telephoto; extreme wide-angle], a reliance on tight singles, and the free-ranging camera'[1]. Bordwell points out that this in many ways recalls aspects of early, silent cinema — particularly faster editing. Strong similarities have frequently been noted between the current (digital 'multimedia') period and early cinema, in terms of audience response to the new technological capacities of the respective periods, but also in terms of certain very similar stylistic effects, such as split-screen and superimposition[2]. Furthermore, the technique of plotting an overall 'visual arc' for a film, often involving systematically altering technical and stylistic parameters (such as 'lens length, camera movement, lighting, color, and setting') according to narrative patterns, is said to have become standard in US filmmaking, and to be apparently derived from Eisenstein; Bordwell describes the derivation of this influence, and its dissemination through the film program at the University of Southern California[3]. This would seem, then, to relate directly to the kind of segmentation — and in fact to the original conception of Soviet montage — used and advocated by Meyerhold and then Eisenstein, in theatre and then in film[4]. Meyerhold's relation to the development of montage in this context is indicated in the quote — 'Given man's power of memory, the existence of two facts in juxtaposition prompts their correlation; no sooner do we begin to recognize this correlation than a composition is born and its ideas begin to assert themselves'[5]. While there is no suggestion that this current tendency particularly entails formal parametric

[1]   D. Bordwell, *The Way Hollywood Tells It*, Berkeley: University of California Press, 2006, p.137

[2]   See, for example, T. Elsaesser, 'Early Film History and Multi-Media', in Chun, WHK & Keenan, T, *Old Media, New Media*, New York and London: Routledge, 2006, pp.14-15

[3]   Bordwell, 2006, op. cit., p.173

[4]   See D. Bordwell, 'The Idea of Montage in Soviet Art and Film', *Cinema Journal,* Vol. 11, No. 2, Spring, 1972, pp.9-17

[5]   ibid., p.10

sequencing of the *serial* variety, it certainly brings about 'overt play with form'[1], though in Bordwell's view always ultimately in the service of a traditionally devised story.

Such 'segmentation' leads some writers to conceive of the formal structuring of such contemporary films as 'modular', with stylistic parameters often markedly altered between sections. This modularity is often considered to arise from a general familiarity with a database aesthetic as described by Manovich. Allan Cameron posits that while this generally still supports a conventional narrative (as with Bordwell), there are numerous examples where it supports a fragmentation of time — that is, where the narrative presentation of chronological events is particularly non-sequential[2]. Frequently cited examples include *Pulp Fiction* (Tarantino, 1994), *Memento* (Nolan, 2000), *21 Grams* (Iñárritu, 2003), and it is perhaps noteworthy that such examples are often quite mainstream in terms of their distribution levels. The significance of this as a perceptible trend in narrative development is that, rather than simply functioning as conventional 'flashbacks', such films often 'evoke a mood of temporal crisis by formally enacting a breakdown in narrative order'[3], thus perhaps expressing, and prompting, consideration of the human experience of time in relation to chronological time and to the contemporary world. Cameron puts the interesting view that these films 'signal the point at which these [modular, modernist] aesthetics have been accepted by the popular culture at large' and that this argument 'challenges the notion of a distinct 'rupture' between the modern and postmodern'[4]. Yet, according to this view, this is generally done without completely doing away with conventional narrative, such films occupying a middle ground between classical narrative and experimentalism.

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[1]   Bordwell, 2006, op.cit., p.184
[2]   A. Cameron, *Modular Narratives in Contemporary Cinema*, New York: Palgrave Macmillan, 2008
[3]   ibid., p.2
[4]   ibid., p.16

Certain other recent writers claim that these characteristics — multiplicity, simultaneity, varying temporality — have in fact brought about a substantial alteration to traditional Hollywood narrative in recent times, and relate this process to an increased 'musicalisation' of visual culture generally.

Carol Vernallis reacts directly to Bordwell's view with the assertion that in fact there has been greatly increased 'audiovisual' tendency, and that this may be largely attributed to the influence of music video and online video platforms. Films with 'unusual formal structures'[1] — including such examples as *Tree of Life* (Malick, 2011) and *Melancholia* (von Trier, 2011) — use 'musical' structures which enable the subversion of traditional narrative, or which may be superimposed on top of conventional story structure. Multiple, interweaving plot-lines and character trajectories are sometimes barely interconnected. As well as a general 'musicalisation' of soundtracks — whereby all the various audio elements (including dialogue as well as ambient sounds, 'effects', and actual music) are often composed into music-like arrangements — Vernallis identifies the frequent phenomenon of 'audiovisual passages'[2] in film, standing out from the general body of the narrative/plot, having particularly dense texture, and holding audience attention through their affective mood and active pace. 'Intensified accelerated films' — such as *Moulin Rouge* (Luhrmann, 2001), *Eternal Sunshine of the Spotless Mind* (Gondry, 2004), *Day Watch* (Bekmambetov, 2006) — change constantly, in such a way as to force the audience's attention to always remain in the 'now'[3]. Again, modularity is a prominent factor; the influence of music video — whereby the generally quite clear divisions of song sections (verse, chorus, etc) are very often also used as segmentation points for contrasts of visual content and

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[1]   C. Vernallis, *Unruly Media: YouTube, Music Video, and the New Digital Cinema*, New York: Oxford University Press, 2013, p.34

[2]   ibid., p.67

[3]   ibid., p.79

style — may arguably often be seen in the contemporary tendency for differing visual styles to be interspersed according to changes in perspective within a narrative. More straightforwardly, image cutting according to regular musical rhythms, as commonly found in pop/rock music videos, is now regularly used in certain sequences of mainstream films (this until relatively recently tending to be generally considered uncinematic). This 'mixing' aesthetic, the common contemporary sense of a capacity to juxtapose and combine disparate elements into new works, may in fact be seen as deriving from several sources, though ultimately from similar (digital) origins. As well as the music video influence, and the general expectation of multiplicity derived from audience members' own technology usage, post-production technology itself is undoubtedly a factor. Contemporary digital editing software, as now used virtually universally for audiovisual postproduction, certainly tends to facilitate the visual conception of the compositional layout of a piece of work, not only in the direct correspondence of image layers and audio layers, but also in the overall patterning of the various elements throughout the piece as a whole. It has been variously noted that this suggests the realisation of an Eisensteinian conception of 'vertical' and 'horizontal' structure[1]. Michel Gondry (director of *Eternal Sunshine of the Spotless Mind*) is also a noted director of music videos, and has been a semi-professional drummer. Using methods reminiscent of 'visual music' animators, or even those of Eisenstein or Vertov, he uses graphical representations of the main accents in the music against which to notate significant visual events. An example of this can be seen in a video about his preparation for a music-video production titled *Star Guitar*[2]. A rather different version of music-video/cinematic hybridity is Beyonce Knowles' *Lemonade*, a 'video album' which juxtaposes sequences which have been described as being 'art-film' in style with music-video song clips[3].

[1] *See, for instance,* A. Mollaghan, *The Visual Music Film*, Basingstoke: Palgrave Macmillan, 2015, p.16. *She mentions also Chion's view that 'harmony' rather than 'counterpoint' is more applicable to Eisenstein's conception.*
[2] *'making of Star Guitar',* https://www.youtube.com/watch?v=GF0-wGbRqEs&list=RDGF0-wGbRqEs *, accessed 4-4-17*
[3] C. Vernallis, 'Beyoncé's Lemonade, Avant-Garde Aesthetics, and Music Video: "The Past and the Future Merge to Meet Us Here" ', in *Film Criticism*, Volume 40, Issue 3, 2016, http://dx.doi.org/10.3998/fc.13761232.0040.315 , viewed 9-4-2017

Danijela Kulezic-Wilson (2015) compares in detail musical and cinematic uses of 'time, rhythm and movement'[1]. She puts the case that the increased musicalisation in many films has led to a shift in conventional narrative, and even at times 'the abandonment of classical narrative rules altogether'[2]. She analyses in detail the films *Dead Man* (Jarmusch, 1995), *Pi* (Aronofsky, 1998), and *Anna Karenina* (Wright, 2012) to investigate the significance of musical form in each case, and yet their very different resulting styles. Jarmusch has described the strong influence of music on his work, particularly in relation to rhythm. His films are often very modular, with scenes often markedly divided by sections of black, which has been compared to periods of rest in a musical piece; Kulezic-Wilson's analysis of *Dead Man* has a quite detailed discussion of his use of these 'blackouts' in relation to musical form, and their relation also to Japanese artistic form (silence/gaps between structural elements). In Aronofsky's *Pi*, Kulezic-Wilson identifies an overall technical and structural approach drawn from *hip-hop* and *techno* musical styles. Visual aspects of the film, as well as audio, demonstrate the kind of patterning related to these musical forms, including a form of *sampling* where particular footage elements are used and re-used in montage effects to emphasise certain recurring events in the narrative. Aronofky's next film, *Requiem for a Dream* (2000), notably features the characteristics mentioned earlier in relation to stylistic variation according to narrative viewpoint. In Wright's *Anna Karenina*, a pronounced and overt theatricality works such that 'the rules of classical [cinematic] narration are fully abandoned'[3]. This variety of theatricality however, is very much a musicalised one. Diegetic sound is regularly incorporated into the texture of the soundtrack in a musically rhythmical manner; the actors' movements are literally choreographed — in general, not only when dancing; the camera movements, and the editing are structured in sympathy with these other elements; the 'nuts and bolts' of theatrical production are frequently brought into view (as though substituting for the actual technical apparatuses of cinema). Wright was inspired to take this path by

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[1]   D. Kulezic-Wilson, *The Musicality of Narrative Film*, Basingstoke: Palgrave Macmillan, 2015, p.3

[2]   ibid., p.5

[3]   Kulezic-Wilson, op. cit., p.163

researching the theories and methods of Meyerhold (Eisenstein's theatrical mentor); this influence is strongly in evidence in the contemporary 'musicalised' theatre, or 'composed' theatre forms, as will be discussed below.

Other directors who emphasise music as their primary influence further demonstrate wide stylistic diversity. Michael Haneke is quoted as saying that the structuring of his films is always based on musical methods[1]. Elsewhere, he emphasises that this is a matter of rhythmic patterning, and that a film must have 'the feeling of music'[2]. Alejandro González Iñárritu (*21 Grams,* 2003; *Babel,* 2006; *Birdman*, 2014) speaks of the musical stylistic influences used as the primary inspirations for his films[3]. He has a background in composition for film, and describes the structural conception for his films as also being a fundamentally musical one[4]. One of the most widely cited contemporary examples of multiplicity in film is *Timecode* (Figgis, 2000). It is telling that this rather radical contemporary extension of cinematic simultaneity was conceived and executed through directly musical technique. Rather than implying 'non-linearity' by the fragmentation of time sequence, as many other films do, *Timecode* directly attempts a musical level of multiplicity, a literal polyphony in a sense, with four 'parts' playing simultaneously. Figgis says, 'This movie is music. … It is all about harmony. This film's got an entirely musical structure'[5]. He describes the structure of the film as being conceived as similar to that of a string quartet, and he in fact wrote the script using musical manuscript paper. Each written 'bar' on the page represented one minute of real time, and the entire project was precisely coordinated using synchronised watches (hence the title). The four screens simultaneously portray four separate, though interconnected, story segments. Each of the four is shot in a single continuous take,

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[1]   ibid., p.29

[2]   G. Andrew, 'The Interview: Michael Haneke', *Sight and Sound*, London 22.12, December 2012, p.54

[3]   YouTube: 'Aljandro Gonzales Inarritu on Music in Films', accessed 4-4-17

[4]   Kulezic-Wilson, op. cit., pp.32-33

[5]   T. Veneruso, *An Interview with Mike Figgis, Director of "Time Code",* 1999, http://www.nextwavefilms.com/timecode/index.html,   answer 4, *last viewed 8-12-17*

which might be considered similar to a musical performance[1]. By adjusting the audio levels, Figgis directs audience attention to particular screens where necessary to follow important plot developments. At all times, however, it is possible to choose to observe any of the various separate parts of the narrative according to individual choice.

Various writers identify, in the temporal and spatial disjunction in certain films, the exposure of the limitations of traditional narrative in expressing the multiplicity of contemporary experience. Cameron cites *Code Unknown* (Haneke, 2000), and *Timecode* (Figgis, 2000) as examples of this in relation to temporal and spatial structure, respectively[2]. Kulezic-Wilson , referring to Kramer's categorisation of 'subjective' temporal structures in twentieth-century musical composition (as discussed in Chapter 4), posits that the fact that contemporary film demonstrates similar concerns 'invites us to consider their nature and relationship to reality'[3]

Composed theatre

'Composed theatre' refers to the recent tendency, particularly in Germany and in Britain, to build on the twentieth-century compositional interest in treating 'the theatrical stage and its means of expression ... voice, gesture, movement, light, sound, image, design [etc.] ... according to musical principles and compositional techniques and apply musical thinking to performance as a whole'[4]. While such thinking can obviously be traced to Wagner (and thence to ancient origins), it is from the early-to-mid-twentieth century that this can be seen as a quite consistent source of

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[1] *Subsequent notable productions featuring multiple/split-screen techniques include 'The Tracey Fragments' (McDonald, 2007), and 'Pretend' (Talen, 2003).*

[2] A. Cameron, *Modular Narratives in Contemporary Cinema*, New York: Palgrave Macmillan, 2008, p.3

[3] Kulezic-Wilson, op. cit., p.105

[4] M. Rebstock, and D. Roesner, 'Introduction', to *Composed Theatre: Aesthetics, Practices, Processes*, Bristol, Chicago: Intellect, 2012, p.9

ongoing innovation. Prominent figures in this who have also been dealt with to various extents in this study include Schoenberg, Cage, Kagel, and Meyerhold. In Meyerhold's 'biomechanics' method of actor training, for instance, the body is taught to 'think' for itself and respond to changing circumstance — much as instrumental musical training results in physical responses which become semi-automatic; following achievement of a certain level of accomplishment in this acting method, improvisation is encouraged. Very often, and certainly in these recent theatrical iterations, it is through 'score'-like plans that such production is both planned and coordinated. Cinematic instances of similarity to this concept include Vertov, Eisenstein to a degree, as well as the obvious case of Figgis's *Timecode*. While it is by no means common to conceive of filmmaking in this way, the serial influences and 'parametric' theories outlined by Burch and Bordwell also demonstrate that such thinking is by no means unprecedented. Such 'notated'/'scored' plans for production are seen by some as a means to facilitate a more equitable collaborative creative process, in that such 'scores' can ensure that all participants — such as actors, composers/musicians, lighting and set designers, etc. — can all work with the same 'blueprint', more in the style of a 'chamber ensemble' than an 'orchestra with conductor'[1]. Here, the influence of Cage may be particularly seen. They can also, in fact, facilitate the coherent incorporation of improvisation, by 'building in' such sections between specified points in the performance, much as this is done in various musical genres; pieces of actual music may even be used in such episodes as one way to provide precisely timed backgrounds over which actors can improvise. Such flexibility can be possible even in relation to highly technologically-oriented multimedia aspects of such productions, where audio, video, lighting, and even movement of sets are controlled by software/hardware (particularly MIDI[2]) systems; such systems may be set up to be 'triggered' by physical movement or voice activation, enabling the possibility of temporal flexibility and thus improvisation. Such integrations of production hardware with the

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[1]   D. Roesner, ' 'It is not about labelling, it's about understanding what we do': Composed Theatre as Discourse', in Rebstock and Roesner, 2012, op. cit., p.342

[2]   *Musical Instrument Digital Interface: a system developed for controlling synthesizers, this can also be used to precisely control these other production elements.*

kind of software used in music production 'makes theatre composable'[1]. The use of video as an often integral part of such productions can take several forms: pre-recorded, live projection in the performance space, even external footage wirelessly linked to hardware in the theatre and projected live.

'Audiovisual Art'

In these theatrical forms a certain connection of theory to practice is in evidence, and the discernible influence of such artists as Cage and the early Soviet filmmakers is especially clear in the deliberate spirit of innovative experimentalism. Visual arts practice was of course intertwined with film history from very early on in the latter's existence, beginning with Richter and Eggeling, and continuing through figures as various as Whitney and Nam June Paik to current, frequently audiovisual, forms of 'installation art'.

Sound began to be introduced into installation art from the mid-twentieth century, largely through concern with the use of 'space' as such. In this it was influenced by such developments as Lazslo Maholy-Nagy's architecturally-derived and cubist-influenced 'theatre of totality', which was concerned to express simultaneity and multiplicity[2]. The deliberate spatialisation of sound in musical composition can be traced to the sixteenth century, when the Venetian 'polychoral' style used two distinct choirs, often separated into opposite sides of a church or cathedral. In the mid-twentieth century many composers aimed to devise performance situations which broke the rigid physical division between audience and performers, often by utilising the characteristics of performance spaces to distribute multiple sound sources. Such composers as

[1]   Roesner, 2012, op. cit., p.351

[2]   H. Rogers, *Sounding the Gallery: Video and the Rise of Art Music*, Oxford: Oxford University Press, 2013, p.85

Iannis Xenakis, György Ligeti, and Karlheinz Stockhausen, are notable examples. Stockhausen, particularly, devised means of distributing electronic sound signals amongst multiple arrangements of loudspeakers.

Through the later 1960s and into the '70s video was increasingly used in artistic and political, largely community-based projects, particularly in New York City. Nam June Paik, frequently credited as being the progenitor of 'video-art' generally, was part of this milieu; he had been initially trained in musical history and composition, and was involved in the heavily Cage-inspired *Fluxus* group. Video and sound gradually began to be included in 'installations' as art galleries began accepting aspects of the musical tradition; this represented a convergence of music and art histories — as the musical element expanded its spatial constraints, visual art aimed to transcend its temporal ones[1]. Audiovisual installations are now, of course, commonplace. The use of video in these quite experimental ways, since the '60s, has undoubtedly been a major factor in the development of the now generalised audiovisual culture of the present. The very multiplicity of screens of many kinds surrounding many of us creates its own form of spatialisation. Spatialised sound, through multiple speaker systems, has been thoroughly incorporated into the cinema experience. The developing form of v*irtual reality* audio is looking to expand this further, and some research is using musical form as a structuring device for this purpose[2].

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[1]   ibid., p.117

[2]   *See, for example,* Z. Berkowitz, et.al., 'Emphasizing Form in Virtual Reality-Based Music Performance', *Proceedings of the 2016 International Computer Music Conference.* San Francisco: International Computer Music Association, https://quod.lib.umich.edu/cgi/p/pod/dod-idx/emphasizing-form-in-virtual-reality-based-music-performance.pdf?c=icmc;idno=bbp2372.2016.068;format=pdf , last viewed 9-10-17

A recent tendency in academic media/film theory appears to be the inclination to strengthen the connection to practice. Here again is a similarity to the period of very early cinema — a kind of convergence of art, philosophy, technology, and science. The *media archaeology* approach in media- and film-studies, through the re-examination of the development of forms, styles, and technologies, is useful in placing the current turbulent, convergent context more clearly in relation to both earlier periods and potential developments. Thomas Elsaesser, for instance, describes the way in which this approach, when applied to the history of cinema, is seen to be 'tracing paths or laying tracks … [to] accommodate continuities as well as ruptures'[1]. Jussi Parikka emphasises the field's capacity to engender new forms of both theory and production, and in this its multidisciplinary nature is integral. Noting the influence of Deleuze and Guattari's conception of 'nomad' thought, he says:

> As a nomadic enterprise, a travelling discipline that moves across disciplinary boundaries in order to understand complexities of matter and time, the media-archaeological agenda includes much more than the past and the present — it points to the archives of the future[2].

Wolfgang Ernst's 'media-archaeological' method, particularly including his notion of *sonicity*, is concerned to emphasise sonic, as distinct from visual (including alphanumeric), cultural modes. This work very much continues (in fact, extends) a McLuhanesque approach, as will be outlined further. Sonicity is not identical to actual audible sound, but can encompass all 'sound-like' vibrational dynamics. Temporality, the fact that the nature of all vibrational and frequential phenomena is to have duration, is the key aspect. As L.C. Young puts it, Ernst asserts 'the affinity and privileged alliance between technological media and musical sound, based on the

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[1] T. Elsaesser, 'The New Film History as Media Archaeology', *Cinémas: Journal of Film Studies*, vol. 14, n° 2-3, 2004, par.33, https://www.erudit.org/fr/revues/cine/2004-v14-n2-3-cine863/026005ar/, accessed 25-9-17

[2] J. Parikka, *What is Media Archaeology?*, Cambridge: Polity Press, 2012, p.167

assumption that their common denominator is temporal processuality'[1]. Musicology is said to be necessary in this field, in combination with the study of technology and computing, due to its status as the longest-standing discipline of time-based processuality[2]. As in a tradition stemming from pre-Socratic Greece, music is seen as 'not primarily a practice of acoustic pleasure and entertainment … but a model of knowledge'[3].

Ernst's concept of sonicity concerns media on a very fundamental and general level, and is deliberately indicating theoretical areas at an early stage of development. To attempt to predict in detail its ramifications for the moving image generally would inevitably be very speculative. However, Ernst provides detail in relation to one such matter which he regards as being already in effect — and this point is particularly useful in grasping an aspect of the overall notion of sonicity. He suggests that the 'almost infinite flexibility of digital technologies, especially in the area of micro-temporal manipulations'[4], creates much finer affective increments in the viewing experience of those watching digital cinema than is the case with film as such — much smaller increments than can be consciously perceived, in fact. This relates to the notion of video being in reality a 'sonic' technology rather than one directly related to the photographic, a view that has been outlined by others also. This conception is credited to Tony Schwartz, who describes the physiological/psychological theory behind it; our visual sense 'fills in' the detail of the televisual/video image which is presented on the screen only one dot of light at a time (several thousand per second). Whereas in film each visual 'sample' consists of a complete image (in each frame), in television/video as with audio, the brain — through a process of reception, memory, and prediction — pieces together the information in a continuous process. Thus 'the

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[1] L.C.Young, 'Preface' to W. Ernst, *Sonic Time Machines: Explicit Sound, Sirenic Voices, and Implicit Sonicity*, Amsterdam: Amsterdam University Press, 2016, p.7

[2] W. Ernst, *Listening to Sonic Expressions with Media-Archaeological Ears,* presentation at Aarhus Universitet, 2016 https://www.youtube.com/watch?v=B2m9ouzlYHc , last accessed 25-9-17

[3] W. Ernst, *Sonic Time Machines: Explicit Sound, Sirenic Voices, and Implicit Sonicity*, Amsterdam: Amsterdam University Press, 2016, p.120

[4] ibid, p.35

brain utilizes the eye in the same way it has always used the ear. With television, the patterning of auditory and visual stimuli is identical'[1]. Ernst mentions the similar view of prominent video-artist Bill Viola, who emphasises the development of video recording from audio technology rather than photographic: 'The video camera, being an electronic transducer of physical energy into electrical impulses, bears a closer original relation to the microphone than it does to the film camera'[2]. Ernst also notes Flusser's conception of the 'sounding-image' wherein 'audiovisual' entities — whether sound, vision, or alphabetical text — are rendered equivalent by their common existence as digital data. Elsaesser, in the course of outlining the many and various 'parental genealogies' of cinema, also emphasises that television is actually not essentially photographic; it deals with transmission not storage, instantaneity not permanence, and is 'putting a premium on simultaneity and "liveness" rather than realism and illusionist presence'[3].

Ernst's thesis is centrally derived from McLuhan's concept of 'acoustic space'. This, as we can recall, posits that pervasive electronic communications promote the reception of information from multiple directions at once as with sound coming to the ear, thus tending to adjust what is seen as the skewing to 'visual' linearity resulting from excessive reliance on alphabetical text. In *sonicity*, however, this concept is extended; online, for instance, the synchronous simultaneity of electronic acoustic space is replaced 'by radically asynchronous, non-linear, discrete temporalities … a temporalized, dynamic *lógos* performed by postings and repeated status updates'[4]. Linear narrative is no longer sufficient to fully express contemporary electronic, digital, experience; undoubtedly it is to a substantial degree this that is reflected in the 'modular

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[1]   T. Schwartz, *The Responsive Chord* (1973), Coral Gables: Mango Publishing, 2017, pp.14-15

[2]   B. Viola, *The Sound of One Line Scanning*, 1990, retrieved 3-10-17 from https://sciami.com/scm-content/uploads/sites/9/2016/11/bill-viola-the-sound-of-one-line-scanning.pdf (5th page, though unnumbered)

[3]   T. Elsaesser, 'The New Film History as Media Archaeology', *Cinémas: Journal of Film Studies*, vol. 14, n° 2-3, 2004, par.25, https://www.erudit.org/fr/revues/cine/2004-v14-n2-3-cine863/026005ar/, accessed 25-9-17

[4]   W. Ernst, *Sonic Time Machines: Explicit Sound, Sirenic Voices, and Implicit Sonicity*, Amsterdam: Amsterdam University Press, 2016, p.34

style' of much of the theoretical work concerning (and indeed that foreshadowing) this field of investigation, including Ernst's book itself[1]. In this application of media archaeology, the digital archive, through 'the temporalisation of mathematics'[2], takes on a sonic dimension in Ernst's sense.

Ernst suggests that there are only two ways in which sound is carried through time: notation in musical scores and through signal-based recording; this dichotomy is highly questionable. In music, many pieces are passed down from generation to generation from one musician to another. This is the methodology of folk musics of many different kinds, in which notation is generally not traditionally used. In the classical tradition also, technical and interpretive skills passed directly between generations of players are at least as important as the ability to read notation, as essential as this is. While notation is clearly the traditional means of communication of compositional ideas in Western music, a score is by no means equivalent to actual sounding music; it is a kind of 'blueprint', always subject to skilled interpretation, and in fact inevitably subject to some degree of variation according to innumerable factors of era, technology, fashion, etc. Ernst does acknowledge the latter point, putting the view that, in a similar way to a score enabling a piece of music to be brought back to life in a different time, a digital recording does the same thing; he argues that this is because digital coding transforms the material from explicit sound (removes it from existence in time, in fact), and requires it to be technologically converted back into analog form in order to be heard again. In other words, it is argued that whereas in phonographic recording the score is always excluded, when digital code is the medium of storage a kind of musical 'score' is preserved within the data.

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[1]   L.C.Young, 'Preface' to Ernst, *Sonic Time Machines: Explicit Sound, Sirenic Voices, and Implicit Sonicity*, Amsterdam: Amsterdam University Press, 2016, p.15

[2]   W. Ernst, *Digital Media Archaeology: Archive, Museum and Sonicity*, presentation to the Canadian Centre for Architecture, 2014, https://www.youtube.com/watch?v=f_GsDqKuOF8, last accessed 25-9-17

Ernst interrogates the methodologies of the Parry and Lord studies of Slavic oral poetry from which conclusions were drawn about possible parallels to techniques employed in Homeric verse (as outlined in the previous chapter). The presentation of spoken verse in the form of written alphabetical text will always fail to capture nuances of rhythm and other 'musical' aspects. (One should perhaps observe that there is inevitably a similar difference between an actual performance and the notation on the page, in any genre, or in the case of any artform for that matter — a script or a musical score compared to the fully performed versions, for instance.) It seems that Parry's and Lord's transcriptions were made in some cases from audio recordings, and in other cases from dictation; those recorded as audio were then transcribed as both alphabetical text and musical notation. Ernst says, '[m]issing was a media-archaeological sensitivity for modes of audio-visual signal recording beyond (in a temporal sense of cultural history) or rather below (in the signal processing sense) the cultural technology called writing'[1]. He questions whether Parry's theory of formula-based oral poetry may itself be due to its derivation from this form of analysis (though this argument does not consider the kinds of factors — classical rhetoric, other traditions of improvisational technique, contemporary psychological research — discussed here in relation to this topic previously). A system of 'content-based' audio retrieval — in other words, one which can search and identify material from the technical sound data itself (comparing various sonic characteristics as waveform files, for instance) — would be 'technologically immanent'[2], as opposed to the less appropriate traditional system of alphanumeric textual archiving. Much research on such audio archive systems has been going on in recent years, as is also the case with content-based video retrieval.

It is suggested that audio recording technology functions as a kind of actual 'time-machine',

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[1]   W. Ernst, *Sonic Time Machines: Explicit Sound, Sirenic Voices, and Implicit Sonicity*, Amsterdam: Amsterdam University Press, 2016, p.79
[2]   ibid., p.80

suspending 'time's pure linearity'[1], enabling a kind of 'transposition' of acoustic time; elsewhere, this is illustrated with the claim that an audio recording of someone's voice, when replayed, strikes us as a current (non-historical) experience, whereas to see, for instance, a quote from a historical figure projected on a screen, maintains the sense of historical perspective[2]. Recorded audio inherently has a 'musical' character in this view; it cannot truly accurately be represented by alphabetical writing, consisting in reality of 'micro-temporal vectors of pitch and resonance'[3] involving mathematical ratios which have been intimately linked to musical proportions since Pythagoras. Digital recording — storage as computer code — facilitates archiving and analysis according to the genuine physical characteristics of the audio signal itself. Through a further broadening of the conception of this epistemological, mathematical definition of 'music', and revealing the 'implicit sonicity in any algebraic function'[4], Ernst believes that much knowledge that has been hidden may be revealed.

Ernst argues against perceived Eisensteinian notions of 'audiovisual' relations (whereby disparate art and media forms are seen as blending into a single entity), due to the fundamental differences between 'electromagnetic waves' affecting the eyes, and the 'mechanical, violent vibrations' of sound, although he concedes that there may be 'harmonic relationships'[5]. However, this common interpretation of Eisenstein's conception of the audiovisual may lack nuance.

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[1] ibid., p.94

[2] W. Ernst, *Listening to Sonic Expressions with Media-Archaeological Ears*, presentation at Aarhus Universitet, 2016 https://www.youtube.com/watch?v=B2m9ouzlYHc , last accessed 25-9-17

[3] W. Ernst, *Sonic Time Machines: Explicit Sound, Sirenic Voices, and Implicit Sonicity,* Amsterdam: Amsterdam University Press, 2016, p.109

[4] ibid., p.142

[5] W. Ernst, *Listening to Sonic Expressions with Media-Archaeological Ears*, presentation at Aarhus Universitet, 2016 https://www.youtube.com/watch?v=B2m9ouzlYHc , last accessed 25-9-17

Audiovisuality as 'dynamic juxtaposition'

The 'synthesis' of elements in Eisenstein's 'vertical montage' may be seen as following a first stage of fixed camera with motion within the frame only, and a second stage of multiple camera set-ups featuring juxtaposed shots with perceptible 'breaks'; the final stage then results in a musically-inspired, 'polyphonic' audiovisuality in which many elements contribute with equal importance[1]. In his *Notes for a General History of Cinema* (1946-48), only very recently available in English translation, Eisenstein expresses the view that artistic 'synthesis' tends to come about in periods of 'social unification', and that the Soviet project to establish 'universal unity' is a particularly apt example[2]. He then describes this aspect of cinema:

> A synthesis not of the mechanical copresence in pure form (that was the limit of the synthetic possibilities of the theatre).
> But each [art] is embedded in a qualitatively new way, such that it cannot be organically taken out …
> … A dynamic juxtaposition instead of mixing together.[3]

From this perspective, the 'organic unity' of an artwork comes about through the overall form being sufficiently forceful[4] as to override the individual tendencies of the various elements within it, rather than through everything being blended into smooth cooperation — 'montage as a unity in diversity'[5].

In a later section of the *Notes...*, we see that Eisenstein's audiovisual conception in fact concerns the necessity to 'dismantle the natural synchronism of sound and vision in order to impose the artist's will'[6]. Thus, it involves the very opposite of a blending into one, and is in fact directly

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[1]   P. Montani, ' "Synthesis" of the Arts or "Friendly Cooperation" between the Arts?'; in Eisenstein, 2016, p.388
[2]   S. Eisenstein, *Notes for a General History of Cinema* (Kleiman, N & Somaini, A, eds.), Amsterdam: Amsterdam University Press, 2016, p.110
[3]   ibid, pp.110-111
[4]   *'[A] force superior in rank' as Montani puts it*, P. Montani, op. cit., p.388
[5]   S. Eisenstein, *Notes for a General History of Cinema* (Kleiman, N & Somaini, A, eds.), Amsterdam: Amsterdam University Press, 2016, p.112
[6]   ibid, p.215

descended from the original motivation of (silent) cinematic montage. Still at the basis of this conception is 'the exploration of musical structure and the principle of audiovisual counterpoint'[1]. In this late refinement of Eisenstein's audiovisual concept the notion of 'counterpoint' comes much closer to being a direct counterpart to its musical inspiration than in previous iterations: independent, equal elements wrought into the service of an overriding form. Eisenstein writes in some detail of what he sees as the natural origins of music — animal sounds, wind, etc. As a demonstration of his 'audiovisual counterpoint' he cites the example of the asynchronicity of lightening and thunder, as heard in all circumstances except when a storm is directly overhead, 'by virtue of the difference between the speed of light and that of sound'[2]. Thus the very distinctiveness of the elements juxtaposed is emphasised in his conception, rather than their inextricable melding.

This issue of the relationship of elements to overall form, of parts to whole, would seem to be fundamental to current concerns in relation to new forms of media often involving the moving-image, variously defined as *multimedia*, *intermedia*, etc. It seems clear that this compositional aspect of Eisenstein's work is one of those with considerable contemporary relevance. (Some detail of the influences upon which he particularly drew was included in Chapter Two: *Polyphony & Counterpoint*.) It has been suggested that Eisenstein's approach to affect, resulting from his particularly musical approach to the audiovisual synchronisation of sound and image, is of unique value[3]. Also of particular note in this context is the significance of the relationship of musicality and experimentalism in the background to his work. Meyerhold's use of musically-inspired notation as a production tool, such a seminal influence for Eisenstein, arose in the

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[1]   ibid, p.221
[2]   ibid, p.218
[3]   J.Tobias and J.Heatwole, 'About Sync: A Conversation with James Tobias', *Afterimage,* May/June 2010, Vol. 37 Issue 6, p.9-12

context of 'scientific' experimentalism in relation to temporal proportion[1].

Conclusion

An appreciation of traditional musical form was prevalent in Western culture through to the first half of the twentieth century, not only in academia but in educated society generally. A multitude of factors reduced the ubiquity of such appreciation, including largely media-related, arguably democratising influences on general culture, and also the formal upheaval in Western 'art music' itself in conjunction with abstraction in the arts overall. The loss of this appreciation of form has often compromised contextual understanding of much important twentieth-century theoretical writing, including that outlined in this study. The present moment, however, facilitates reconsideration of this issue on a number of fronts. Rather than musically-derived formal concerns prompting suspicions of overly extreme positivism, they may engender fresh approaches to affective composition, along the lines of what can now be seen as Eisenstein's conception of the audiovisual as the utilisation of the individual strengths of media elements within a single, organically structured, artistic production. Rather than the association of musical form with science, technology, and mathematics being seen as being incompatible with creativity, its reinvigoration, particularly through the advent of digitality, may restore a connection to its origins in a single, multifaceted, cultural endeavour of research and discovery.

The spirit of deliberate, serious experimentation underlying the approach of the early Soviet school of film-making, and that of the Cagean\aleatoricist era of 'mixed-media', perhaps underlies their enduring influence; they were systematically applying to the challenges of their times the new technologies available to them. (These are of course not the only instances, but are

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[1]   R. Robertson, *Eisenstein on the Audiovisual*, London and New York: Tauris Academic Studies, 2009, p.73

two which seem particularly relevant to the contemporary convergence of motion-pictures and other performance forms.) The notion that experimentation in media production is somewhat akin to that in scientific laboratories, and that it may be socially desirable in a similar way, is by no means prevalent in contemporary culture. Referring to historical precedents for 'practical laboratories, whether for artistic or technological creation', Parikka sees a current 'acute need for *concept labs*, where we can twist, experiment and open up concepts …'[1]. Again, this is seen as essentially connected to an interdisciplinary approach.

Early film-makers, particularly perhaps the French, also found in the capacity of film to display musical movement and simultaneity the potential to express inner feeling and the 'flow of thought', notably with the advent of the Impressionist and Surrealist schools. The sensations of increased multiplicity and simultaneity they experienced in the new technological possibilities resonate with our own experience — Epstein's writing, for instance, seems remarkably fresh in this light. There are indeed very strong similarities apparent in the volatility of opinion, in both periods, regarding the effect of such issues on narrative.

The issue of digitality and its many technical and social implications is perhaps only just beginning to be dealt with. The fear of the very loss of connection to reality as we understand it can tend to overwhelm the consideration of positive potentialities. The extent to which digital moving-image recording constitutes a loss of 'indexicality' remains a somewhat fraught subject. As a practical example, software products such as Adobe's proposed *VoCo*, which can enable editing of speech files so as to entirely simulate a person's voice, have caused understandable concern as to the obvious implications in regard to veracity.

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[1]   J. Parikka, *What is Media Archaeology?*, Cambridge: Polity Press, 2012, p.14

With live performance, both real-time and recorded, becoming widely accessible to very much larger audiences through online technology — particularly to individual users, but also via special cinema-based events — it seems clear that some degree of convergence of the theatrical and the cinematic is under way. Recent films which make a feature of their single-take production might be seen as the conventionally cinematic aspect of this phenomenon; world-wide streaming of recordings of live performances of all kinds, and also admirably blocked live video coverages of theatrical productions, converge from the other side. The phenomenon of highly structured ('scored') 'multimedia' production — musicalised/composed/total theatre — and the contemporary integration of video technology into theatrical performances of many kinds are from this perspective very likely to bear increasingly upon the ongoing development of moving-image forms[1]. Ernst's postulation that the notated musical score is significantly similar to the digital recording has some moot aspects, but is likely to engender greater awareness of the role of the tradition of Western composition in matters of 'processuality' as particularly relevant to contemporary media culture.

Further than this, time will tell to what extent online communications generally — personal as well as otherwise — will be affected by the increasing integration of audiovisual technologies. Ubiquitous, instantaneous remote video and audio presence, surely now not at all difficult to imagine — *Skype*-like interactions between people (and perhaps groups of people) becoming a normal mode of interaction. — may make the internet considerably more 'multiple' than we have seen thus far. In this case, perhaps even Flusser's 'chamber music' scenario (with its implications both utopian and dystopian) may begin to appear less fantastic.

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[1] *This covers a great deal of diverse work; one artist in whose work musical performance, live dramatic movement, and audiovisual elements are often combined with equal prominence in a formally composed manner is Jennifer Walshe. See for instance* '1984 IT'S O.K'. (2016), https://www.youtube.com/watch?v=peUox5Y1_9w *, last viewed 11-10-17*

As significant, and in some ways contentious, as issues of digitality certainly are, they perhaps in reality represent a crystallisation of existing tendencies rather than a rupture. The work of the prominent analyst/critics of modernity dealt with in previous chapters all has in common certain of these contemporary preoccupations. Kracauer, Adorno, Deleuze, and McLuhan are all concerned to examine the fragmentation of the general experience of the modern world, expressed in their writings through segmentation and aphorism. If indeed the recent tendencies in film and other moving-image media of greatly increased multiplicity, simultaneity, and temporal variation (which may be interpreted as symptoms of a tendency to musicalisation) do in fact mark the first incorporation of modernist expression into mainstream culture, what, in the light of these detailed and influential theories, should we conclude about the social ramifications of this? Does such incorporation suggest some increasing capacity for aesthetic enlightenment, or merely the final subsumption of these aesthetic characteristics by the capitalist system?

A McLuhanesque aspect can be seen as revealing such multiplicity as a historical development towards the non-linear and the 'acoustic'. Pattern recognition is said to be necessary in order to structure the plethora of stimuli in contemporary 'acoustic' culture; the role of the artist in this is considered vital. Being 'in' cyberspace, with such space continually 'remade' as we use it is 'just like the acoustic space of the pre-literate environment'[1]. And the corresponding experience of 'jumping around' in both space and time in much contemporary cinema may be seen as providing a similar feeling. These phenomena, in this light, facilitate an aural/acoustic turn on quite a deep, fundamental level. Given the ubiquity of such technological usage, the question arises as to what extent these developments in fact indicate an adjustment taking place to the 'visual', linear character of our entire culture. McLuhan's, and Innis's, fundamental reminders of the ancient interplay of the logical and the rhetorical — the linear and the non-linear — have

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[1]   P. Levinson, *Digital McLuhan: a guide to the information millennium*, London: Routledge, 1999, p.6

strong resonance in current discussions of narrative and database.

Observing the similar techniques of musical improvisation and classical rhetoric — their mutual relationship to, on the one hand, non-linearity and, on the other, to the 'flow of thought' — brings the recognition that the subconscious is in fact a trainable resource into which one can creatively 'tap' in a very practical way, giving access to a whole side of human potential which is otherwise largely unrecognised. The implications of this for new developments in the media arts are as yet unclear, but connections to important related issues are multiple. Perhaps Flusser's theories come closest so far to recognition of this (although foreshadowed by McLuhan); awareness of the musical/mathematical rhythmic patterning of thought itself may enable us to re-envisage our reality.

'Improvisation', for Kracauer, relates to his concern for 'contingency'; for him these relate very much to freedom from coercion. Much as history cannot, in this view, be accurately pressed into a tidy succession, people's activities, particularly in modern cities, should not be regimented according to industrial convenience. For Kracauer, the fragmentation of modern experience, expressed particularly in film, contains the potential for reconfiguration and thereby for significant change. To the extent, then, that new media experiences do indeed engender at least a similar level of a sense of fragmentation as earlier cinema, it may seem reasonable to assume that similar potential should be regarded as applying. Indeed, the capacity for personal, individual reconfiguration of media fragments now being literally rather than only imaginatively possible, one might assume that such potential for socially useful change should be seen, in Kracauer's terms, as markedly increased. Perhaps, furthermore, the greatly increased capacity for the production of disorienting ('impossible') imagery could then be seen as bringing about increased potential for the questioning of conventional mindsets.

A Deleuzian and/or Deleuzian/Guattarian interpretation of the current media context is particularly difficult to clearly define. Deleuze regarded the aphorism — the 'fragment' — as 'the form of pluralist thought'[1]; he appears to concur with what he presents as Nietzsche's view that, as with a poem, the aphorism prompts interpretation and reconsideration. *Multiplicity* — in philosophical terms the idea that everything is formed by virtue of the precise nature of its constituent elements — may be seen as the basis of such concepts as the rhizome and the assemblage[2]. There are various views as to the extent to which the internet can properly be regarded as itself being a rhizome, however it would seem reasonably safe to say that it does appear to tend to enable the formation of rhizomatic connections: any part of such an internet-based rhizome can potentially (theoretically) connect to any other, and the network of connections so formed is in a constant state of reconfiguration. While on the one hand such technology may enable increased social control by capitalist interests and/or the 'surveillance-state', on the other it is greatly beneficial in the organisation of resistance. Ernst refers to a software system which can enable a Deleuzian-Guattarian 'rhizome' — 'a cartographic linkage of knowledge … liberated from cultural — that is, semantically and cognitively-burdened metadata'[3].

The substantial and underappreciated influence of serialism on these widely acknowledged Deleuzian-Guattarian concepts can establish a connection to the characteristics of contemporary cinema outlined earlier in this chapter. Stylistic patterning of the 'parametric' variety, the serialist derivation of which was outlined by Burch and Bordwell, can be seen as aiming to break free (as in a 'line of flight') from straightforwardly linear, literature-derived narrative. As recognition of the kinds of patterning identified in such theoretical constructs as 'intensified continuity' and

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[1] G. Deleuze, *Nietzsche and Philosophy* (1962), London: Continuum, 2002, p.31

[2] J. Roffe, 'Multiplicity', in *Deleuze Dictionary Revised Edition* (A.Parr, ed.), Edinburgh: Edinburgh University Press, 2010, p.181

[3] W. Ernst, *Sonic Time Machines: Explicit Sound, Sirenic Voices, and Implicit Sonicity*, Amsterdam: Amsterdam University Press, 2016, p.142

'intensified acceleration' becomes more and more generalised, it seems reasonable to postulate that there will be increasing capacity for formal devices to be employed which may enable further divergence from 'classical' cinematic narrative, while maintaining perceptible coherence.

The cinema/tv image is always framed, thus 'a kind of quotation of reality'[1]; of course *virtual reality*, and possible future immersive technologies, are certain to at least modify this paradigm. The conceptual 'smooth'/non-striated space — musically-inspired, and used prominently by Deleuze and Guattari — obviously comes further into practical reality as technology tends towards borders of greater and greater fluidity. Deleuze's *time-image* is surely further extended beyond the conventionally cinematic through such developments.

The influence of musical serialism is in fact even less generally appreciated now than the 'classical' forms in relation to which it arose. For Adorno, modern art can only assert itself, and its 'autonomy', by the negative means of contrast to mainstream, mass-media culture. Every era requires a new dialectic of individual expression and the socially-prescribed forms inherent in its own context. Thus the incorporation into the mainstream of previously progressive characteristics merely demonstrates the inevitable necessity of an entirely fresh aesthetic response. As long as 'mainstream' indicates prescriptive industrialised control, meaningful art, in Adorno's terms, must set itself apart. In the case of cinema as such there are now differing views as to this dialectic, as we have seen — 'classical' narrative or new formal developments. Where music intersects most obviously with such developments, through the influence of popular music video, Adorno himself would undoubtedly regard the formal musical aspects involved as simplistic in the extreme; whether he would acknowledge their potential value in helping bring about alternatives to conventional narrative is another matter. More broadly — in other, 'new'

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[1] ibid., p.85

media usages of the moving-image — 'prescribed forms' are less straightforward to identify. Perhaps the most interesting question in this respect is that of the extent to which more widespread reflection of multiplicity/simultaneity in contemporary culture represents its usurpation by industrial interests.

The relationship of musical form to the moving-image is long, intricately woven, and multifaceted. It is of central relevance to contemporary preoccupations concerning the changing role of communications technology throughout society. Recognition of this enables enhanced connection to powerful strands of intellectual tradition reaching back to very early stages of Western thought, combining art, technology, and science. As has been demonstrated, there are indications on several fronts of the potential for this connection to again become widely recognised.

The frequently noted similarities between the period of early cinema and the present should certainly provoke increased awareness of the musicality involved. It is striking, in fact, that the similarities are not only those concerning the respective attitudes to the new technologies of the times, but also those of aspects of direct production practice. Obvious examples include intensified rhythmic editing, and increased multiplicity/simultaneity (polyphonic/contrapuntal) in the use of onscreen space.

The resurgence of interest in the Frankfurt School theorists indicates a renewed recognition of the potential dangers of capitalist manipulation, and political exploitation, of popular culture. The grounding of Adorno's aesthetics in music, and the ramifications of this for his sociological theory, is not as well recognised. Given the other aspects of musicality recently coming to the

fore in humanities study generally, it might be expected that this should gain further appreciation. For Deleuze also, the musico-intellectual influence on his philosophy of cinema may display a connection to a similar strand of connection between aesthetics and the political.

The current tendency towards convergence of aspects of performance forms — musical, theatrical, cinematic, even gallery-based — prompts reinvigorated consideration of the genealogy of such hybridity. Recognition of the influence of such figures as Meyerhold and Cage again emphasises musical significance and, through this, connections to very much older traditions.

The rhetorical, and its relation to non-linear informational modes, establishes a link between the current media context of digital connectedness and the roots of Western culture in a recognition of the intertwined character of all branches of intellectual endeavour. There may be a particular desirability at the present time for combined effort across disciplines in the serious quest for genuine knowledge, in the face of a socio-political climate in which the very validity of such endeavour is questioned.

Further research

This field of investigation may have implications across a wide range of media-related concerns. In terms of screen-studies as such, increased recognition of the role of musical form may prompt corresponding investigations into formal aspects of motion-pictures. One possibility might take the form of detailed comparison of the early, silent period to contemporary cinema in terms of musicality — particularly where there is overt musical influence, described as such by the filmmakers. Even where the influence is less overt, there may be useful research into musicality.

One possible example might be an investigation into musical aspects of camera movement and, in conjunction with observing the lighting methods used, a study of the affective results achieved. The particularly rhythmic camera movements in the work of, say, Kenji Mizoguchi, Max Ophüls, and Jean Renoir, might be analysed in a precise, musical manner — in terms of patterns of variation in duration, tempo, etc. This could be related to the affective mood achieved, and cross-referenced to the lighting techniques employed. The relationship between movement and lighting in this context would bring about an interesting juxtaposition of the affective and the technical — long takes with substantial movement obviously raise technical lighting issues. In certain cases where there could be said to be a *polyphony* of levels in depth-of-field staging — most notably, perhaps, in some of Mizoguchi's films — the lighting appears quite intricate, with each layer apparently individually lit.

In their mutual capacity to express temporal human experience, music and motion-pictures are close relatives — very old and very young. In the nuance and detail of its structural capacity, and its integral accommodation of many voices at once, music has many centuries of experience to share. Movies, born directly from the new technology of the dawning twentieth century, have unequivocally been the main expressive attraction of the period since. Music has seen so many technological innovations that not only is it undaunted by them, it enthusiastically embraces each opportunity to extend its palette. Movies, even as their character inevitably develops and changes, will undoubtedly do the same.

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