Cinesonica: Sounding the Audiovisuality of Film and Video

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Declaration

I declare that the work presented in this thesis is my own

Abstract

The dissertation presents an exploration of neglected and under-theorised aspects of film and video sound. In doing so, the study proposes a sounding of the *cinesonic*; that is, it considers the deployment of sound within an audiovisual context. The key concern of this dissertation is how we might map and negotiate the materiality of film and video sound both beyond, and in relation to, its signitive dimensions, and what might be at stake in a critical engagement with that materiality. In particular, this sounding engages with the inscription of difference that is common to Saussurian linguistics, signitive formulations of sound-image relations, and notions of what might constitute the properly 'political' in an audiovisual poetics founded on modernist paradigms. The research demonstrates that any coming-to-terms with film and video's materiality needs to be informed by the idea that the material events we term 'the film' or 'the video' are marked by a relationship between sound and image. Thus the dissertation negotiates a sounding of these media in relation to that materiality best described as audiovisuality. The dissertation opens with a consideration of the way in which sound is commonly conceptualised in terms of its relationship with an object source, and how the formulation of sound as signifier militates against an engagement with its material dimensions. The following chapters explore neglected aspects of film and video sound by drawing on a range of theoretical resources predominantly – but not exclusively – derived from the work of Gilles Deleuze, with detailed case study analyses of specific film and video texts, and interviews with filmmakers. The topics covered in these chapters include the phenomenon of optical crackle, electronic sounds, the correspondence of sound and image pejoratively termed 'mickey-mousing', and the organisation and manipulation of sounds in British Scratch Video of the 1980s.

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Acknowledgements

Preface

Like many people drawn to write on the subject of film sound, the initial motivation behind my own research was a feeling that sound has been somewhat neglected in discussions of film and video – a theoretical inadequacy that concerned me both as a teacher, and as a film-maker. This research project has provided the opportunity for me to engage with what has been both a personal passion and an intellectual pursuit: that is, it has given me a chance to reflect on both the theorisation of film sound, and on my own experience as a practitioner. My fascination with film sound arises not only out of a love of cinema, but also from the experience of making films, videos, and audio works. As a practitioner I gained an awareness of the way in which film and video texts are crafted and assembled from the visual and sonic materials that constitute them, and experienced the pleasure of recording sound, of making creative choices between different sounds during post-production, responding in different ways to their qualities, placing and shifting them in relation to one another, combining and separating them, suturing or fusing them with images; and although this dissertation does not engage with my own practice, and is not exclusively concerned with issues of film production, this experience of film and video nevertheless reveals itself in my choice of research topic, and informs the work done with the case studies that make up this dissertation. The experience of making films, and of working with students of media production, can be seen to underpin the particular research question I tackle in this dissertation: namely, the attempt to come to terms with the materiality of film sound. Thus my own theoretical negotiation of film and video sound attempts to engage with that which a filmmaker is very close to: the materials that constitute the medium. This concern with the materiality of film and video sound also relates to my own personal history in other ways, especially in relation to the changes in technology that have impacted on low-budget and no-budget filmmaking over the last two decades. Having originally trained as a film-maker, shooting on 16mm and editing on a Steenbeck, I emerged from full-time education in the early 1980s to find myself in a rapidly changing media environment, where film's position within the Independent sector was being challenged by video; a decade later I witnessed the shift from analogue to digital video. What these changes in technology foregrounded for me

was the materiality and sonic specificity of each format: the crackle of the optical film soundtrack, the impacts made by a soundtrack constructed primarily by editing rather than mixing, the hiss of analogue video, the crispy resonance of digital sound. The question subsequently raised in my mind was how we might come to terms with these qualities of sound – how might we make sense of them, how we might engage with them at a critical and theoretical level? The problem I faced in relation to the existing body of literature was not only that it is heavily biased towards the visual, but also that the study of film has been dominated by a concern with film as a signifying text, and primarily as a narrative form. However, my experience of making films and videos, of listening to them as a practitioner, and of listening to them in cinemas, galleries, lecture halls and at home, suggested to me there are ways of knowing sound, ways of registering its materiality that have little to do with the attribution of meaning; that is, sounds and sonic practices are not always most profitably negotiated through theoretical interventions founded on a concern with signification and representation.

If my particular relationship with film and video can be seen to inform the location of my research question, so too my own history informs the methodology employed and developed in this dissertation, in terms of its structure, choice of films and theoretical resources, and the attitude adopted towards the research project as a whole. When I was an undergraduate film student, one of my lecturers told me that the reason he made films was because he disliked them – which I understood to mean that he disliked mainstream commercial filmmaking (to which his own praxis was presumably opposed). While I didn't wholly believe the sincerity of my lecturer's claim, he was nevertheless expressing a view of Independent film practice that was in wide circulation at that time. The early 1980s was a highly politicised era, with an understandable emphasis on oppositional politics. For many, like myself, interested in the social function of Independent cinema, the question of the relationship between film form and ideology was of central importance. Informed in part by the debates of the 1970s, particularly those associated with Structural film, there was a tendency at this time to conceptualise a radical poetics of film, and thus politicised film practice, in terms of opposition to dominant, hegemonic cultural forms. Many aspects of materialist film practice were often simply inscribed

against naturalistic and narrative modes of representation, understood and valued in terms of their potential to deconstruct dominant cinema. What I found problematic about this approach was that one always seemed to end up talking about what films *weren't* doing, rather than addressing them in positive terms. At the same time certain modes of film practice were privileged within the context of a history of radical poetics: in particular montage, and the so-called 'contrapuntal' use of sound. Over twenty years later, these notions of what might constitute radical film practice remain in circulation, regularly called upon to theorise both contemporary and historical work. The problem with this is that there are certain modes of film and video practice, and certain aspects of film and video's materiality, that cannot be understood within this tradition, and have consequently been neglected, forgotten, ignored or dismissed as having no political potential. What therefore emerges from my own background and experience in relation to the methodological drive of this study is not only the desire to consider the ways in which sound-image relations are constituted and understood in terms of materiality, but also a concern with what exactly might be at stake in the relationship between sound and image.

Introduction

This dissertation attempts a coming-to-terms with what I propose are neglected aspects of film and video sound. This neglect, in one sense, manifests itself as the general lack of critical literature on the sonic. This has been signalled elsewhere, and it is unnecessary for this critical absence to be rehearsed here, since the observation that much remains to be done on sound appears with regular frequency in the steadily growing body of literature on sound in general, and film sound in particular. Rather the issue at stake in this study is exactly how the sonic dimensions of film and video might be auditioned, addressed, understood and discussed. The key concern of this dissertation is how we come to terms with the materiality of film sound both beyond, and in relation to, its signitive dimensions, and what might be at stake in a critical engagement with this materiality.

The semiological[1] project has had a profound influence on the landscape (and soundscape) of film studies, and while successive critical moves have distanced the study of film from the interventions of the first wave of cinesemiology in the 1960s, the conception of film as *signifying* text has remained a powerful influence on film theory and criticism. Although no longer completely commanding the centre-ground of film studies, the complex of signification, meaning and representation that emerged from

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[1] While making some reference to the work of C. S. Peirce in later chapters, this dissertation focuses critical attention on the theoretical lineage of Semiology rather than Semiotics. Peirce's work certainly provides an alternative modelling of the sign in his tripartite formulation of the indexical, symbolic and iconic, and an alternative model of signification that proposes a process of infinite semiosis rather than formulating the signified (or rather the *interpretant*) as the terminal point of significatory processes. However, the fundamental structure of division between the material signifier and what it might signify, which is a central concern of this research, remains common to the work of both Saussure and Peirce, even though their formulations of the processes and the elements of signification may differ. Thus Peirce writes, "A sign is an object which stands for another to some mind" (Peirce, 1991: 141), while Saussure proposes, "The linguistic sign unites, not a thing and a name, but a concept and a sound image" (Saussure, 1964: 66). Whereas Peirce proposes a division between sign and interpretant, Saussure proposes one between signifier and signified. In relation to the central concerns of this dissertation, the specificity of Peircean Semiotics does not fundamentally challenge the issues raised by my analysis of Saussurian linguistics, but rather provides another manifestation of them in different terms.

cinesemiology remains an important conceptual frame in which the film and video text is critically situated. While, over the last three decades, the concern with subjectivity has realigned the film text in relation to issues of reception and spectatorship, nevertheless what we term 'the film' seems to remain a clearly demarcated entity; it remains a text that signifies. The concern with signification is clearly no longer focused on the internal operations of the filmic text or the precise nature of the cinematic sign, but rather how the signs contained within it relate to the various milieus in which they might circulate: social, cultural, political, economic, psychological, historical, and so forth. Despite the range of perspectives offered by the various strands of post-structural theory, film remains understood primarily as text to be *read*. The longevity of this formulation is, of course, clear testament to its usefulness.

There has clearly been significant disenchantment with Semiology itself as a way of engaging the signitive, and the body of post-structural theory can be seen both as a building on, and a critique of, structuralist modes of enquiry. However, since I propose that, in the study of film and video sound, much remains to be done, it might still be useful to identify what the limitations of semiology might be in relation to a critical coming-to-terms with the sonic.

A number of points derived from a return to Ferdinand de Saussure's *Course on General Linguistics* inform this dissertation, both in terms of a direct engagement with those processes of signification that can never be disregarded in representational art forms like film and video, and also in terms of the broader conceptual formulations of differentiation, individuation and essence which have informed the epistemological modalities brought to bear on film theory and criticism. Sound fares badly within Saussurian linguistics, constantly stripped from a project that favours the seemingly stable, abstract, universal paradigm of language rather than individual concrete speech acts: *langue* in preference to *parole*. This methodology of extraction and abstraction militates against engagement with concrete particularity, the material, or the contingent. Thus, although the starting point for the *Course In General Linguistics* is a concern with speech, and even though Saussure states that "in the lives of individuals and societies,

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speech is more important than anything else" (Saussure, 1964: 7), this concern is resolved through the model of language, which is identified as a "well-defined object in the heterogeneous mass of speech facts" and therefore a "principle of classification" (Saussure, 1964: 9). Saussurian linguistics thus excludes the material and the contingent in favour of abstract paradigms, which, as conceptual entities, are necessarily divorced and absent from concrete phenomena, events and objects. Encountered within the conceptual frame of semiology, each individual act of signification is simply rendered a manifestation of this abstract paradigm.

A further distanciation from the sonic takes place when Saussure nominates writing as the means by which language can be successfully navigated: "we generally learn about language only through writing" (Saussure, 1964: 23). In a telling use of imagery that figures chaos in terms of the oceanic, Saussure comments:

> Whoever consciously deprives himself of the perceptible image of the written word runs the risk of perceiving only a shapeless and unmanageable mass. Taking away the written form is like depriving a beginning swimmer of his life belt. (Saussure, 1964: 32)

However, my primary concern with the Saussurian model of signification is not the fate of the sonic in a project that was obviously never concerned with it. Rather, what is at stake in this brief return to Saussure is a number of related issues which necessarily affect critical consideration of the concrete particularity of those events, phenomena and objects that take their place in the processes of signification, and which circumscribe the discourse in which the materiality of sonic phenomena might be addressed. The conceptual mode proposed by Sausurian linguistics represses consideration of the material dimensions of the signifier beyond its ability to sustain difference, and thus to create or rather support meaning by negative differentiation. This position is famously expressed in Saussure's formulation, "in language there are only differences *without positive terms*" (Saussure, 1964: 120). What this means in terms of materiality is figured powerfully in an illustration Saussure gives in support of the synchronic study of language. Part of the motivation behind the *Course in General Linguistics* lay in its reaction to the diachronic study of language, which had dominated modern linguistics until this point. For Saussure, the study of language was served not by engaging with its evolution, but by removing it from a temporal frame. His interest thus lies in the

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synchronic, the static, the science of language-states (*etats de langue*). Thus he comments on language:

> It is a system based on the mental opposition of auditory impressions, just as tapestry is a work of art produced by the visual oppositions of threads of different colours; the most important thing in analysis is the role of the oppositions, not the process through which the colours were obtained. (Saussure, 1964: 33)

What this reveals, beyond the obvious problematic dispensation with the temporal, is a dematerialisation of the sign. Here there is no way to deal with the materiality of the signifier other than in terms of its ability to support and manifest difference. Thus there is no discourse offered within which colour can be considered, other than its ability *not to be* other colours, and thus to differentiate itself in *negative* terms from others. This dispensation with materiality takes its place within a broader conception of signification that renders both terms of the sign (signifier and signified) as psychological entities; the signifier is deemed by Saussure to be a 'sound-image' (the mental imprint of a sound), while the signified is a concept (Saussure, 1964: 66). Thus Saussure comments, "Everything in language is basically psychological, including its material and mechanical manifestations, such as sound changes" (Saussure, 1964: 6). The clear inference here is that matter does not matter: the materiality of objects and events barely figures in a system founded primarily upon the notion of the arbitrary sign.[2] Saussure makes this position clear when he states, "language is a form and not a substance" (Saussure, 1964: 122). This dematerialisation of the sign must also be seen in the context of the privileging of the signified as the primary term of signification. While not dispensable, the signifier simply takes its place in the sign as that which supports the creation of meaning; the pay-off of signification is the concept that results, the sign's terminal point.

One of the key problems of approaching film and video sound in terms of signification is that it rather too neatly coincides with that formulation by which we casually

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[2] Saussure acknowledges that language is only one particular semiological system, and that there are others that embrace signs (like bowing) that are not arbitrary but motivated in some way. However, his preference for arbitrary signs is clearly expressed: "Signs that are wholly arbitrary realise better than the others the ideal of the semiological process; that is why language, the most complex and universal of all systems of expression, is also the most characteristic; in this sense linguistics can become the master-pattern for all branches of semiology although language is only one particular semiological system" (Saussure, 1964: 68).

conceptualise sounds in terms of the objects or events perceived as their source – sounds described as the sound *of* something or other. The problem posed by this formulation is that it limits, to issues of representation, the ways in which we might come to terms with these sounds, while simultaneously ascribing to them a secondary status, situating them at the level of attribute, characteristic or effect. Thus an object represented on screen, perceived to be a sound's source, seems to 'explain' the sound we hear; and if that source is absent from the screen, then sound seems to be explained by the fact that it signifies that source in its (unrepresented) absence.[3]

The first of two concerns that emerge from this return to Saussure, and one of the key issues that dominates this dissertation, is how we might begin to come to terms with the materiality of film sound. How might these sounds be mapped and negotiated beyond, and in relation, to their signitive dimensions? Running alongside the signitive is a parallel universe of materiality, with ways of knowing sound, and ways of registering sonic presences, that have little or nothing to do with the attribution of meaning, and which cannot be understood through those reading techniques founded upon semiological models.

The work of a number of contemporary theorists provides a sense of the ways in which this registration of phenomena might be considered critically. The work of Vivian Sobchack, Laura U. Marks and Brian Massumi has been formulated in ways that seek to engage with the sensory, both in relation to the signitive, and as distinct from it. Vivian Sobchack's work on film has drawn on phenomenology to explore the relationships between bodily experience and contemporary moving-image culture, and considers film in terms of the ways in which it represents and rearticulates our concerns and experiences of embodiment and vision (Sobchack, 1992, 2004). Laura U. Marks's work on what she terms 'haptic visuality' has considered how film signifies through its materiality in ways that suggest the tactility of vision (Marks, 1998, 2000). In this way film can evoke the

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[3] This latter type of sound is commonly described as off-screen sound, a term that signals the dominance of retinal regimes over the way in which cinema is described and understood, since what this means, in fact, is that a sound's perceived *source* is off-screen.

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sense of touch, smell, and bodily presence. Negotiating intercultural cinema through the context of embodiment and the senses, in *The Skin of the Film* Marks explores what can be represented by this form of transsensoriality, proposing that filmmakers working between cultures can engage the sensory to convey cultural experience and memory. And in Brian Massumi's *Parables for the Virtual* (2002), movement and affect are the terms used to negotiate bodily and cultural processes that operate through multiple registers of sensation.

A number of disciplines employ the term embodiment to refer to the fact that experience is embodied and lived. A recognition of the body, and thus of embodied experience, has been seen to address the situation in which particular disciplines have placed an almost exclusive focus on the mind and cognitive processes understood, in Cartesian terms, as non-extended and disembodied. The historical trajectory of this concern with embodied experience runs through a number of key currents of 20th century thought, spanning phenomenology (especially the work of Merleau-Ponty) and the Modernist engagement with the materiality of language[4]. Ian Burkitt's book *Bodies of Thought* (1999), which tackles issues of embodiment, identity and modernity, provides a useful introductory formulation of the ways in which a notion of embodiment might be understood and developed in cultural terms. He states, "the body has until recently been an almost invisible object for the social and psychological sciences, which have preferred on the whole to concentrate upon the realm of rational action and the mind rather than upon the body" (Burkitt, 1999: 1). However, critically addressing dualisms between the mental and the material, and the ways in which these relate to various social and cultural formations, Burkitt's approach demonstrates that the concept of embodiment might do more than simply engage with that which has suffered neglect through the bias of a mind/body dualism: it also situates the lived body within a cultural and social context. This, then, allows for two, potentially interrelated, aspects of embodied experience to be considered. Firstly, it allows the physicality and corporeality of the body to be situated in relation to issues of subjectivity. Thus Burkitt poses the question:

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[4] Kahn & Whitehead (1994), Weiss (1995), Kahn (1999) and LaBelle & Migone (2001) offer
excellent critical commentaries on the modernist interest in the materiality of embodied language.

> How could we ever have become, or how could we remain, a person with our own sense of identity if we were not a bodily presence capable of movement and sound, able to attract the attention of others who could then focus upon us as a distinct being made of flesh and blood? (Burkitt, 1999: 1)

The interrelatedness of the material, lived body and psychic formulations of subjectivity may therefore be addressed by the notion of embodiment. Hence, Sobchack comments:

> Embodiment is a radically material condition of human being that necessarily entails both the body and consciousness, objectivity and subjectivity, in an *irreducible ensemble*. Thus we matter and we mean through processes and logics of sense-making that owe as much to our carnal existence as they do to our conscious thought. (Sobchack, 2004: 4)

A second dimension of embodiment, which draws on the idea that the body is lived within various social and cultural formations, situates embodied experience in relation to the ways in which the body itself is discursively constructed; for example, by ideas about what constitutes normality or abnormality in bodily terms. Sobchack makes the point that, if we understand the phenomena of experience to be embodied and lived by a subject, then we must take into account the fact that our understanding of these phenomena, and their meaning, are qualified by historical and cultural factors: "embodiment is never a priori to historical and cultural existence" (Sobchack, 2004: 2). As Burkitt argues, "The body is ... both a cultural product and producer, inhabiting a symbolic world connected to the other dimensions of its experience: to its location in the various spaces and times carved out by its social activity" (Burkitt, 1999: 129).

The notion of embodiment outlined briefly above raises many interesting questions for the study of film, some of which are addressed in visual terms by Sobchack and Marks. However, my own limited use of the term does not seek to engage with the breadth of ideas the term signals in the range of work, and the range of disciplines, that might draw upon it. The term embodiment is used in Chapter 1 specifically in relation to the work of the American video artist Scott Rankin, whose extensive and repeated use of a hand-held camcorder communicates a strong sense of embodied perception and experience. Rankin's use of 'subjective', point-of-view cinematography and sound recording create a

sense of embodied perception, locating the audio-spectator[5] *within* the space the filmmaker presents to us, simultaneously signalling the corporeality of the body that wields the camera. While of course we understand that point-of-view camerawork is simply a representation of subjective perceptual experience, nevertheless, Rankin's physical negotiation of space with the camera, and the marks of his corporeal presence recorded on the videotape, creates the powerful sense that we share his perceptual experience. Thus when Rankin circumnavigates a tree in *Path (2003)*, his jerky, lopsided hand-held tracking shot, and the sounds he makes as he trips and falls to the ground at the end of the shot, serve to convey a sense of embodied experience: both signal the body whose perceptions we feel we share as audio-spectators. This is no omniscient, disembodied narrator, such as we encounter in classical cinema, but one of flesh and blood, whose temporal and spatial negotiations of the audisovisual are embodied. But at the same time that Rankin's cinematic negotiation of space signals his own corporeal presence, it also locates us as phantasmic bodies in his represented space. That is to say, we vicariously share, through the representational power of cinema, what we understand to be Rankin's embodied experience. What my own limited use of the term embodiment tries to engage with is the way in which, through the use of subjective sound recording and camerawork, a sense of embodied experience can be communicated to the viewer – and that this sense of embodiment relates not only to the corporeality of the body, but also to the subjective registration of audiovisual sensation that takes place within particular environments. Thus the body is located, fixed and constructed not only by recognition of the extent of its corporeality, but also by the way in which it registers sensation. In this way, Rankin's work represents a sense of embodiment not just through signalling the corporeality of its maker, registered present through camera movement and sounds, but also by locating the body as the "material premises that enable us, from the first, to sense and respond to the world and others" (Sobchack, 2004: 3). What I suggest here is an aesthetics of embodiment, which constitutes one aspect of spectatorship, and does not require a represented body on the screen. Rather, Rankin's work signals notions

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[5] Michel Chion's term "audio-spectator" (1994: xxv) is used at various points throughout this dissertation to suggest the audio-visual nature of what is commonly termed film 'spectatorship.'

of embodiment by the way in which it places the audio-spectator within the represented spaces it presents.

Recent interest in perception, embodiment, and the senses forms part of what could be described as an 'affective turn' in cultural studies. In part, this has been marked within film studies by the sheer number and proliferation of film theory books published since the late 1990s that have rearticulated or drawn upon the work of Deleuze and Guattari, e.g. Bogue's *Deleuze on Cinema* (2003), Kennedy's *Deleuze and Cinema: The Aesthetics of Sensation* (2002), Rodowick's *Gilles Deleuze's Time Machine* (1997), Flaxman's *The Brain is the Screen: Deleuze and the Philosophy of Cinema* (2000), Pisters's *Micropolitics of Media Culture: Reading the Rhizomes of Deleuze and Guattari* (2001) and *The Matrix of Visual Culture: Working with Deleuze in Film Theory* (2003) and Powell's *Deleuze and Horror Film* (2005). This body of literature stands in addition to a host of books on Deleuze and Guattari's work that situate their ideas within the context of philosophy or cultural studies. Deleuzian theory seems to provide a radical alternative to structuralist thinking, and to that post-structural theory which is inevitably bound to structuralism in its very attempt to divorce itself from it. The work of Deleuze and Guattari, and perhaps Deleuze in particular, seems to provide a means by which it is possible to engage critically with affect, sensation, desire, and embodiment. These, and other ideas, offer the opportunity to register and engage with the experience and circulation of the moving image beyond the terms proposed by the notion of the signifying text.

Despite being a difficult term to define precisely, the notion of affect provides a useful concept with which to explore the ways in which viewers and listeners respond and relate to film outside the intellectual processes by which meaning is created. In psychology the term is broadly used to refer to the emotional tone expressed by a subject, or to the subject's externally displayed mood. However, in its more general usage, affect is loosely understood to be synonymous with emotion or excitement. A useful introduction to the way in which this notion of affect relates to our engagement with the cinematic text is provided by Noël Carroll, who, writing on the relationship between film, emotion and

genre in *Philosophy of Film and Motion Pictures*, characterises what he terms the "affective life" as "the life of feeling" (Carroll, 2006: 217). Carroll suggests that affect comprises a range of phenomena, including automatic reactions (e.g. the startle response) and phobic and sexual responses, in addition to those responses we might more readily identify as emotion (fear, anger, sorrow, etc.) (Carroll, 2006: 217-218). Within the framework he provides for analysing the relation between film and emotion, Carroll employs the notion of affect to describe and identify a particular set of spectatorial responses to the cinematic event, and to acknowledge the place of emotion and feelings within the cinematic experience. Formulated in this way, affect is distinguished from cognitive responses to cinema; that is, the notion of affect describes responses to audiovisual stimuli that cannot be accounted for in terms of knowledge or meaning. Interest in affect can therefore be seen to mark a break with the concern with signification that came to dominate the study of film in the wake of the 'linguistic turn' of the 1960s.

I have suggested above that our encounters with the materiality of film include ways of knowing sound and ways of registering sonic presences that have little or nothing to do with the attribution of meaning. The concept of affect therefore presents one set of possibilities for registering and mapping our encounter with film's materiality, by way of the term's negotiation of a range of possible connections made between film and the audio-spectator, beyond those proposed by signitive models of cinema.

Many theoretical attempts to negotiate affect, and to distinguish it from cognitive responses to stimuli, formulate the term in ways that give primacy to sensation. Thus, Anne Rutherford, in her article *Cinema and Embodied Affect*, which considers the implications of an aesthetics of embodiment for film theory, refers to affect in terms of "sensible resonances of experience", and "a dilation of the senses, a nervous excitation... an opening of the pores, a quickening of the pulse" (Rutherford, 2003). Gay Hawkins, theorising cinematic affect in relation to her own response to the film *American Beauty*, situates affect in terms of phenomena "registered somatically, beneath and before consciousness" (Hawkins, 2002). Similarly, in her book *Deleuze and Cinema: The Aesthetics of Sensation*, which explores cinema as a primarily non-cognitive experience,

Barabara Kennedy draws upon the work of Spinoza to propose that, "affect has an irreducible bodily and autonomic nature. ...Autonomic here is defined as purely a physical response to something: sensual responses, for example, the skin getting warmer, or the heart beating faster" (Kennedy, 2002: 101). What these comments propose is affect as a sensory and bodily response to the audiovisual stimulus of the cinematic event. Such responses cannot be figured in cognitive terms, and thus, at first sight, appear disconnected from those frames of reference proposed by established approaches to cinema founded on signitive paradigms (e.g. narrative, identification, representation).

Although 'affective' theorisations of cinema have become more widespread in recent years, the affective dimensions of cinema were not only recognised, but also theorised by Soviet Filmmakers in the 1920s. In *The Sound Film: A Statement from the USSR*,[6] Eisenstein, Pudovkin and Alexandrov wrote of the power of editing, "It is known that the basic (and only) means that has brought the cinema to such a powerfully affective strength is MONTAGE" (Eisenstein, 1977b: 257). Here the three Soviet directors openly celebrate the affective impact made by film editing on the spectator. Running throughout Eisenstein's writing on cinema is a concern with the affective potential of film, the means by which this might be realised, and the ends to which that potential should be employed. To take one example, of the five types of montage identified by Eisenstein in the 1929 article *Methods of Montage*, only one (intellectual montage) is wholly situated and discussed in relation to the cognitive dimensions of the cinematic event, while the remaining four (metric, rhythmic, tonal and overtonal montage) can all be seen to be draw significantly on an understanding of the affective dimensions of film. Outlining the parameters of metric montage, Eisenstein considers the question of whether or not a metric beat needs to be perceptible for this type of editing to have its desired effect on the spectator:

> I do not mean to imply that the beat should be recognizable as part of the perceived impression. On the contrary. Though unrecognized, it is nevertheless indispensable for the "organization" of the sensual impression. Its clarity can bring into unison the "pulsing" of the film and the "pulsing" of the audience. (Eisenstein, 1977b: 73)

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[6] *A Statement* first appeared in English translation in *Close Up*, Oct 1928 Vol.3 No.4 pp. 10-13. However, reference is made throughout this dissertation to the translation by Jay Leyda - which appears in Eisenstein's *Film Form* (1977) – for reasons of clarity of expression.

Here, Eisenstein very clearly expresses the idea that the regular "pulsing" generated by a film edited in this way will be registered at an affective level by the spectator, and in common with the sources referred to above, he offers this phenomenon as sensory in nature. Furthermore, he distinguishes the affective power of metric montage from the representational dimensions of film when he adds, "the content within the frame of the piece is subordinated to the absolute length of the piece [of film]" (Eisenstein, 1977b: 73).

However, while it might be relatively uncontentious to recognise affect as that which Eisenstein terms the "sensual impression" made by the film text on the spectator, coming to terms with the precise nature of this encounter is more problematic, not least because, as both Massumi (2002) and Kennedy (2002) have pointed out, there is no cultural vocabulary specific to affect. Drawing on the work of Spinoza, Massumi suggests that affect can be figured as an impingement on the body (Massumi, 2002:31). Thus affect can be understood as a registering by and through the body of the sensory stimuli that impinge upon it. Massumi argues that affect should be considered in terms of intensity, related to the passage from one state to another, distinguishing it from both the 'content' and effect of that which impinges upon the body, and locating affect in a 'space' between perception and action. That is, affect precedes subjective and cognitive responses to stimuli.[7] This conceptualisation of affect as intensity rather than emotion is illustrated by the fact that the feelings of sadness generated by a film can paradoxically be pleasurable for the spectator; Massumi suggests it is the *intensity* of emotional response that is

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[7] This is not to suggest, however, that there is no relationship between the affective and cognitive. While affect can be usefully distinguished from cognitive responses to stimuli, the two exist in relationship to one another. As Paul Gormley states, "Thinking about the differences between affect and knowledge/meaning in purely binaristic and totalising terms is impossible" (Gormley, 2005: 33). Thus Massumi suggests that the relationship between meaning and affect is one of "resonation or interference, amplification or dampening" (Massumi, 2002: 25). Similarly, Eisenstein's does not offer these terms as mutually exclusive. Rather, film's affective and representational potential may exist and operate simultaneously: for example, a representational image may register with the spectator at an affective level as a result of the way in which it has been edited. Nevertheless, distinguishing the cognitive from the affective is a useful strategy when, as in this dissertation, the aim is to explore those areas beyond the significatory.

registered as affect, and therefore the notion of affect relates to changes in intensity registered by the body rather than specific (emotional) responses to a stimulus.

Kennedy, like Massumi, draws on Deleuzian notions of affect, which shift the concept from purely psychic formations, where it is conceptualised primarily in relation to emotion, to "'material' configurations of energy and matter" (Kennedy, 2002: 81). Here affect is figured in relation to a body reconceptualised in terms of flows, intensities and assemblage. It is this disengagement from purely psychic formations of affect that allow the term to be articulated by Kennedy in relation to film's materiality. Like Massumi, Kennedy distinguishes affect from emotion, and in so doing removes it from the field of subjectivity. She comments, "affect operates beyond subjectivity within the materiality of the film itself, through an immanence of movement, duration, force and intensity, not through a semiotic regime of signification and representation, but in sensation" (Kennedy, 2002: 101). What Kennedy recognises in her negotiation of affect is the part played by film's materiality in that encounter between film and spectator – an encounter that cannot be figured in terms of signification. The strength of this approach, and its relevance to this dissertation, is that it not only takes into account the sensory aspects of affect, but also the way in which the material configurations of film give rise to an affective response. In this way, it becomes possible to discuss film's affective potential or its affective dimensions in relation to its materiality. Kennedy thus sketches one aspect of affect in terms of film's affective processuality:

> ...the ways in which colours vibrate, clash, coincide, resonate; the dimensions of their tones; the blurring of their boundaries; the linearity across and within the frames; the rhythms and movements felt across the screens; the role of sound within this experience. Not in any psychic or libidinal way as we saw in psychoanalysis, for example, but through the materiality of the film, its compositional elements, connecting with other bodies, corporeal, material, molecular... (Kennedy, 2002: 104)

This understanding of affect reinstates the material play of film into a concept that might otherwise divorce sensation from stimulus. For Deleuze and Guattari, since "it is difficult to say where in fact the material ends and sensation begins" (Deleuze & Guattari, 1994: 166), affect cannot be distinguished or disentangled from the material events and assemblages that produce sensory response: "Harmonies are affects. Consonance and

dissonance, harmonies of tone or colour, are affects of music or painting" (Deleuze and Guattari, 1994: 164).

Taking this lead from Deleuze and Guattari, Kennedy's study of cinema as a non-cognitive experience conceptualises film as a body (denaturalised, conceived as a series of flows and particles) in assemblage with other bodies (our own), and what we term affect is generated in, through, and by that meeting or assemblage. Whereas Massumi figures affect in terms of impingement, Kennedy models this interaction between film and our body as absorption: "When our bodies absorb the movements of the screenic images, instead of reflecting them, our activity can be described as effort, or... as 'affect'" (Kennedy, 2002: 169).

Within the context of this dissertation, the term is employed to signal those sensory responses to cinesonic materiality that cannot be explored through the significatory paradigms that have come to dominate the study of film. Informed primarily by the formulations of affect offered by Deleuze, Guattari and Kennedy outlined above, the term is also used in relation to those aspects and dimensions of cinesonic materiality that are fundamentally connected to the affect they generate. Since the primary concern of this dissertation is with the materiality of film and video sound, the notion of affect is therefore brought to bear in ways that enable a critical engagement with that materiality; as such, affect takes its place alongside the temporal, historical and morphological formulations that are employed within this dissertation to map and negotiate cinesonic materiality. The potential problem of focusing only on the notion of affect as a way of dealing with that which cannot be thought in terms of signification is that it inevitably places focus on the subject through the concern with embodiment, perception and the senses. While all of these terms must occupy an important place in a critical engagement with the non-significatory, the benefit of what I have so-far termed 'materiality' is that it maintains a focus on the text. Having personally come to film studies through training as a filmmaker, and as someone who continues to produce video and audio work, and who works with students of media production on a daily basis, I am very much aware of the way in which the film or video text is crafted, the way in which the interaction and

weaving of its material dimensions presents itself as the sensory stimulus negotiated by the viewing and listening subject. Thus the notion of the text is useful when considered as a meeting point of practices, materials, and perception; it is not useful when, dominated by a notion of reading, the text becomes only a static source of meanings to be decoded. Therefore, in my own study the notion of affect informs, rather than determines, the ways in which film and video sound is negotiated. In any case, I propose that an interest in materiality should figure implicitly in the critical concern with affect, since this term relates to the ways in which objects and phenomena are registered, known, and understood by those that encounter, use and consume them. Thus, in addition to what may be considered the affective turn in film studies, reference might also be made to an increasing interest in material culture within cultural studies. The materiality of objects with cultural significance, and the social relations these objects enter into have long been of interest in fields such as anthropology and archaeology. However, the interdisciplinary nature of both cultural studies and visual studies enables, at least potentially, new types of critical encounter with materiality that build upon a range of existing disciplines, including design, art history, social history, human geography and museology.

However, what is absolutely clear from the body of literature that has been assembled is that if there is indeed an affective/material turn, it has not dealt with the sonic. The affective turn is not a 'done deal', and in the rush to take up Deleuze and Guattari there remain substantial blind-spots. It is precisely this area of critical neglect that this dissertation addresses. An illustration of this critical absence is made by the fact that much remains to be done even in the task of thinking through the work of Deleuze and Guattari in relation to the sonic; beyond passing references to sound, the work that forms this affective turn in film studies is primarily concerned with the moving image.[8]

The critical move made in this dissertation, however, is not simply a switching of sides, a debunking or reversal of established critical positions. What follows is not a wholesale dismissal of the significatory in favour of the material. Rather this study is informed by

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[8] A notable exception to this is a study by Jayamanne (2001), which considers Spike Lee's use of music in *Do The Right Thing* (1989) in terms of Deleuzian notions of territoriality.

the belief that a critical engagement with film and video sound must be aware of –
although not always directly concerned with – both signification and the material, and
crucially the relationship between the two. As Stan Brakhage has suggested, the
representational dimensions of film are never entirely lost, no matter how much an
individual filmmaker might attempt to displace or reconfigure the medium's
representational qualities. Although Brakhage had in fact made many sound films, his
commitment to producing work without a recorded soundtrack is both well known and
well documented.[9] When asked by Suranjan Ganguly what he learned from his
encounters with the composers Edgard Varèse and John Cage, and their work, he
commented:

> Primarily what I got from them was the inspiration to make silent film. I was especially
> attracted to the instrumental aspects of their recorded live-sound (for example, the hiss of
> tires on a wet street) and the fact that the sound could refer to the source of the recording
> (a passing car). This is a corollary of film because when you turn on the camera you
> automatically pick up reference. Even if you shoot totally out of focus, there is a certain
> quality of say a car's movement which even if reduced to a blob of hexagonal lens-
> reflecting light is usually recognizable as that of an automobile. (Ganguly, 2002: 154)

For Brakhage this ability to signify, to refer to a source is one that must be constantly
challenged in order to create a 'direct' encounter with vision. In a sense, it was the
referentiality of sound that informed his approach to the image:

> Take the jackhammer with its electronic echoes in [Varèse's] Poeme Electronique or the
> waterdrop sounds that resound within the interpolations in Deserts, and consider how
> these references to the source of the sound are embodied within what is finally a pure
> sound aesthetic. That has taught me to resist the referent, to take on referential
> photography and contain it so that the references would not destroy the aesthetic of the
> film as a film experience. (Ganguly, 2002: 154)

What can be taken from Brakhage's comments is the idea that the significatory can never
be neatly excised from cinema, leaving a material balance that could be neatly weighed
and measured. While the concerns of this dissertation are very definitely focused on the
materiality of film and video sound, it is understood that this cannot always be considered
in isolation from a medium's representational dimensions. That is to say, the critical
engagement with materiality proposed by this dissertation seeks to address phenomena

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[9] See his essay The Silent Sound Sense (1960).

that may or may not support the creation of meaning, but do not themselves belong to this sphere.

The question of what constitutes film's materiality is, of course, far from straightforward, and like the notions of embodiment and affect, needs some form of clarification within the context of this study. A focus on film as text, and on meaning and signification, draws attention away from the fact that film is a material assemblage, and the cinematic event has concrete temporal and spatial dimensions. Issues relating to film's materiality have perhaps been most clearly theorised in relation to avant-garde filmmaking practices, particularly those taking their cue from modernism in proposing film as an exploration and demonstration of its own properties. In broad terms, what has been seen as a modernist concern with specificity[10] reveals itself in the pursuit of 'film as film'; that is, film practice which attempts to identify and draw primarily upon what might be considered to be the medium's essential characteristics, reducing or eradicating non-cinematic elements, and thus differentiating film from other art forms, sometimes purposefully establishing a self-reflexive dimension to film practice. In this way issues of materiality were seen to be central to Structural Film practice in 1960s and 70s, occupying a dominant place in its theorisation (e.g. Cornwell's *Some formalist tendencies in the current American avant-garde film* (1972), Gidal's *Theory and Definition of Structural/Materialist Film* (1975) and *Materialist Film* (1989), Sharits's *Words Per Page* (1972) and Wollen's articles *The Two Avant-Gardes* (1975) and *Ontology and Materialism in Film* (1976)). Thus Birgit Hein's characterisation of Structural Film proposes: "These works are basically exploring the whole reproduction-process that underpins the medium, including the film material, and the optical, chemical and perceptual processes" (Hein, 1979: 93). Within the context of avant-garde film theory and practice, an important formulation of film's materiality has centred on a recognition and engagement with the qualities of its physical substrate: that is, the film strip itself and its unique photochemical properties. For Regina Cornwell, film's material dimension is essentially conceived in terms of light acting on film emulsion in time (Cornwell,

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[10] A view of modernism proposed, for example, by Clement Greenberg in his famous essay *Modernist Painting*: "It quickly emerged that the unique and proper area of competence of each art coincided with all that was unique in the nature of its medium" (Greenberg, 2002: 775).

1972:111). According to this formulation, film's materiality reveals itself primarily in visual properties and phenomena such as grain, colour, movement and flicker – all of which situate materiality exclusively in relation to film's photochemical support, and its passage through the projector.

However, the temporal dimensions of film's materiality alluded to by Cornwell are not limited to the ability of the film-strip to reproduce or generate movement of, or in, an image. The physical aspects of film's material substrate identified by Cornwell are not only the basis of the film image, but also its structure in time. Malcolm Le Grice proposes that some forms of Structural Film practice "establish experience of duration as a 'concrete' dimension of cinema, and as the dominant dimension of cinematic experience" (Le Grice, 1977: 118-120). Similarly, for Peter Gidal duration is understood to be a "material piece of time", and thus the "basic unit" of film (Gidal, 1975: 191). We might therefore take Gidal's pithy statement "Material must not mean just that which you can touch, some object" (Gidal, 1989: 46) to suggest that an understanding of film's materiality need not necessarily be limited to consideration of the medium's physical substrate; understood as an event taking place in time, film's concrete temporal dimensions render process and structure part of its materiality. Thus, within Structural Film practice, duration is not seen as a neutral and transparent 'container' for time-based images, but becomes foreground as one of film's fundamental properties, one of its material dimensions. And in the same way that film occupies time, so it occupies space: as Michael Snow points out, "It is precise that 'events *take place*'" (Hartog, 1978: 36). That is, the occupation and production of space related to film exhibition might also be understood to constitute one aspect of the medium's materiality, mapped in part by the physical cone of light emerging from the projector, the screen, and the spatial relationship between the two dimensional screen and the three-dimensional cone of light that is directed at it.

The limitation of the formulations of materiality sketched briefly above is their obvious visual bias, which in turn prompts two questions about film's materiality: firstly, in what ways might film's sonic element be considered 'material', and secondly, how might this

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materiality be situated within an audio-visual context? The issue of whether sound *itself* can be seen as material – rather than the object it seems to refer to – is addressed by Pierre Schaeffer's notion of "reduced listening", also known as "acousmatic listening" (Schaeffer, 2004). According to Michel Chion, if *causal* listening involves listening to sounds in order to identify their source, and if *semantic* listening involves listening in order interpret a message transmitted in a code or language, then *reduced* listening focuses on the *traits* of the sound itself, independent of the cause or the meaning of a sound (Chion, 1994: 29). Listening in this way produces a new domain of sound – what Schaeffer referred to as *objets sonore, or* sonic/sonorous objects. If sound is listened to and conceptualised as a concrete sonic event, dissociated from any representational function, then its materiality can be registered in terms its complexity, amplitude, tonal qualities, timbre, duration, development over time, and so on. While my own study does not draw directly on Schaeffer's work in this area, the strength of his concept of the *objet sonore* is that it addresses the fact that irrespective of whether or not a sound signifies, it has a material existence in space and time, independent of its source; and if we understand sounds to be material events or phenomena, then the notion of sonic materiality refers to the specific qualities, states, forms and structures of those sounds. This conceptualisation of sound's materiality is in fact lent support by Saussure, who identifies "sound changes" as an example of language's "material and mechanical" dimension (Saussure, 1964: 6). The qualities of timbre, duration, and development over time, which might serve to adumbrate the Schafferian *objet sonore,* provide clear parallels with those qualities of the image that were seen to manifest film's materiality within Structural Film practice: for example, movement, grain, and duration. Of course, it is important to remember that the multiple dimensions of sound's materiality are interrelated. So, for example, the quality of reverberation that contributes to the temporal profile of a sound is also inextricably linked with the physical space in which a sound event *takes place.* Similarly, the timbral qualities of electronic sound, which serve to identify and constitute its concrete particularity, cannot be divorced from the material technology that produces them. Furthermore, the soundtrack, as a material assemblage of sounds structured in time, tends to present a multiplicity of sonic phenomena, rather than discrete, neatly differentiated individual sounds. The concrete experience of listening to

the soundtrack is one that reveals its material state to be one of flux and flow, a hence a materiality marked by the fluidity of multiple and shifting sound relations engendered not only by the recording itself, but also by editing and mixing.

The range of factors which figure in addressing the complexity and particularity of the material dimensions of cinema are suggested by Rick Altman's commentary on film exhibition:

> As a material product, cinema quickly reveals the location and nature of its sound track(s), the technology used to produce them, the apparatus necessary for reproduction, and the physical relationship between loudspeakers, spectators, and their physical surroundings. Such an approach encourages us to move past the imaginary space of the screen to the spaces and sounds with which cinema must compete – the kids in the front rows, the air conditioner hum, the lobby cash register, the competing sound track in the adjacent multiplex theatre, passing traffic, an a hundred other sounds that are not part of the text as such, but constitute an important part of cinema's social materiality. (Altman, 1992:6)

Thus Altman maps the material dimensions of cinema not only in relation to its soundtracks, but also in relation to its technology and the spatial aspects of exhibition. Importantly, this opens up to consideration a broader range of sounds than those normally considered by what Altman characterises as text-oriented approaches to cinema. Critical consideration of film's sonic materiality is thus not necessarily limited to the multiplicity of sounds recorded *on* the soundtrack, but might also include those sound produced *by* the soundtrack (such as the 'hiss' of magnetic recording tape) and the technology of film exhibition, rendered within the context of particular physical space. While what Altman identifies as the sounds of cinema's social materiality does not occupy a significant place in my own study, his suggestions that we open our ears to a range of sounds beyond those sanctioned by the established notion of the soundtrack, and that we consider the place occupied by film technology in material terms, inform my own negotiation and formulation of sonic materiality.

Having addressed the question of the ways in which film's sonic elements might be considered 'material' within the context of this study, the question remains how this materiality might be situated within an audio-visual context. If the materiality of sound can in part be mapped in terms of development, rhythm, play, contrast, and so on – as

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concrete manifestations of what might be more broadly termed 'structure' – then it follows that relationships between sound and image might also considered as a constituent of materiality. That is, if we understand structure to be the concrete particularity of the distribution of events within a temporal frame, rather than an inferred or imposed abstract paradigm, and accept that structure maps an important part of film's materiality (as is proposed by some writers on Structural film), then it is not only the 'horizontal' relationships between sound and sound, and between image and image that constitute its materiality, but also 'vertical' relationships between sound and image. And if the notion of materiality relates to the qualities, states, forms and structures of the concrete sounds and images that constitute film, then it should also embrace sound-image relationships.

Central to the formulation of materiality offered by this study is the idea that the material events of film are marked by a relationship between sound and image, and thus I propose that an engagement with sound's material dimensions needs to address what I term film and video's audiovisuality. I have borrowed Philip Brophy's elegant neologism 'cinesonic' to signal the fact that the sounds with which I am concerned are not isolated sonic phenomena, but are heard within the context of film and video.[11] This observation appears so self-evident that it hardly seems worth mentioning. But however straightforward this statement may seem – or perhaps because of its very simplicity – the idea it conveys has had almost no significant impact on the study of film; yet the consequences of this observation for film theory and criticism are profound indeed. It is Michel Chion who has almost single-handedly placed this idea on the critical agenda, and who makes the point in his seminal work *Audio-vision*, that "films, television, and other audiovisual media do not just address the eye. They place their spectators – their audio-spectators – in a specific perceptual mode of reception, which… I shall call audio-vision" (Chion, 1994: xxv). He states that the objective of his study is to "demonstrate the reality of audiovisual combination – that one perception influences the other and transforms it.

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[11] Brophy coined the term for the *Cinesonic International Conference on Film Scores and Sound Design*, held annually in Melbourne since 1998.

We never see the same thing when we also hear; we don't hear the same thing when we see as well" (Chion, 1994: xxvi).

My own work on materiality builds on Chion's central premise in proposing that any coming to terms with film's materiality must be informed by the idea that what we term 'the film' is marked by a *relationship* between sound and image. Thus what follows is a sounding of that materiality which is best described as film's audiovisuality. This dissertation is therefore a sounding of the audiovisuality of film and video, and is thus concerned with the sonic within the context of its relationship with the image. This audiovisuality is provisionally considered through a number of key aspects, each of which has a bearing on the way in which this study tackles its subject.

The first important observation to be made in relation to this provisional notion of audiovisuality is that the relationship between sound and image is always present in film and video, since sound can never be wholly absent from the cinema or video event. As many studies of 'silent' cinema have shown film has never been truly silent.[12] Many types of sonic accompaniment were employed in the early years of cinema, including various forms of musical orchestration, narration, and accompaniment by sound effects or performed dialogue. But in addition to this, sound is always produced by an audience, the technology of exhibition, or is provided by the noises emanating from outside the theatre. So despite the fact that a filmmaker like Stan Brakhage might make a conscious choice not to record a soundtrack for a number of his films, their screening can never be a purely visual experience. The benefit of thinking through the sonic dimensions of film in these terms is that in challenging what is normally understood as the self-contained soundtrack, a broader notion of sound-image relationships is brought to bear. What is interesting about these particular sounds is that while they very much affect our experience of film and video, they are often situated below the level of consciousness. As Brian Massumi points out, "The vast majority of the world's sensations are certainly nonconscious" (Massumi, 2002: 16). This then demands a listening to of that which we neglect, ignore,

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[12] See, for example, King (1984), Abel & Altman (2001), and Altman (2004).

and listen through – like the hiss of oxides on magnetic tape, or the optical crackle that marks older film prints.

The second important observation to be made in relation to the notion of audiovisuality relates to the idea that film and video are transsensorial media forms. The common conception of film as a binary structure composed of sound and image, or image and sound, precludes engagement with the transsensory or intersensory experience of cinema. A number of filmmakers, yet few theorists, have concerned themselves with a mixing rather than a differentiation of the senses of sight and sound that might take place in cinema. The work of Laura U. Marks is a notable exception to this, and the recent interest in the senses has begun to challenge the distinctions previously made between the senses in our apprehension of various phenomena. However work in this area, like that of Marks, has yet to engage with the sonic.

This is not to suggest that no useful distinction can be made between the sonic and the visual, but rather that there are forms of combination and blending that create significant moments of transsensory experience, just as there are strategies of differentiation and dissociation that demand consideration of the sonic and the visual as distinct phenomena. The issue here is not that one type of relationship determines audiovisuality, but rather that film and video are host to multiple, shifting sound-image relations. Thus, any consideration of the cinesonic must necessarily respond to the fluid nature of the film text, and the fact that the relationship between sound and image is never of a single stable and continuous type, but rather is marked by constant flow and flux. In time-based media like film and video, the changes that take place in both sound and image equate to changes in the relationship between them. Furthermore, at any given moment, film's audiovisuality may be marked by more than one type of relationship; it is therefore possible that simultaneous, overlapping, multiple audiovisual modalities might comfortably occupy any given audiovisual sample. Thus at the same time as we engage intellectually with the signitive dimensions of film, the film or video also registers and operates at the level of affect. Any approach to the cinesonic will need to embrace the way in which the visual and the sonic interact, combine and separate to create the film

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text. Thus, although this study concerns itself with the cinesonic, on occasion we need to approach this by considering the visual and the sonic on their own terms. What this demands is an engagement with the contingent rather than the universal, an engagement with flux, flow and change rather than the frozen, the static, the immutable.

With this notion of film's materiality in place, this dissertation attempts to map audiovisuality through a number of dimensions: the temporal, historical, morphological, and affective. Thus the formulations of materiality drawn from the work of Altman, Schaeffer and from Structural Film theory, serve mainly to triangulate the territory of material sound that my own study seeks to map in other ways. However, the question remains why undertake this sounding of film and video's audiovisuality? This dissertation does not offer itself simply as an attempt to more *accurately* account for what cannot be netted by Saussurian notions of signification – a pointless activity in any case since Saussure never intended his posthumously published work to be applied to an analysis of the cinesonic. But it is to Saussure that I once again return to raise the question of what exactly might be at stake in a conceptual mapping of audiovisuality.

At the heart of Saussurian linguistics lies the inscription of difference: "in language there are only differences" (Saussure, 1964: 120). Central to Saussurian thought is a distinction made between what is knowable and unknowable, which then maps onto modal distinctions between notions of essence founded upon differentiation, individuation and abstraction, and phenomena which are noisy, chaotic, unruly, unmasterable and ultimately unknowable. The tension between these conceptual and ontological modalities reveals itself quite clearly in the way in which Saussure removes the troubling presence of sound from the study of linguistics, the subsequent eschewal of speech in favour of language, and the modelling of language through writing. The unmanageability of the sonic dimension of language is clearly a troubling presence in the *Course in General Linguistics*, and a key motivation behind Saussure's preference for writing: "apart from their graphic symbols, sounds are only vague notions" (Saussure, 1964: 33). But what is it that necessitates the clear removal of sound from the Saussurian project, when it might just as well have been considered a significant constituent of speech? On the topic of the

object of linguistics, Saussure offers speech (*parole*) as unruly, unmasterable, "many-sided and heterogeneous" (Saussure, 1964: 9), not only uncontainable within Saussurian linguistics, but unknowable within *any* scientific project. From Saussure's standpoint, speech lacks unity, "straddling several areas simultaneously – physical, physiological and psychological – it belongs both to the individual and to society; we cannot put it into any category of human facts" (Saussure, 1964: 9). Within the context of a project based on classification and differentiation, speech becomes a noisy, tumultuous swirling mass that can only be tamed by language (*langue*): "As soon as we give language first place among the facts of speech, we introduce a natural order into a mass that lends itself to no other classification" (Saussure, 1964:9). What is particularly telling here is Saussure's use of the word 'mass'; speech is figured as the undifferentiated, the confusing, and most worrying of all, the unmasterable. With its sonic base, speech is too fluid, too undifferentiated, too much in flux to be dealt with in the same way as the static, immutable model of writing. Saussure's project not only favours the static and the immutable, but also imposes stasis on the phenomena under study by denying their multiplicity, flux and fluidity.

As noted above, the Saussurian model of language is founded on the inscription of difference, but the importance of this figure of difference extends beyond the mechanics of signification to suffuse and inform the whole Saussurian project. What cannot be *differentiated* is rejected as an unmanageable, unknowable mass. Returning once again to Saussure's simile of the swimmer without a lifebelt, the threat posed by the oceanic becomes clear:

> Whoever consciously deprives himself of the perceptible image of the written word runs the risk of perceiving only a shapeless and unmanageable mass. Taking away the written form is like depriving a beginning swimmer of his life belt. (Saussure, 1964:32)

Semiology proposes ways of knowing that are wholly reliant upon a conceptual mode that operates through division and individuation. As such Saussurian linguistics is simply one, albeit highly influential, manifestation of what Deleuze and Guattari have termed 'arborescent' thought. Taking the root system of plants as a way to map and describe "the most classical and well reflected, oldest, and weariest kind of thought" (Deleuze & Guattari, 1988: 5), the authors propose that arborescent thought is founded upon

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bifurcation, separation, and individuation, just as a root system divides underground. Thus they state that, "Binary logic is the spiritual reality of the root-tree" (Deleuze & Guattari, 1988: 5). What this modelling addresses is the deeply structural problems of structural thinking, of structuralist theory, and of that post-structural theory which in its opposition to structuralism can never be divorced from it. For Deleuze and Guattari, challenging this model of thought is of central importance to any philosophical project: "We're tired of trees. We should stop believing in trees, roots, and radicles. They've made us suffer too much. All of arborescent culture is founded on them, from biology to linguistics" (Deleuze & Guattari, 1988: 15). And perhaps if one considers how arboreal modes of thought underpin divisive social, sexual or political classifications of otherness, then it is clear that a great deal is at stake in tackling its influence on modes of conceptualising the world.

The question this raises for my own study is how binary formulations and the inscription of difference impact upon the ways in which we conceptualise and negotiate relationships between sound and image. What does this inscription of difference mean in terms of cinesonic formulations such as montage, so-called 'contrapuntal' uses of sound, and in terms of oppositional and deconstructive film practices reliant on a constitutive other? The issue of the negative differentiation that lies at the heart of Saussurian linguistics is pertinent here; what we observe is a problematic reliance on a secondary term – that which the phenomenon under consideration is *not*. The problem with this constitutive outside is that it deflects attention away from the thing under consideration, rendering it at best subordinate to this other term. This is mirrored by the sound-source formulation, wherein our attention is constantly diverted from the material sound being auditioned to the real or imagined object or event it represents. The challenge this raises is how to find ways in which we might constitute and negotiate the object of study in positive terms and avoid the constant displacement of materiality that occurs in significatory systems. Furthermore, if binary epistemological and ontological modalities are reliant upon differentiation, mutual exclusivity and opposition, how then might we engage with the forms of fusion, entanglement, combination, and blurring that the notion of audiovisuality might justifiable include.

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Finally, if these particular forms of audiovisuality are unknowable within certain epistemological regimes, then they may take on radical potential. That is they may offer alternatives to hegemonic models of audiovisuality, like that proposed by classical cinema, in ways that contest those models at a fundamental level. Thus the notion of radical poetics explored in this dissertation revisits the original sense of the word 'radical' as that relating to inherent and fundamental qualities. In one way this represents a return to those issues of film form that were central to what D. N. Rodowick has termed 'Political Modernism.' (Rodowick, 1994) In the 1970s the theoretical interventions made by semiology, psychoanalysis and Marxism in film studies came to have a direct bearing on the way in which film practice was understood as political. One of the important consequences of this particular meeting of theory and practice was that issues of 'form' were considered in political terms: "Ideology was no longer simply considered as the message or content of films; equally important was asking how the spectator was addressed through strategies of filmic signification" (Rodowick, 1994: xii-xiii). By revisiting this notion, questions of audiovisuality open out onto what is at stake politically in sound-image relationships, what might constitute a radical poetics of audiovisuality, and how this relates to what has traditionally been understood as political within the context of audiovisual poetics, particularly in relation to modalities of modernism.

Having outlined the aims of this dissertation, it remains for me to explain briefly something of the organisation and scope of what follows. The way in which this study is organised relates very closely to issues of methodology. My study of cinesonica works through a number of trajectories, each of which can be seen as an attempt to sample and a map the audiovisuality of film and video. The dissertation makes no claim to offer a linear history or totalising 'theory' of the cinesonic, but rather seeks to make a number of interventions into what remains an under-theorised area of the study of film and video in ways that seek to make creative and productive connections between particular historical moments, film and video production practices, technologies, theoretical and conceptual frameworks, and film and video texts. These trajectories draw upon film and video as primary sources in their own right, on various bodies of critical and theoretical work, and

sometimes the words of the filmmakers themselves, taken largely from my own interviews with them. Since the concern of this study is with the cinesonic rather than issues of film genre, the study purposefully engages with a wide range of film and video sources. Most of the work undertaken on film sound has so far focussed on the narrative feature film, and while this study also considers classical Hollywood film, significant reference is made to avant-garde film and video, animated cartoons and Scratch video. While each chapter makes use of the critical resources associated with each of these areas, critical and theoretical work from outside the area of film studies is brought to bear on the topics under discussion. Each is introduced within the context of the chapter hosting it, but a brief outline might usefully indicate the key theoretical resources upon which the dissertation as a whole draws[13]. Mention has already been made of the work of Deleuze and Guattari, and this study engages specifically with their work on the Refrain from *A Thousand Plateaus* (1988), and with Deleuze's *Cinema 2: The Time Image* (1989). Works on music, and the writings of composers, figure in several chapters. A particularly useful resource in this context has been Daniel Goldmark and Yuval Taylor's collection of materials on cartoon music (2002). Their excellent book brings together a wide range of texts that span the history of the animated cartoon, so that they may be seen in relation to one another for the first time. In addition I have drawn upon Jacques Attali's seminal work of cultural historiography, *Noise* (1985), Curtis Roads's work in microsound, in his book of the same name (2001), and finally Siegmund Levarie and Ernst Levy's *Musical Morphology* (1983).

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[13] Although not referenced extensively in my own study, there is a growing body of literature relating to the emerging field of sound studies, concerned in particular with auditory culture and sonic arts. This body of work presents an interdisciplinary approach to the study of sound within a cultural context, drawing upon musicology, architecture, electro-acoustic composition, urban studies, communication and media studies, phenomenology, social sciences and psychology to engage with subjects such as the role of sound in historical and social thought, contemporary and historical soundscapes, music, voices, technologies and auditory experience and sensation. Bull & Back (2003), Erlmann (2004), and Augoyard & Torgue (2005) draw on a range of disciplines to offer a variety of perspectives on the study of auditory culture, while the work of Kittler (1999), Lastra (2000), Day (2000), Taylor (2001), Thompson (2002), Weiss (2002) and Sterne (2003) situate specific sound technologies within histories of auditory culture. Recent critical commentaries on sonic art, which seek to locate art works and sonic practices in relation to broader contexts of auditory culture, include LaBelle & Roden (1999), LaBelle & Migone (2001), Weiss (2001) and Toop (1999, 2004).

Each of the trajectories featured in the five chapters of this dissertation stands alone in some ways, but at the same time each forms a part of a larger arc. They appear in a particular order, and are constructed in a certain way to create a sense of movement over the dissertation as a whole, balancing the act of sampling with the articulation of those samples. At the same time, connectivity is created by particular issues and figures that echo across the chapters. Issues such as noise, montage, negative differentiation, and deconstruction[14] take the form of a refrain, each return of which aims to add both depth and breadth to the study. The nodal points in this study appear at the end of chapters, so that each subsequent chapter can build on what has gone before.

The notion of the refrain, in the sense of a return, describes the critical stance I adopt throughout this study. Whenever we approach a film, video or critical text, we tend to inherit well-rehearsed readings of that text. My critical response to this has simply been to ask the question, 'what if?' Much of my work is a form of revisionism that returns to sets of ideas and particular readings in order to release a potentiality that is locked into this resource, but has remained neglected because of the way in which it has been used or read. And it is by this kind of critical return that I aim to make an intervention. A brief illustration of this might be the way in which I have used the work of Levarie and Levy on musical morphology. The notion of musical morphology is not one that in any way dominates the critical landscape of music. Indeed, Levarie and Levy's work is firmly located in traditions of structuralist thought in ways that might seem unhelpful in the context of this study. However, their passionately-written and occasionally eccentric text not only serves as a snapshot of a certain mode of thinking this dissertation attempts to break with, but in its central figure of morphology provides a critical tool which can be

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[14] It is understood that the term 'deconstruction' has a very precise meaning in the field if literary studies, associated with Derridean theories of reading. While not entirely divorced from this notion and history of deconstruction, the term is used in this dissertation in a more general sense to signal those artistic and critical practices that, in the wake of structuralism, sought to deconstruct particular (often hegemonic) cultural practices and objects. My own use of the word seeks to embrace a plurality of deconstructive practices, including for example the strategies of so-called 'counter cinema', and 'Brechtian' techniques that seek to uncover and reveal the illusionistic nature of particular representational forms. Of particular relevance to this study are those deconstructive practices and theories that seek to disentangle the sonic from the visual within the audiovisual constructions of cinema.

revisited to engage productively in a mapping of the materiality of sound-image relationships. Although Levarie and Levy's study adopts a structuralist approach in asserting that music can be understood in terms of the stability of certain musical forms, the notion of morphology can also be applied to an encounter with the shift, flux and change of sound. Thus the critical approach proposed by this study is not one of debunking or demolishing, but of revisiting and rethinking – approaching both audiovisual texts and critical works as material that is there to be constantly mined and re-mined.

Chapter 1

SOUND   SOURCE   OBJECT

Listening ears

Scattered along the Kent coastline are the crumbling remains of a sound technology that never really was. Between the First and Second World Wars a series of experimental concrete sound mirrors was constructed to serve as an early warning system against airborne attack from mainland Europe. Sound was gathered at the focal point of these acoustic mirrors by means of trumpet-shaped sound collectors connected to the listener's ears by a stethoscope arrangement of rubber tubes; a system to be replaced in later experiments by microphones, amplifiers and headsets. The personnel posted at these listening stations would be monitoring for the sound of enemy aircraft heading towards Britain over the English Channel. This sonic forewarning would enable the listeners to alert the relevant authorities to prepare defence against the imminent threat of aerial attack. At the heart of this technology, a forerunner of radar, laid a notion about the relationship between sound and its source that ultimately turned out to be the technology's failure. The value of these 'listening ears', as they are referred to locally, was founded upon the belief that one sound could be separated from a host of others, and that this one sound could be attributed to a particular source: approaching enemy aircraft. These now crumbling concrete structures represent a manifestation of the common conception of sound as an attribute of a source. What motivated interest in these particular sounds was the fact that they signified 'approaching aircraft' and therefore a

threat from outside. But the failure of this project reveals sonic modalities that challenge signitive formulations of sound phenomena. Somehow, the sound of an aircraft was to identify the presence of an unseen enemy in vast, fluid, undifferentiated expanses of sea and sky. The problem with the acoustic mirrors is obvious to anyone visiting them today; for those constructions with an elevated or exposed coastal position, the swirling white noise of wind, rain and waves masks and consumes all other sounds until it is too late – until the enemy is upon you. The oceanic sound of wind and waves, and the flux of meteorological systems, possesses, mixes, conceals and homogenises all sonic phenomena within its grasp. For those acoustic mirrors located some distance back from the coastline, it was the environmental noise created by the development of road transport and the expansion of coastal communities between the wars that interfered with air defence listening[1] (Scarth, 1999: 185-189).

If the foundation of this technology was the notion that sound is attributable to a source, then its failure reveals two conceptual modes, two ways of thinking and approaching sound that seem opposed and mutually exclusive. The first proposes isolation, individuation, differentiation, a cognitive foregrounding. As the mode attributing sound to a source, it is the conception underlying the most common linguistic formulation by which we describe sonic phenomena as 'the sound of' something or other. The other conceptual mode proposes an undifferentiated, fluid, protean, dispersed and oceanic sound, cognitively backgrounded or disruptively foregrounded.

But even if it had somehow been possible, under optimum conditions, to differentiate these sounds, their detection gave no information about the height, speed and direction of approaching aircraft. The crude sound-source model adopted here was not able to describe or map the spatial or temporal dimensions of the unwinding sonic event. Put another way, the significatory model upon which the acoustic reflectors were founded was unable to engage with the material dimensions of the sonic event; unable to engage with the flux, flow, and movement of sound in space and time. Rather, in conjuring the

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[1] The history, development and construction of the acoustic mirrors are documented in Richard N. Scarth's *Echoes from the Sky* (1999).

presence of enemy aircraft from the murky expanses of the English Channel through listening, these structures simply represent an attempt to sound otherness; and not only in terms of distinguishing one sound from another. By listening out towards mainland Europe for approaching aircraft, the sound reflectors construct the absent other, the threat of the external.

What is manifested by these concrete structures is a relationship between sound and source that relates directly to the signifier/signified model proposed by Saussurian linguistics. If sound is considered to be an attribute of an object-source, when divorced from that object, sound becomes conceptualised as a signifier of that source in its (visual) absence; barking signifies dog, while rumbling possibly suggests the approach of enemy aircraft. Sound thus enters into networks of representational thought, serving as a proxy for something absent from its own concrete manifestation, its own materiality. Transposed to the cinematic, this sound-source formulation has a powerful influence on the way in which we think through sound-image relations. In some respects, the screen, through its representational visual imagery, seems to offer itself as a collection and succession of object sources, to which sounds are appended. But of course in the cinema sounds are appended not to objects, but to images. This introduces into the sound-object formulation a further significatory dimension, to which is added the fact that the sounds we hear at the cinema, designed to accompany the images, are usually recorded; the dog listening attentively to his master's voice is not, of course, listening to his master's voice but to its recorded analogue.

Sounding the untranslatable

But film is not entirely served by an essentially linguistic model of film as signifier, of film as a signifying text.[2] When we conceptualise film as a signifying structure along the lines proposed by the dominant linguistic model, we engage in an act of translation. This chapter, and indeed this dissertation, engages with those elements of the audiovisual

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[2] The question of whether or not cinema constitutes a 'true' language, explored most notably by Christian Metz (1974), is not directly relevant to this study. Rather the issue at stake here is how models derived from the study of linguistics have been applied to an understanding of film as a signifying text.

experience of film that cannot be neatly disposed of with the label 'signifier.' These are the elements and practices and relationships with which we might struggle to *make sense*, but which can nevertheless *be sensed*. The material dimensions of the cinesonic extend beyond their ability to support the significatory processes that seem to dominate cinema; the materiality of the cinesonic thus embraces and comprises the audiovisual event in its temporal and spatial richness, and in addition its perception. It is precisely this dimension of audiovisuality that we might formulate with Sarat Maharaj's notion of the untranslatable as the 'left-over' of translation (Hall & Maharaj, 2001: 45). Maharaj describes that which cannot be processed or contained within any particular epistemological system in the following terms:

> When one language, one experience, one visual or retinal regime gets translated into another, it has to be re-jigged to fit into the system of thinking of the other and something is 'left out'. This remainder – at least this is what logically appears when you analyse translation – inhabits the space of the untranslatable... (Hall & Maharaj, 2001: 45)

Applied to the case of a cinema conceptualised as a signifying practice or text, this left-over which remains unaccounted for by the logic of the sign could be, for example, the material dimensions of the signifier, or the temporal and affective aspects of the cinesonic event. For the moment, however, the notion of the material provides a useful way of provisionally mapping an important aspect of the 'untranslatable' of cinema.

But in a representational art form like cinema, the significatory cannot be neatly excised, leaving the material balance of non-signification to be neatly weighed and measured; the meaningful and the meaningless exist in relation to one another, and not simply in terms of mutual definition. So, for example, when we listen to an actor speaking in an 'old' film, in addition to the semantic meaning of the dialogue relayed to us by the technology, that technology itself is made present in a quality of sound that might signify historical location, mode of production, and so on. But at the same time, this quality of sound – the warm, oceanic, enveloping rumble of optical crackle that marks older film prints – is also registered by the audio-spectator at an affective level.

As Saussure's preference for language over speech indicates, in order to ensure the success of the semiological project, this material balance of translation needs to be

contained, repressed or excluded. Yet since all signification begins with a material manifestation, this is not easily done. In the Saussurian model of language, the material simply needs to manifest difference, and after doing so evaporates in deference to the signified, which being a conceptual entity has no material dimension. But, of course, the material does not evaporate; its troubling presence cannot be completely repressed or excluded. And so we might say, as Jacques Attali puts it, "There is no order that does not contain disorder within itself..."(Attali, 1985: 34). This material 'other' of signification is sometimes sounded as turbulence in relation to linguistic meaning, as Maharaj suggests in his discussion of the 'left-over' of translation:

> The remainder which cannot be put into words might be something you can visualise or something that can be suggested through sonic stuff, through 'sounding of that difference' as a kind of turbulence, as a cloud of disturbance around clear-cut linguistic meaning. (Hall & Maharaj, 2001: 46)

Understood beyond the context of spoken and written language, while yet still embracing both, the untranslatable might thus be inscribed within and against any signitive mode as a destabilising form of turbulence. This is particularly the case with the work of the filmmakers selected for consideration in this chapter. The films of John Smith, Scott Rankin, Anthea Kennedy and Nick Burton are examined here because they demonstrate, in a variety of ways, a direct critical engagement with signification through its destabilisation. A consideration of this approach to film practice is important to this study, for in the process of destabilisation, materiality begins to reveal itself. What these films show is not only that the materiality of sound can indeed disrupt the significatory, but also that disruption manifests the material. In Smith, Kennedy and Burton's films, this critical engagement with signification is largely undertaken through the deconstruction and denaturalisation of filmic modes of representation, while in the case of Rankin's work the focus is on personal, cognitive and linguistic relationships, and the ways in which these relationships influence how we think and view the world. This turbulence is sounded in these films where signification breaks down or is tested, where it proves resistant and difficult, or where it is revealed not to be that simple relationship of equivalence proposed by the signifier/signified binarism. The current chapter considers the points at which destabilisation occurs in the field of the cinesonic, where a disturbance and breakdown of signification begins to map the space of the untranslatable

material, marking what is 'left over' and neglected in studies of film sound dominated by the concept of the signifying text. Crucially, the work also serves as a means by which to log the disjuncture between film practice and its theorisation. By critically engaging with the limitations of critical modes drawing predominantly on significatory models of meaning, the films prove to be an instrument by which we are able to map the zone of the untranslatable. Thus the films become models through which I have tried to figure some of the neglected spaces of cinesonic materiality. In this sense what follows is a search for productive failures, both in terms of significatory film practice, and the potentially creative disjunctures between film practice and its theorisation.

Maharaj's notion of the untranslatable clearly signals the limitations of significatory models when he writes:

> Beyond the *sense* of word and image are sounds which cannot be entirely drawn into the net of signification and cannot entirely be decoded and deciphered as meaning this, that or the other. These larger sonic pools – the penumbra of the untranslatable... for which we have to venture beyond language... (Hall & Maharaj, 2001: 39-40)

This "penumbra of the untranslatable" describes a huge field, largely unmapped in terms of critical enquiry. However, the sound-source formulation, by which we attribute sounds to perceived or actual objects, provides a productive starting point from which to traverse and map this 'penumbra'. As stated above, this common cinesonic model occupies a privileged position in terms of the way sound-image relationships in film have been considered, and both represents and manifests what Maharaj refers to as "the net of signification." As such the sound-source formulation stands as a primary example of the signitive modelling of sonic phenomena. But, as Walter Murch suggests in his foreword to Michel Chion's *Audiovision* sounds are not "completely explained" by the objects that seem to create them (Chion, 1994: xvi). And indeed, what some sound film practices demonstrate, particularly those that take their cue from developments in modernism, is that the very act of conceptualising sounds as signifiers, and of attempting to resolve their identity into a simple signitive function, produces a turbulent excess that demands to be heard.

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Signitive modes and self-reflexivity

The work of John Smith engages with both the signitive potential of sound, and its flux and fluidity. Smith has been producing films since the early 1970s, and although usually categorised as an avant-garde or experimental filmmaker, his use of low-key drama, humour, and an interest in story-telling mark a point of contact with some aspects of mainstream film and television. However, while engaging with narrative, Smith's work is clearly influenced by the concerns of Structural film[3], which was a dominating presence in British Independent film culture when the filmmaker was a student at the Royal College of Art in the early 1970s. Thus his early films have been described by A. L. Rees as part of that movement's 'second-wave' (Rees, 1999: 117).

For Peter Gidal, one of the key theorists and filmmakers of Structural film, and also Smith's tutor at the Royal College of Art, Structural filmmaking was conceived in terms of the tension between film's representational dimensions and its materiality: "The dialectic of the film is established in that space of tension between materialist flatness, grain, light, movement, and the supposed reality that is represented" (Gidal, 1978: 1). For Gidal this position on film practice entailed a rejection of illusionism, in favour of a concern with the material dimensions of the cinematic event. What resulted was a pursuit of film as film that demanded an active viewer, standing in opposition to a cinema of passive consumption. In this respect, Structural film, as formulated and practised by

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[3] The term 'Structural film' has been contested throughout its history, resulting in a number of reformulations designed to account more accurately for the work under consideration. The term was applied by P. Adams Sitney in his article 'Structural Film' to describe the work of Tony Conrad, George Landow, Michael Snow, Hollis Frampton, Joyce Wieland, Ernie Gehr and Paul Sharits. Sitney writes: "Theirs is a cinema of structure wherein the shape of the whole film is predetermined and simplified, and it is that shape that is the primal impression of the film" (Sitney, 1969: 1). This use of the term was contested at the time by George Maciunas, who complained that Sitney had employed the wrong terminology, given inappropriate examples, proposed an inaccurate chronology, and cited the wrong sources as origins. (see Sitney, 1971: 349). A few years later, in his highly influential 1975 article *Theory and Definition of Structural/Materialist Film*, Peter Gidal made the addition of the word 'materialist', partly in order to distinguish his concerns from those of Sitney and the American Avant-garde, but also to signal a Marxist political position on film practice. A detailed account of the relationship between British and American Structural film is given by A. L. Rees (1999: 72-87). However, in 1989 Gidal dropped the term 'Structural' from the title of his book *Materialist Film*. Throughout this dissertation the term Structural Film is used, and should be understood to embrace the various positions on film practice signalled by the historical sketch above.

Gidal, was a political project, situated in opposition to that psychological manipulation of the viewer essential to the operation of classical cinema. This praxis is firmly located within the context of what Rodowick has termed the 'political modernism' of the 1970s, in which the relationship between film and ideology became a central concern in avant-garde film practice (Rodowick, 1994). Thus Structural film practice was to engage directly with what Gidal proposed were the oppressive dimensions of representation: "Representation matters, it is realism of another kind. A materialist experimental film practice engages on that level with the illusions of representation and the illusory (and real!) constructs of viewing film, or anything, as if it were natural" (Gidal, 1989:7). In this way, the issue of representation becomes a key arena in which the signitive – and primarily visual – dimensions of film are discussed in political terms. Representation becomes the site of political struggle, in which the material dimensions of cinema are positioned in relationship to the representational: "Without a theory and practice of radically materialist experimental film, cinema would endlessly be the 'natural' reproduction of capitalist and patriarchal forms" (Gidal, 1989: xiii). While for Gidal and others this entailed a radical negation of normative modes of film construction, a wholesale rejection of narrative, and an oppositional stance to illusionism, Smith's own praxis adopted a different attitude to the ideas underpinning Structural film practice:

> I guess it wasn't that I was resistant to it, it was that it wasn't all there was for me. I have always been fascinated in or attracted to illusionism in cinema: being drawn into a surrogate, substitute experience. But also what really makes that work for me is being able to pull out of it, so that the films are a kind of interplay... between looking at the stuff as material and moving in and being immersed in it. It's that kind of edge that I'm interested in, between immersion and distance. (Smith, 2002)

The role sound plays in film, and its relationship to the image, are key elements of Smith's praxis. Although Smith is acknowledged as a sound stylist and a filmmaker who is clearly interested in the creative potential of film sound, very little direct attention has been given to this aspect of his work in the existing critical literature; there has, as yet, been no sustained examination of the various sonic strategies employed in his work. Discussion of Smith's films and videotapes usually focuses around a number of themes: his use of narrative in relation to anti-illusionist strategies, his use of humour, and the personal nature of his work in relation to his habitual use of domestic space and East

London locales (Curtis, 1996; Parker, 2002; Rees, 1999, 2002; Hamlyn 2002, 2003). These themes are also reiterated in the published interviews with Smith, such as those by Elwes (2001) and Frye (2003). A number of these studies place primary focus on the visual; for example, Mazière's insightful 1983 *Undercut* article *John Smith's Films: Reading the Visible*, and Hamlyn's analysis of the relationship between narrative construction and framing in Smith's work in *Film Art Phenomena* (2003). The closest we come to any extended critical discussion of sound, however, takes place under a consideration of language, and in particular the use made by Smith of voice-over (Mazière, 1983; Rees, 2002). While spoken language is certainly an important aspect of Smith's work, and closely relates to his concern with the relationship between sound and meaning, this remains simply one aspect of a broader set of sonic strategies that are deployed in Smith's films, other aspects of which have so far escaped close critical attention.

The films engage with the way in which sound creates or accepts meaning, working to loosen the bond between sound as a material signifier and that which it might signify. The insertion of a space between the two terms of the sound sign, this loosening of the signifier/signified bond, is a strategy that allows a consideration of the material dimensions of sound both within and outside the context of signification. However, in Smith's films it is the relationship between material and meaning, the movement between material signifier and signified, that is key to their operation.

A technique commonly used by Smith is to offer up an image or a sound that seems to have a single identifiable source or a particular meaning. He will then work to deconstruct this relationship, to throw it into question, to objectify its terms. *Om* (1986) presents us with the image of a young Buddhist monk sitting alone in a dark space. Shaven-headed, and dressed in saffron robes, he looks directly at the camera as incense smoke rises in the foreground of the shot. He takes a deep breath, and begins to chant the single sound-word-tone "om" (Fig. 1.1).

The duration of the unbroken chant begins to extend further and further, and as it does so we begin to sense that the sound we hear cannot possibly have been produced by the monk naturally. The sound runs for an impossible length of time; the monk should be exhausted, and thus what we hear can only be the result of film technique. He continues to look into the camera, the resonant humming tone broken only once by the monk inserting a comic "tiddly pom" into the chant. Suddenly the torso of a barber armed with electric clippers enters the frame. The young monk's head is shaved clean, and now the humming sound of the chant is also taken by the electric clippers (Fig 1.2). But there is yet another level of indeterminacy at work now: this hum could be either the objective sound from our point of audition, or the subjective sound of the clippers as heard by the monk. Finally the head is shaved clean, a click signals that the clippers have been switched off, and the sound of the chant/hum cuts out, leaving only the ambient sound of the room. The barber takes off what at first seemed to be the young monk's robes, but is now revealed to be, in fact, a barber's cape. Beneath the cape are the braces and polo shirt of a skinhead (Fig. 1.3). The young man looks at himself in the camera/mirror, leans towards the source of the rising smoke previously assumed to be a burning stick of incense, and lifts a cigarette to his mouth to take a final drag before stubbing it out.
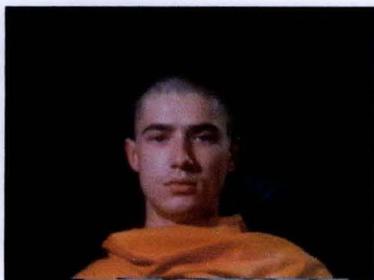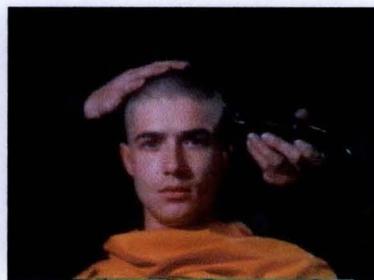
Fig.1.1   Fig. 1.2   Fig.1.3

Smith reveals the ambiguity of sound and image, foregrounding the ability of images and sounds to create and accept meaning. The tone we hear at first is unquestionably that generated by the chanting monk, but this interpretation of the sound is subsequently undermined by a number of factors. Firstly, the duration of the chant suggests the sustained tone is simply a product of film technique, not a reliable document of a profilmic event. Secondly the introduction of the electric clippers "takes" the sound, but

in such a way that what we hear could be either the objective or subjective audition of the perceived source. Central to what is at work here is the possibility of a polysemia that is figured in terms of slippage, extension and movement. What is significant about Smith's work is that these multiple meanings are not always packaged out separately, as in a pun, but rather coexist as a series of possibilities coalescing around the material signifier. In this instance what we have are not simply two or three separate 'meanings' for the tone we hear, given one after the other, but rather an accretion of meanings that resist definitive resolution. The indeterminate nature of the relationship between the sounds and what they might signify seems to be resolved towards the end of the film when the clippers are switched off and the humming tone ceases. Yet, this is an impossibility if we reflect back to how the sound was originally created; initiated, it seemed, by the monk. Part of the film's joke is the impossibility of wholly attributing the sound we hear to any single source; and in this way, Smith loosens the grip of the source on sound, and the relationship between signifier and signified. Here is a puzzle that we can never solve; all we can do is shuttle between one possible meaning and another. This establishes an oscillation between the material sound and a number points demarcated on a horizon of possible meanings. An undecidable quality of sound is thus revealed, but of course this is an undecidability situated within a contained locus of specified meanings, concordant with a conceptual position that suggests a signifier *can* imbue or be imbued with meaning. There is no opening of the floodgates here to what is unknowable within the semiological project.

However, there are other techniques employed by Smith that enable a further exploration of sound-image relations, and which serve to further radicalise notions of unresolvability and resolvability. The restricted signitive model of a binary shuttling between alternative meanings can be destabilised in two ways: firstly by a consideration of the power of the image to resolve sounds (and vice versa), and secondly by considering the variety of possible connections that might serve to link sound and image, and the multiplicity of points of contact between the two elements.

Movement and meaning

In Smith's film *The Black Tower* (1985-7)[4] we are challenged to make connections between sounds and images that initially appear to resist meaning. The narrative of *The Black Tower* centres on an unseen protagonist who is haunted by a tower he believes is following him around London. Much of the film comprises a black screen, to which we cut when the troubled protagonist describes his sightings of the tower on journeys around the area in which he lives – visits to Hackney Marshes, visiting a friend in Brixton Prison, a trip out of town to the country. The amount of black screen in the film brought complaints from viewers when the film was first shown by Channel 4 in 1988. The station's call log for the evening of transmission records the following comments:

> "Why the hell isn't this a radio production? I'm in the media, and I've come home after a 15 hour day expecting to see something decent, not this unmitigated rubbish."

> "What is this? Is there something wrong with the programme? When advised, demanded to know why no warning was given out."

> "What's going on, I can't understand this at all."

> "I've watched this upside down and sideways, but I can't make head or tail of it. Doesn't make sense." [5]

These comments directly demonstrate a response to the turbulence generated by that which cannot be understood in signitive terms. What motivates most of these callers to contact the TV station is the fact that they are confronted with something that, to quote one of the callers, "doesn't make sense"; that is, something that doesn't resolve itself in the act of signification. This is also figured by one of the callers as perhaps some form of transmission failure, which is of course what makes TV companies anxious about silence and blank screens, worried that a channel-hopping audience will assume the channel is

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[4] Smith engages in the unusual practice, at least for a filmmaker, of dating his work in a way that makes clear its full production period. Thus, although *The Black Tower* was completed in 1987, the film is dated by Smith as 1985-7. Although this is almost unique in filmmaking, it is a common practice in a fine art context, and thus signals Smith's position outside of the commercial film industry, and an artisanal mode of production that is at variance with the commercial sector. This mode of production allows Smith's films to develop and evolve over an extended period of time, one consequence of which is that Smith is able to document and explore changes in his domestic and local environment which could never registered within the timeframe of a commercial production schedule.

[5] Channel 4 telephone call log, 19th December 1988, provided by John Smith.

'down' and turn to another. That which does not signify can thus present a very real disturbance to what seems to occupy the most privileged position in film: the creation and transmission of meaning. In extreme cases, like that of the extended black screen, this failure to signify equates with the unthinkable of television and film: its demise, cessation, negation.

In voice-over, the protagonist tells his story and we trace his progress from unease to breakdown and eventual death. The voice-over narration in traditional documentary forms, sometimes referred to as 'the voice of god', directs our reading of a polysemic image by anchoring meaning. Smith acknowledges and foregrounds this power of resolution when dealing with images or sounds that seem to lack meaning, such as the black screen. Any such absence of meaning might occupy one of two positions: an unacknowledged, unconscious 'background' position where we are simply not aware of any absence of meaning and are not in search of meaning, and a foreground meditation on lack when we are made consciously aware of a failure to signify. The black screen has a special status in film, rather like that of silence on the soundtrack – it marks either a temporary suspension of the film or its cessation. The fade to black between scenes presents a 'bracketed' moment, a pause that takes us out of what seems to rightly constitute 'the film.' This fade to black takes us into a void that despite being part of the material experience of film, and is indeed generated by the film itself, seems yet not to be a part of it, something of which we are barely aware. What Smith does in *The Black Tower* is to use sound to move us to a position where we become consciously aware of the black screen's material presence, and then further, onto a position in which that same black screen takes on specific meanings, rather than simply serving as the empty space between the shots that make up the film. What we witness in these sections of the film is meaning taking shape as we watch and listen.

After initially spotting the tower near his home the character describes his surprise at seeing it again inside the walls of Brixton prison when visiting a friend there, and then later again at several points on his journey home. The sequence ends:

NARRATOR

I decided to take another look at the tower from my

house when I got back, but by the time I got there it

was dark.

(Cut to black)

There was no moon and I couldn't see it over the

rooftops.

(Boiling noise [?] begins)

That night I dreamt that I was imprisoned in the tower.

My body was paralysed and only my eyes could move.

At first I thought that I was in complete darkness, but

after a while I noticed a greyish speck which remained

in the same place when I moved my eyes. I realised

that I was facing a flat black wall. I got the feeling that

the room was in fact brightly lit, but I couldn't be sure.

At first the black screen seems to mean nothing, it does not hold our attention or engage our thoughts at a narrative level. But then this black screen comes to represent night and the black wall of the protagonist's dream. So persuasive is the voice-over that we may search the screen for that grey mark the voice-over describes. There is a humorous, reflexive element to this device, which situates Smith's practice within the traditions of Structural film. Indeed it reminds us of Peter Gidal's comment that, "'Empty screen' is no less significatory than 'carefree happy smile'" (Gidal, 1975: 189). We find ourselves gazing at a visually inert TV monitor or cinema screen, while listening to sound played over the loudspeakers. In this way we are confronted with the material conditions of film or TV exhibition: we might not only be referred to the notion of film passing through the projector, and that cone of light which is marked by its absence in this instance, but also to the screen itself. Within Structural film practice, 'empty' screens can therefore be theorised in terms of distanciation; a heightening of the awareness of the material conditions of film exhibition, a self-reflexive foregrounding of the audience's perceptual response to the event *taking place* within the physical space of the cinema. In Smith's work, which prompts the viewer to invest the screen with meaning, the oscillation set up

between meaning and materiality has the effect of making the viewer self-aware, conscious of the perceptual and cognitive contribution they make to the cinema event. Thus the viewer becomes a witness to their own desire to invest the untranslatable with significance, a witness to the very ease with which this takes place.

Smith also uses a tactic of delayed resolution to similarly articulate the relationship between sound and source, signifier and signified. Following the sequence described above, we are presented with a brisk series of monochrome screens, each accompanied by a different sound (Table 1.1).

TABLE 1.1 First monochrome sequence from *The Black Tower*

Shot No	*Image*	*Sound*
1		buzzing
2		footsteps
3		birds, hum of distant traffic
4		crackling
5		watery sounds
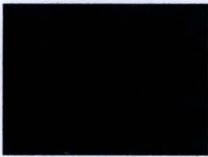
6   Hiss and bubbling

7   watery movement

No explanation is given for the match between sound and image, and there seems to be no connection between the two. What sutures sound and image is simply their synchronous cutting. What is interesting is that we are able to accept these imageless monochrome screens quite happily within the context of abstraction, where we are not troubled by worries of identifying what they might represent; we have seen work of this kind by other avant-garde filmmakers, most notably the 'flicker' films of Paul Sharits and Tony Conrad. However, the reaction generated by the sounds, in combination with the abstract monochrome screens, sets up a troubling desire to connect sound and image. We recognise the sounds as worldly and as potentially representational, even though we struggle not only to *identify* them (which means to identify their source) but also to describe them without the help of an image to reign in their polysemic play.

In this sequence the relationship between sound as signifier and its meaning is loosened, if not lost altogether. When sound is severed of its source, the listener is forced to engage with its materiality. There is no support here for the listener since there is no sense of predictability or patterning in the sound-image relationships offered. There has long been a tradition of relating colours to sounds, in a history that includes the experiments of the French Jesuit philosopher and mathematician Father Bernard Castel with his *clavecin oculaire* in the 1730s, the Colour Music movement of the late 19th century, the experiments of the Italian Futurists Bruno Corra and Arnaldo Ginna[6] and the interest in synaesthesia of a range of artists, composers and filmmakers including Kandinsky,

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[6] See Corra's 1912 article *Abstract Film – Chromatic Music*, reprinted in Appollonio (1973).

Scriabin, Norman McLaren and Oskar Fischinger[7]. But it is precisely the *impossibility* of forging links between sound and image here that is the key to the way in which the subsequent variations on the sequence operate. The viewer is invited to make these links, begged by the editing to do so, but the screen offers only the blueness of blue, the redness of red, and the grain of the film stock. While colours undoubtedly have cultural associations, the sound, in its refusal to support these, strips away these possibilities, refusing them a place in our response to the film's sound-image relationships.

We are now confronted with the materiality of both sound and image. The sounds are unidentifiable, suggestive only in a vague way. In such cases we are forced inside the sound, to observe its morphology[8], listening for clues that will resolve our concerns. In short, for a while we are left to fend for ourselves. But Smith doesn't allow this to go on for too long as the montage is fairly rapid and is followed by the next sequence, in which the visuals of the first are repeated, but this time accompanied by voice-over (Table 1.2):

TABLE 1.2 Second monochrome sequence from *The Black Tower*

Shot No.	Image	Voice-over
1		The teasmade woke me up at eight-thirty…
2		and I jumped out of bed and rushed across the room to switch it off.
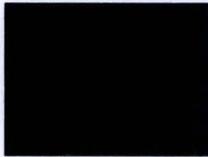
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[7] This history is documented in Brougher et al. (2005) *Visual Music: Synaesthesia in Art and Music Since 1900* and in Sara Selwood's unpublished 1981 MPhil dissertation *The Development from Abstract Art to Abstract Animated Films*.

[8] Morphology is understood here in terms of 'shape' as development over time. This is topic covered in more depth in Chapter 4.

3		It had rained again during the night but I drew open the curtains to discover that the morning sky was bright and clear.
4		Shivering, I quickly put on my clothes...
5		and lit the fire
6		In the kitchen, I poured myself some fruit juice...
7		and made porridge. While waiting for it to cook I...
8		did the washing up from the night before.

Words are now matched to the colours, but no resolution is offered in terms of the meaning of the visual track. We may make some connections – the cut from black to red signifying daybreak, for example - but these do not carry the weight of final resolution.

The third variation of the sequence finally resolves image and sound in terms of each other (Table 1.3). Finally the sounds heard in the first sequence are resolved in terms of meaning, attributed to a source previously represented by visual abstraction. In contrast to the polysemy of *Om,* the dominant structuring device of this sequence is the *deferral* of resolution.

TABLE 1.3 Third monochrome sequence from *The Black Tower*

Shot No.	Image	sound
1
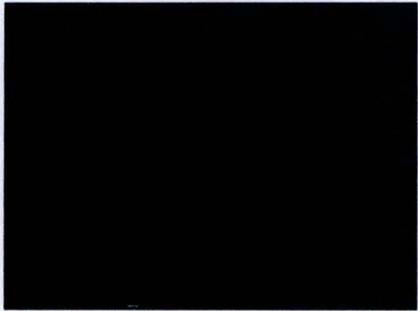
black | bubbling, hissing |
| 2 |

shot of teasmade switching on, revealing previous shot as dark interior in early morning | Buzzer |
| 3 |

dark red – revealed as bedding as figure pulls back sheets and gets out of bed | Buzzer and room ambience |

4

Black – revealed as a curtain when drawn back to reveal window looking out onto a tree

Sound of bare feet walking on bedroom floor, curtain drawn followed by birdsong

5

Bright red – revealed with pull-out as shirt covering other items of clothing

Birdsong and distant traffic

6

Black – then glimmer of yellow as fire takes hold

Crackling sounds

7

Yellow – thumb comes into shot revealing a mug

Scraping sounds

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8
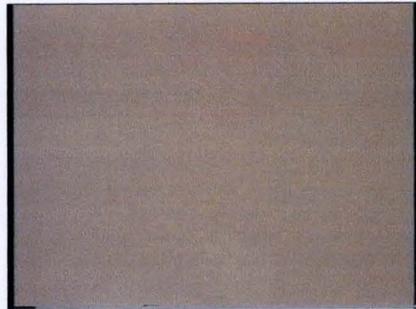
Pale yellow – porridge

Hissing and bubbling

9

Blue – cup placed on blue Formica
work surface

Clink of dishes in water

Two other techniques used by Smith, represent variations on this problematisation and objectification of the relationship between signifier and signified, sound and source. Smith often uses sound to move us from one position, or belief in a perception, to another. In one sequence the protagonist, feeling under pressure from the continual appearance of the tower, decides to leave London for a while. We cut to a shot of a house and lamppost surrounded by trees and bushes, and an atmosphere track of birdsong suggestive of a peaceful rural location (Fig. 1.4). A short time later we return to this shot, this time located within a dream sequence. On this occasion the shot is held for a few seconds, but then we jump-cut to another shot that matches the first exactly, except for the presence of a large tower block in the middle of the frame (Fig. 1.5).

Fig. 1.4   Fig. 1.5

At first the tower block is inserted in flash frames that alternate with longer sections of the 'rural' scene, which hence remains the dominant image. However, as the sequence progresses so the balance between the 'tower block' and rural version of the shot changes so that the tower block version becomes dominant, with the rural scene inscribed momentarily onto this new 'reality.' This is a very purposeful shift in how we read the image, and the edits are highly visible markers of the means by which it has been achieved. We then hear the noise of an explosion and see the tower block crumbling into a heap of rubble in the centre of the frame, sending up a growing cloud of dust. Smith achieved this sequence by shooting the demolition of a block of flats at Hackney Wick in 1986, returning some time later to shoot exactly the same scene from the same spot minus the tower block. As the tower block collapses we hear a rumble and crackle as a growing cloud of dust fills the image. The voice-over comments: "I was woken by the smell of burning and opened my eyes to see the rising smoke. I stamped out the flaming edge of the newspaper…"

Since the character has apparently fallen asleep reading a newspaper, the rumble/crackle sound we hear is taken to be that of the burning newspaper 'leaking' into his dream of the collapsing tower block. Rather than an accretion of meanings, here we have a simple transition from one to the other. What Smith's technique foregrounds here is sonic latitude, and the ability of certain sounds to support a range of interpretations.

Fig. 1.6

Smith's work with sound in *Om* and *The Black Tower* centres on polysemy, shifts in meaning, the attribution of meaning, and the deferral of meaning. To clarify further, we might say that here, on the whole, 'meaning' is equivalent to source, as perceived or represented. In this way Smith's work engages directly in a destabilisation of that dominant model of sound-image relationships which informs so much classical film practice. By exploring the relationship between sound and image, and the way in which they come together to create meaning, the films engage in what Phillip Drummond has referred to as the "explosion of the semiotic" (Drummond, 1979: 12). That is, an examination of the cinematic signifier; a confrontation with the processes and apparatus of sign production that results in a subtle undoing of cinema. It is precisely this focus on deconstruction that provides the dominant critical framework for discussion of Smith's work in much of the existing critical literature. Here, emphasis is placed on the way his work reveals the constructed nature of film, and how this ultimately anti-illusionist stance situates his work in relation to a classical, mainstream film practice which remains illusionistic and essentially manipulative. Thus Rees writes: "as a joint product of the aesthetics and the techniques which they embody, the films assert a personal vision which is never finalised or fixed, and open a narrative space in which the viewer can question the construction of the film as a manipulated spectacle" (Rees, 2002:16).

Similarly Rees situates the spectatorial self-awareness that results from the techniques used by Smith in relation to dominant forms of cinema:

> In John Smith's films, the spectator is a producer as well as a consumer of meaning, bound in to the process but simultaneously distanced from the 'naturalness' of the film dream. This feature alone marks off John Smith's films from the lure of cinema (to which his richly visual images nonetheless allude) and locates him firmly as an artist-filmmaker,

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who turns the codes of the film medium into a continual questioning of film truth. (Rees, 2002: 30)

Elsewhere, a pairing of self-reflexivity with deconstruction is made by Hamlyn in his analysis of the way in which strategies of cinematography are deployed by Smith in relation to narrative construction in *The Black Tower*:

> As the narrator slips into a paranoid state, the viewer comes increasingly to realise that the film's meanings have been constructed through carefully selected framing. The utter simplicity and transparency of this strategy forces the viewer to confront his own gullibility, but equally to take pleasure in noticing the details which give the game away, and to understand how easy it is for him/her to be deceived. (Hamlyn, 2003: 87)

Like other critics, Hamlyn also situates Smith's own particular type of film practice in relation to the model of mainstream cinema. In an interesting commentary on how Smith's cinematography differs from that of other filmmakers concerned with revealing and foregrounding film's materiality, Hamlyn writes:

> Where many filmmakers have striven to foreground the medium by, for example, scratching the emulsion, or filming the act of filming, Smith has always insisted on technically immaculate, seemingly straightforward images. But these images are so created precisely in order to challenge mainstream cinema and TV on their own ground. The high quality pictures are put in the service of thoroughly subversive structures, which question their own veracity as much as they challenge the mainstream. (Hamlyn, 2003: 57)

This critical perspective is very much in harmony with Smith's own figuration of his work. In an interview Smith has commented, "I'm interested in work that invites us to question what we are told. It's to do with engagement rather than consumption" (Elwes, 2001: 13). On the issue of the relationship between materiality and representation, he states, "I wanted to play with the edge between immersion in a psychological narrative and seeing the film for what it is – a material construction, an assemblage of assorted parts" (Elwes, 2001: 15).

The critical location of Smith's work, and the filmmaker's own praxis, seem to position the figure of film sound's materiality predominantly in relation to the processes of signification and the creation of meaning. While Smith's cinesonic strategies aim to reveal the material construction of film, that materiality is always aligned with a concern with meaning. That is, although the material dimensions of the cinseonic prove to be a destabilising source of turbulence in relation to the significatory, materiality never sets

the agenda; rather, materiality serves to adumbrate the processes of signification. Though the attribution and creation of meaning might be disrupted or delayed in Smith's work, meaning is never entirely displaced. Auditioned from this perspective, the materiality of film sound is ultimately resolved in signification. Rees (2002), Elwes (2001), and Mazière (1983) all make the point that one thing that distinguishes Smith's work (and defines it in contradistinction to mainstream classical cinema) is the 'space' it offers the spectator to do their own work; but ultimately the work that is done is to invest the sounds and images with which we are confronted with meaning.

In its primary concern with meaning, it is clear that an important element of the deconstructive tradition that has informed Smith's work for the last thirty years is founded in those modes of structuralist enquiry associated with what is referred to as the 'linguistic turn' of the 1960s. In one sense this is illustrated by the fact that language has proved a rich picking-ground for writers on his work, particularly Rees and Mazière. The attraction of structuralism, which not only informed the Gidalean take on Structural film, but also dominated British film theory in the 1970s, relates perhaps to the way in which it provides theoretical support to a mode of modernist art practice concerned with uncovering and undoing. Thus the founding ideas of Structuralism become politicised in lending support to a Brechtian tradition of unmasking, revealing and deconstructing hegemonic cultural objects. This set of notions continues to inform Smith's work, and is offered by him as a rationale for its political value. What is clear from his analysis of his own praxis is that it emerges from a particular moment of British independent film culture when structuralist notions informed a radical poetics of film:

> The notion of making the process clear in the work is kind of political in relation to Brecht and use of alienation and these sorts of things. When I look back on it I also think it's kind of quite religious in a way. You were sort of taught these things, these notions at film school by the people that I came into contact with as a student, and I kind of took these things onboard totally. And I sort of completely believe in them – I have to make work which actually refers to its process in some way. I see that as a political dimension of the work. (Smith, 2005)

The relationship between theory and practice mapped by Smith's work thus creates a distinct context in which the material dimensions of the cinesonic experience can be discussed. What we observe in the work, the theoretical resources it draws upon, and its

subsequent theorisation by critics, is the centrality of deconstruction. Clearly there is a self-reflexive dimension to this in the sense that Smith's films work to reveal their own artifice – but this move is primarily motivated and informed by a concern with the illusionistic, manipulatory powers and truth claims of dominant cinema. Thus Smith's own praxis is constantly haunted by the figure of a cinema which conceals its construction: that is, an absent mainstream, classical cinema. As a political project, his praxis clearly assumes an oppositional stance in relation to the hegemonic cultural objects and institutions of this dominant cinema. But furthermore, the politically informed deconstruction undertaken in this work is mapped very closely to film's semiological dimensions, particularly in relation to the strategies by which Smith examines sound-image relations dependent on the sound-source model. Thus although the figure of materiality never seems far from the concerns of this type of deconstructive film practice, or for that matter Structural film, its articulation by the discourse surrounding it is limited to its significatory dimensions.

However, when considered outside of the deconstructive traditions in which the work has been predominantly situated – and which serve to locate the filmmaker in relation to the debates of Structural film and in an oppositional relationship to mainstream cinema – Smith's work provides a route into ways of figuring the materiality of the cinesonic, other than in support of or in opposition to signification. Building on the existing critical work, it can be shown that the *play* between sound and image in Smith's work clearly demonstrates something which seems remarkably uncontentious, yet is profound in its implications: namely, that what constitutes a crucial dimension of sound film's materiality is a *relationship* between sound and image, not the simple addition of two constituent terms. That is, the sound film cannot simply be understood as an essentially visual form with an additional illustrative dimension added. Smith's deconstructions of the sound-source model of the cinesonic allow the audio-spectator the opportunity to do their own work, even if ultimately this work ends in signitive resolution, and the parameters of the work done are determined by the filmmaker. As Mazière puts it:

> This is not to be interpreted as a free for all, that the subject constructs the film in isolation according to his wishes, desires, etc... but that working with a specific set of units, variables, motifs, images and words one can produce films which engage the

viewer in an active, critical and pleasurable activity. It is in the construction of the films that a reading space is left, by denying a hegemonous structure, an orientated multiplicity is produced. (Mazière, 1982: 44)

The polysemic nature of Smith's audiovisuality, its latitude and play, eliminate the possibility of a one-to-one equivalence of signifier and signified, which might suggest that pre-given meaning is located exclusively within a particular material image or sound. Of course, there are moments in a film when the image is dominant, and where sound occupies a secondary, accompanying position. Similarly there may be moments when sound takes the lead, as is the case with George Barber's 1996 video *Simultaneous City (Liverpool)*, which features a soundtrack of interviews with the inhabitants of Liverpool played against a black screen. However, since there is always a sonic dimension to the cinematic experience – whether this is a recorded soundtrack, musical accompaniment, or the sound of the projector – this relationship between sound and image always exists, and crucially, is in a constant state of flux. The shifts in meaning in Smith's work map precisely to the flux of its audiovisuality. What this relationship between sound and image also suggests is that meaning is an effect like any other; it is the product of a coming together of sound and image, and simply needs to take its place alongside, and in relation to, other effects, rather than dominating critical consideration of the film event to the exclusion of all else.

The Black Tower provides a very clear example of one way in which this relationship might be explored and mapped outside the locus of meaning. In the first abstract monochrome sequence, where colours are accompanied by unidentified sounds, it is simply a simultaneity of sound and image generated by editing that creates their correspondence. This is a very basic example of what Michel Chion has termed synchresis, a neologism forged by combining the words synchronism and synthesis. Chion describes it as the "spontaneous and irresistible weld produced between a particular auditory phenomenon and visual phenomenon when they occur at the same time" (Chion, 1994: 63). Exactly how we might engage critically this particular form of audiovisuality is an issue returned to again in Chapters 4 and 5, which consider the much

maligned correspondence between sound and image referred to as 'mickey-mousing', and the affective dimensions of sound organised by editing.

Smith's films make the audio-spectator consciously aware of the ways in which the visual and the sonic interact, combine and separate. Rather than grounding acts of signification in notions of 'universal' abstract meaning, Smith's work foregrounds the transitory and contingent nature of the production of meaning, thus offering an audiovisuality that signals the flow of sound-image relations rather than the static individuation of constituent terms. It is this sense of movement that Smith's work foregrounds, even if this has been understood in the critical literature only in terms of the latitude of meaning. The *audiovisuality* of film is comprised of something other than the sum of its constituent parts: different to, yet constituted by, both sound and image. The problem of conceiving film as a binary structure composed of sound and image, or image and sound, is that it precludes engagement with the transsensory or intersensory experience of cinema, an issue to which I return in Chapters 3, 4 and 5.

As indicated previously, the theory and practice of deconstruction has had an important political role to play in challenging hegemonic cultural objects and practices, as well as in formulating alternative cultural projects. However, one of the short-comings of deconstruction, both as a filmmaking practice and a conceptual frame in which to situate that practice, is that in reducing cinema to what its takes to be its constituent parts, it effectively severs sound from image. As the majority of writing on film has prioritised the visual, it is understandable that in an attempt to rehabilitate film sound, deconstructive film criticism and practice has long been at pains to disentangle the sonic from the visual within the audio-visual constructions of cinema. Paradoxically, in staking a claim for sound, the risk run is that the relationship between sound and image is lost. While the critical situation demands that we focus on the traits and dimensions of the sonic, these need to be reinstituted within the context of the cinesonic – that is, in terms of their deployment in relation to the image. What is needed is an approach that is not limited to individuation, differentiation and specificity, but embraces forms of blurring, combination, fusion, synthesis, and the coming together of the senses. That is, in trying to

come to terms with the place and role of sound in cinema, deconstruction needs always to be balanced by a creative act of construction. In this way, failure becomes productive, in the sense that in logging the disjuncture between theory and practice, between the film event and its dominant conceptualisation, we find other strategies that begin to map the untranslatable in positive terms.

Theorising the materiality of direct sound

The disjuncture between certain dominant forms of critical practice and the cinesonic experience of the films they attempt to deal with is usefully illustrated by a brief consideration of the work of two of Smith's contemporaries. The films of Anthea Kennedy and Nick Burton, fellow students with Smith at the RCA in the 1970s, and sometime collaborators, also deconstruct the orthodox codes and conventions of film practice, perhaps most notably in relation to the cinesonic in the film *Birdman* (1975). However, the way in which the type of film practice represented by Kennedy and Burton's work has been largely conceptualised does not do justice to what we hear on the soundtrack, and how this relates to the experience of watching their films.

Drawing loosely on the life of the exiled German opera singer and wildlife sound recordist Ludwig Koch, *Birdman* features Koch's son, Val Kennedy, playing the role of his father. The soundtrack is made up of three distinct elements: extracts from Koch's autobiography, read as voice-over by Kennedy; recordings of birdsong made by Koch; and the dense location sound that forms the dominant sonic texture of the film. The recording of this last element of the soundtrack is informed very clearly by a direct sound aesthetic. This approach to sound production, more commonplace and familiar as the sound of news and documentary, centres on the transcription of all location sound, resulting in extremely dense recordings that are rich in sonic detail.

This soundtrack, dominated as it is by the noisy, direct location sound recordings, stands in contrast to the well-modulated, well-behaved classical film soundtrack, and the dominant sonic key of *Birdman* is one of unruly uncontainability, disturbance and interruption. Indeed, Burton describes the soundtrack as "fairly rough and ready"

(Burton, 2004). Interruption is created, in part through editing strategies. In the final scene of the film, we hear fragments of a voice-over that seems to make no sense in relation to what is happening on screen, or even to what has been heard previously, and the film ends cutting midway through a voiced-over sentence. This fragmentation is explained by Burton in terms of the disruption of narrative engagement:

> ... the film is highly structured, and rather one-dimensional in the sense that it was very fixed on the form. And although we were interested in the narrative, the narrative had to be attacked somewhat. An abrupt ending is, of course, a very useful way of non-closure, which was an essential part of the system that we were using... the narrative was there as an attraction, as something going on that you might be keen to get more involved with, [but] you were never really allowed inside the pleasure of the narrative world. (Burton, 2004)

In an earlier scene, Koch's assistant Pidsley is shown crouching over sound recording apparatus in a suburban garden. As he dons a pair of headphones, we hear birdsong on the soundtrack, sound taken in fact from Koch's original recordings. Sound and image relations work here to suggest that we now share Pidsley's point of audition. However, the filmmakers question the status of what we see and hear in the film in relation to the sound-source dynamic when the technician then removes his headset, and the recording continues to dominate the soundtrack. This is not quite the same as Smith's use of shifting meanings, but like Smith's work, the technique refers the listener to the fact that there are cinematic codes at work structuring sound-image relationships in ways that determine how the audience interpret what they see and hear. As with other scenes in *Birdman*, this particular device works to draw attention to the way in which the cinematic code of sound perspective structures film's audiovisuality to create meaning. This destabilisation of the normative modes of sound-image relations serves to denaturalise and demystify the audiovisual dimension of cinematic representation. There is no sense of careful crafting here, of modulating the recording of birdsong to allow room for the location sound that runs beneath. Rather this feels like a crude mechanical layering, producing a cacophony that forces a confrontation with the concrete particularity of the soundtrack, preventing any unconscious acceptance of the sound as naturalistic representation.

Other techniques work to challenge the illusionistic nature of the well-behaved naturalistic soundtrack in which smooth transitions and the balance between its elements aim to produce an erasure of its material existence. In a scene in which Koch encounters 'The Queen of the Belgians' painting in a clearing in the woods, her reply to Koch's greeting is dubbed, in contrast to the direct location sound we have heard until this point. No attempt here is made to bed this sound into the sonic atmosphere of the rest of the scene. In contrast to the noisy location recordings of Koch's dialogue, we are now confronted with the relatively clean, dead sound of a studio recording in which the background sounds of birds, and the movement of actors is entirely absent. This inscription of difference announces the material heterogeneity of the soundtrack, an approach that Burton conceptualises in terms of deconstruction: "when we dub, it's absolutely obvious... everything is clear, everything is what it is... that's what it's like watching that film, it's like a car with the body shell off, and you're seeing all the components" (Burton, 2004). Kennedy also considers this deployment of sound in relation to the project to reveal the constructed nature of the film text, but situates this in terms of a strategy to prevent any potential manipulation of the audience: "If it sounded dubbed, that wouldn't have bothered me. I would have thought it was a good thing that the process had been revealed. I think I preferred that to feeling that I had somehow cheated and therefore had cheated the audience" (Kennedy, 2005).

A striking example of this form of deconstruction features another exploration of the sound-source dynamic, whereby sound is irreconcilably split from the image that signifies its source. Kennedy and Burton's *The Reichstag Fire Part I* (1976) includes a single long-take that begins with a stationary motorcyclist, revving his engine in preparation for departure. The close-miked sound of the engine dominates the soundtrack, and in terms of sound perspective is in keeping with the shot distance at this point. In fact, the filmmakers obtained this recording by placing the sound recording equipment in the panniers of the motor cycle (fig. 1.7) The camera then tracks with the motorcyclist as he drives through suburban streets and then joins a busy motorway (fig. 1.8). However, although the motorcycle falls back from the camera car (figs. 1.9 & 1.10) and then overtakes it leaving the frame entirely (figs. 1.11 & 1.12), the sound recording remains

constant – there is no accompanying variation in volume to signal a change in sound perspective. The sound continues to dominate the shot even when the motorcycle, its perceived object-source, is entirely absent. Here we witness a radical separation of the elements which comprise the film text, situating the directors' praxis within that Brechtian tradition which seeks to reveal cultural objects as constructions.

Fig. 1.7

Fig. 1.8

Fig. 1.9

Fig. 1.10

Fig. 1.11

Fig. 1.12

This approach of allowing naturalistic modes of filmic construction to collapse informs other aspects of the films' soundtracks. In both *Birdman* and *The Reichstag Fire Part I*, shot in or around the filmmakers' West London home, the continuous sound of traffic permeates many scenes. In addition, every movement of performers and props within the space of the recording is captured: movement of actors, clothes, props, furniture, and so on. The actors' entrances and exits, and their movements around the largely domestic interiors are rendered with a sonic concreteness that foregrounds performance, objectifying the spaces in which it takes place, and deflating any attempt to construct a convincing fictive space. Kennedy comments on this aspect of the soundtrack in terms of the choice made by the filmmakers in adopting a direct sound aesthetic:

... I liked to hear the acoustic of the room where the filming was taking place and this is something I miss in post-synched films today. It produced an immediacy and an awareness in the spectator of the filming taking place. You could almost hear the film crew breathing which produced a tension, a frisson. (Kennedy, 2005)

Direct sound recording is usually associated with documentary, news and certain realist practices. Despite the fact that the sound recordist is probably listening for particular sounds, and negotiating their way through the total soundscape of a location by using a directional microphone, direct sound does not appear to conform to the sonic hierarchy of classical cinema. Here dialogue is accorded first place above sound effects and music (in that order), and provided with a protected space. In the classical film, sound is always marshalled so as not to interfere with dialogue, one of the central supports of narrative. In contrast, background sounds, ambient sounds, and sounds without an obvious visual source located within the frame, all find a place in direct sound recording; consequently there is a place here for the idiosyncratic, the unexpected, the unintelligible. These factors are taken to indicate a lack of mediation, a certain passivity that seems to guarantee the indexicality and objectivity of the recording. Thus Kennedy comments of her own work, "Direct sound seemed like a pure and honest thing to be doing" (Kennedy, 2005). The direct sound approach seems at some level to involve a minimum of human agency, unquestioningly responding to everything that takes place in front of the microphone. For this reason, Michel Chion has described it in the following terms: "Many people consider location sound not only the sole morally acceptable solution in filmmaking but also the one that simplifies everything, since it eliminates the problem of having to make choices" (Chion, 1994: 104-5).

What Chion suggests is that one of the appeals of this approach for filmmakers is that it is, in some ways, less constructed, less mediated than other modes of sound production. The moral dimensions of this practice are those mapped by a Cagean approach to sonic construction[9]; that is, direct sound seems not to require us to impose our will on the sonic event or its record, but allows sounds to speak for themselves. These 'undoctored',

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[9] Cage comments in his article *Experimental Music*: " [the composer]... may give up the desire to control sound, clear his mind of music, and set about discovering means to let sounds be themselves rather than vehicles for man-made theories or expressions of human sentiments" (Cage, 1999: 10).

continuous recordings appear to stand as an unblinking witness to the profilmic event; the inclusion of the aleatory and accidental suggest these sound events are autonomous, and not staged for the camera or sound recorder. The corollary of this is that the direct sound recording, unlike the well-modulated classical sound recording, appears not to set out to manipulate the listener. Of course, all these factors figure in the value that is attributed to direct sound when heard within the context of news and documentary production. These are essentially the arguments that support a notion that news and documentary might somehow attempt to be objective and unbiased.

However, this position on direct sound would obviously be unsustainable in a film practice, like that of Kennedy, Burton and Smith, in which the moral and political responsibility of the filmmaker is to reveal the artwork's constructedness. Thus the adoption of a direct sound aesthetic in *Birdman* and *The Reichstag Fire* needs to be situated within another set of debates. What is important about direct sound understood within a reflexive film practice is that it results in a proliferation of detail that is confusing, 'irrelevant', and perhaps unintelligible. While this in itself can stand as a mark of fidelity and immediacy, it can also bring the soundtrack to a point of excess. In rendering the manifold elements of image and action in startling sonic clarity, direct sound presents a form of realist documentation that challenges naturalist approaches to sound. Like Joyce's *Ulysses,* direct sound can push realist tropes to the point of saturation and perhaps overload, collapsing the representational into the material. What we observe through this conceptualisation of direct sound is a cinesonic practice that inscribes materiality within and against the signitive as a destabilising form of turbulence.

In this way, Altman (1985) argues that since the microphone, unlike the ear, is not selective, the resultant density of a direct recording seems to foreground the materiality and artificiality of the sound recording. He contrasts this with mainstream films that mask their own construction, a technical and aesthetic tradition of denial and concealment. Thus Altman ascribes to the practice a reflexive, self-materialising dimension, and an oppositional stance to naturalistic forms of mainstream cinema. Such a theorisation certainly accords with the dominant conceptual frame in which deconstructive work has

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been situated, perhaps most notably by the critical writing supporting Structural film, attributing as it does oppositional and demystificatory potential to materiality.

When situated alongside other aspects of film style, this auditioning of *Birdman*'s direct soundtrack seems appropriate, as the film's approach to mise-en-scene and performance also serve to deconstruct naturalist registers. The film is largely shot in domestic interiors, in a suburban back garden, and in a park. Although Koch arrived in the UK in 1939, no attempt is made to dress sets or locations in a historically accurate fashion. Rather the fabric of contemporary life, which includes the audible sound of West London traffic, is visible and audible everywhere, from the dress of performers to the presence of contemporary motor vehicles. In terms of the soundtrack, Val Kennedy's voice-over presents itself as being *read* (which indeed it is) rather than performed in a more traditional sense. In the scene in the woods, Kennedy reads from a piece of paper exactly the same kind of text that we hear in the voice-overs (extracts from his father's autobiography) with exactly the same style of delivery. There is a sense in which this sound of reading is self-reflexive, self-materialising, in that it makes no pretence to naturalism, and also because the relative flatness of delivery tends towards a materialising monotony. This tendency is brought out by the filmmakers in their use of extended duration in passages of read voice-over.

Destabilising naturalistic cinesonic codes

When auditioned within the context of the film, its historical and cultural milieu, and the rationalisation offered by the filmmakers, *Birdman*'s soundtrack is rather neatly contained by the notion of deconstruction. This is also the case if one considers these cinesonic strategies in relation to the issues and debates that have been used by critics to situate Kennedy and Burton's work on other films. (Ellis, 1981, 1992; Cowie, 1981; Christie, 1981) Like Smith's work, the films of Kennedy and Burton represent an undoing of cinema. If we ask ourselves of which cinema this is an undoing, then the answer is a cinema where these codes and devices are repressed, a cinema that presents itself, in terms of construction, as transparent – and this is, of course, mainstream classical Hollywood cinema. For these three filmmakers the use of deconstruction has, at

least in part, a counter-cultural, oppositional motivation: it forms part of a broader project to destabilise and challenge the dominance of hegemonic models of cinema. For Burton, the adoption of 'formalist' techniques had a clear ideological motivation:

> It was political. When I start talking about it now it seems rather naïve, I guess. Perhaps it was. But it was, it was to do with – nothing too unusual – but that sense of not wanting that kind of illusion and manipulation of a spectacle. At that time we were at war with the society of the spectacle, and classical Hollywood cinema seemed to epitomise that. That was the appeal. But I have to say there was another kind of appeal... it's a cinematic appeal, you know, what you can do with film. There is a great appeal of classical Hollywood language. But there is also a way of exploring those things, the relationship between sound and image, and just pushing them a bit, seeing what will happen if you disturb that harmony. (Burton, 2004)

There is a clear sense in which left-wing and counter-cultural cinematic practices of this period engaged in a denaturalisation of the filmic sign in an attempt to reveal the ideological underpinning of signs, sign systems, and signifying practices. As Smith explains it, the motivation behind this was, and continues to be, an attempt to destabilise and denaturalise illusionistic film practices:

> These words are probably coming straight out of the 1970s at the RCA, but it's what I've always said and what I think I believe – it's to do with actually being able to engage with the work rather than simply consume it. That you are manipulated, but you're aware that you're being manipulated, and you know how you're being manipulated and the films set out as part of their project to actually tell you that. So in a dry way the theory behind that is that it enables you to engage, it enables you to question. The work makes everything suspect however "authentic" it is in terms of documentary material or whatever – it makes you ask questions about it, I hope. So much of the work is on one level documentary, but hopefully you're looking at it in a way that you don't necessarily trust it – certainly that you're aware that you're being presented with subjective material anyway, there's no kind of attempt at objectivity – it's the opposite. (Smith, 2002)

This desire to destabilise naturalistic film practices clearly signals the importance of the concept of deconstruction to these filmmakers. However, this positioning of film practice reveals one of the fundamental problems of deconstruction, especially where, as in the case of Smith, Kennedy and Burton's work, it has, at least in part, an oppositional motivation. Deconstructive formulations of film theory and practice, like oppositional formulations, share the problem of being in some way binary constructs, the primary term of which is absent. This is particularly clear in the writing on Structural film in the late 1970s. So, for example, although Gidal states that Structural film is conceived in terms of a *dialectic*, a space between material and representation, its critical deployment demonstrates a tendency towards antithesis:

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"Such film mitigates against dominant (narrative) cinema."

"An avant-garde film defined by its development towards increased materialism and materialist function does not *represent*, or *document*, anything."

"Structural/Materialist film attempts to be non-illusionist." (Gidal, 1975: 189)

These negative formulations are found elsewhere, common in theorisations of independent film practice in this period. Phillip Drummond opens his introduction to the catalogue of the Hayward Gallery's 1979 exhibition *Film as Film* with the following:

> Our definition of avant-garde film will clearly hinge upon the qualities we associate with the broader context of 'mainstream' or what we might call 'dominant' cinema. In this case the avant-garde will then be typified by its 'opposition' to norms and values within its 'opposite' (1979: 9)

Similarly, Peter Wollen employs the term "counter-cinema" in his account of Godard's 1970 film *Vent d'est* to describe a film practice that is wholly defined in terms of its opposition to an absent, other cinema – once again, that of the Hollywood mainstream.[10]

Rather like the problem posed by sound-source formulation, the danger here is that, in a centrifugal fashion, attention is turned from the object or event itself to something which is effectively absent. Rather than engaging with the concrete particularity of the film text or event, this mode of conceptualising film practice becomes reliant upon abstracted, absent hegemonic models. What we encounter is a problematic dependence on a secondary term, a constitutive other. So, for example, when John Ellis offers a critical commentary on Kennedy and Burton's 1980 feature film *At The Fountainhead (of German Strength)* – a film which continues to develop its directors' interest in German history – he continually refers to the ways in which the film departs from, challenges and deconstructs televisual modes of narrating history. Thus Ellis writes of the film: "It both acknowledges television's dominant treatments of this history, and rebuffs them. It uses all the major television strategies... but refuses their distinctive discursive closures, and places them in a particular emotional register that is alien to them" (Ellis, 1981: 48).

However, what he does not work to establish is the precise nature of the "particular emotional register" that is somehow opposed to its problematic televisual counterpart.

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[10] See Wollen (1982: 79-91).

Paradoxically, his understanding of Kennedy and Burton's practice is fundamentally oriented by what it is *not*: "Any cinema calling itself 'independent' has to encounter this televisual mode of narrating and organising general political history" (Ellis, 1981: 48). Even when dealing with concrete practice in positive terms, this orientation towards antithesis remains. When later commenting on *At The Fountainhead* within the context of British Independent cinema, Ellis writes:

> Rather than the regime of narrative progression, which tends to unify all the effects contained within the film into a final harmony, some independent films deliberately work in a different way. They promote an attitude of reading the image as a space containing different and conflicting meanings; and the soundtrack as composed of sounds which do not necessarily cohere into an aural 'point of view.' (Ellis, 1992: 259)

This is in no way to suggest that such theorisations are somehow lazy, or un-thought, or irrelevant. On the contrary, these oppositional notions have a crucial radical function within a particular set of historical and cultural conditions, and may continue to have relevance (although the fact that this conceptualisation of film practice grew out a specific period in the history of independent film is reflected on by both Smith and Burton). The value of these formulations is in revealing, examining and challenging existing hegemonic models and structures. In this case, this type of politicised oppositional film practice, and its supporting theoretical resources, form part of the broader social, political and cultural project that follows through the radical logic proposed by May 68. Certainly this conceptual frame makes sense of Smith, Kennedy and Burton's work, since the filmmakers were overtly engaged in the deconstruction of a film text understood as a signifying system, and as such, a socially informed construction; their project had never been to map the material. However, to allow this one set of ideas to circumscribe critical consideration of their work is to limit the study of film to issues of authorship, or worse, to relegate everything but the contemporary to the museum.

The problem is that this way of situating films and film practice in relation to an absent other continues to exert a dominant influence on the critical landscape. At the time of writing, the website for the British Artists' Film and Video Study Collection features a research paper by Orlene Denice McMahon entitled *An Analysis of the Soundtrack in the work of Malcolm Le Grice*. In the absence of critical literature on the sonic dimensions of

avant-garde film, this is indeed a welcome contribution to scholarship in this area. The fact that it is featured on this particular website accords it, and the ideas it contains, a certain status. However, while it contains many interesting observations on Le Grice's work, it simply reiterates what have become normative critical notions in this field. Thus McMahon begins the paper:

> The fact that this type of film-making remains the "most marginal and least understood" [Edward S. Small] means that we must resort to Hollywood and its commercial films as a critical yardstick for analysing avant-garde film. The role of music and soundtrack in avant-garde films is significantly in contrast with the place of music in Hollywood films. (McMahon, 2005)

While this kind of theorisation has an important place in making sense of films like *Birdman*, and in situating them historically, the challenge it lays down is how to map and explore the materiality of the film's direct soundtrack in *positive* terms. A potential problem of only considering this work in relation to the debates of its original historical context is that it robs it of contemporary relevance. Although now rarely screened, Kennedy and Burton's work of the late 1970s still represents an important engagement with the materiality of the cinesonic; it was simply that there was no discourse at that time with which to engage with this dimension of audiovisuality outside the confines of a politically motivated deconstruction informed by structuralism. While these perspectives may or may not continue to have relevance thirty years later, questions relating to the material dimensions of film's audiovisuality, and what is at stake in it, remain unaddressed. By returning to these films we are able to release a potentiality that makes a positive contribution to a contemporary critical engagement with notions of materiality. The problems inherent in deconstructive film practice and theory indicate the fundamental difficulties of addressing identity in positive terms. This is the perhaps disturbing fact that we tend to construct identity in terms of negation and difference, defining something always by what it is not rather than what it is, always relying on and referring to a constitutive outside. And this, of course, is a formulation that runs to the very heart of a semilogical model based on Saussure's formulation of language: "in language there are only differences *without positive terms*" (Saussure, 1964: 120). In the light of these observations, what then does it mean to listen to the reflexive soundtrack?

In what ways might we come to terms with the materiality of the cinesonic in the context of these films, and to what ends?

What immediately strikes one when listening to *Birdman* is its profoundly energetic prickliness: a sonic friction that constantly engages, exhausts, involves and envelops the listener. But how do we engage with the 'rough and readiness' of a soundtrack in ways other than referring to the well-behaved, well-modulated, and largely 'transparent' (perhaps 'inaudible' is a better term to use here) soundtrack of mainstream cinema? One way might be to consider the perceptual, cognitive and affective dimensions of the cinesonic event set in train by the direct soundtrack, and how these might relate to its unexplored signitive dimensions. One specific example of this approach revolves around what we might term the 'sound of technology'. Burton comments:

> We always used Senheisser 816s, the big rifle mic. What it was, of course, was classic news film stuff. And of course it gave you that [news] look with the [Arriflex] BL. We shot on BLs and Senheisser 816s. It was just convenient in those days, I guess, that those of us that were working that way – and there was a group of us working in the same way – wanted that sound. But actually that was what was around, too. I think that whole generation were brought up on BLs and 816s, which gave you that sound. That's what it was for: it was for picking up news. And of course it suited us absolutely with this philosophy of direct sound and overtly recording what was there. They're very powerful microphones, as well – they're not actually the most ideal for more naturalistic sound. (Burton, 2004)

What Burton refers to as "that sound" defines a territory of low-budget independent cinema: it reminds the listener of other films made in this period, other films produced within this particular cultural milieu. This particular sound is produced by a number of factors: the type of microphone used, whether sound is recorded on location or in a studio, and importantly, how all these are in turn filtered and rendered by the film's optical soundtrack. This sound of technology, whether consciously registered by the listener or not, has a powerful affective dimension, overlaying the film with a feeling of 'pastness.' In this respect, this neglected dimension of the cinesonic event, has its own signitive potential. But is it simply by convention that the murky, scratchy sound of the optical soundtrack refers us to the past? To turn to issues of perception and cognition, a sound like that of optical crackle inhabits a borderline between conscious and unconscious awareness, between signification and a sensory engagement with the

material. This sound has an enveloping, warm, oceanic aspect that would seem to belong to the affective dimensions of the cinesonic. Furthermore, like the busy ambience of direct sound, it has an inescapability that also surely figures at an affective level. None of these possibilities are addressed by the dominant conceptual modes applied to the analysis of film. In a similar fashion, while deconstruction provides a number of ways in which we might make sense of *Birdman's* audible sound editing, as a conceptual mode it has no way of engaging with the visceral, affective shocks of the film's sonic construction. Once again, these particular audiovisualities coincide, map and represent the untranslatable materiality of the cinesonic event, and each is explored further elsewhere in this study: Chapter 2 considers the sound of technology, while Chapter 5 addresses some of the affective dimensions of edited sound.

What we witness in the films of Smith, Kennedy and Burton, are filmmaking practices that take as one of their subjects the codes and conventions of cinema itself. In considering the issue of where destabilisation of signification might occur in the field of the cinesonic in this work, we have seen how in Smith's films turbulence is sounded around the sound-source formulation that structures film's representational function. In the work of Kennedy and Burton, this destabilisation focuses on a range of naturalistic cinematic practices. In contrast, the work of the American videomaker Scott Rankin is less overtly involved in an examination of film language, and more concerned with the issue of language itself. A number of Rankin's videotapes of the 1980s take as their subject-matter personal, cognitive and linguistic relationships, and how these influence the way in which we think, the way in which we view the world. Investigating the problematic issues of difference and meaning, his tapes show what is at stake in the model of difference that structures language and its political dimensions. Rankin's work provides an alternative sounding of the untranslatable of signification, and another way of mapping the cinesonic event. Through contrast, tension and disconnection, Rankin sets in motion the relationships between sound and image, the linguistic and non-linguistic, the representational and the material.

Materiality and the linguistic

Rankin's video work employs a range of sonic and visual strategies that construct a tension between the representational function of the sign and its material dimensions. In *This and That (part two)* (1990) Rankin presents the simple image of a tree, behind which lays the ocean under a clear summer sky. Superimposed over the various elements of the image are the Welsh words *cwmwl*, *terfyngych*, *dwr* and *gwydden* (Fig. 1.13).
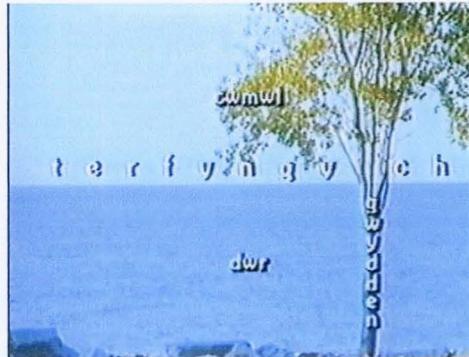
Fig. 1.13

These words are also voiced-over in Welsh. The vocal sounds we hear are presented as signifiers, and we can do the mental work of stitching together sound, word and referent even though we might not be a member of the community of Welsh speakers. To those who do not speak Welsh, these sounds lack the power to signify by convention. Indeed, Rankin chose Welsh because he felt that it has relatively few speakers, and is hence unlikely to be understood by the majority of the tape's audience:

> I tried many languages... I wanted the viewer to not understand the language yet understand the emotional layer and grain of the voice, its tonality, rhythm and emotion... Latin, Cantonese, and Sanskrit were considered for their relative unfamiliarity... but each had connotations that I did not want. Welsh had a sound that was to me English-like... (although Welsh is not related to English). It seemed the most familiar yet opaque to what I expected would be my audience's language range. (Rankin, 2004a)

In this way Rankin forces confrontation with a sign that seems, at first not to signify, in that it fails to deliver the semantic content the words promise. However, what Rankin reveals is that the materiality of the voice has signitive and affective dimensions that exist independently of speech's semantic content:

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> On that tape it teases you into reading the images, as if it were a story he's telling us. And then he goes 'gwandar', and then you're like, *what*?! Then he gets angry. So it's all mixed to do just that; it's to have the emotional value and rhythm of voice. Stuff like a dog understands... (Rankin, 2004b)

What oozes from around the edges of the designation 'sign' are the sounds we usually describe in terms of 'language' (in the sense of 'tongue') 'accent' and 'voice'. The excess produced by stamping these sounds 'signifiers' maps the materiality of the sound. The opacity of Welsh to the non-Welsh speaker forces a confrontation with the untranslatable material balance of signification.

In another sequence from the same tape Rankin presents an extreme close-up of a mouth enunciating the vowel sounds of Welsh (Fig. 1.14), which are not entirely familiar to a viewer, like myself, whose mother tongue is English. In what becomes a key trope of this tape, phonic difference begins to conjure national difference. On screen, superimposed over the mouth as it produces the sounds are the letters identifying them graphically: a e i o u y w.
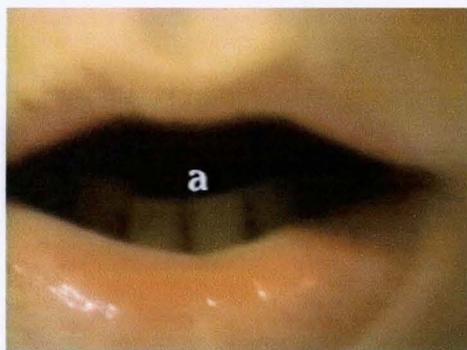
Fig. 1.14

Here language appears to be reduced to its building blocks, the phonemes from which speech is constructed. This particular set of vowel sounds is drawn from a language of which I am not a speaker; it sounds 'foreign', connotes otherness, and an opacity results from the fact that these sounds do not allow me immediate and unconditional access to the language system from which they are drawn, and within which they might *make sense*. But these are *sounds*, not verbs, nouns or adjectives, and as such I recognise their familiarity since they may form part of my own speech. Yet despite their sonic

familiarity, the linguistic frame in which they are cast (a e i o u – the set of vowel sounds) means they do not bed into the phonic conventions of spoken English. That is, they do not precisely conform to the absent, abstract model of vowel sounds in which I attempt to situate them as an English-speaking listener. However, at the same time, the letters superimposed over the image of the lips producing these vowel sounds locate them as properly contained by that set of phonic conventions they also seem to resist. And so an unresolvable tension is maintained between the materiality of these sounds and their place within a linguistic structure. Here it is the untranslatablility of one language into another (one 'tongue' into another, but also the move from writing to speech, the visual to the sonic) that sounds itself as turbulence.

This resonates with another set of divisions and disjunctures proposed by the juxtaposition of the written letters with the sounds. The latter stand as graphic signifiers, not of the sounds we hear, but of the sound's 'name' – or more accurately, for me, the equivalent vowel sound's name in English. This name, of course, has its own sound, closely related to that of the vowel, but not identical. Thus the elements to be considered here are the graphic symbol (a), its sounded name ('ay'), and the speech sound it signifies ('ah'). However contrary to the expectations of an English speaker, Rankin presents the written letter 'a' with the extended Welsh vowel sound 'aah'. Here, the relationship between sound and image points up the fracture that lies at the very heart of language, the opposition that structures the signifier/signified binarism. In his simultaneous uncoupling and re-coupling of sound to naming and 'meaning', Rankin skilfully hints at the destabilising nature of difference: while language must be shared, what I hear in this slight variation of the first vowel sound, in its elongation, is the national difference that can be inscribed into even the most simple material sound. This difference is created by a template of language that is imprinted upon a sound simply because of the order in which it is offered in relation to other sounds. Designating this particular vocal sound part of the group of vowel sounds, 'a e i o u', inflects the material with a notion of difference that constructs otherness; in almost conforming to this absent pattern, these sounds inevitably mark their departure from it.

In a discussion of the performative aspects of language, Deleuze and Guattari propose the notion of *incorporeal transformations*. The term refers to that change which takes place when, for example, a judge's sentence transforms the accused into a convict (Deleuze & Guattari, 1999:80). These transformations affect, and are attributed to, 'bodies.'[11] What Rankin's vowel sequence reveals is that the linguistic frame into which sounds are placed performs a complex act of instantaneous incorporeal transformation. In running these most elemental of sounds through a linguistic structure, Rankin's tape highlights the fracture that structures language, setting sets in motion the internal instability of the sign. In sounding this turbulence, Rankin signals what is at stake in the signitive translation of the material: the creation of otherness and difference.

The sequence continues with the remainder of the alphabet heard in voice-over. However, unlike the vowel sequence, now an image rather than a written letter accompanies each sound (Table 1.4). This sequence, in the relationship it proposes between sound and image, adumbrates another facet of the untranslatable dimensions of significatory systems. The image of the cow signals concepts of representation that resonate with the visual nature of the tape we are watching. This particular image is an ideogram, part of an Egyptian hieroglyph. But of course, like the carving, the video image we are watching is also a representation. Both are motivated signs, that stand in contrast to the arbitrary nature of the speech sounds accompanying them. It is the work of Charles Sanders Peirce that allows some engagement with the material aspect of signification in his tripartite classification of indexical, symbolic and iconic signs (Peirce, 1991). While the symbolic can be considered arbitrary in the Saussurian sense, Peirce's formulations of both the iconic and the indexical challenge the notion of arbitrariness as a founding principle of the sign; the photographic image has both an iconic and indexical aspect, as does recorded sound. However, this contrasts with the arbitrary nature of the vocal speech sounds. Rankin's alphabet sequence is therefore situated right on the Saussure-Peirce/semiology-semiotics fault line.

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[11] "We may take the word 'body' in its broadest sense (there are mental bodies, souls are bodies, etc.)." (Deleuze and Guattari, 1999: 80)

TABLE 1.4 Opening of alphabet sequence from *This and That (part two)*

Place in alphabet	*pronunciation*	*image*
A	'are'	
B	'bh'	
C	'ec'	
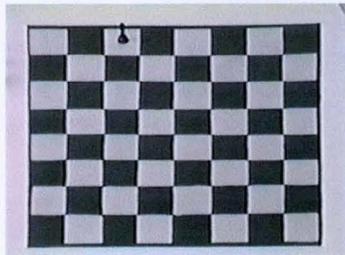
What Rankin does so well is to destabilise the sign by bringing these two terms together, confronting the arbitrary with the motivated sign. It is a resistance to the incorporeal transformations imposed by linguistic structures that begins to reveal itself in this alphabet sequence. By selecting what appear to be random images to accompany the speech sounds of an alphabet, Rankin severs the naturalistic link between sound and image that characterises the vowel sequence in which we see a mouth creating the sounds we hear. His editing imposes another, linguistic order on these images – they are marshalled to 'correspond' to an alphabet structure. But at the same time, these images refuse this structure – there seems to be no relationship between sound and image other than their temporal correspondence. The chain of images simply doesn't form an alphabet; the images refuse to be translated. In addition, a further instability is introduced by the lack of correspondence between Rankin's use of the Welsh alphabet, and the absent structure of the English alphabet, against which it is situated for me personally as a

listener. Through contrast, tension and disconnection, Rankin sets the relationships between sound and image, between the linguistic and non-linguistic, and between the representational and the material in motion.

The introduction of movement into the images creates a defiantly non-linguistic relationship with the soundtrack. The elongated sound 'èng' is accompanied by a camera track past a glass case of stuffed rabbits in a museum. The sound 'èl' shows a glass being placed on a table, which then falls off to the sound of the next letter 'ès.' To the sound 'o' a wave crashes, 'pi' milk poured into a glass (Fig. 1.15), 'oooh' ripples on a pond.

Fig. 1.15

This parallelism forces a bond between sound and image that is arbitrary in a linguistic sense, but is motivated in terms of morphology. This is more than Chion's synchresis, the more or less arbitrary suturing of sound and image through editing. Here the morphological profile of sound and image – the way in which they develop over time – creates a brief moment of intersensoriality. This fusion of sound and image is part of a poetics of editing that rests with the perceptual, cognitive and affective dimensions of the cinesonic, and which entirely escapes signitive modes of analysis. Structuralism, as a mode of theoretical capture, has no way of engaging with becoming, no way of dealing with flux and flow. Indeed, as indicated in my Introduction, Saussure sidelined temporal considerations of linguistic phenomena in simply proposing the value of the synchronic study of language. What this also means is that the audiovisuality of film and video, constituted as it is by the flux and flow of sound-image relationships, is unknowable within signitive regimes. In this way audiovisuality demonstrates what Sarat Maharaj has

termed the "elusive liquidity" of the untranslatable, and as such provides an alternative to notions of the untranslatable as simply oppositional and turbulent (Hall & Maharaj, 2001: 46). Rankin's simple inclusion of movement, and of shots which declare their audiovisuality through synchresis, not only derails the attempt by linguistic structures to account for the non-linguistc, but perhaps more importantly in the context of this study, signals an unknowability in relation to signitive regimes. In demonstrating its "elusive liquidity", the audiovisuality of film and video signals an 'outside' of the signitive, a region removed from its influence.

Rankin repeatedly pitches the material event against the linguistic, creating a zone of disjuncture and turbulence around the signitive. This same sequence also employs a rapidity of editing that does not allow one to delve into the possible linguistic connections that might link sound and image. Rather, sound and image bounce off one another, and the linguistic framework of equivalence that we seek to impose on the flow of sounds and images collapses, with the result that we are confronted by flow, movement, shift, and by differences that can't be resolved. The response is a material feeling of flow, in which the 'linguistic turn' appears to be fighting a losing battle. John Smith's film *Associations* (1975) produces a similar effect, albeit in a different manner. Here images from magazines and colour supplements are edited to 'illustrate' text taken from an article on linguistic theory, read as voice-over. As with Smith's other films, the polysemic nature of signifiers is revealed in the disjuncture between actual and intended/sanctioned meaning. In *Associations* this takes the form of a visual illustration of the words of the text that is governed by association and latitude of meaning[12]. However, the stream of images which accompanies the spoken words is so rapid and indigestible that, as A. L. Rees suggests, what is revealed is the inadequacy of words in representing visual objects (Rees, 2002:17).

For Rankin the importance of challenging linguistic structures lies clearly in the problematic issue of the role of difference in figuring identity. This is evidenced in *This*

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[12] For example, the word 'associations' is represented visually by four images – an ass, a sewing machine, the sea, and a group of Asian women – to produce the rebus 'ass-sew-sea-asians.'

and That by one of Rankin's most straightforward and powerful uses of sound, which highlights the role of 'framing' in our categorisation and mapping of otherness. The sequence comprises a series of film clips that present 'the other' (i.e. the non-white, non-American) in racial terms. As the sequence of shots develops, Rankin's point that framing, and hence representation, *creates* meaning, becomes increasingly powerful. We see black and white footage of Vietnamese peasants, Pacific islanders playing bamboo flutes – a performance for tourists perhaps, or a TV news item. This is followed by clips from a Hollywood movie featuring the actor Sabu (why no surname?) dressed in turban and loin cloth, Buddhist monks praying, a white actor playing an 'Indian' chief in a Hollywood Western, Indian men (this time in India) carrying swords and rifles, a young child herding cattle in Ethiopia, a Thai woman selling gifts from a canoe pulling up to Rankin's tourist camera, and images of African famine culled from a fundraising telethon, superimposed over which are the numbers of telephone donation lines. The sequence is rich in resonances, and raises many issues about our own construction of the other. He comments: "By inserting images of 'others' into the frame, I wished to comment on the distancing, objectification and museumification of non-western peoples and culture."[13]

But underneath the sequence, which has no sync sound, we simply hear a recording of a tango being played with great energy. Rankin cuts to the quick with great simplicity; music, which is considered to be perhaps the most abstract art form of all, and whose appeal seems to lie in the arrangement of non-representational sounds ('pure' and 'objective' to borrow the terminology of the visual arts), is also traversed by lines of difference. The exotic appeal of this slightly over-the-top tango music marks another construction of difference, no less serious in its potential consequences than the laughable portrayal of the Native American leader by the white actor (Fig. 1.16). The tango, as signifier of the exotic, conjures the other with as little sensitivity as Hollywood's portrayal of the Native American. Rankin comments on this use of music:

> The tango did seem overly exoticist and flippant in juxtaposition with the "others" inside the gilded frame and then later inside the museum displays. The ultimate that-ness is to be killed and then preserved... Also the accordion always seemed to me to be (at least in

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[13] Taken from unpublished *Artist's Statement* provided by Scott Rankin.

mid-20th century American music) a very inauthentic instrument, coming from a musak-like culture very alien to me and very solipsistic. (Rankin, 2005)

Fig. 1.16

Embracing the oceanic

At the same time as it deconstructs language, and in the process of doing so, Rankin's work points to other ways of thinking, other modes of knowing that stand in contrast to the individuation and differentiation of linguistic modes. In this way, his work often refers us to the oceanic, and forms of embodiment, both in terms of representation and the affective dimensions of the cinesonic experience. Rankin's use of sea and wind sounds creates a feeling of embodiment, a sensory wrapping of the audio-spectator. *This and That* opens with the image of the sea, superimposed over which the film's title ebbs and flows with the movement of the waves, a dissolution of language enacted by the power of the ocean (Fig. 1.17).

Fig. 1.17

Shots of the ocean and of the desert recur throughout the tape, images and sounds that offer the featurelessness of the ocean and the desert landscape, accompanied by location sound of gently lapping water and the rumble of wind – both of which also share the

characteristics of being featureless and enveloping. Microphone sounds and rumbling dominate Rankin's soundscapes here. The rumbling sound of wind that we encounter first against shots of the desert is carried through to other sequences, employed in a manner that suggests the protean, fluid, malleable quality of sound which allows it to morph to the requirements of the images it accompanies. These are sounds that, in this respect, have no clear or fixed identity. Used in conjunction with the shot of an oppressive desert sky, the rumble of wind in the microphone suggests thunder (Fig. 1.18). Played against a point-of-view shot taken from a hospital trolley, it becomes the rumble of trolley wheels along the hospital's corridors (Fig. 1.19). It also, perhaps, conjures the sound of blood circulating round our own bodies – the low frequency sound that John Cage famously encountered in the anechoic chamber at Harvard. This is surely the most embodied of sounds, the sound that takes us deep within ourselves, a sound that is indistinguishable from our sense of self, our sense of being, our sense of identity.

Fig. 1.18

Fig. 1.19

Similarly, Rankin's visual strategy works to situate us at the centre of an enveloping audiovisuality. Rankin shoots the majority of *This and That* using a handheld camcorder, and there is an attempt here, and in more recent works such as *Central* (2001), *Path* (2003) and *Piccadilly* (2004), to place us and to centre us in the space the filmmaker presents to us. Consequently, point-of-view shots pepper these films. In *This and That* his point of view is often that of the tourist, observing and recording his surroundings, shooting from ground level to look up at the ceilings of churches, standing behind other visitors in galleries, looking up at statues, walking past museum exhibits. The microphone picks up the clunky sounds of the camera being handled, the rumble of wind,

the buzz of everyday conversation. Some shots of the ocean are unstable, the horizon rocking from side to side, and appear to have been recorded at sea. The sound that accompanies this image features the slopping and lapping of water against the sides of an unseen boat, the creaking of its timbers as it flexes with the movement of the ocean. Point-of-view shots taken by Rankin walking in the rain or in the snow feature the sounds of raindrops hitting the pavement, or crispy snowflakes impacting gently on the microphone. In one notable point-of-view shot taken on a swing, with each successive movement backwards or forwards we hear the sound of air rushing past the microphone. This rhythmic sound mirrors or suggests breathing, and thus works to create a sense of intimacy that sutures us, smothers us even, in the cinesonic event. Compare this with Tina Keane's tape *The Swing* (1978) in which classical music[14], superimposed text, and objective, static camerawork create a sense of orderliness that creates intellectual distanciation rather than embodiment. The cinesonic strategies adopted by Rankin place us at the centre of a represented world, and simultaneously envelope us in an audio-visual experience. This relationship between listener and sound in terms of the way in which the represented body and the physical body are impinged upon by the sonic is a key aspect of Rankin's work. The sound has what Rankin describes as a "visceral quality" (Rankin, 2004c); it places you, grabs you bodily, it possesses and inhabits the listener. In very simple terms this sound operates at the level of affect rather than by creating meaning. Evidence of this is given by the reaction of one audience to Rankin's recent tape *Path* (2003), which features extensive use of wind noise. Rankin comments, "My students said 'I really like it, but get rid of that noise', because it bugged them" (Rankin, 2004a).

The importance of the affective dimensions of audiovisuality to Rankin's work is perhaps most clearly illustrated by his 2002 videotape *Central*, which comprises a single handheld track through a busy Hong Kong crowd. However, the shot is not played in its entirety until the end of the tape. Up until that point, we are offered only a small segment of the whole shot, played backwards and forwards repeatedly – but never exactly the same segment, since with each play and rewind, Rankin takes us a little bit further on into the

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[14] In an interview with the author, Keane stated that the tape was originally intended as a 'silent' piece, and that music was added by a distributor without her knowledge.

tape, and a little less further back. Thus we gradually progress from beginning to end via a series of overlapping play-rewind segments. Represented graphically, progress through the tape is thus:

The sound is that recorded by the video camera, laminated to the image, and subjected to the same saw-like backwards-forwards articulation as the image. While little snippets of conversation can be heard to emerge as we progress temporally and spatially through the crowd, the language we hear is Cantonese, and so the opacity of the speech (to someone who does not speak this particular language), and the fractured nature of the general mix and flow of voices in a crowd work against the emergence of any clear linguistic meaning. At the same time, familiar sounds begin to emerge from the protean noise of the crowd, suggesting words that never actually materialise. Recognisable words seem to sprout from this swirling sonic soup, but then wither and die before they are fully realised, signalling perhaps the irresistible desire to invest the material with meaning, to translate the untranslatable. The repetition, coupled with the reverse play, objectifies these sounds as we become familiar with them, exploring and inhabiting their microsonic textures with each pass of the shifting loop. As we slowly advance through the tape, we become attuned to the richness and flux of those sounds that would normally pass us by unnoticed. Our sensitivity to this evolving micro-textural soundscape, to this rich morphology of the everyday, resonates with feelings of embodiment: we are subsumed, consumed, assimilated into this group of people, this moving image, the growling of the crowd. As a cinesonic event, the experience it generates feels somewhat different to that conjured by subject/object positioning suggested by the hand-held camera and environmental sound of Rankin's other works. The filmmaker attributes this to a form of transsensory affect: "there's this sort of hurling thing that goes on there – moving, being catapulted forward, then you stop" (Rankin, 2004b). That is, what we witness in

audiovisuality is that blurring and mutual resonance of the senses described by Sartre in the following terms:

> ... the lemon is extended throughout its qualities, and each of its qualities is extended throughout each of the others. It is the sourness of the lemon which is yellow, it is the yellow of the lemon which is sour. We eat the colour of a cake, and the taste of this cake is the instrument which reveals its shape and colour to what we may call the alimentary intuition. Conversely if I poke my finger into a jar of jam, the sticky coldness of the jam is the revelation to my fingers of its sugary taste. The fluidity, the tepidity, the bluish colour, the undulating restlessness of the water in a pool are given at one stroke, each quality through the others... (Sartre, 1969: 186)

Central has a quality of back-and-forwardness that is seen and heard and felt as the hurling action described by Rankin – and it is us, the audio-spectator, that is hurled just as much as the video material being manipulated. And in this way Rankin's work foregrounds a bodily experience of perception that seems to circumvent and challenge signitive modalities. Asking what this tape means is a pointless question – it means nothing, it is non-sense. But what the tape *does* powerfully foreground is the nature of the cinesonic experience, and perhaps in this way indirectly signals what it is to be in a crowd, what it is to be part of a multiplicity, what it is to be subsumed within a group of people, what it means to come to terms with the oceanic as a way of knowing and a way of being, as opposed to differential forms of individuation.

Refrain

To recapitulate, what this chapter has considered, and has begun to map, are the points at which a destabilisation of signification occurs in the field of the cinesonic in the work of a small selection of film and video makers. This destabilisation takes the form of turbulence in relation to signitive modes, and maps a zone of the untranslatable sonic. To return to the example of the concrete sound mirrors, when considered from the position of signification, it was the very *untranslatability* of the fluid, dispersed, undifferentiated sounds of sea and wind that brought about its failure; this was a project, the primary modality of which rested upon an epistemology of isolation, individuation, and differentiation. Like the sound mirrors, the semiological project is simply unable to deal with the temporal and spatial flow and flux of sonic phenomena, unable to grasp their

elusive liquidity. In its Saussurian formulation, it has also the disadvantage of being based on a model of language that has few ways of considering the material in positive terms, focussing instead on notions of arbitrariness and negative differentiation. But even within Peirce's model of semiotics, although the trichotomy of signs gives some recognition to the sign's material dimension, this is nevertheless absorbed into the primary concern with semiosis. Signitive modes of analysis are largely unable to deal with meaningless materiality.

The potential weakness of the negative differentiation that lies at the heart of the Sausurian model of language also reveals itself in oppositional and deconstructive formulations of film practice. The problem created by this way of conceptualising the place of sound in film is that attention is deflected from the cinesonic to abstracted notions of absent, hegemonic models of film construction. The challenge then becomes to find ways of addressing the cinesonic that engage with its concrete particularity, and most specifically with the flow, flux, complexity and intersensoriality of its audiovisuality.

But at the same time, there is more involved in working towards an alternative to signitive modes of analysis than simply finding more accurate and responsive ways of mapping the cinesonic. What the work of Rankin shows is that the adoption of linguistic models, like that upon which semiology is founded, has consequences that go beyond the ability to map phenomena more or less accurately, more or less convincingly. In *This and That* Rankin figures the relationship between perceptual experience, and the organisation of that experience, in terms of deitic forms that locate subject in relation to object:

> First "pure" presence, perception "This-ness", in the body, moving, seeing, reacting... Then cognition, discriminating (perceptually and cognitively) "That-ness" from separating and naming, to categorising to taxonomies and collections to organising systems and languages and other symbolic systems [...] and representations... All these things build and layer in the head and the memory (in the mind and "body"). They are compared and contrasted and parallel processed and emergent neural matrixes arise that we call thoughts and consciousness and metaphor..."(2005)

The problematic role of language and other representational modes in the figuring of *that-ness* as otherness has already been touched upon briefly above with reference to Rankin's exploration of the notion of framing. Elsewhere in *This and That* we view a succession of

stuffed animals displayed in glass cabinets in a museum. Rankin's comment on this scene pithily sums up the real consequences of this way of classifying, dividing, and thinking the world: "The ultimate That-ness is to be killed and preserved" (2005). In his next tape, *The Pure* (1993), which takes as its subject the cultural attention and reverence given to the 'authentic' and 'pure', the problematic consequences of conceptualisations based on differentiation are brought home powerfully. In a sequence which focuses on the notion of the 'native' as paradise lost, his commentary touches upon colonial inscriptions of difference:

> We are here now; they are there then. We are progress; they are developmentally arrested. We believe that they need our guidance in order to emerge into modernity, that modernity is what they desire, and that progress is a natural course of events. We are moved to civilise them. Of course, under certain circumstances, should they develop too quickly, we may be required to bomb them back into the Stone Age.

Thus, like Smith, Kennedy and Burton, Rankin recognises representation as the site of struggle, a political arena. What *This and That* proposes is that modes of thought founded on differentiation, individuation and notions of essence are highly problematic. And since we live our lives in a complex semiotic space, this issue has real political relevance.

If the untranslatable is inscribed within and against signitive modes as a destabilising form of turbulence, then this means that audiovisuality might also have a political dimension. An audiovisuality that is unknowable within signitive modes of thought might indeed have radical potential, and in addressing the cinesonic in ways that engage with its concrete particuilarity, and most specifically with its flow, flux, complexity and intersensoriality, we are able consider how sound-image relationships relate to the political and ideological.

What we observe in the film and video work considered in this chapter are a number of strategies by which various forms of signification are destabilised, in the process of which cinesonic materiality begins to reveal itself. But what is at stake in cinesonic materiality is more than a simple refusal of the signitive, although this in itself has obvious radical potential. It is the potential *unknowability* of cinesonic materiality that constitutes its political dimension. Thus, unknowability within an established

epistemological regime is not to be understood simply as a negation of that regime, but a route into another universe of possibilities. In this sense, we move from a radical poetics of refusal, to a materiality that opens a window on other ways of knowing, other ways of being, and other ways of understanding what constitutes political aesthetics. In resisting signification, sounds present a materiality that articulates itself in ways other than supporting the material difference required by linguistic formulations of meaning.

The phenomena of ground noise and optical crackle, which forms the focus of the next chapter, provide a particularly interesting example of sounds of this kind. These are sounds produced by the technology of film itself, and which seem to lie outside of the complex of signification, text, meaning, semiotics and representation that has occupied the centre ground of film studies. These sounds escape the tripartite division of speech, sound effects and music that is commonly used to net the contents of the soundtrack. Yet paradoxically this almost wholly ignored sound is constantly present, in varying degrees, on all optical soundtracks of a certain age. The critical challenge this raises is how to engage with something we do not usually attend to, and how to do so in a positive terms – that is, to audition this sound not simply as noise which resists signification, but as a material manifestation of the technology of film itself.

Chapter 2
THE SOUND OF TECHNOLOGY
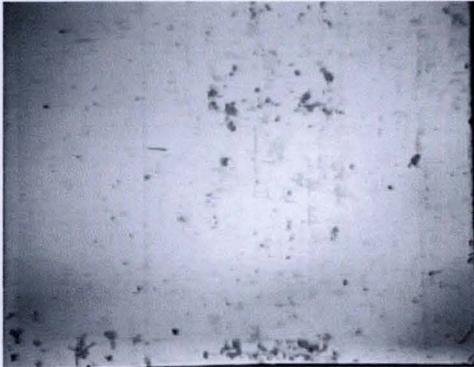
Ground noise and optical crackle: a sound of film

There are a number of crucial cinesonic elements that escape the grasp of the traditional tripartite division of the film soundtrack into of speech, music and effects: one is noise, another silence, and the other the sound of the technology of film itself. This last sound, which is immanent to the technology of film, is almost completely neglected by studies of film sound, unless conceived in terms of noise or inadequacy. So how are we to describe, approach, and most importantly, map this material sound in positive terms? How are we to critically engage with this form of noise other than by situating it in relation to signification in terms of failure or refusal? What are the aspects and dimensions of this sound of technology, and what might an exploration of it bring to an engagement with the cinesonic?

Noise, silence and the sound of technology come together in the figure of what is sometimes called 'ground noise', the term used to refer to any undesirable noise inherent in reproduced sound. In the case of optical film sound, which forms the primary case study in this chapter, ground noise is in part created by the grain of the film stock on which the soundtrack is printed – a result of the play of particles of silver halide through

the beam of light cast by the projector's exciter lamp. As such, ground noise can be understood as simply the sound produced by film's material substrate as it passes across a sound reproducer. On magnetic recordings, including all the various analogue video formats, the equivalent of this sound is the hiss produced by the oxides of the recording tape. But even without film running through a projector, sound is still produced by the equipment due to electrical resistance. Referred to as system noise, this quiet song of electrical circuitry combines with the sounds created by the passage of film described above. In addition to this ground noise, we might also consider optical crackle as a constituent of film sound's materiality. This is the sound created by the thousands, perhaps millions, of tiny scratches that gradually mark a film print over time. Sometimes this sound is light and clear, sometimes a rumble like wind in a microphone.

Together, the grain and scratch of the optical soundtrack comprise one aspect of what might be thought of as the sound of film itself: the sound produced by an unmodulated sound track, a sounding of film's material and the technological bases. There are additional factors that contribute to this sound of technology, mapped by the sum of differences between the profilmic auditory event and the auditory event presented in the cinema. In the same way that the technology of the telephone inhabits telephonic speech, so the technology of film resides as a trace even in the most seemingly faithful recordings. The parameters of this sound of technology are explored later in this chapter, but for now consideration is confined to the background sound of ground noise. It is a sound that is continually present, although revealing itself most clearly in the 'silences' that surround and separate words, music and effects. And for this reason it is present perhaps most profoundly in those films whose soundtracks tend towards dispersion and emptiness, rather than those aiming for a fusion or continuum of soundtrack elements. Although sometimes masked by music or other continuous sounds, this particular sound of film technology is always playing in and through the soundtrack, always there as the 'ground' against which other sounds are 'foregrounded.'

When considered within the discourse of noise, this sound presents a materiality that is understood to threaten the representational by interference, disruption and distraction.

Thus, technical discourse on film sound constructs ground noise as a problem to be solved, a sound that at least needs to be minimised if it cannot ever be removed completely. So, for example, in the American Academy of Motion Picture Arts and Sciences' 1931 publication *Recording Sound for Motion Pictures*, Donald MacKenzie figures this in terms of an issue of fidelity to an original sound source. He states that in order to "… render the film as nearly perfect as possible… no frequencies other than those in the original sound source, should appear in the reproduced record, and there should be no static or noise – ground noise on the film or surface noise on the disc"[1] (MacKenzie, 1931: 89). This form of noise is figured elsewhere in terms of interference with the semantic substance of film, as in Stanley R. Alten's contemporary text *Audio in Media*: "Because noise is an ever-present annoyance, the value of noise reduction cannot be overemphasised, especially in relation to dialogue and field recording, particularly with analog audio" (Alten, 2005: 232). Writing seventy-four years after MacKenzie, Alten introduces a historical dimension into the issue of noise: in suggesting that noise is a problem particularly associated with analogue audio, he implies that it becomes less of an issue with the advent of digital technology. It is worth remembering, however, that the promise of noiseless recording has been with us since the very beginnings of commercial film sound technology: back in 1930 Western Electric was marketing its latest sound system as "Noiseless" technology.[2]

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[1] MacKenzie's reference to disc technology here points to the fact that at this time there were two alternative sound systems in use: one in which sound was recorded and reproduced on disc, and another in which sound was recorded using photographic film, and reproduced from the film print itself.

[2] The innovation of Western Electric's "Noiseless Recording" was to use black rather than clear film for the unmodulated (and hence silent) optical sound track. Previously the use of clear film meant that dust and scratches registered on the optical sound reader as sound. By using black as the unmodulated sound track, dust did not register, and only scratches severe enough to remove the film emulsion might produce unwanted sound.

Critical literature and ground noise

Film Studies is almost totally deaf to this sound of film technology, considered only within technical histories as a troubling presence to be reduced and ultimately removed by successive waves of technical innovation. For example, David Bordwell very briefly frames the reduction of ground noise, along with developments in directional microphones and an increase in the frequency and volume ranges of film recording, as part of the American film industry's drive to solve "particular problems" between 1932 and 1935[3] (Bordwell, Staiger & Thompson, 1985: 300-1). Generally, however, in a position that in some way parallels the conceptualisation of ground noise that emerges in the commercial film industry, film studies has constructed this sound (by neglect) as external to the film text, rather than embracing it as part of cinseonic textuality.

This particular aspect of film sound is doubly neglected, doubly difficult to approach with existing critical resources. As something which seems to lack apparent meaning, it finds no place in approaches derived from film-as-text traditions. At the same time it also presents the challenge of how we engage with a phenomenon that we simply don't attend to, since the sound of technology is something we tend to listen *through* rather than listen *to*. Or so it seems.

In terms of the film soundtrack, any upfront materiality of 'the sound of film' will always represent a departure from one of two idealised norms: firstly silence, and secondly fidelity to the profilmic sound event. In this way, paradoxically, the technological development of commercial film sound aspires towards fantasies of silence, expressing a wish to reduce noise to zero, and to achieve a final and complete erasure of the technology of film itself, resulting in absolute fidelity. As MacKenzie states, "The object of all recording is to furnish a sound which will be indistinguishable from the sound one would get from the real source if it were there" (MacKenzie, 1931: 84). Understood with this goal in mind, developments in film stock and in printing can be seen in terms of the

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[3] Parallel developments took place in other countries, and an account of the European response to the transition to sound is given by Neale (1985). However, reference is only made in this dissertation to the specific sound systems that emerged from Hollywood's transition to sound. These are taken as illustrations of the technical background to the issues discussed.

repression of the medium's sonic materiality, the traces of its material base. As Bordwell points out, a number of the developments in film stock that took place in the 1930s were undertaken by RCA and ERPI[4] to increase the frequency range of film recording, reduce the ground noise that resulted from the granularity of the film stock, and extend volume range. These technical developments relate to the fact that on the optical film soundtrack, sound is encoded graphically in a strip alongside the picture area of the film print. The ability of this small area of the film print to encode sound depends therefore on the ability of the film stock to render photographic detail; large-grain stock encodes sound information with less resolution and with less precision than fine-grain stock. Thus the grain structure of film has a direct relation to the amount of information that can be recorded on it, and thus to the fidelity of the recording. One of the perceived problems of early sound film stocks was that the frequency and volume ranges of recordings were quite limited; very low or high frequencies either could not be recorded, or distorted. According to Stephen Handzo, "The graininess of the emulsion degraded the upper frequencies and read on the reproducer as noise" (Handzo, 1985: 389-390). Similarly, the dynamic range of recordings was also compressed within a relatively narrow band; quiet sounds did not register well (if at all), while louder sounds distorted. In addition, as indicated above, the granularity of the stock also created a certain amount of ground noise itself. Certain developments in film stock were therefore specifically aimed at increasing fidelity: Bordwell lists the introduction of ultraviolet light in recording in 1936, the development of RCA's 'High-range' process for greater volume range, and use of fine grain stock for better recording in 1939 (Bordwell, Staiger & Thompson, 1985: 301). Similarly Altman mentions experiments in film stock carried out by Eastman and Du Pont which resulted in the production of fine-grain film stocks such as Eastman No. 1302 and Du Pont No. 222 (Altman, 1985: 47). The result of these developments – and others relating to microphones, amplification and relay systems – was an expansion of frequency range. According to Belton the frequency range of sound film in 1928-30 was approximately 100Hz – 4Khz, but had increased to 30Hz-10Khz by 1938 (Belton, 1985: 67). However, what should be remembered is that the frequency range audible to the

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[4] Electrical Research Products Incorporated, a subsidiary of Western Electric, was heavily involved in the development of early film sound technology.

human ear is approximately 16Hz – 20Khz. Thus, even an expansion of this range in film sound recording and reproduction still represents a compressed and limited frequency spectrum, which is audible to the listener as such. It is in part this compression that gives film sound its sonic signature, differentiating it from the profilmic auditory event. Importantly, what a brief consideration of technical history reveals is that this signature has changed over time, revealing a historical dimension to cinesonic materiality. This, as will be shown, provides a crucial means by which we are able to engage critically with the sound of technology.

Audibility and inaudibility of noise

An alternative way of considering these attempts to improve fidelity is to view technical development in terms of a repression of materiality. This is not simply a critical viewpoint, but an avowed goal of classical film technique. In 1931 Carl Dreher, Director of the Sound Department at RKO Studios wrote in his foreword to the Academy of Motion Picture Arts and Sciences' *Recording Sound for Motion Pictures*:

> In this field we are dealing not merely with a branch of engineering, but with engineering placed at the service of an art. We are dealing with a division of engineering which must produce physical realities, not in accordance with a rigid and inflexible technique, but for the purpose of arousing emotion in an unobtrusive and self-effacing manner. (Cowan, 1931: xv)

This desire for self-effacement informs many aspects of sound production and post-production in classical cinema. In production this includes the prohibition against revealing the presence of film sound equipment; hence the ruse in the early days of concealing the microphone in a vase of flowers or hanging it just out of shot from a walkway or boom. In post-production, editing practices that seek to achieve their own effacement include the use of fades and dissolves rather than cuts, and the practice of cutting to sound, rather than cutting on a sound, in order to avoid audible sonic montage.

In this context, attempts to reduce ground noise are simply another way in which the material base of classical cinema seeks to reduce its own presence. This attempt at silencing cinema's materiality reveals a historical dimension to notions of audibility and inaudibility. Michel Chion makes the point that in the 1930s many films tried to achieve a

continuum of dialogue, music and effects, for example in musicals, where all sounds belonged to a 'single universe'. He adds, "They were helped by the fact that the background noise in films of the period, more or less consciously audible to the spectators, acted as a 'basso continuo'" (Chion, 2003: 53). This *basso continuo*, as a sounding of film's technology, is largely absent from the modern screening of 35mm prints due to the advent of Dolby noise reduction. Introduced in the mid 1970s, Dolby processes, according to Chion, have also served to broaden frequency range, improve dynamics and enable greater intensity contrasts. However, one of its main effects has been to reduce background noise, the purpose for which the system was originally developed[5]. Chion suggests that this technical change is also reflected by a change in the perceptual dimensions of the cinesonic event:

> Dolby cinema thus introduces a new expressive element: the silence of the loudspeakers, accompanied by its reflection, the attentive silence of the audience. Any silence makes us feel exposed, as if it were laying bare our own listening, but also as if we were in the presence of a giant ear, tuned to our own slightest noises. We are no longer merely listening to the film, we are as it were being listened to by it as well. (Chion, 2003: 151)

In the absence of audible ground noise, the audience's "attentive silence" represents a change in perceptual activity that parallels film sound's shifting sonic signature. Thus classical cinema's technical evolution, motivated by an aspiration to total self-effacement, has meant that the quality of the unmodulated soundtrack has changed over time. What both the *basso continuo* silence of the 1930s, and the 'implosive' silence of the Dolby era powerfully reveal are the historical dimensions of this particular sound of film technology. Perhaps less obviously, but equally importantly, the expansion of frequency and dynamic range also seem to mark a departure from previous incarnations of the audible announcement of film's technology. Chion's comments, and the example of silence, signal the fact that the temporal complexity of the sound of technology has important textual, spectatorial and perceptual dimensions, and that furthermore these are inextricably linked with notions of audibility and inaudibility.

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[5] Dolby noise reduction works by breaking an audio signal into four discrete frequency bands. The signal of each band is boosted and then compressed to remove low level noise, and then expanded again. The four frequency bands are then recombined to produce a resultant sound with less ground noise.

The currency of sound recordings, and by extension sound recording technology, seems not to announce itself, as each generation labours towards higher fidelity, and finds itself marvelling at the latest rendering of recorded sound. The cinesonic, as we have seen, can be a slippery object, lost in that easy act of elision that takes place when we move from sound to source, from material to meaning. A consequence of this is that we easily neglect film's sonic signature. However, the historical dimension of materiality renders this elision and slippage audible. Auditioned through the ear trumpet of history (why a more unlikely metaphor than 'seen through the lens of history'?), the sound of film technology materialises.

Listening to recordings of the past the listener is struck by the presence of a technology inscribed within and upon recorded sound. The sound of technology, when situated within a historical frame, reveals itself to be an inaudibility of the contemporary and a becoming-audible of the historical. While the listener can hear and perhaps identify the sound of films made in the 1930s, we are hard-pressed to hear what defines the signature of today's film sound; hence Chion can hear *nothing*, and in the apparent absence of sound, our ears turn inside-out in the effort to hear *something*. We observe the same phenomenon in relation to many other aspects of film; for example, the stuttering and mumblings of Marlon Brando's performance in *On the Waterfront* presented a performance celebrated at the time for providing an unequalled realism, an unsurpassed fidelity. Viewed today the style reveals itself as style, and seems mannered and highly audible and visible. Similarly, current film stocks, current televisual images, current sound recordings all seem to announce themselves less than those of the past. Yet it is surely a mistake to suppose that inaudibility is a unique feature of the 21st Century, and that we are somehow finally approaching a point of technological inaudibility; after all, 75 years ago Western Electric was making its own claim to noiselessness. Rather, inaudibility is a feature of currency, and it is temporal *displacement* rather than any specific historical moment that determines a sound of *pastness*.

While the various media industries have always sought to repress the audibility of technology, there is a sense in which audiences in any case listen *through* certain sounds.

Chion suggests above that audiences were "more or less" aware of ground noise in the 1930s, that this *basso continuo* was "more or less consciously audible to the spectators." This more-or-lessness is significant; while we might consciously acknowledge the presence of ground noise, we listen through it, and become 'more or less' unconscious of it. So, for example, while we recognise the limitations of the telephonic reproduction of the human voice, its extreme compression is nevertheless soon forgotten as we attend to the semantic content offered by the voice at the other end of the line.

A significant corollary of this perceived inaudibility of the present is that materiality announces pastness. A broad but yet very definite sense of the past inhabits the sonic figure of ground noise and the many particular and subtle renderings of speech, music and effects we connect with it. What strikes us is that we are immediately sensitive to the historical displacement of a recording. While, unlike the expert we may not be able to identify the sounds we hear with a specific decade, nevertheless, old sound recordings do *sound old*. The buoyant contemporary market in old microphones and recording equipment[6] indicates the fact that sound recording equipment produces a certain quality of sound that may no longer be available with current technology. And perhaps part of the motivation to purchase retro-equipment may be an artist's desire to signal the past, in the same way that film makers add synthetic scratches and dust particles to video in post-production to suggest archive or vintage footage.

To summarise, collecting around the notion of the sound of technology are a number of interconnected areas: materiality, audibility and inaudibility, and the historical. Where these intersect, we may now begin to think about memory. But the question to be asked is, exactly how are pastness and materiality connected, and what relation has memory to this? To consider these questions, we need to listen more closely still to the sounds that make up the historical sound of technology.

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[6] For example, the company *Funky Junk* exists to service the demand for classic and vintage professional analogue audio equipment. See http://www.proaudioeurope.com.

Sounding the past

To come to terms with the place and role occupied by the shifting sound of technology we might ask a number of questions: what are we hearing in these old recordings, what is the difference between those sounds which present themselves as 'old' and those that do not, and what determines that difference?

The sonic field traversed by technology can be usefully divided into four interrelated areas, each of which makes a contribution to the sound of the past.

1. Rendering

The technology of film sound is not only heard as a background to other sounds, but inhabits each and every element of the soundtrack. Every sound heard in a film bears the trace of the technology's sonic signature. If we were to analogise the soundtrack of the film in terms of voice, then a sound of film also resides in the Barthesian grain of that voice. When Barthes writes about grain in terms of "… the very friction between the music and something else, which something else is the particular language" (Barthes, 1977: 185), the word 'friction' is used to describe a relationship between two elements that cannot be divorced. Binary formulations seem to fail us here; in the very act of naming constituent dimensions, we separate what we know and hear to be inseparable. Barthes works towards solving this problem by a choice of simile that stresses connectivity. Thus, writing on the voice of the Russian bass, he describes its sound: "… as though a single skin lined the inner flesh of the performer and the music he sings" (Barthes, 1977: 181-182). The relational aspect of this formulation is directly relevant to an understanding of the notion of the sound of film; permeating every sound announced by a film is the audible trace of a meeting of technology and sound – to rephrase Barthes, as though a single skin lined the technology of film and the sounds it produces.

The way in which a sound is rendered by a technology is in some respects is akin to timbre, while a visual parallel might be the differences in film stock that serve to define a historical period, irrespective of the degree to which a print has been scratched. There are several aspects of production that have a bearing on this, but most significant are the

nature of the microphone, and the medium (also known as the 'carrier'). Different microphone technologies respond in different ways to sound, emphasising certain frequencies, de-emphasising or removing others. For example, all microphones produce a simple gating effect since they are not responsive to all frequencies or all levels of amplitude. Microphones work by translating sound vibrations, registered on a diaphragm or metallic ribbon, into electrical impulses. Thus the issue of a microphone's sensitivity directly relates to the ability of the diaphragm or ribbon to be set in motion by sound vibrations, to respond sympathetically to these, as well as its ability to transform these vibrations into an electrical current. The early microphones used in film lacked sensitivity, in the sense that were not responsive to lower amplitudes or to a wide range of frequencies. The fall-off below a certain level of amplitude, and a relatively narrow frequency response creates a gating effect, and a consequent 'bundling' of sound within particular frequency and amplitude ranges. This amplitude gating is one factor that creates what sounds like a rapid attack and decay of sound on some older film soundtracks. In a number of films made in the late 1920s and early 1930s, the words of the actors seem to explode out of the audible ground noise that cocoons them, and then just as quickly disappear back into it. The effect is a feeling that the sounds overcome some kind of inertia in tearing themselves from the soupy silence of Chion's *basso continuo* of ground noise.

However, this effect is also a result of mastering onto the film print, where again only a certain amount of information can be registered optically – a factor discussed earlier in terms of the developments of film stock relating to grain. This slightly explosive feeling of speech tearing itself from the background of ground noise is thus heard on a disparate range of film soundtracks, from classical Hollywood films such as *White Zombie* (Victor Halperin, 1932) and *My Favourite Wife* (Garson Kanin, 1940), to later independent and avant-garde productions such as *Vivre Sa Vie* (Jean-Luc Godard, 1962) and *The Chelsea Girls* (Paul Morrisey & Andy Warhol, 1966). Being in part a product of mastering and the nature of the optical soundtrack, this sound is not limited to those films recorded with the very earliest of microphones. Low-level background and ambient sounds rarely register on these soundtracks, and so there are many moments of quiet in which we hear

the hiss of ground noise and optical crackle and almost nothing else. In addition, speech seems insulated from a wider sonic world. The rapid attack and decay, characteristic of these recordings, serves to add further to this sense of sonic isolation. In a film like *My Favourite Wife*, an example of classic 1940s Hollywood screwball comedy, much of the dialogue has been dubbed or post-synched. This also works to remove ambient background sound, again creating the feeling that the performers' words are dropped like pebbles into a pool of still water.

In some films, the presence of speech seems to liberate other lurking, viral sounds not present when vocal or other sounds are absent. In the famous impressionistic sound sequence from Hitchcock's *Blackmail* (1929), in which the film's guilt-ridden central protagonist seems only to hear the word 'knife' emerge from a babble of breakfast conversation, we hear within that single repeated word a distinct textural presence. This haunts only the speech, music and effects of the soundtrack, and is not a feature of the unmodulated soundtrack. Once again, this texturing of sound, absent from the silences occupied by ground noise and optical crackle, serves to isolate and differentiate sounds from the sonic continuum of ground noise, giving the soundtrack a ghostly, disengaged feeling at times.[7]

Another effect of the combination of microphone and mastering is the production of a density and continuity of sound that results from having very little contrast between recorded sound events. The dynamic range of any soundtrack is necessarily limited, but in some films this becomes clearly audible, especially in scenes where more than one person is talking, as in crowd scenes, or where music and speech is combined. This compression produces a dense fusing of sonic elements, a relatively homogenous continuum of sound squeezed within a relatively narrow bandwidth. This is heard in *The Chelsea Girls* and *Vivre Sa Vie*, both of which feature use of direct sound. In Warhol's film this is particularly the case when the people being filmed argue or shout, whereby

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[7] This sound would appear to be some form of system noise, and relates to one or more of the various stages of amplification that take place in production, post production and exhibition. The sounds of the film thus become a kind of window, opened and closed onto the film's system noise.

heavy distortion works to create a homogenising effect. What is noticeable about this small sample of films is that it covers a 30 year period, which suggests that these sounds create a general rather than a specific sense of past. In the case of *The Chelsea Girls*, the sound also locates itself within a particular cultural milieu; independent filmmaking of this period often features 'low-fi' sound of this type.

Sound archivists refer to the recording medium as the 'carrier', a term which while being used to suggest a separation between the medium and the signal, might also be used to challenge this simple binary formulation. If we rethink the notion of carrier as that of one infected by a virus, we come closer a satisfactory formulation of rendering in terms of non-separation. A virus cannot exist independently of its host, and in a sense becomes part of it, inseparable from it. In the same way, reproduced material sound cannot be separated from the 'carrier' that brings it into being. Any carrier will record and reproduce sound in a particular way, imprinting it with its own sonic signature. In the case of disc recording, for example, the groove itself can only accommodate certain ranges of amplitude and frequency. Above the upper limit of this amplitude range (very loud sounds) and below a certain frequency (very 'low' tones), the vibrations of the cutting stylus become so great that cutting extends laterally beyond the parameters of the groove. The consequence of this is that two adjacent grooves may cut into each other, rendering the record unplayable. Very high frequencies could not be reproduced on early coarse groove discs, firstly because the recording equipment employed was not sensitive to these frequencies, and secondly the shellac material from which the records were finally pressed was not able to support the minute micro-morphological features of the groove that reproduced high frequency sound. In this way, the restricted ranges of amplitude and frequency in early disc-recorded films, like those of sound-on-film productions, is audible to the modern listener in terms of compression and limitation.

However, there are also more subtle effects that film technology has on recorded sound. Competing with sound-on-disc film sound systems of the late 1920s and early 1930s were a number of sound-on-film systems. One of these, RCA's Photophone system, transcribed sound by using a tiny mirror which turned in response to the variable electric

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current generated by the microphone. This mirror reflected a beam of light, and as it deflected caused the light to flicker in direct response to the modulating sound source. The resultant variable pattern of light could be recorded on a strip of film to produce what is referred to as a 'variable area' optical sound track[8]. However, the mirror itself had a degree of inertia, and the system was therefore not sensitive to faint sounds, and also over-modulated loud sounds (Bernds, 1999: 68). This produced what is referred to as 'volume expansion', the effect of which is to produce a slightly explosive quality on the soundtrack, and a cut-off below a certain amplitude. This is another factor that contributes to a feeling of audible compression, distinctive of films produced using the system. Since Photophone remained in use until it was replaced by tape recording in the 1950s, once again the effect of the specific rendering of sound it produced must convey a general rather that specific sense of the past.

2. Ground noise and system noise

Mention has already been made, in relation to the sound produced by electrical circuits, of the fact that the hardware of film production and reproduction generates system noise. To this can be added the sounds made by the camera or the projector's shutter, and those made by drive belts, motors, and so on. This hardware can therefore produce sounds that are inscribed into the recording, and traditionally measures have been taken to reduce this, as with the introduction of the soundproofed 'icebox' and the camera blimp. Mechanical sounds produced by the camera are constructed as problematic in a filmmaking practice that prioritises the concept of flow. In classical cinema this sound is prohibited not simply because it signals the means of production, but also because sound edits might be rendered audible by the changing level and quality of camera noise determined by changes in camera position within a location and between locations. Such a sonic practice is directly opposed to the basic tenets of the continuity style of

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[8] There were two ways of encoding sound optically on film, referred to as the variable area and variable density methods. The variable area soundtrack encodes sound as a waveform while the variable density soundtrack encodes sound as a series of parallel striations of varying densities of black or clear film. The Fox Movietone system and the Western Electric system both recorded variable density soundtracks. In the former, the light source activated by the variable current was a gas-filled tube (the Aeolight), while the latter used a variable slit (the Light Valve) through which light passed onto the recording film.

filmmaking. Filtering is used to remove camera noise as much as possible in post-production, and commonly a music track or other continuous atmos track is laid down to disguise sound cuts, maintaining flow and repressing difference.[9]

In ground noise, however, both the hardware and the software of film production and exhibition play their part. In disc recording and playback the crackle and hiss we associate with vintage recordings, referred to as surface noise, is the sound produced by the contact between needle or stylus and the shellac surface of the disc as it works its way along the groove. On the optical soundtrack, this is the sound produced by the grain of film stock, and the scratches that mark negatives and prints. These sounds lie at the heart of the impact made by Jonty Semper's *Kenotaphion* project (n.d.), which presents archive sound recordings of two-minute silences held on Armistice Day and Remembrance Sunday at the Cenotaph in London. Semper has collected all available recordings of the event from newsreels, radio and television broadcasts from 1929 to 2000. What we hear in the silences being observed are not only the environmental sounds captured in the recordings, but also the sounds of the various technologies of recording. In the case of recordings taken from the earlier films, the sheer intensity and volume of the ground noise is quite striking to the modern listener.

As signifiers of a historical period, ground noise and system sounds can easily be added to a contemporary sound mix. However, if this is done it is only suggestive of vintage sound; in addition to ground and system noise, the signal part of the recording also needs to be rendered in a particular way to fully suggest pastness. The embeddedness of this sound of the past is demonstrated by the unconvincing nature of attempts to suggest pastness by mixing crackle and hiss taken from old films with a contemporary soundtrack. In a modern recreation of a vintage sound recording, these sounds seem to sit on the 'surface', in the same way that the synthesised scratches added to contemporary

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[9] Mike Figgis describes using this technique in his work on *Internal Affairs* (1990). Reshoots for the film were shot on a noisy Arriflex camera. Figgis considered the location sound unusable, but found it difficult to secure the cooperation of his lead actor to rerecord the dialogue: "So, I found out the key of the sound of the camera magazine, and I scored the music for that scene in the same key. So the score eats up the sound of the magazine and it ends up as a piece of music" (Figgis, 2003: 13).

video footage seem somehow divorced the material substrate of the image. The crackle of an old disc is caused where the needle encounters the damaged wall of a record groove or particles of dirt. In the case of shellac discs this sound is in part due to the nature of the surface itself; that is, microscopic holes and fissures form part of the fabric of the material, and register as the pops, hiss and crackle of surface noise. At each point the needle encounters one of these, there is a loss of recorded sound, a gap filled by a microsonic click. This may happen with more or less serious consequences, sometimes many hundreds of times per second. What a modern mock-up of vintage sound does is to merely superimpose these sounds over others, and thus the original modern recording runs unbroken below the noises that are superimposed over it. This superimposition is not equal to the viral nature of true surface noise, which instead is deeply connected to the recorded sound it interacts with and forms part of.

3. Content

The specific sounds that are recorded, the way people speak, the way they interact with the medium, their accents and figures of speech, and so on, all help to fix a historical location for a recording.

4. Playback

Each technology reproduces sound in a different way. There is a distinct difference between the reproduction of sound in a cinema set up for Dolby Digital Surround, a telephone, a wind-up gramophone and transistor radio. In this way, the resonant sound produced by the gramophone horn comes to signify the sound of the past, just as much as the quality and content of the recording. However this quality of sound is only in part attributable to the hardware being used. In addition, since sound is an event, the acoustics of the environment in which playback *takes place* also influences the specific signature of any reproduced sound.

Microsound and the drone

Having sketched some of the factors that contribute to a sounding of pastness, the issues to be considered now are exactly how connections are made between the materiality of

the film text and a sense of the past, and where the listener figures in this relationship. Is it the case that these sounds, and qualities of sound, simply signify the past by convention, by the inscription of difference that serves to distinguish historical periods, or are there other ways in which the perceptual dimensions of the cinesonic event might figure in this sense of pastness? In what follows, I will focus primarily on optical crackle as a sound which signals just such a sense of the past, and on the quality of compression that contributes to the sonic signature of older film soundtracks.

Central to the discussion that follows are two key observations that emerge from the analysis above: firstly, that ground noise is constant, and secondly that film sound is compressed in terms of both its dynamic range and frequency range. The main theoretical resource I will draw upon in what follows is Curtis Roads's work on microsound (2001). The focus of Roads's work is on sounds of very short duration and how these are perceived when auditioned en masse. Although the author is specifically concerned with the notion of microsound as it relates to musical composition and listening experience, his findings are nevertheless relevant to this discussion of film sound. The strength of Roads's work is that it situates perceptual considerations of microsound within the context of cultural practice, applying ideas from the science of psychoacoustics to the study of musical composition, performance and the experience of musical listening. But ironically, it is perhaps the disjuncture between his own modelling of the temporal dimensions of sound, and the cinesonic phenomena discussed here, that proves most productive in mapping the perceptual dimensions of the sound of pastness.

Despite not being continuous *tones*, the sounds produced by ground noise and optical crackle possess certain drone-like qualities. These work to disturb the normal temporal frames of reference that we bring to our experience of cinema. Roads's study of microsound considers a range of time scales ranging from the infinite to the infinitesimal (Roads, 2001: 3), a range which is then mapped by a series of domains. Roads identifies the *supra*temporal domain as that which lies beyond individual compositions, usually measured in terms of months, years, decades and centuries. The *macro*temporal is the timescale relating to overall musical form; transposed into filmic terms, this corresponds

to the running time of a film. The *meso*temporal domain relates to divisions of form: groupings of sound objects into phrase structures. In film, this would relate to scenes, shots, and moments within shots. Roads then identifies the *sound object* itself, and here we might think of individual sounds on the film soundtrack. Below this level, and the main subject of Roads's study, lies the *micro*temporal domain, which embraces sound particles down to the threshold of auditory perception; a temporal domain in which sound elements are measured in thousandths of a second.

Roads makes the point that although we may not notice microsounds individually, we can nevertheless hear them en masse. It is this interaction of hundreds or thousands or millions of microsounds that we hear in the sound of rain, in the roar of the ocean, in the movement of wind through the leaves of a tree, or in the crackle of fire. If these individual sound events occur quickly in succession, then one sound begins to mask the next, and this contributes to the illusion of a continuous tone[10] (Roads, 2001: 22). No longer heard as discrete sound events, the sounds that make up film's ground noise produce a continuous *unpitched* tone. To this, we add the sounds produced by the scratches on the print itself, referred to so far as optical crackle. This sound does not have the density of ground noise; that is, it is made up of fewer discrete sound events per second. The amount and severity of scratching will vary from print to print, but a significant factor here is the age of a print, since the longer it is in circulation, and the more times it has been screened, the more the surface of the print will be marked by both visible and invisible scratches. The effect of this is described by Saskia Baron in her account of a screening of a widely circulated print of Robert Frank and Alfred Leslie's *Pull My Daisy* (1959):

> Last time it played at the Scala the celebrated Kerouac rap was hard to follow, and the film was beginning to acquire that 'patina' which makes itself more conspicuous than the film beneath it – one too many atmospheric crackles and an over-redolent graininess (don't ask what of)... (Baron, 1986: 39)

The sound of optical crackle is certainly more variable than ground noise, less consistent. It comprises short bursts of sound, random in terms of both duration and amplitude. Not

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[10] Roads states that a gap of less than 200 milliseconds between two microsounds will produce this kind of forward masking.

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only will certain parts of a print feature it more than others – those parts handled most frequently, normally the beginning and end of reels – but also there is no discernible pattern, the sound comprising a combination of light clicks and heavy thuds. However, the rate at which these individual events occur will produce different effects. In his influential article ...*How Time Passes*... Karlheinz Stockhausen makes the connection between periodicity and pitch:

> Our sense-perception divides acoustically-perceptible phases into two groups; we speak of *durations* and *pitches*. This becomes clear if we steadily shorten the length of a phase (e.g, that between two impulses) from 1" to 1/2", to 1/4", 1/16",1/32", 1/64", etc. Until a phase-duration of approx. 1/16", we can still just hear impulses separately; until then, we speak of the 'duration' of a phase. The latter process becomes perceptible, rather, in a different way: one perceives the phase-duration as the 'pitch' of the sound. 1/32" phase-duration makes us, say, 'a "low" note.' (Stockhausen, 1959: 10)

The number of times a sound is repeated per second, and the length of the gaps between each repetition, are factors in a continuity that exists between rhythm and pitch. According to Stockhausen, at about 16 repetitions per second we lose the sense of individual sound events, and begin to hear forms of continuity.[11] Although statistics are not available for optical film, a 'poor' quality 78 shellac disc is likely to have around 2,000 clicks per second, of durations varying from 20 microseconds to 4 milliseconds[12] (Godsill & Rayner, 1998: 99). This statistic gives some indication of what might be heard on an optical print. These microscopic scratches to the surface of the print will create a continuous, light, unpitched tone. It is unlikely that severe scratches will be this frequent, but even at around only 16 or so per second, we begin in any case to move into an area of unpitched tone; that is, where optical crackle hovers between being a localised and a global phenomenon. This is supported by Roads's work with sound 'grains' of 25 milliseconds. Using 15 grains per second, Roads observes rhythm; at 15-25 grains per second fluttering and a sensation of rhythm; at 25-30 grains per second the grain order disappears; between 50 and 100 grains per second we hear what Roads calls 'texture';

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[11] Citing work on rhythm and tempo by Paul Fraisse (1982), Roads suggests that we sense pulse or meter from approximately 8Hz to 0.12Hz and below (Roads, 2001: 17). Above this range we no longer perceive rhythm, but forms of continuous sound. Below this range the gaps between individual sounds become too long for the listener to be able to situate them in terms of perceived rhythm.

[12] i.e. from 20 millionths of a second to 4 thousandths of a second

and at over 100 grains per second a continuous sound mass is produced (Roads, 2001: 106).

Dismantling time

The observations provided by Roads and Stockhausen enable us to establish that ground noise and optical crackle create a continuous unpitched tone. However, the phenomenon of this sound's continuous nature sets in motion Road's subdivision of time into various domains, erasing some of the distinctions he draws between them. The continuous tone challenges our usual conception of the discrete sound object: this sound has little or no internal development, and is morphologically featureless. As it is continuous, it has no rhythm, pulse, narrative, climax, or any sense of progression; in any case, we lose from continuous, extended sounds any sense of patterning. According to Roads, sense of rhythm is lost below 0.12Hz; that is, if a sound repeats only every 8.333 seconds or more, we no longer perceive it in terms of rhythm. Thus while the density of this sound of ground noise and optical crackle may vary, the length of time taken for the changes to occur mean that we will probably not impose upon them any sense of order or patterning, or perceive any kind of narrative development. Added to this is the fact that in any case, the listener tends to displace continuous sounds from the foreground of perception: "The ear's sensitivity to sound is limited in duration. Long continuous noises or regular sounds in the environment tend to disappear from consciousness and are noticed again only when they change abruptly or terminate" (Roads, 2001: 12).

And finally, since the sound of optical crackle may not always be particularly loud, it is in any case unlikely to draw our *conscious* attention.

It might be argued that the fact that the sound must have a beginning and an end gives it some status as a defined, isolated, morphologically discrete object, especially when it seems to emerge most clearly in the gaps between speech, sound effects and music. But this is not the case, since although it might seem that this sound resides in the spaces left between other sounds, in fact it continues all the way through the film. Rather, perhaps, our attention is only consciously drawn to this sound in the extended absence of those

more traditional sound objects that form what is commonly understood to be 'the soundtrack.' Consequently, this sound also challenges Roads's conception of the mesotemporal: the grouping of sound objects into phrase structures. There are no phrases, no groupings, no patterning or memorable variations within this temporal domain. In this way, in the sound of ground noise and optical crackle, the meso, macro, the sound object, and the microsonic domains merge to become one sonic experience, from which normal temporal frames of reference are lost. The sound is homogeneous, lacking the memorable short-term morphological differences that mark development or progression of any kind. Such a sound is non-directional, and non-narrative in the sense that it does not support narrative or possess its own internal narrative. Such sounds might therefore be thought of in terms of stasis, sustain, and suspension. Sustained tones of long duration produce a temporal slipperiness that casts the listener adrift; there is no way of carving up duration here as there is complete continuity between microtemporal and macrotemporal domains.

Optical crackle is a composite sound, created by millions of microsounds. It is actually highly textured, and thus differs from a constant electronic tone. There are unpredictable, non-rhythmic micro-variations in the sound, and in this sense it shares similarities with the sounds of wind, water and fire rather than the musical drone. But nevertheless, because of its temporal duration and its sonic consistency, we can say that it is drone-like – as is the hum of distant traffic, the sound of air conditioning, or the sound made by a car or ship's engine. We are thus on the border of a drone experience, since optical crackle injects individual, localised sound events into the global sound of ground noise. However, the mere fact that there are so many of these localised sound events means that their repetition, although not rhythmic, works to remove them from the foreground of conscious consideration; that is, we begin to ignore them.

In part this parallels, and helps to explain, the power of Michael Snow's film *Wavelength* (1967), in which the sine-wave section of soundtrack sometimes occupies a borderline zone between a sound in which development can be clearly perceived, and one in which that same development escapes audition at any given moment. When we listen to this film, at certain moments although we 'feel' or 'sense' that the tone is rising, we cannot

hear this change within our normal mesotemporal frames of reference. This extended change located within the mesotemporal domain almost threatens to occupy the whole film with its simple, slow tonal progression. The great strength of Snow's film is the way in which it forces the listener to become aware of their acts of auditory perception, and yet not to be able to come to terms with that act fully, in the sense that the percept itself seems fugitive; that is, the 'content' of our perception is not easily grasped, not easily objectified, not easily separated from our awareness of the act of listening. There is little help from the image, which at times is a barely perceptible (although jerky) slow zoom into the wall opposite the camera. The sine wave presents a slippery surface in a barren landscape, forcing us towards a 'direct' experience of duration. Snow gives the audio-spectator a tantalising taste of time, stripped of those events that would otherwise simply render it a container for film's narrative and representational elements. As Snow suggests in an interview with Michael Hartog, *Wavelength* is "A time monument" (Hartog, 1978: 36); it is a prism through which time is seen and heard in both its vertical and horizontal dimensions.

Of course, in many films which feature audible ground noise and optical scratch, the audio-spectator's attention is tuned to the visual events on screen, and in this way duration is carved up into events. It is for this reason, perhaps, that this sound may work at a subconscious level to create a form of turbulence in which the stasis of the soundtrack is in tension with the narrative and movement of the image track, thus creating feelings of displacement, alienation, and distanciation: a dual-stream flow of sound and image. In terms of sound-to-sound relations, it is this turbulence that creates the effect of hearing 'isolated' speech dropped into and onto the ground noise of optical film. This is particularly the case in the dream-like, distanced voice-overs of film noir where background sounds, including music, are removed and the voice-over is suspended in silence. This effect also relies on a certain calmness in the voice – even a tendency towards monotony – and a slowing of speech that has the effect of introducing more silence into the narration. The estrangement or atemporality created is that of the aquarium. In part this is certainly because sound and image are divorced (a topic

considered in more detail the next chapter), but the static, suspended sound of ground noise and optical crackle of film's 'silence' also play their part in creating this effect. [13]

This notion of suspension may explain why some of the most powerful moments of this static sound are those in which the image works less to mark time; that is, when the stillness of the image comes close to matching that of the soundtrack. This is particularly a feature of Antonioni's work. In *L'eclisse* (1962), for example, the film's central character Vittoria assists her friends searching for a lost dog at night. Alone, her attention is caught by a row of metal flag-poles (Figs. 2.1-2.3). Their ropes, caught by the gentle wind, tap against the poles. Vittoria, like the viewer, is suspended in this simple, almost static image, as the gentle tapping sounds float quietly in the warm oceanic crackle and hiss of the barely modulated soundtrack.
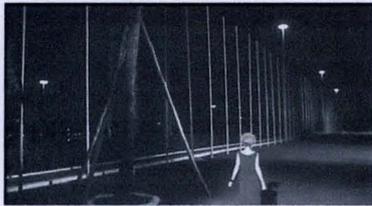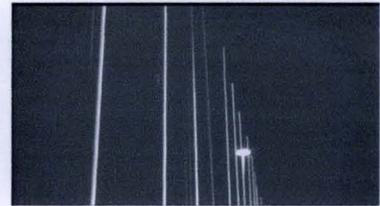
Fig. 2.1   Fig. 2.2   Fig. 2.3

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[13] Adorno briefly mentions a similar phenomenon in relation to radio broadcasts of music, in a theoretical formulation that provides support for the idea that sounds located in relation to ground noise are somehow distanced. In the 1941 essay *The Radio Symphony*, he describes the ground noise of radio as a 'hear-stripe' upon which the music being broadcast is placed, and suggests that while it may or may not attract the attention of the listener, as an objective characteristic of the sound being auditioned, it plays a part in our perception of the total sonic event. He writes: "One might venture to suggest that the psychological effect of the hear-stripe is somewhat similar to the awareness of the screen in the movies: music appearing upon such a hear stripe may bear a certain image-like character of its own" (Adorno, 2002: 251). Although this formulation is not developed any further in the essay itself, comments in the unpublished *Memorandum: Music in Radio* help to explain this simile (cited by Richard Leppert in his commentary on Adorno's essays on music. [Adorno, 2002: pp.85-112]). Here Adorno comments that music "… appears to be projected upon the stripe and is only, so to speak, like a picture upon that stripe" (Adorno, 2002:219). His formulation of the hear-stripe foregrounds a sense of distanciation, attributing to the music what Leppert terms a "second-order presence" (Adorno, 2002: 219). Adorno explains the effect of this in terms of the positioning of the listener in relation to the music: "The listener has the feeling, not that he is being confronted with the music itself, but that he is being told something about the music, or being introduced to music by radio. It does not sound like Beethoven's music itself, but like 'now you will hear something about Beethoven'" (Adorno, 2002: 219).

Antonioni often uses drone-like sounds, but not necessarily placed low in the mix. In *L'avventura* (1960) a similar moment of suspension occurs when the film's central characters – and again the audience – are confronted with the sounds of the sea surrounding the barren Mediterranean island, and the sound of wind as they search for their missing friend. *Il Deserto Rosso* (1965) features several moments in which the very film itself seems transfixed by a scene made strange by the sound of steam escaping from a pipe, or the general industrial noise of a power station. In all these instances, the shots are extended and static, which serves to further reduce the attention we place on movement and progression. In addition, these are sounds, like ground noise and optical crackle, which hover between continuity and change, stasis and movement. These are films in which time appears, like the sound, to be momentarily suspended. This effect complements those narrative moments in which Antonioni's characters gaze out of frame with the look termed by the US Marines the 'thousand yard stare'. This is a look that indicates some form of psychological disconnection from the immediate environment. In a military context, this occurs as a reaction to the stress of prolonged combat, a removal of self from the horror of the moment. In Antonioni's work, this look may be interpreted as a look into eternity, a moment of epiphany or enlightenment, but there is always the sense in which the character is temporarily disconnected from the moment or suspended in it.

However, is what is suggested above in relation to optical crackle merely conjecture, or are there similar experiences in other art forms that provide support to, and perhaps develop further, the notion that the drone-like qualities of ground noise and optical crackle disturb our normal frames of temporal reference?

"There is the 'dream chord', which I used to hear in the telephone poles ..."[14]

The work of La Monte Young, perhaps more than that of any other artist working in sound, has been concerned with the potential of the static continuous sound. Since 1958 Young has been best known for composing music that features the use of long sustained tones within extended time structures. The score for his *Composition 1960 #7* simply consists of a chord (B and F#) and the instruction "To be held for a long time." *Composition 1960 #9* is a straight line drawn on a three-by-five inch file card, which Young performed as one single sustained pitch (Young & Zazeela, 1969: 32). In 1964 Young initiated *The Tortoise, His Dreams and Journeys,* conceived as open-ended piece of potentially infinite duration, and of which he writes: "This music may play without stopping for thousands of years, just as the Tortoise has continued for millions of years past" (Young & Zazeela, 1969: 16). Since the piece is still on-going, any performances given since its initiation are considered by Young to be simply excerpts from the total work. A number of sound elements might constitute the piece at any given time, and performances have featured chanted vocal tones, and sustained tones and drones produced by string instruments. However, what has been a constant element in the work has been the use of electronic tones, which in the first performances were produced by an audio frequency generator and a small electrical motor taken from an aquarium filter pump. These sounds were always conceived as part of a mixed media 'theatre' piece, or sound and light installation, the visual elements of which have been provided by Marian Zazeela in the form of light projections and neon sculptures. Young and Zazeela planned that these performances or environments should run continuously in what they referred to as 'Dream Houses'. The first continuous Dream House presentation ran from 1979 to 1985 in a building on Harrison Street, New York. The second has been running as a continuous sound and light environment since 1993, under the auspices of the MELA Foundation, also in New York.

What is interesting about Young's work in relation to ground noise is the way in which it serves as the confluence of a number of interrelated ideas. These are sometimes discussed

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[14] La Monte Young (Young & Zazeela, 1969: 47)

explicitly by the composer, but also weave through his personal mythology of titles, experiences and influences, as well as the sounds he produces. Clearly, the notion of the 'Dream House' serves to make an overt connection between the music played in it and a particular state of consciousness. Although working now with continuous tones generated by purpose-built electronic synthesisers, Young nevertheless perceives a connection between the drone and the sounds of wind, fire and water. Describing his early experiences of listening to the wind blowing through the cracks of the log cabin in which he was brought up, he comments:

> It sounded great coming in like that – very calm, very peaceful, very meditative. During my childhood there were four different sound experiences of constant frequency that have influenced my musical ideas and development: the sounds of insects; the sounds of telephone poles and motors; sounds produced by steam escaping from such as my mother's tea-kettle or train whistles; and resonation from the natural characteristics of particular geographic areas such as valleys, lakes, and plains. Actually, the first sustained single note at a constant pitch, without a beginning or end, that I heard as a child that did not have a beginning or ending was the sound of telephone poles – the hum of the wires... I'm also very fond of power plants. (Young & Zazeela, 1969: 33)

Young refers to the sound he heard in the telephone poles as the 'dream chord', reconstructed in *Trio for Strings* (1958) as G, C, C-sharp and D. This sound also forms the basis of *The Second Dream of the High-Tension Line Step-Down Transformer* (1962), where it is expressed by the composer in terms of the ratio 12, 16, 17, 18 (Young & Zazeela, 1969:47). The sound of fire also takes a place in his Fluxus work *Composition 1960 #2*, which may be of any duration, and begins with the instruction "Build a fire in front of the audience" (Mertens, 1988: 23).

For Young, these continuous sounds have a number of important dimensions. His own commentaries and ideas reveal a conceptualisation of these sounds that foregrounds a notion of the present. Unlike the sound of ground noise and optical crackle, many of the continuous sounds of the works that make up *The Tortoise, His Dreams and Journeys* are amplified to the point of physical pain (Young & Zazeela, 1969: 18). This level of amplification is in part Young's attempt to "get inside a sound":

> There are several ways you can approach it. One is that someone concentrates so heavily upon a given sound - he gives himself over to it to such a degree – that what's happening is the sound. Even though I could be sitting here, all I am is an element of the sound. Another approach is to walk into an area in which the sound is so abundant that you

actually are in a physical sound environment. This happens when someone walks into one of my concerts. (Young & Zazeela, 1969: 35)

In this sense Young proposes that the music enacts a kind of dissolution or transportation of self – either through the act of listening, or through envelopment by the music.[15] At the same time, the music also has a spatial aspect, whereby these continuous sounds foreground for the listener an encounter with the space they occupy:

> When a continuous frequency is sounded in an enclosed space such as a room, the air in the room is arranged into high and low pressure areas. In the high pressure areas the sound is louder, and in the low pressure areas the sound is softer. Since a sine wave has only one frequency component, the pattern of high and low pressure areas is easy to locate in space. Further, concurrently sounding sine waves of different frequencies will provide an environment in which the loudness of each frequency will vary audibly at different points in the room, given sufficient amplification. This phenomenon can rarely be appreciated in most musical situations and makes the listener's position and movement in the space an integral part of the sound composition.(Young & Zazeela, 1969: 11)

One can identify in this type of experience a clear departure from the normal frames of linear temporality. Rather than any melodic or narrative progression in time, what becomes foregrounded in the work, and in Young's commentary on it, is the physical experience of listening, of being inside a sound, of being in the present. This aspect of the music is further evidenced by the fact that Young's work makes extensive use of chords as one of its central foundations, usually expressed in terms of simple mathematical ratios. Young comments: "I noticed about 1956 that I really seemed more interested in listening to chords than in listening to melodies. In other words, I was more interested in concurrency or simultaneity than in sequence" (Young & Zazeela, 1969: 32). Listening to continuous chords once again disrupts a clear sense of temporal progression, a position that is most clearly expressed in the title of another of Young's works, *Vertical Hearing or Hearing in the Present Tense* (1966). When asked about the kind of time his Tortoise piece created, Young replied: "Its own time, which is determined by and measured in terms of the frequencies we are sustaining" (Young & Zazeela, 1969: 63).

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[15] John Cage recorded his experience of hearing Young's work in precisely these terms: "In the lobby after La Monte Young's music stopped, Geldzahler said: It's like being in a womb; now that I'm out, I want to get back in. I felt differently and so did Jasper Johns: we were relieved to be released" (Cage, 1985: 16).

The conceptualisation of the drone as placing us in the present is another example of how this particular sound disrupts our notions of the flow of time as regular, measured, and normally comprehensible in terms of a succession of events. While we may become more acutely aware of perception and duration listening to the drone, this sense of duration is one of slippage, of a dissolution that provides a mild parallel to the effects of sensory deprivation. In this sense, what we witness is a non-linear sense of the present; this is not a well-behaved present, taking its place neatly between the future and the past, but one that expands in all directions to challenge our usual temporal frames of reference. Certainly the experience of listening to Young's work at high amplitude is very different to our experience of listening to the crackle and hiss of optical film, not least because the latter is a sound of which we are not always consciously aware, and consequently our own perception of it is not necessarily foregrounded. But the connections the composer makes between sounds of wind, water and fire, temporal experience, and the dream, all begin to provide a framework for thinking through the way in which the sounds of optical crackle and ground noise may affect the audio-spectator. In this respect it is significant that in the work of Bill Viola, the imagery of fire and water, and the dense oceanic rumblings of his soundtracks are often coupled with the temporal expansion and suspension that is created by his use of slow motion. In his videotape *The Passing* (1991), these elements are sutured with an engagement and representation of forms of consciousness associated with dreaming and the recollection of memory. Furthermore, Viola's work clearly seeks to situate the transcendental in relation to temporal manipulation; that is, the use of slow motion and the oceanic sounds of the videotapes are part of the artist's strategy to represent or create altered states of consciousness, and to signal the transcendental dimensions of both the material sign and what it signifies. In this respect, Viola's work reminds us that chants and drones have traditionally been used in religious ceremonies to represent and create a sense of the transcendental. And in the work of Scott Rankin, in tapes such as *This and That* (1990) and *Path* (2003) the sound of wind in the microphone produces a low frequency drone that similarly works to displace narrative temporality in favour of alternative temporal and perceptual registers.

All these audiovisual examples connect with our own everyday experiences of staring into an open fire, looking at the sea, or staring out of a train window. Experiences such as these present a globalised visual field that is in many respects similar to the sonic field of ground noise and optical crackle. In both we face a multiplicity of elements and events that cannot be tracked individually. Our attention might alight from time to time on an individual flame, a wave, or an element of the passing landscape, just as our attention may occasionally be caught by a particularly loud scratch on an optical soundtrack. However, we also experience this multiplicity as a host, a mass: our vision may blur, our conscious awareness of our sonic and visual environment seems to recede, exactly as in the phenomenon of the 'thousand yard stare'. In this state we enter an internal world of thoughts and memories. Paradoxically, what this suggests is that the 'vertical' listening proposed by Young – which situates us in the present by removing the horizontal dimension of development over time – may also connect us with the past through memory. In Young's case, amplification to the point of pain would probably militate against the kind of reflective experience prompted by other manifestations of continuous, stable sounds at lower levels, such as ground noise and optical crackle. At these lower levels of amplitude, when the monotone becomes monotonous, we disengage from the environment in which we find ourselves, and enter a state of consciousness that proves fertile for the recollection of memory.

1946. *Crack-Up.* Tagline: "Could I KILL... and not remember?"

This connection between present and past, monotony and memory is clearly articulated in audiovisual terms by the Hollywood thriller *Crack-Up* (Irving Reis, 1946). The tagline of the film neatly summarises the centrality of unstable memory to the film's narrative. Early in the film, its central protagonist George Steele, an art curator recently returned from active military service in World War II, receives a telephone call informing him that his mother has been taken ill. He makes a nighttime train journey to visit her, but never arrives. After what might have been a train crash, or the mental breakdown suggested by the film's title, he turns up later that night at the Art Museum in a bewildered state having no memory of what has happened to him. In an attempt to piece together the events of that night he embarks on the same journey the following day, in the hope that he will

discover some clue as to what transpired. The film thus provides us with an opportunity to see roughly the same narrative events twice: Steele queuing to buy a ticket at the railway station, having his ticket checked (Fig.2.4), boarding the train, buying cigarettes, looking out of the train window, checking his watch and so on. However, in this second version, Steele is trying to remember, trying to crystallise the vague feelings he has about what happened the previous evening into reliable memories.

Crack-Up gives us a rare opportunity to observe the differences that variations in soundtrack might contribute to approximately the same sequence of narrative events. In the second sequence Leigh Harline's score is dominated by the use of sustained tones played on strings and woodwind, structured around a single note played by the violin. This single, sustained note is repeated, producing a paired monotone figure that itself repeats throughout the sequence (Fig. 2.5). This is played over a slowly changing melodic woodwind figure. We hear this theme as Steele stares into the eyes of the train conductor, when he surveys the other passengers in the carriage, when looking out of the train window into the darkness outside; in short, during every moment when he is trying to remember what happened on his previous train journey.

Fig. 2.4
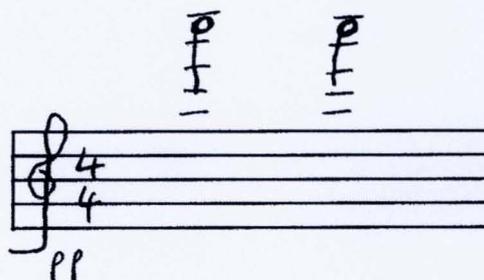
Fig. 2.5

Taken out of the context of this film, this would be considered quite a radical composition, most particularly because of the use it makes of monotony. But perhaps what is most striking is the connection that this piece of music makes between the contemplative aspects of sustained, consistent sounds, and memory; or more accurately in this case those failures of memory experienced as the vague, uncertain, non-specific

feelings that haunt and possess Steele. These contrast in some way with the memory of war that hangs over the whole film. Many references are made to World War II, which had ended just a year before this film was made. Steele refers to it on numerous occasions, even at one point comparing the chaotic scene of his apartment, which appears at first to have been burgled, to Nagasaki. But while the War is a definite presence, a dark shadow hovering over the whole film, Steele's attempts to remember engage with something that resists recollection. In both versions of the scene we see him gazing through the train's window, and reflected in it, looking out into darkness. This is accompanied in the first version by the rhythmic sound of the train, as shots of Steele are intercut with close-ups of the train wheels and the track. At the end of each version of the sequence, he becomes mesmerised by the lights of what appears to be an on-coming train, like an animal trapped in a car's headlights. This sense of stasis, this state of suspension, this kind of exploration of inactive states of uncertainty fundamentally challenges the narrative basis of Hollywood film, driven as it is by a cause and effect logic that demands action, movement, and the resolution of enigmas. It is significant therefore that the first version of this scene ends climatically with some form of implied crash or collapse, since classical Hollywood cinema cannot support the intense sense of gaseous undefinability that has been set up here. This diffusive atmosphere is brought to an end with a sudden insertion of kinetic energy, a rapid and violent montage of extremely short shots, each only few frames in length. This montage of shots of the lights of the oncoming train, close-ups of the transfixed Steele, and the interior of the carriage, reminds us very strongly of Soviet cinema. In the second version of the sequence this dramatic climax is brought about by a rapid cutting between close-ups of Steele looking once more out of the window, becoming ever more fearful as the lights of the oncoming train approach, and over-the-shoulder shots silhouetting Steele against the lights of the approaching train (Figs 2.6 & 2.7). At what might have been the moment of impact, the music is interrupted by the harsh, violently rhythmic sounds of the oncoming train rushing past the window. And thus the drone of memory, the uncertainty of the past is interrupted by the concrete and kinetic: an interruption of stasis by the flow of linear montage which signals time is back on track, violently separating past from present, matter from memory.

In *Crack-Up* it is the character Steele who experiences these feelings of memory failure, and temporal suspension is only suggested by the music; just enough so that we might empathise with Steele's condition and situation. Thus, what we hear in *Crack-Up* is a domestication of the drone, and what we feel is just the slightest suggestion of its power. However, as we see in the work Antonioni, Snow and Viola, there are films that work on the viewer and listener directly to create just such a form of temporal suspension.

Fig 2.6   Fig. 2.7

To recapitulate, the critically neglected sound of optical crackle and ground noise is one aspect of film sound's materiality that works to create a sense of pastness. Under certain conditions, this sound has a drone-like quality that sets in motion our normal frames of temporal reference to create feelings of stasis and suspension. The sense of pastness also surfaces in a disturbed form in *Crack-Up*, where the use of the domesticated drone suggests that the continuous, static sound has some connection with memory: in this case, with failure of memory. In the final section of this chapter, I would like to consider the perceptual processes that connect drone, memory, and the sense of pastness. The key theoretical resource I draw upon in this respect is Deleuze's second *Cinema* book, *The Time Image* (1989). The value to this study of Deleuze's work here is that it is primarily concerned with the representation of time in film, and with the cinematic treatment of memory. As its subtitle suggests, Deleuze's book is focussed principally on the visual. However, I propose that the ideas contained within it can be usefully be transposed to a consideration of the cinesonic.

In *Cinema 2* Deleuze proposes a cinema in which certain shots fuse the pastness of a recorded event with the presentness of viewing; for example those moments of suspension and strangeness found in the post-war European art movie. This serves as a useful way of thinking through how a sound like optical crackle or ground noise might embody and articulate a sense of the past. When we watch an old film we are situated as spectators in the presentness of the perceptual experience, and in addition witness the presentness of the profilmic event – in the sense that film is always said to be in the present tense. However, something else intervenes, and the sound of ground noise and optical crackle introduce a sense of past tense into this. It is in this unresolvability of tense that we can encounter a direct manifestation of time. I hope to show that while convention plays its part in making the listener associate a sound of a particular technology with a broad historical period, our response to that sound is not just a Pavlovian, learned response to an arbitrary signifier; in the case of optical crackle and ground noise, convention operates within a complex of perceptual and cognitive processes that are connected to the drone.

Deleuze and the direct manifestation of time

One thing that Deleuze uses to distinguish a cinema that defines itself primarily through motion and action, and one that is more directly connected with ideas of time, is the presence of what he describes as "pure optical and sound situations" (Deleuze, 1989:9). These are contrasted by Deleuze with sensory-motor situations. The two *Cinema* books draw a rough distinction between a classic Hollywood cinema, conceptualised as a cinema of movement and linear narrative associated with a 'sensory-motor schema'[16], and post-war European Art cinema, in which 'pure' optical and sound situations offer a *direct* experience of time (as opposed to that experience of time implied by movement and change within the sensory-motor schema). At certain moments in the latter group of films, the sensory-motor schema is disrupted when we are confronted with "pure optical and sound situations." That is, for example, when images or sounds do not bed down into

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[16]The term refers to structures that are governed by a linear cause and effect logic. The sensory-motor schema thus enables narrative structure through the creation of goals, obstacles, and resolutions, etc.

the normal passage of events of a narrative structure. Deleuze terms the signs that work in this way *opsigns* and *sonsigns*. These signs have the capacity "to make time and thought perceptible, to make them visible and of sound" (Deleuze, 1989: 18). An example of this might be the moment in Antonioni's *L'eclisse* discussed previously, where narrative and even time itself seems suspended as Vittoria stands transfixed before a row of flagpoles. In situations like this, as Deleuze puts it, "the action image disappears in favour of the purely visual image of what a character *is*, and the sound image of what he *says...*" (Deleuze, 1989: 13).

In optical crackle we have a sound that displays similar characteristics to Deleuze's *sonsign*: here is a sound that doesn't behave itself in sensory-motor terms. It is a sound that does not represent, that does not resolve itself in terms of a neat object contained within a cause and effect chain of events. In part, this is because of the perceptual dimensions of the sound. When we perceive an object we do so by an accumulation of data; in addition to direct perceptions, we draw upon imagination, experience and memory. In *Thing and Space: Lectures of 1907*, Husserl proposes that when we perceive an object, we cannot perceive all sides of that object simultaneously: things don't present themselves to us all at once (Husserl, 1997). The total appearance of a thing is therefore a mixed form of representation constructed from visual perceptual data and imaginary projections based on that data. By associative contiguity, a horizon surrounds this visual perceptual data, and points to further, diverse, possible appearances of the same object. This horizon is both referential and potential: it refers both to what we see and what we might reasonably expect to see. This gradual building up of perceptions is referred to as shading-off or adumbration. In a similar way Bergson introduces the factors of experience and memory into the process of perceiving an object. He suggests that when we recognise and identify objects, we rely on our accumulated experience of them: when we perceive an object, we revive a past memory of it, and note its resemblance to the object that is present. In this way it is possible to draw a distinction between perception images and memory images. Perception images are actual, while memory images are virtual (Bergson, 1991).

For Deleuze, it is the fact that the memory image is virtual that is important in distinguishing the opsign and the sonsign from the action-image of the sensory-motor schema. He proposes that 'pure' optical and sound situations have two poles: objective and subjective, real and imaginary, physical and virtual. He goes on to suggest that the images and sounds of the opsign and sonsign enter into relation with a virtual image, and as we contemplate, the virtual and the actual can become indiscernible. This coalesence of the actual image and the virtual image, forms a kind of circuit where each runs after the other. The result of this is that the actual image cannot take its place in the sensory-motor schema, but rather, this indiscernibility gives the opsign or the sonsign the power to disrupt or suspend it.

The drone of optical crackle and ground noise, which is never absent from the film, demands a constant 'reading' that never results in any form of resolution. Thus the drone of optical crackle and ground noise is marked by movement without progression, both in terms of its own morphology, and our own resulting perceptual activity. Husserl's concept of adumbration describes the perceptual process, which takes place prior to cognition, whereby thought ranges through possibilities and alternatives, patterns and differences in response to perceptual data. Our processing of optical crackle presents perceptual movement without progression in the sense that adumbration may continue without resolution whenever the sound remains in the background of perception, and has no obvious link with an onscreen image. That is, the perceptual processes of adumbration are never resolved in the production of a coherent, discrete sonic object, nor are these sounds ever resolved in terms of an object-source: at an unconscious level, the audio-viewer's perceptual processes are constantly ranging through possible ways in which this sound might be resolved. This is a search without end, movement without progression: in phenomenological terms, a double movement of creation and erasure.

According to Deleuze, it is the very readability of the opsign and the sonsign that enables a cinema of *direct* thought as opposed to a cinema of sensory-motor response. In optical crackle we have a sound that demands a constant 'reading', even though we may not be conscious of this. But the fact is we are aware of it at some level, as our immediate

awareness of its sudden termination would suggest. This 'reading' has no end, since the sound is never absent from the film, and because it is a sound that finds no answer in the image or any of the other frames of reference of film 'language'. By never finding resolution, it remains outside of the sensory-motor schema. If the sound were to ever actualise – by the attribution of narrative significance, or by resolution in terms of an image, or even by being so loud that it occupies the foreground of perceptual experience – it would be subsumed by the sensory-motor schema.

The question Deleuze asks is what plays the role of the virtual image with which the actual image must coalesce to produce the opsign and sonsign? With what must the actual image combine in order that the sonsign and opsign can resist being absorbed by the sensory-motor schema? Deleuze suggests that an image recollected from memory cannot play this role because of "... an insufficiency in the recollection-image in relation to the past" (Deleuze, 1989: 53). That is, when an image is recalled from memory, prompted by an actual perception, it is taken from a virtual past into the actual present. It thus becomes actual rather than virtual – it enters, so to speak, the present tense. Deleuze writes:

> This is why the recollection-image does not deliver the past to us, but only represents the former present that the past 'was'. The recollection-image is an image which is actualized or in the process of being made actual, which does not form with the actual, present image a circuit of indiscernibility. (Deleuze, 1989: 54)

Deleuze suggests that a recollection, which in its pure form is virtual, becomes actual through a recollection image. As such, the recollection image bears no marks of the past from which it is drawn: in its actualised form, the recollection can only represent the present that the past once was. Quoting Bergson[17], Deleuze explains, "the image pure and simple will not be referred to the past unless, indeed, it was in the past that I sought it" (Deleuze, 1989:54).

What this quote makes possible is the idea that pastness is connected with a zone of unactualised (and thus pure and virtual) memories. This zone of memory, which is also a zone of the virtual past, is signalled in the *process* of recalling images from it. Thus it is

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[17] Bergson, 1991: 135.

the *act* of remembering, the *act* of searching memory, that gives a recollected image its pastness.

The virtual past of memory is thus conceived as a huge storehouse of virtual recollections, which become actualised when consciously engaged with in the present. However, when an act of remembering fails, the presence of this zone of the virtual past is signalled, but its contents are never actualised in the present. It is this virtuality that the sonsign and the opsign require to suspend the motor-sensory schema, and to manifest time directly. Deleuze writes:

> When we cannot remember, sensory-motor extension remains suspended, and the actual image, the present optical perception, does not link up with either a motor image or a recollection-image which would re-establish contact. It rather enters into relation with genuinely virtual elements, feelings of déjà vu or past 'in general'... (Deleuze, 1989: 54-55)

How then does this relate to our consideration of optical crackle? Certain sounds fail to connect with motor images or recollection images. Such a sound is that of optical crackle. It does not allow itself to be situated within the sensory-motor schema: it represents nothing in narrative terms, it does not present itself as a complete, understandable sonic object, nor does it become actualised in terms of unity with any perceived object source or visual event presented on screen. The sound of optical crackle seems only to stand for itself: as noise, it fails to signify in the terms demanded by the sensory-motor schema. In this case the perceptual image – the actual sound of optical crackle – never fully connects with any memory image that might serve to fix or place it in sensory-motor terms (when we hear optical crackle we are not referred back to any specific film we have seen in the past, but rather to a diffuse body or archive of work). And it is in the failure of the actual image to link up with a motor-image or a recollection image that keeps the sensory-motor schema suspended, instead placing the sound in relation to "genuinely virtual elements, feelings of déjà vu or past 'in general'..." (Deleuze, 1989: 54-55). The actual perception image thus remains almost constantly in contact with a virtual element: the key requirement of the sonsign. In addition, the constant activity demanded by optical sound's insistent presence satisfies another condition of the sonsign: that it be readable. This, then, seems to provide a perceptual formulation for the suspension and disruption of

orderly time noted earlier in relation to the drone. The drone upsets the sensory-motor schema, disrupting normal temporal frames of reference.

The question of the sense of pastness remains, however. To address this, we might make use of the distinction Deleuze makes between the actuality of "peaks of present" and the virtuality of "sheets of past" (1989:98). Time forks in two directions as present moments join the past. The presents which join the past become virtual images and sounds, and are only actualised through recollection in the present. Thus, the past is conceived by Deleuze as fluid, malleable sheets, in contrast to the precise and clearly defined "peaks of present."

Optical crackle might figure or signify the past in a number of ways. It is in some ways like an accumulation of dust or debris, that gradually builds up with age to obscure what lies beneath. It is also a kind of erosion, a gradual and partial erasure, which if it were to continue would end in complete obliteration of the object – just as a monument or geographical feature erodes over time. But what has been established by the transposition of Deleuze's ideas is that optical crackle and ground noise offer the constant presence of the unactualised. Every moment the film is haunted by the shadowy, nebulous presence of this region of the unactualised. Crucially, this shadow is also the presence of every other film that features optical crackle. By convention, we associate each individual manifestation of optical crackle with vintage film, with the film 'archive' in its broadest sense. The region of the unactualised extends beyond the personal memory of the spectator, into the transpersonal memory space of the archive. This archive, the totality of all 'old' film, stands as a vast storeroom and dumping ground for moments of the past captured on film. The shadowy presence of the unactualised of optical crackle and ground noise opens out onto this ungraspable, uncontainable expanse of old film. All old films, at least for the viewer and listener, belong to this nebulous region. When we are not watching or recalling specific films, all 'old' films dissolve into the malleable, fluid sheets of the past. The sounds of optical crackle and ground noise mark a specific but broad region or layer of these sheets of the past. This region is that of the unactualised film, the region of the genuinely *virtual film*. What defines this region, which is

ungraspable in its multiplicity of individual films, is the sound of optical crackle, black-and-whiteness, and scratchedness. Optical crackle is a trace or imprint that links this amorphous body together; and it is the sign that something has been retrieved from this space of transpersonal memory – the sign of pastness – like the dust on a document retrieved from an archive.

Is this in the end to simply suggest that the sound of optical crackle and ground noise is an indexical signifier of pastness? Of course, this is true, but it presents a very special case of signification that is in some senses also the failure of signification. What this sound directs us to is not a specific memory of a particular film: when I unconsciously audition this sound, I do not recall *White Zombie*, *My Favourite Wife*, *Vivre Sa Vie* or *The Chelsea Girls* as specific examples of films which feature this sound. Rather I am directed to a region of unactualised films: unnamed, unrecalled in their specificity, unremembered in their individuality, but whose presence is sensed as that ungraspable multiplicity residing as a nebulous, shadowy presence haunting every old film I watch. This is the virtual past represented by the totality of the film archive.

It is interesting to note that two films which explore archive news and documentary footage in terms of memory both make extensive use of the figure of multiplicity. In Woody Vasulka's *Art of Memory* (1986) and Steve Reich and Beryl Korot's *Three Tales* (2002), archive news footage is multiplied visually through the use of computer graphics, while sound is looped and layered to produce a swirling mass of images and sounds of the past. This sometimes works to prevent a close engagement with any particular clip, whose precise representational and semantic content is sacrificed in favour of a broad sense of pastness. In their multiplicity, these sounds and images become ungraspable in terms of 'content', prompting instead of narrative progression unresolved feelings or vague unactualised memories.

Other artists have drawn upon this sense of the archive and of ungraspable multiplicity, working with anonymous sounds and images to evoke feeling of pastness. Phillip Jeck's work with vinyl records creates a kind of requiem for the passing of technology in ways

that connote a powerful sense of melancholy. His 1993 performance *Vinyl Requiem* featured 180 record players, while the continuous project *Off the Record* has used between 6 and 80 record players, timed to play at intervals, each record sticking in a chosen groove. His recorded work *Vinyl Coda* (2000) again features short, unidentifiable loops of sound from old, scratchy LPs. The looping and the layering of sound and his use of a reverb unit and a delay pedal, all work to create a sense of a multiplicity: the forgotten archive from which these anonymous pieces of vinyl emerge momentarily before disappearing again, perhaps forever. In Jeck's work this is combined with the dominant presence of vinyl surface noise, the effect of which is to remove the listener from the moment, creating a requiem in which the feeling of pastness is inextricably linked with the mournful and the melancholy. Here notions of technical obsolescence and the forgotten archive are combined with the affective dimensions of vinyl's own sound of technology to create a sense of the past that is situated in terms of loss.

The sounds of optical crackle and ground noise signal a specific, yet broad, region of Deleuze's sheets of the past. And it is our perceptual relationship to these sheets of the past that Deleuze describes in his figure of the 'implied dream'. Once again drawing on the work of Bergson, Deleuze considers how a dreamer responds to stimuli: "... the dreamer is not at all closed to the sensations of the external and internal world. However, he no longer relates them to specific recollection-images, but to fluid, malleable sheets of past which are happy with a very broad or floating adjustment" (Deleuze, 1989: 56).

This assertion has relevance to an analysis of ground noise and optical crackle, and sounds like those of water and fire, because they can create dream-like states in which the listener does not relate sounds to specific recollections, but to broad sets of unactualised feelings and thoughts. Of course, this is not a guaranteed reaction to such sounds, but is a function of the mix and level of such a sound, and of the visuals that accompany it. However, even when the sound does not produce a distinct hypnotic quality, the level and type of attention we give this background sound is likened to that given by the dreamer. To refer back to Michel Chion's formulation of ground noise as a *basso continuo*, here is a way of thinking through the spectator's 'more or less' conscious awareness of this

sound. To be more precise, it is not the dream that provides the model we need to connect with sheets of the past, but rather what Deleuze terms the "implied dream." This term describes states of reverie, waking dreams, strangeness and enchantment that parallel the reaction of the dreamer to external stimulus, and provides a better model for understanding the relation between actual and virtual in 'pure' optical and sound situations. In this way, the sound of optical crackle and ground noise is capable both of acting as a drone to suspend normal temporal progression (feelings of waking dreams, strangeness, enchantment), and of putting the listener into contact not with specific recollection-images, but with fluid, malleable sheets of past.

Refrain

The sound of film technology has a material aspect which is almost completely neglected by studies of film sound, unless conceived in terms of noise or inadequacy. In relation to the optical soundtrack, this materiality is heard in the way in which sounds are rendered by the medium and the sound of the medium itself. The critically neglected sounds of ground noise and optical crackle can be mapped by notions of time, and specifically the idea of pastness. What we have also seen is that this sound also connects with related notions of memory. My own reading of Deleuze thus maps a wholly unconsidered aspect of film sound by making the connection between memory, monotony and the past – these are the elements which map the affective dimensions of the materiality of optical crackle and ground noise.

The case of ground noise indicates a sound-image relationship that is not accounted for by the model of mimetic or illustrative sound; that is, sound which simply illustrates the image onscreen. Nor does it relate to the signitive model of sound image relationships whereby sound signals a visually absent object-source. What the case of ground noise and optical crackle presents is an audiovisuality that challenges the dominant creative and conceptual formulations of sound-image relationships. But how are we to conceptualise this particular form of audiovisuality?

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The key resource I would like to reintroduce to negotiate this area is noise. What this chapter shows is that noise is not the one-dimension phenomenon it is often taken to be. Noise has been persistently valorised in the arts for its violent, shocking, disruptive potential. But as the case of ground noise illustrates, noise can also be quietly invasive. The political dimensions of representation, raised in Chapter 1, provide the context in which noise may take on radical potential; in its failure or refusal to signify, noise seems to presents an untranslatable, turbulent materiality. If this materiality has historical dimensions, as illustrated by the case of ground noise's shifting audibility, then perhaps the radical potential of other forms of noise might be affected by historical considerations. It is this issue that is explored in the following chapter through an examination of the cinesonic deployment of electronic sounds. These sounds, once strange and shocking, have become increasingly familiar and conventional with the passage of time. How then might this impact upon their radical potential? And if, as Chapter 1 suggests, audiovisuality itself might have a radical dimension, where might electronica be situated within the context of the cinesonic?
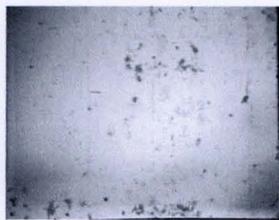
Film scratches – taken from 16mm print of *Wavelength* (Michael Snow, 1967)

The log cabin in which La Monte Young spent his childhood.

Chapter 3

STRANGE SOUNDS

Electronica Noise Theory

Electronic sounds have in common with those discussed in the last chapter, the fact that they can be produced by, and within, the film medium itself. Electronica produced by optical sound synthesis does not rely on the transcription of external sounds, but can instead be generated by the technology of optical sound film itself. Like the sounds discussed in the previous chapter, electronica has also been figured in terms of noise, and it is this noise potential that allows it to take on a radical dimension within works where it is used to challenge, to disrupt, to disorient. When inscribed within certain aesthetic systems, it is noise's disruptive non-conformity that can give a sound radical potential. In part, electronica has drawn just such a potential from its status as a *strange* sound; here is a sound that seems to announce emergency and change. As Jacques Attali, one of the key theorists of noise, writes in his seminal work on the subject: "In music, the instrument often predates the expression it authorises, which explains why a new invention has the nature of noise..." (Attali, 1985: 35). This shock of the new, the radical strangeness of electronica, situates this particular form of noise within a historical framework, revealing another historical dimension to issues of cinesonic materiality.

However, within a broader cinesonic context, the use of electronic sounds has become almost entirely conventional. These once strange sounds, which are no longer strange but familiar, become the nostalgic and conventional *signifiers* of the strange. The sounds of the Theremin, the Trautonium, and numerous other electronic instruments with creaky names, have been commonly used in film to suggest a dystopian future where robots go bad, or to signify madness and the monstrous. These mobilisations of electronica within mainstream cinema do indeed seem confer to electronic sounds something of the status of noise. Their presence sonically signifies a disruption to the normal: a challenge to existing models of social organisation, a breakdown of the accepted norms of behaviour, a monstrous threat to paradigms of the natural. But of course this is simply the signification of noise; these strange sounds are domesticated and stripped of their disruptive power through submission to narrative and musical codes. The alterity of noise, for which it has been valorised within the arts, is thus resolved in terms of the *signification* of otherness: the alien, the mad, the broken, the monstrous, the aberrant.

This issue of signification cuts to the heart of a broader question that must be considered when we address the uses to which noise is put within the context of the cinesonic: namely, how might the non-identity of noise situate itself in relation to the significatory dimensions of cinema? It is this issue that is central to a consideration of where electronica might be situated within an audiovisuality that radically challenges the dominant creative and conceptual formulations of classical cinema's sound-image relationships.

In theoretical terms, the refusal of noise to signify – which is key to its status and power – is a refusal to be translated, a refusal to be equated with anything other than itself. In its concrete particularity, noise presents a materiality of sound that finds no equivalent. Noise demands to be heard in the here-and-now. It grabs you by the throat rather than evaporating in signification, directing attention elsewhere. Its refusal to submit to a code (musical, linguistic or otherwise) thus marks its non-identity, and signals its potential to transgress, resist and disrupt the codes by which both art forms and power structures are

organised. The problematic allure of abstract structures, so far observed with reference to Saussurian linguistics, resurfaces in Adorno's critique of identity thinking. In the same way that Saussurian linguistics reduces individual concrete speech events to the abstract structures of language, so identity thinking reduces materiality (amongst other things) by equivalence. Adorno writes: "Bourgeois society is ruled by equivalence. It makes the dissimilar comparable by reducing it to abstract qualities... that which does not reduce to numbers, and ultimately to the one, becomes an illusion" (Adorno & Horkheimer, 1997: 7). Considered within the context of political economy, this conception proves to be highly problematic, since everything in society becomes reduced, and reducible, to an exchange value, processed by the monetary code through which equivalence is ensured. Issues of political economy are indeed relevant to this discussion of electronica, and not only because this is the dominant theoretical context in which noise has been situated by Attali, and within which the cultural study of noise has been predominantly positioned in relation to political discourse. Political economy also reveals itself in the fact that most audiences are familiar with the sounds of electronic instruments like the Theremin precisely because they have been inscribed into the world of exchange; precisely because their sounds have both meaning and value in commercial cinema.

However, what is more immediately relevant to the discussion here is the (false) notion proposed by identity thinking that concepts adequately deal with objects; the notion that things can be fully known and contained by concepts, and therefore reduced to examples of an abstract paradigm. As Adorno puts it so succinctly, "Conceptual schematas self-contentedly push aside what thinking wants to comprehend" (Adorno, 1997: 4). Auditioned within this context, noise is marked by its non-identity, its non-equivalence – a refusal to be known, to be contained – and a resistance to subjugation by the codes it seems therefore to threaten. Noise cannot be known by these codes in the unpredictability and multiplicity of its concrete particularity. Rather, noise seems to propose itself as raw, material sound, before and beyond meaning, matter liberated from all forms of construction. In the language of information theory, noise is entropic; it is unpredictable, unconventional, formless, stochastic.

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But of course, it isn't, since within the cinesonic context noise becomes almost entirely domesticated and conventional, whether signalling the other, or offering resistance to signifying regimes. Yet it is the presumed alterity and non-identity of noise that has been championed in the arts, and consistently celebrated in terms of its oppositional and disruptive potential. In this formulation we encounter the Futurist/avant-gardist legacy, a theorisation and celebration of noise that conceptualises it as shocking, violent, and war-like. This remains the dominant discourse for noise within the arts, which concurrently situates the phenomenon within a broadly political context. In this way, Attali states that "Noise is a weapon..." (Attali, 1985: 24) and "To make a noise is to interrupt a transmission, to disconnect, to kill. It is a simulacrum of murder" (Attali, 1985: 26). Within a cinesonic context, and in relation to the noise potential of electronica, a tension is therefore created between an identity and non-identity of noise, between a radical potential of noise and its domestication by narrative, musical and other cinesonic codes. As Attali himself suggests, although a new instrument may predate the expression it authorises – hence creating the strangeness of a new sound – expression can and *will* be authorised, in the sense that new codes *will* almost inevitably emerge:

> In music, the instrument often predates the expression it authorises, which explains why a new invention has the nature of noise... it contributes, through the possibilities it offers, to the birth of a new music, a renewed syntax. It makes possible a new system of combination, creating an open field for a whole new exploration of the possible expressions of musical language. (Attali, 1985: 35)

What Attali signals here, and is also illustrated by the case of ground noise, is that the way in which we audition sounds and technologies shifts over time – the quality of their audibility changes. Sounds which once presented an untranslatable materiality, like those of electronica, now conjure nostalgia, while other sounds once neglected begin to reveal their materiality, as in the case of ground noise. Attali offers this change in positive terms, as a form of renewal, whereby noise provides an open field of potential and opportunity. Considered in a slightly different way, this idea suggests that what we hear in the changes taking place over time are processes of normalisation and containment, shifts from non-identity to identity, and from materiality to signification.

This chapter seeks to explore the ways in which tensions between the radical potential of electronic noise, cinesonic codes, and the processes of history run through the cinesonic text. This raises the issue of how electronic sounds might be articulated within contemporary avant-garde film practice. What I want to consider here is whether it is theoretically and creatively possible to rearticulate or reframe electronica in such a way that these sounds maintain their radical potential in contemporary work. Might there be some form of sonic sublation by which filmmakers could re-engage with the traditions and conventions of these sounds, but in a way that would give them contemporary resonance? And how such a shift might be theorised and actualised in terms of the relationships between sound and image, looking and listening, seeing and hearing?

If electronic sounds are no longer shocking, are there other ways in which conventional cinesonic formulations can still have political power? Are there ways in which tired old electronica might find contemporary resonance by reconnecting with its noise potential? To consider the issues outlined above, I will draw upon three main film resources. The first of these is the experimental film work of John and James Whitney undertaken in the 1940s, in which optical sound synthesis was employed explicitly to create sounds with no historical precedent. Described by the critic William Moritz as "one of the most radically original audio-visual manifestations ever devised" (Moritz, 1979: 65), the Whitney Brothers' five *Film Exercises* (1943-44) hold particular relevance to this study because they represent an attempt by their makers to combine the sonic and the visual in ways that seek to explore their complementarity. As such, these films present an exploration of a set of sound-image relationships that stand apart from those dominant modes of audiovisuality proposed by signitive models. The second body of work drawn upon in what follows features the use of electronica deployed within the context of classical Hollywood cinema in ways that figure otherness. And finally, to consider a contemporary use of electronica, I turn my attention to Tina Keane's 1996 film *Deviant Beauty*, which features an almost entirely electronic soundtrack. Situated within the context of avant-garde film practice and its associated discourses, Keane's film enables a consideration of the ways in which the radical potential of electronica might be reconfigured within the

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contemporary, and perhaps more importantly, how this might impact on our understanding of audiovisuality.

The key theoretical resources I bring to these bodies of work are Jacques Attali's *Noise* (1985) and Freud's essay *The 'Uncanny'* (1958). Attali's book remains probably the single most important theoretical text dealing with the cultural historiography of noise. As such it provides a crucial tool with which to engage with the noise potential of electronica. Building on Attali's work, and using the film texts outlined above, this chapter makes the critical move from essentially sonic figurations of noise to thinking noise in cinesonic terms. Finally, Freud's essay *The 'Uncanny'* provides a way of connecting the technical and formal aspects of electronica with their affective dimensions. My own employment of the notion of the *unheimlich*[1] works to connect the noise of electronica with a set of ideas about monstrosity and essence, which I propose are key to an examination of all the film texts considered here.

Optical sound synthesis

Before engaging with the work of the Whitney Brothers, it is important to outline the methods by which sound can be synthesised optically, and to explore some of the issues this raises in terms of electronica's affective and psychoacoustic dimensions.

Although rarely acknowledged in histories of music, the technology of optical film sound opened two parallel and related strands that were to have a profound influence on the soundscape of twentieth century western art forms: the first is sound editing (dealt with in chapter 5) and the other is sound synthesis. As has already been demonstrated in the case of ground noise and system sound, film technology generates as well as relays sound. The conceptual move from relay to generation should not be underestimated, since it fundamentally challenges the ontological basis of the cinema as a medium of record and reproduction. A good deal of the attention given to film sound production centres around the ways in which sounds are recorded for a soundtrack, and the subsequent arrangement

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[1] In this chapter I use Freud's original German term 'unheimlich' since it carries a meaning that is not captured by the English term 'uncanny', to which it is often translated.

and treatment of those sounds in post-production. Within the context of film sound technology, the microphone, as a mechanical analogue of the ear, prioritises a notion of sound as an external phenomenon, as being 'out there.' What happens to those sounds subsequently in post-production is conceptualised in terms of orchestration; sounds may be edited and mixed, but individually those sounds are still understood to belong to a milieu essentially external to the technology in which they are situated. Thus even when subjected to various forms of cinesonic processing (recording, cutting, mixing) these sounds maintain an identity that marks them as external to that system – the sound of a dog rather than the recording of a dog, its analogue. This, of course, is yet another consequence of the dominant object-source conceptualisation of sound discussed previously. Sounds internal to this technology are, as we have seen, considered to be noise. As such, they impose themselves between the pro-filmic auditory event and audition by the listener, thus threatening fidelity.

In optical sound synthesis, like that undertaken by John and James Whitney in the *Film Exercises*, sound is generated by making marks on the optical area of the film print by drawing, painting, printing or photographic means. The sound that results proves problematic in respect to dominant models of sound-image relationships: it produces a sound that issues from what cannot be thought in classical cinema. That is, it is a sound that emerges from the very apparatus that makes such an effort to erase its own presence. Situated within an understanding of sound underpinned by the object-source model, this is indeed a sound that seems to come from nowhere. Central to the work of classical cinema is the mapping of profilmic space and the concurrent construction of fictive or narrative space. But sound produced by optical synthesis has no source definable or identifiable in terms of cinematic space; nor is it a sound that is easily located within the imaginary 'orchestra pit' proposed by film's musical accompaniment, since it emanates from the technology of projection itself. Indeed, it was remarked by a journalist in 1932 of the experiments of one of the pioneers of optical synthesis, "Rudolph Pfenninger creates tones from nothing" (Tönende Handschrift, 1932, quoted in Levin 2003: 58). At a conceptual level it is a sound that refuses to be inscribed into the dominant spaces of cinema; it is a sound that deterritorialises the spaces constructed, mapped and represented

by cinema, simultaneously challenging the common formulation that relates sound to object sources located in a stratified or gridded space. Rather, this sourceless sound permeates cinema, collapsing represented space with technological space.

It is this quality of indeterminacy that provides a route into thinking through the psychoacoustic and emotional dimensions of this strange sound. This spatial indeterminacy, which is also total permeation, gives this particular form of electronica something close to the magical power of Chion's acousmetre[2], for this is a sound that speaks to us without position. This must be a disturbing sound – one whose source lies not on screen, nor in any instrument (electronic or otherwise) *recorded* for the soundtrack. And since we are so accustomed to thinking sound in terms of source, such spatial indeterminacy is potentially disturbing.

This is a sound that is often described as other-worldly; and it is one to which we might appropriately apply the term 'uncanny', understood in the sense of the German *unheimlich*. Translated as 'unhomely', the *unheimlich* seems to be that from *without* or outside the home. In abstract terms, the homely is that which is anchored in known, striated space, while the *unheimlich* is that which is not. However, as Freud suggests in his essay *The Uncanny*, the *unheimlich* does not simply describe that from without – the other or the alien. He observes that the word *heimlich* can convey both a comforting sense of the homely, and at the same time also a more negative sense of something that is hidden or secret. The corollary of this is a formulation of the uncanny that Freud expresses in the following terms:

> ... this uncanny is in reality nothing new or foreign, but something familiar and old-established in the mind that has been estranged only by the process of repression. This reference to the factor of repression enables us, furthermore, to understand [Friedrich] Schelling's definition of the uncanny as something which ought to have been kept concealed but which has nevertheless come to light. (Freud, 1958: 148)

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[2] Chion defines the acousmetre as: "A kind of voice-character specific to cinema that in most instances of cinematic narratives derives mysterious powers from being heard and not seen" (Chion, 1994: 221). Examples, given by Chion, are found in *The Invisible Man*, *The 1000 Eyes of Dr Mabuse*, and *The Wizard of Oz*.

What Freud sketches is a form of concurrence, a presence of the *unheimlich* within the *heimlich*, the co-presence of the other and the excluded at the centre. This describes a permeation, and a dissolution of that which demarcates internal from external. In this way we move from a striated or stratified state in which everything is known in terms of spatial differentiation, and in which boundaries protect notions of essence, to a smooth space of co-presence or permeation. Thus the uncanny figure of the double represented by the automaton, which Freud considers in his essay, is both like and simultaneously unlike the human. Returning to the figure of optical synthesis, the other-wordliness of electronica might indeed lie in its otherness, its unhomeliness. But this can also be understood in terms of its refusal and transgression of the official demarcated spaces of cinema. Here is a sound that has no home, that cannot be enclosed within a territory marked by boundaries. This is a sound that haunts, and one that threatens the notion of the clearly defined spaces of cinema: narrative, profilmic, technical. And here, in keeping with Freud's definition of the uncanny, is the resurfacing of that which is repressed – the unthinkable of cinema, the sound of itself, the sound of technology.[3]

Sound synthesis and optical inscription

The figure of technology is very much foregrounded, rather than repressed, in the work of the Whitney Brothers and other filmmakers working in optical sound synthesis. By various methods, sound can be synthesised by inscribing marks and patterns onto optical sound film. In the normal process of recording sound optically, sound vibrations collected by a microphone are turned into a variable electric current, which in turn excites a light source in the recording device. Here the sound-modulated light beams that result are recorded photographically, inscribed on the light-sensitive film-strip. In each of the three main optical systems developed within the American film industry, a different method was used to produce a sound-modulated light source. In the Movietone Fox system the

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[3] Brophy describes this sound of cinema in terms of the *electric*, in a way that may also suggest its repression: "In its amalgamation of the plastic arts, cinema never experiences a dilemma in foregrounding the painterly, the theatrical, the choreographic, the photographic or the acoustic. All these modes of depiction, their historical artistry and their specific disciplines are regarded as 'cinematic' when they are blended onto the screen. But what about the electric? Cinema shows its electrical circuitry is generally unwanted despite its revelation of its technical being" (Brophy, 2004: 10).

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light source activated by the variable current was a gas-filled tube. In the RCA Photophone system, a tiny mirror turned in response to the modulating sound source, reflecting light onto or away from the unexposed sound film, while the Western Electric system used a variable slit through which light passed onto the recording film. The recording process thus results in the visible inscription of a pattern onto photographic film stock. The pattern inscribed can be one of two types: variable area (Fig. 3.1) or variable density (Fig. 3.2). These soundtracks are located along the edge of the film print, as indicated in Figs 3.3 and 3.4. In Fig. 3.3 the pair of variable area waveforms indicates a stereo soundtrack, while Fig. 3.4 shows a mono variable density soundtrack. During playback the process of inscription is essentially reversed, so that the patterns recorded on the film now create a modulated light source, which by means of a photo-electric cell produces a variable current that in turn is amplified to drive loudspeakers.
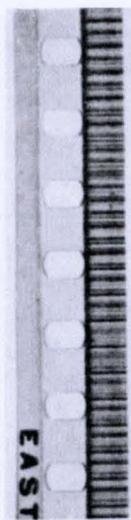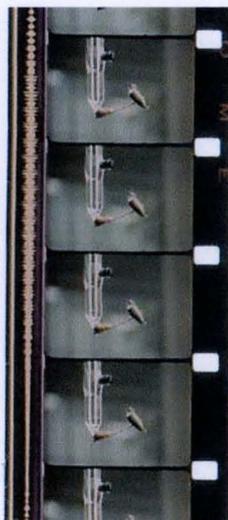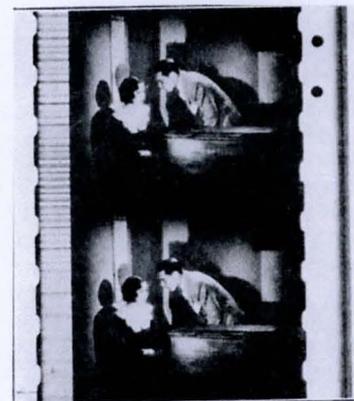
Fig. 3.1   Fig. 3.2   Fig. 3.3   Fig. 3.4

It is possible to draw or paint or print directly onto the sound strip, or to print images, shapes and patterns photographically, and all these methods were employed by a handful of filmmakers and composers who were experimenting with the technology of optical film to synthesise sound in the 1930s.[4]

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[4] Research was undertaken both in the Soviet Union and in Western Europe during the 1920s and 30s. One of the first to consider the artistic potential of synthesised sound was the Bauhaus artist Lazlo Moholy-Nagy, who had foreseen the creative potential of creating sound graphically before

The sounds produced by this technique, such as those that comprise the soundtrack of the Whitney Brothers' five *Film Exercises*, are the eerie, synthetic sounds we most commonly associate with electronic instrumentation. In the popular imagination all such sounds are labelled 'electronic', although synthetic sounds can also be produced by mechanical, optical and magnetic techniques. Nevertheless, all such methods of synthesis are now embraced under the musical term 'electronica'. Thus, the musique concrète pieces created by Pierre Schaeffer in the late 1940s, which initially comprised sound recordings edited from disc (and not tape as is sometimes assumed) are celebrated as one of the origins of electronic music. As a label for a category of sound, electronica is as useful or as harmful as any other, but one of the consequences of its usage is that writers happily ascribe the eerie or machine-like quality of synthetic sound to the mysterious, other-worldly properties of electricity. Thus Erik Davis writes:

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the process had become widely used. In 1933, he produced an experimental film, *The Sound ABC*. On the soundtrack of the film he printed letters of the alphabet, drew people's profiles, and used fingerprints and various other markings and symbols. By running these graphic images through a sound projector, he was able to show that each visual form produced a distinct and audible sound. The soundtrack was re-photographed so that the image of the soundtrack could be projected simultaneously with the actual soundtrack – sound and image were essentially generated from the same visual patterns. At around the same time the animator Oskar Fischinger had been carrying out his own experiments in synthetic sound. Fischinger produced long scrolls of paper, painted with geometric shapes. These patterns were then photographed onto the soundtrack. Also working in Germany, Rudolph Pfenninger had pioneered a similar system of optical synthesis. An account of his work, which situates Pfenninger's experiments in relation to a prehistory of optical sound synthesis, is given by Levin (2003). In the Soviet Union, similar work was undertaken in the early 1930s. A detailed account of these experiments is given by the animator Norman McLaren (see Manvell & Huntley, 1975: 185-193). McLaren describes his own work in synthetic sound in 'Notes on Animated Sound' (McLaren, 1953). Mention should also be made in this context of composers who experimented in optical synthesis. Jack Ellitt, who worked as a composer and film editor, independently pioneered a system of drawing directly on the celluloid without the use of a camera in 1933. Ellitt's work in film sound is dealt with further in Chapter 5. In the mid-1960s Daphne Oram, the British pioneer of electronic music, and founder of the BBC Radiophonic Workshop, used a graphic system in her Oramics machine, which generated sounds from hand drawn patterns on strips of film using the optical sound reproducer from 35mm film equipment. An account of this is given in *An Individual Note of Music, Sound and Electronics* (Oram, 1972). Roads (2001) is one of the few writers on music to acknowledge the role played by film technology in early electronic sound. Roads refers to the work of Denis Gabor, the inventor of holography, and his Kinematical Frequency Converter. In the late 1940s Gabor used the optical recording system taken from 16mm film projectors for his experiments with pitch-time (Roads, 2001:61).

> ... the revolutionary sonic media that followed in the wake of the telegraph – telephone, phonograph and radio, not to mention Theremins, Moogs and Roland 303s – [can] be regarded as creative transmutations of the new 'elements' that would come to undergird the 20th century's cultural consciousness: electricity and electromagnetism. (Davis, 2002: 16)

Of course, what Davis refers to as the 'the electromagnetic imaginary' – that is, "the mythic, animistic and just plain weird cultural dimensions of electricity and electromagnetism" (Davis, 2002: 16) – must be relevant to a discussion of electronic sound. However, the electrical discharge of this position cannot entirely account for the phenomenon of 'electronica', if only because the term embraces sounds generated by other than strictly electronic means. What this term does is to remove from the field of study consideration of syntheticness in general, and replaces it with a purely electrical discourse. I would argue that one of the key ways of opening up electronica to critical consideration is a discussion of the synthetic, of which the electrical/electronic is merely one expression or manifestation. Syntheticness is a quality shared with sounds synethsised by other than electronic means, and approaching electronica through the synthetic provides for a much wider debate than simply tracing electrical currents. Such confusion is perhaps understandable, since the early electronic experiments of pioneers like Raymond Scott dominated the development of sound synthesis in music, and have a much higher profile in the public consciousness than the invisible and largely unknown experiments of a group of marginal film artists like the Whitney Brothers, whose chosen art form was seen as essentially visual. The iconographic images of electronica feature musicians and composers struggling with unwieldy piles of valves and tangled leads rather than filmmakers stooped over an optical printer.

Trouble in utopia: synthesis in the work of the Whitney Brothers

Why go synthetic? Why were experiments like those of the Whitney Brothers undertaken, and what might this tell us about sound in general, and electronica in particular?

Synthesis has a great appeal to those who wish to plough their own furrow, and in the work of the Whitney Brothers, the synthetic has a utopian aspect. Throughout a career that embraced musical composition, and pioneering work in animation and computer

graphics, John Whitney's abiding interest was in the complementarity of sound and image, and in the artistic possibilities of their synthesis – a term that should be understood, within the context of the Whitneys' project, to mean both generation and unification. Between 1943 and 1944, in conjunction with his painter brother James, John Whitney completed a series of five short experimental films known collectively as the *Film Exercises*. In all five films, simple animated graphic forms (e.g. Fig. 3.5) were accompanied by soundtracks created using a method of light inscription that employed a series of pendulums. Using a system of connecting rods, the Whitneys' pendulum sound recorder (Fig. 3.6) de-magnified the movement of the oscillating pendulums to make fine adjustments to a variable slit through which light passed to be registered onto photographic film. The instrument had a selection of 30 pendulums that could be swung singly or in combination. By adjusting the length of each pendulum, their frequencies could be arranged to form a scale, and in this way the filmmakers were able to score synthetic music by controlling the number, length and frequency of the pendulums. Thus, no sounds were required to produce the patterns inscribed on the film strip which, when run through a sound projector, would generate tones.
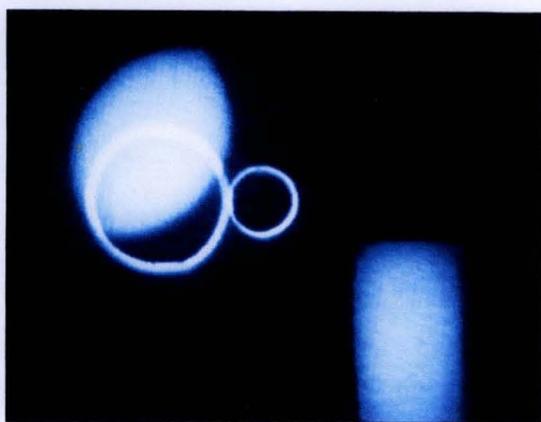
Fig. 3.5 *Film Exercise No. 4* (1944)
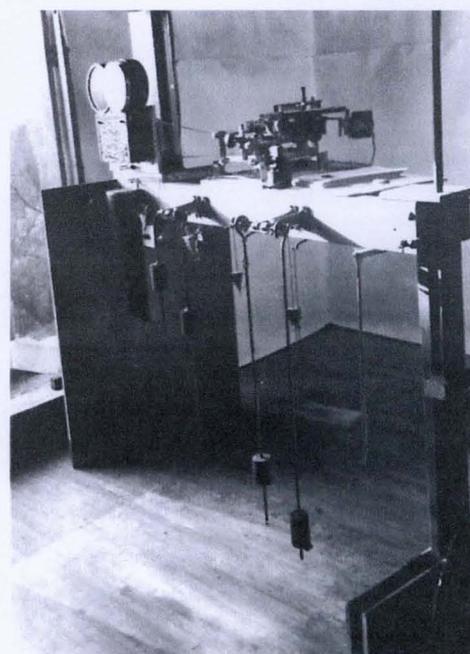
Fig. 3.6 The Whitney Brothers' pendulum sound Recorder (Russett & Starr, 1988:171)

The sounds produced for these films have a strange, unearthly quality, at times like an electronic organ, at others reminiscent of the steamboat calliope, and range in frequency from low pulsing infrasonics to high-pitched tones. The tones heard in these films are sometimes single pure sine waves, or else what the Whitneys referred to as 'vertical note mixtures': their adoption of serial techniques, and a rejection of traditional forms of Western art music, meant they discarded the term 'chord' (Whitney, 1980: 153). At other times the sounds created remind the listener of the sharp tap of the woodblock, or sometimes of dripping water. It is a vocabulary of sounds that becomes more familiar a decade later in the work of the animator Norman McLaren, and most particularly in what is perhaps McLaren's best known film, *Neighbours* (1952)[5]. It is also heard, significantly, in the "electronic tonalities" produced by Bebe and Louis Barron for the science-fiction film *Forbidden Planet* (1956), although in this case sounds were produced by electronic rather than optical means.

Despite their simple visual vocabulary, the *Film Exercises* are highly complex, since the abstract visual forms provide ample permutational variations of colour, colour intensity, shape (solid or in outline), scale, position, movement on screen and movement in perceived spatial depth. In addition, all of these elements are controlled in terms of the speed of movement or change. Finally there are the various relationships between the images and the soundtrack, which sometimes work in parallel, sometimes in counterpoint. The permutational logic of the films owes much to Schoenberg's influential twelve-tone system, which John Whitney first encountered while studying in Paris in 1939. The acknowledged influence of serial techniques on the Brothers' work can not only be seen, but also heard, since the music employs explicit structural devices. For example, *Film Exercise No. 1* (1943) is structured around a three beat figure that is increasingly condensed with each new return, then used in reverse to conclude the film.

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[5] Here McLaren created a library of cards on which he drew graphic patterns that would be photographed onto the soundtrack. Each card had a specific tonal value, and so in effect McLaren was able to score his soundtrack in the traditional manner. The soundtrack produced follows the conventions of the animated cartoon genre in that it comprises short sections of musical themes, and also musical sound effects produced to synchronise with action on-screen.

Film Exercise No.5 (1944) employs a canonical form with sound counterpart also in cannon (Whitney, 1947a: 60).

But even before the Whitneys constructed their pendulum sound recorder, music had served as a temporal model for their early silent work. Writing in 1959 for Karlheinz Stockhausen and Herbert Einert's serial music journal *Die Reihe*[6], Whitney explained: "Our activities were not alone musical since our first interest has been to compose abstract graphic compositions with a time structure as in music" (Whitney, 1980: 154). The article describes how their early 8mm film, the silent *Twenty Four Variations* (1939-40), comprised permutations of a simple graphic matrix composed of a rectangle and a circle.[7] The matrix (Fig. 3.7) was broken down to produce both positive and negative shapes, which could be animated in phases and moved around the screen. Another level of visual complexity is added by the printing method used by the Whitneys, again directly influenced by Schoenberg's twelve-tone technique. Having produced a short animated sequence, they were then able to reprint it to produce other serial permutations:

> We devised an optical printer in which this film strip could be rephotographed onto colour film using colour filters, either in normal direction or retrogression, right side up or inverted, or mirrored. Graphically, here was a parallel to the transpositions and inversions and retrogressions of the twelve tone technique. (Whitney, 1980: 155)

Returning to the *Film Exercises*, the relationship here between sound and image also bears witness to this permutational logic. In *Film Exercise No. 4*, for example, an image is sometimes directly accompanied by a sound; thus when a rectangular form flickers, intermittent sound mirrors the rhythmic visual changes. The appearance of some visual forms is marked by a 'woodblock' sound, while at other times there is a delay between sound and image that is "in a proportional relationship to the depth or distance of its corresponding image in the screen space" (Whitney, 1947a: 60-61).

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[6] This article was first published in its original English version in Whitney (1980: 151-155).

[7] The film is not currently in distribution, and according to William Moritz, the only copy remains the original 8mm reel located in the Whitney vault. In addition to John's own description of the film, some idea of the experience of watching it is given in Moritz's article on the Whitney Brothers' early work (Moritz, 2006). However, the relevance of the film to this dissertation lies not in the experience of seeing it, but in Whitney's account of the principles by which it is structured.
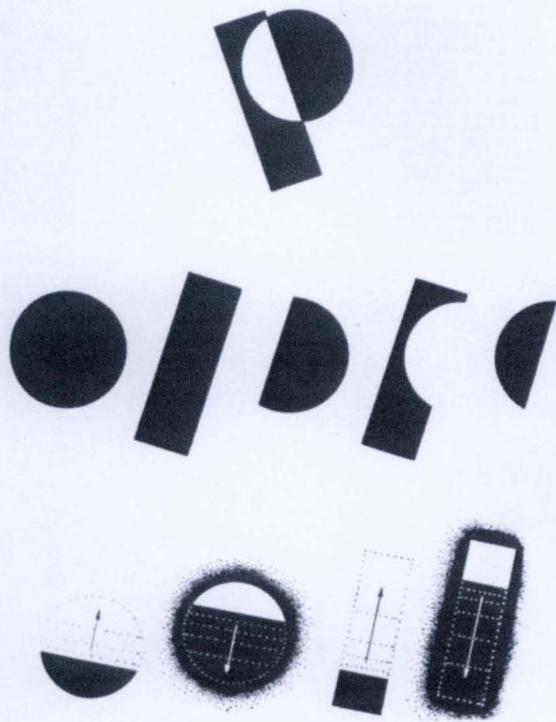
Fig. 3.7 The Whitney's graphic matrix for the silent *Twenty Four Variations* (1939-40). The original matrix (top) was broken down into constituent forms (centre), which then produced positive and negative stencils. These were airbrushed to create an additive type of animation that showed the forms developing in phases (bottom). (Russett & Starr, 1988:173)

The eerie, synthetic sounds produced by the pendulum recorder might commonly be referred to as 'futuristic', and while today this term creaks under the weight of ironic nostalgia, it is not wholly inappropriate. The writing of the Whitneys in the 1940s is often utopian in tone, and particularly so when referring to the possibilities offered by technology. Their relationship with the machine is seen in wholly positive terms. For a previous generation of artists, it had been the abstract that was attributed with the utopian notion of a universal language.[8] For the Whitneys, this universality is *guaranteed* by the

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[8] For example, the use of visual counterpoint in Viking Eggeling's seminal abstract animated film *Diagonal Symphony* (1923-5) can be seen as part of a utopian search for a universal language. The film grew out of Eggeling's collaboration with Hans Richter on the 'orchestration' of linear forms in developmental scroll painting. According to Richter's description, *Diagonal Symphony* is structured on "the interplay of relationships between lines which he had arranged... in contrapuntal pairs of opposites, within an all-embracing system based in the mutual attraction and repulsion of paired forms" (Richter, 1965: 63). Behind the film's spatial and temporal counterpoint lay Eggeling's concern to define a logic that would hold true for all forms of abstract art, a set of 'laws' that would not only be universally applicable, but more importantly,

machine: "Our very realm of creative action is implicit in the machine. Emphasis is necessarily upon a more objective approach to creative activity. More universal. Less particular. More so by virtue of the inherent impersonal attribute of the machine" (Whitney, 1947b: 34).

In addition, for the Whitneys the machine opens up new fields of creative opportunity:

> But the machine is yet a poorly integrated, clumsily handled invention else man would not be face to face with his destiny by it today. Personal contact with new creative fields by way of the machine would hardly be worth struggling after were it not for the tremendous variety of new clay to be found there, its universality and its close relationship with modern experience. (Whitney, 1947b: 34)

The importance of this close relationship with modernity can also be understood as a refusal of tradition. Perhaps most significantly, the machine is seen as a fundamental break with the past, representing the modernist future in many ways:

> The introduction of the machine in such proportions as has taken place only in this century constitutes a quantitative change effecting a distinct qualitative revolution. The motion picture camera is no more an improved paint brush than our sound track device is an improved musical instrument. (Whitney, 1947b: 34)

One of the main objectives of the Whitneys' experiments, and hence the relevance of their work to this consideration of sound-image relationships, was to create a synthesis of the sonic and the visual in ways that demonstrated their complementarity. The Whitneys explain the rationale for their development of the pendulum sound recorder in terms of a problematic of sound-image relations:

> It is common place to note that film and sound today have become a permanent unity. We are attracted by the prospects of an idiom as unified, bi-sensorially, as the sound film can be.
>   Naturally, we have wanted to avoid weakening that unity, which would be the very essence of an abstract film medium. It occurred to us that an audience would bring with it its own disunifying distractions in the form of numerous past associations and preconceptions were we to use previously composed music in relation to our own abstract image compositions. We, therefore, tried the simplest, least common, primitive music we could find. But another source of disunity became apparent. In this case, the dominant source of distraction was a contradiction between the origins (the players, instruments, time, place, etc.) of this kind of music and our animated image.

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universally comprehensible. Borrowing the term for the central structuring bass line used in Baroque music, Eggeling's 'thorough-bass of painting' was not just a contrapuntal compositional model, but also a Utopian attempt to identify a language that transcended national boundaries. See Selwood (1981).

> Thereafter, little thought was given to any other consideration than to search for a method of creating our own sound by some means near as possible to the image animation process, technically and in spirit. (Whitney, 1947b: 32)

This passage reveals a number of important ideas about sound. Firstly, the writers conceive sound and image in terms of unity; the possibility of audio-visual synthesis is unquestioned. It is telling that the essay is entitled "Audio-Visual Music", since historically music has been the site at which sound and image meet: both metaphorically and creatively in the reflection on synaesthetic experience undertaken within painting, and in the various experiments with colour organs. The bi-sensorial unity of the sound film is offered by the Whitneys as an essence – in this case, of the abstract film. Note that they do not see cinema as an extension of painting in terms of the further development of painterly concerns. In this sense their work is distinguished from that of the first generation of abstract animators, like Hans Richter and Viking Eggeling, who saw in film the means by which they might introduce a further temporal dimension into the experimental work with developmental scroll paintings. While the Whitneys' search for essence places their work within the mainstream of modernism, their position differs from those artists and theorists who seem to have been preoccupied with isolating one medium from another. So, for example, we see in Soviet cinema of the 1920s and 30s a rejection of the theatrical, and an initially problematic relationship with sound (a topic to which I return in Chapter 5). And Brecht, whose work is so much concerned with an engagement with the specificity of his chosen medium, considered the combination of art forms, proposed by the notion of the *Gesamtkunstwerk*, highly problematic:

> ... so long as the arts are supposed to be 'fused' together, the various elements will all be equally degraded, and each will act as a mere 'feed' to the rest. The process of fusion extends to the spectator, who gets thrown into the melting pot too and becomes a passive (suffering) part of the total work of art. Witchcraft of this sort must of course be fought against. Whatever is intended to produce hypnosis is likely to induce sordid intoxication, or creates fog, has to be given up.
> *Words, music and setting must become independent of one another.* (Brecht, 1964: 37-38)

When so much of the discourse relating to the visual arts of this period revolves around notions of purity, abstraction and essence, it is significant that in the Whitney's work, synthesis and the synaesthetic challenge the boundaries between media. And yet, at the same time, the Whitneys strive to isolate and disassociate by avoiding representational

images, and significantly, the sound of recognisable instrumentation; what might be termed 'the sound of music.' Their decision to build the pendulum sound recorder is motivated partly by the very sourcelessness of electronica, outlined earlier. This is sound without mimetic or signitive potential; it is sound generated not by plucking, striking or blowing, but by the play of light. Not only do they wish to avoid the "disunifying distractions" created by the associations of existing pieces of music, but they also require a playerless, instrumentless, timeless, placeless sound – a music that aspires to nothingness. The solution of using "the simplest, least common, primitive" music they could find was unsatisfactory because its "origins (the players, instruments, time, place, etc)" created a similar disunity with their imagery (Whitney, 1947b: 32). Thus, they were in search of a sound that did not signify. Expressed in other terms, the material sound they required was *noise*: sound without identity, sound marked by non-identity.

This produces an interesting reversal of the normal formulations of noise. In a system which strives not to signify, the 'sound of music' becomes noise. Attali certainly makes this a theoretically possibility in the following definitions:

> A noise is a resonance that interferes with the audition of a message in the process of emission. A resonance is a set of simultaneous, pure sounds of determined frequency and differing intensity. Noise, then, does not exist in itself, but only in relation to the system within which it is inscribed: emitter, transmitter, receiver... (Attali, 1985: 26-27)

> ... noise is the term for a signal that interferes with the reception of a message by a receiver, even if the interfering signal itself has a meaning for that receiver. (Attali, 1985: 27)

In these formulations of noise, clearly based on models drawn from communication theory[9], it might paradoxically be the known and the representational that disrupt.

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[9] C.E. Shannon's highly influential paper, *A Mathematical Theory of Communication* (1948), proposed a general model of communication systems in which noise is introduced *into* a signal as it is relayed from transmitter to receiver. The schematic diagram of a general communication system proposed by Shannon is as follows:
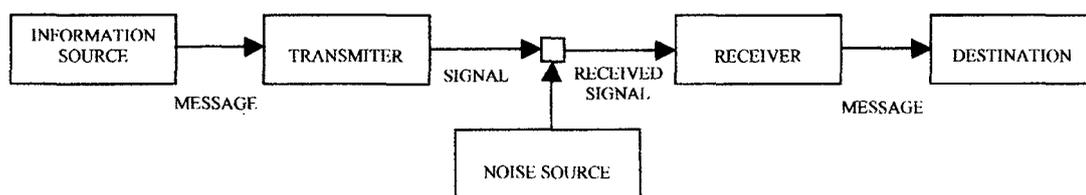
Significantly, this formulation gives noise potential to sounds that are familiar and wholly known. This was demonstrated in Montreal in 1998 when classical music was successfully used to rid railway stations of undesirable loiterers.[10] As will be shown later, this sets up the possibility that the now conventional sounds of electronica might yet regain their original power to disturb.

The tension between the abstract and the representational that we observe in the films and the writing of John and James Whitney points towards a broader sonic force that they work to hold in check. The Whitneys write disapprovingly that, had they employed previously composed music to accompany their images, the audience might bring its own "disunifying distractions" to their work in the form of past associations and preconceptions (Whitney, 1947b: 32). It might seem that the controlling and somewhat patronising attitude taken by the Brothers to their audience is a response to the perceived threat that the sound of music posed to the isolation and purity of their own abstract image 'compositions'. But what we can also see in their writing is a broader concern with the power of sound to destroy their new, perfect world. Their own modernity is described in terms of abstraction and essence, and their visual world is one of almost mathematical purity. This rigorous simplicity is reflected in their choice of structural approach: the visual matrix whose limited constituent elements parallel the notes of Schoenberg's tone row, and its articulation through optical printing, similarly determined by serial techniques. The images are those of space, of the mind, of the draftsman's table. In their purity, essence and isolation they represent a utopian vision of noiseless modernity: sounds and images that parallel the empty, expansive whiteness of the International Style.

Although Shannon's simple linear model has been developed and revised by subsequent theorists, this figuration of noise remains a powerful presence in the way the phenomenon is described and understood.

[10] "Opera has become the latest weapon employed by Montreal's Metro system to chase off youthful toughs who loaf about downtown stations, demanding spare change from passersby, chain-puffing cigarettes under "No Smoking" signs, cussing, spitting, and generally making life unpleasant for real subway riders. The police can't seem to frighten them away. But Metro officials reckon the late diva Maria Callas or tenor Luciano Pavarotti might just do the trick. Montreal is already claiming success, saying that there are fewer young idlers strutting about the city's busiest subway station and that regular riders are being hassled less since the opera started booming." Nickerson (1998, quoted in Clifford 1999)

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For the Whitneys, the visual world becomes an arena over which they have absolute domination. The desire for authorial control is apparent in their writing, couched in terms of artistic freedom:

> ... there is for us perhaps more personal freedom than is possible in any other motion picture field today. Our sound and image technique provide a complete means accessible to one creator. We believe in the future of the abstract film medium as one differing from the others in that it demands none of the large scale collaboration typical in present motion picture fields. (Whitney, 1947b: 33)

Thus in addition to the tension between the abstract and the representational, another, between freedom and control, order and expression, also runs throughout the work. And it is not just the sound of music that represents an uncontrollable threat to their new utopia, this hermetically clean world that must resist infection from the outside. The way in which they conceptualise sound-image relationships, and the way in which they corral their own electronica to meet their desired goals suggest that all sound might represent a disruptive presence. It must be remembered that their visual world was already established in *Twenty-four Variations*. With the *Film Exercises* the sonic is allowed into the Whitney project, but on condition that it is shaped, moulded, driven and curtailed by the visual. The film certainly proposes an audio-visual synthesis, but one in which the sonic is absorbed by the primary term of the audio-visual contract, which despite word order remains the *visual*. The relationship between sound and image shifts in the films; they are sometimes in tight synchronisation, sometimes in counterpoint. However, what both types of relationship demonstrate is that the sonic is consistently situated in relation to the visual. Notwithstanding the Whitney's claims to be working towards audio-visual synthesis, accompaniment seems the more appropriate term to describe sound's relation to the image in these films. In the following statement, it is clear that the primary term is always the visual:

> In composing the sound, we seek to exploit a spatial quality characteristic of the instrument which reinforces that effect of movement in space which we seek to achieve in the image. Since both image and sound can be time scored to fractions of a single motion picture frame, there is opened a new field of audio-visual rhythmic possibilities. The quality of sound evokes no strong image distraction such as was observed in other music. Consequently, the sound is easily integrated with the image. (Whitney, 1947b: 33)

When the Whitneys write of "fractions of a single motion picture frame", the degree of control they desire is telling. Certainly John's later career indicates clearly that he was

strongly attracted to structure. This shows itself in a 1970 interview with Gene Youngblood in which John passes comment on the contemporary audio-visual scene:

> The light show people are doing something like an infant pounding on the keys of a piano. Sometimes it can be very creative and terribly exciting. But in the long run, looking at it as an adult, it's just banging away at the piano without training.
> (Youngblood, 1970: 214)

Returning to the Whitney's 1947 essay, running through it is the undeclared notion that sound is the Dionysian term of the audio-visual relationship, and must be controlled. It is not only the sound of music that must be managed; somewhat paradoxically, the noise potential of their own noise must also to be contained.

But in what sense could their own music be a noisy threat to the audio-visual world they had created? In the *Film Exercises*, electronica simply cannot be left to do its own thing. Even more than half a century after the film was made, the soundtrack remains powerful and noisy. Its morphological unpredictability, its sudden changes in tone and amplitude, and the sheer intensity of its volume all retain the power to disturb, even if, for the modern listener, the soundtrack at times seems almost to verge on pastiche. But while the electronica must have one kind of noise potential – that is, it must lie outside of signification – it is also highly controlled. Hence, this is not noise that is in any sense beyond construction; rather, it is highly constructed. What ultimately controls these sounds is their *submission to a visual code*. Sounds which fail to obey the visual lead, which refuse to be subsumed by audio-visual synthesis, and which therefore maintain some form of independence from the image, run the risk of becoming noise *in relation to the visual* – setting up the kind of distraction the Whitneys worked so hard to avoid. It is for this reason that it is not only the sound of music that needed to be controlled; in addition, the audio-visual *turbulence* potentially created by their own electronic noise also needed containment. It is this turbulent noise that the Brothers seek to control by their careful scoring to fractions of a single motion picture frame, and by the move towards audio-visual synthesis as combination, by which complementarity of sound and image is ensured. The potential turbulence of electronica is here contained by a particular formulation of sound-image relationships: an audiovisuality that entrains the sonic

through complementarity. From this it is possible to make the observation that *sound can be noise not only in relation to other sounds, but also in relation to the image.*

This form of audio-visual turbulence is not to be understood in terms of counterpoint, the largely art-cinematic model of sound-image relationships developed in the early years of sound cinema, famously proposed in 1928 by the Soviet Filmmakers Eisenstein, Pudovkin and Alexandrov in *The Sound Film: A Statement from the USSR*. In any case, such a theoretical perspective does not apply to the *Film Exercises*, since the work is grounded in John's concerns with the complementarity of sound and image, and embraces audio-visual parallelism as well as contrapuntality. Rather, this potential audio-visual turbulence identifies an aspect of noise not covered by any existing theorisation – one that builds on a notion of the cinema as *transsensory* or *intersensory*.

In the *Film Exercises* the visual is always prioritised above the sonic, and the sonic is that which needs to be explained, contained, resisted and reinvented. The solution is science-fiction music: clear and synthetic, that in its rejection of the past comes to represent a voice from the future, thus clear of associations of any kind save those of the Whitneys' carefully controlled synthetic universe. Their science-fiction music is thus a sign of repression, a form of censorship, implicit in which is an acknowledgement of the power it seeks to repress. The paradoxical absence of noise in the purity of the Whitney's synthetic universe signals its repression, and thus reconnects us to notions of the uncanny. While the noise-free might be in some senses comforting (listening to Kraftwerk's *Autobahn* as I drive up the M1), it might also produce a sense of disquiet, as with the automata and dolls mentioned by Freud, or the situation signalled by the B-movie cliché, "It's quiet... maybe too quiet".

Charles Kriel has suggested that the noise-free is uncanny because it signals, and hence returns to our attention, what is repressed; in this case noise.[11] His argument, based on Freud's proposition that a repressed thing returned is uncanny, suggests that our

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[11] 'Noise and the Uncanny.' Presentation given at *Cybersonica: International Festival of Music and Sound*, ICA, London. June 5-7 2002.

unconscious desire to fill in blank space leads us to an encounter with that which has been repressed in order to create this same noiseless blank space. Alternatively, as Attali neatly puts it, "There is no order that does not contain disorder within itself..." (Attali, 1985: 34). Synthetica and Electronica, as the sound of utopia, always seems to carry within itself the dystopic seeds of its own undoing. Thus, drawing on the work of Kriel and Attali, we can say that the freedom and alterity of noise might conversely signal the repression and control that is central to any system in which noise is inscribed. Any system or code must necessarily repress a host of elements to function and define itself as a code or system, to draw itself out from the swirl and mix of elements and milieus. In his book *Genesis*, Michel Serres (1995) suggests that *everything* emerges from noise when he writes, "The raucous, anarchic, noisy, variegated, tiger-striped, zebra-streaked, jumbled-up, mixed-up multiple, criss-crossed by myriad colours and myriad shades, is possibility itself. It is a set of possible things, it may be *the* set of possible things" (Serres, 1995: 22).

If this is so, then in order for systems to emerge, things must be excluded from the total set of all possibilities, all milieus, all elements. As Deleuze and Guattari suggest in their essay *1837: Of the Refrain* (1988), it is the refrain that summons order from chaos. If Kriel's formulation of the uncanny suggests that the absence of noise is disturbing, then it perhaps follows that, what does not disturb – that which what we perceive as 'normal' – is somewhat paradoxically marked by the presence of noise; not as its constitutive outside, but as somehow immanent to it.

Noise and the monstrous

At the same time that the synthetic soundtracks of the Whitney Brothers' films sound adventurous and new, their preference for strict modelling of sonic phenomena points to a domestication of a potentially problematic sound. But what is it about electronica in particular that makes it so problematic? Why did it need to be contained by audio-visual synthesis? What might be the unwanted consequences should the electronic be left to its own devices? To understand this, it is necessary to consider the ways in which electronica has been deployed in classical cinema, and how this might help explore the issue of the relationship between noise's non-identity and its significatory potential.

The Whitneys were consciously creating machine sounds that had no historical precedent. But synthetic sound, chosen for its very unfamiliarity, brings a dynamic of unknowability into play. It is this that opens electronica up to a whole series of meanings, readings and conceptualisations over which the Whitneys could have had no control. Yet ironically, as we shall see, it is just this series of potential meanings that *domesticates* the synthetic within the milieu of classical cinema. The very newness and non-identity of synthetic sound (sourceless, playerless, timeless, placeless, unrecorded) presents a problem of categorisation and conceptualisation, and it is this that brings strange sound within those discourses commonly associated with the concept of noise. As outlined in Chapter 1, sound is most commonly conceptualised in terms of those objects perceived as its source. In this way the material sonic signifier directs us to the object referent. When this simple link with an object is lacking, as must be the case with 'new' sounds, the sonic presents the material status of a sign, but reveals itself to be a sign that does not signify. The problematic nature of this undigested materiality is evidenced by asking the simple question: what is the synthetic the sound of?

Such sounds are deemed to be 'noises.' Seen in this way, the category of noise becomes a catch-all, a dustbin in which the problematic nature of non-identity and materiality are deposited and hidden. In the context of signification, in order not to discredit the semiological project, this stuff has to be labelled 'noise': deformed or unformed entropic nonsense (non-signs) that demonstrate only the qualities of deformity or entropy. In terms of the cinema, if a sound is not music, speech or a sound effect, then it must be noise. Of course, this makes noise threatening, since it is composed of the monstrous detritus that cannot quite be hidden in the Saussurian dustbin. Noise becomes the monstrous-material, challenging notions of essence and identity, and simultaneously signalling the repression that is central to any system in which it is inscribed. We might visualise noise here as the nightmarish creatures assembled from the discarded, forgotten bone and hair that populate the films of Jan Svankmajer. There is, of course, nothing inherently monstrous in the material; it is exclusion that makes it so. Noise is noise partly because nobody wants to be reminded their system of classification does not work. Noise is thus a

collapse of stratification, a monstrous permeability. So, in the classic formulation of the horror film, it is the monster that threatens normality. And we can also say, leaning on Foucauldian notions of discourse, that the very proposition of normality constructs the monstrous. This indicates, once again, that noise is part of every system, no matter how repressed.

The alterity of noise is most usually formulated as subversion, interference, disruption, disconnection, and turbulence in relation to a dominant code or power. Attali writes: "Noise, then, does not exist in itself, but only in relation to the system within which it is inscribed: emitter, transmitter, receiver" (Attali, 1985: 26). But what Attali does not acknowledge is that what he refers to as 'the terror of noise' lies not only in violence, but also in undecidability, indeterminacy, unknowability, unmasterability, in its lack of essence: noise "does not exist in itself." Thus the terror of noise lies in part in its monstrosity. What Attali sets up with the definition quoted above, but does not address in his own analysis, is the fluidity, the mutability, the absolute lack of essence of noise. Noise becomes the slipperiest of sounds – it appears before us with its insistent particularity, yet evades adequate conceptualisation, since it can only ever have the non-identity of 'noise'. And if, as Attali states, "noise is the term for a signal that interferes with the reception of a message by a receiver" (Attali, 1985: 27), then noise must necessarily be that which is carried along with the message, infecting and inhabiting it, but yet can never be part of that message. It is thus always the other, always outside, unwelcome, and beyond or outside understanding – at least in terms proposed by the dominant code it infects. But noise in fact problematises any simple binary, dyadic formulations of isolated, individuated, and differentiated essence proposed by noise/signal and noise/order models. Part of the indeterminacy of noise rests in the fact that it is both internal (received along with the signal) and external (not part of the signal), neither fully one nor the other.

The uncertain status of the synthetic reveals itself in the case of Bebe and Louis Barron's electronic score for the 1956 MGM science-fiction film *Forbidden Planet*. The MGM machine had great problems absorbing the electronic sounds created by two avant-garde

composers whose previous experience had included spending one year working for John Cage, editing 1/4 inch tapes to realise the 500 page score for his composition *Williams Mix* (1952). The anxiety created by the electronica they produced for the film was expressed at an institutional level. In the first instance, the Musicians Union would not allow MGM to hire the two composers under normal terms and conditions. According to Bebe Barron at least one objection to their involvement in the film industry was the familiar concern that musicians would be put out of business by electronic music (Barron, 1997: 262); a sharp contrast to the Whitneys' approval of the liberating capacities of the machine. But the dispute hints at a deeper anxiety of demarcation. The Barrons were forbidden to call their work 'music', because of the union problem, and so it was termed 'electronic tonalities' by the studio. Further, when it came to Oscar nominations there was confusion over whether the soundtrack should be judged as music or sound effects: "… that's why our Academy nomination got screwed up. They didn't know who to give it to; they had no set categories for it" (Barron, 1997: 261).

Yet despite these difficulties, what the example of *Forbidden Planet* also demonstrates is the way in which cinema can absorb the shock of the new and disarm modernist noise. In addition to providing what is essentially film music, the Barron's electronica also supplied sound effects for the film's futuristic technology, including the ray guns used by the crew to combat the 'Monster from the Id' (Fig.3.8).
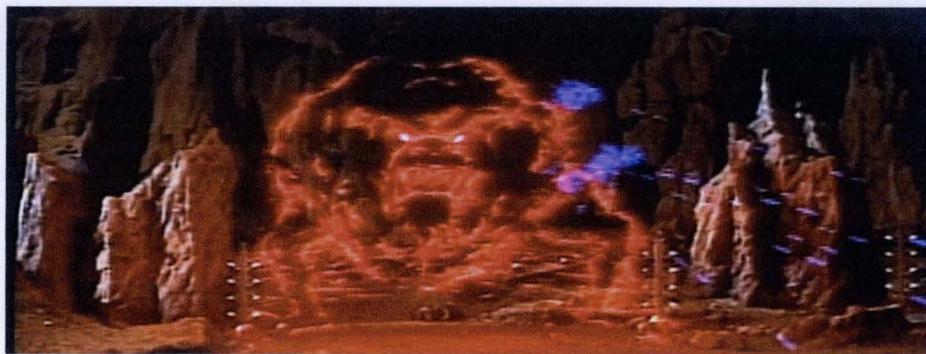
Fig. 3.8

Here, the synchronisation of sound and image domesticates electronica, since its narrative deployment as sound effects renders the sound of futuristic weaponry absolutely

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believable. And so the sonic articulation of modernity represented by electronica is rendered transparent within the narrative context of classical cinema.

Electronica and classical cinema

In classical cinema, notions of the terror of noise have been consistently articulated through, and refracted by, the deployment of electronica. Synthetic sounds, particularly in the 1940s and 1950s, were commonly used to signal the monstrous. Bebe Barron described the sounds she produced with Louis as "end-of-the-world-type" sounds (Barron, 1997: 256). However, on occasion she was also required by the film's producer to create 'love music', about which she comments:

> ... we went through absolute hell to get something that didn't sound awful, like monsters or war. So it was a tough assignment. I found some stuff that was legato notes, almost like viola sounds, although we would usually dump things if they resembled existing instruments. (Barron, 1997: 261).

Like the Whitneys, the Barrons were in pursuit of a new soundscape, and by their own admission, MGM was interested in their work because the sounds they were able to produce were monstrous. It is significant that a sound resembling a traditional instrument, and thereby familiar, was used for the love themes; this perhaps further explains why, conversely, the unfamiliar (and the unheimlich) has been so effectively employed within the milieu of horror.

The notion that noise is located within a system, infects it, and if not repressed can erupt, is paralleled in the dominant source of destruction and terror in the film, the Monster from the Id. The monster is at once insubstantial and yet powerfully destructive. It is invisible until it attempts to breech the protective force field erected by the film's band of heroes, the crew of the United Planets Space Cruiser. The monster's overt Freudian significance as the primitive, instinctual unconscious further hints at a disruptive presence within: one that must be repressed. In narrative terms, the monster appears to be unconsciously conjured by Dr Moebius, when his love for his daughter Altaira, and his control over her, is threatened by the arrival of visitors to his planet. This tension between repression and the potentially turbulent forces located within was also expressed at the level of film production. According to Barron, most of the "Freudian stuff", which she

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personally found so fascinating, was edited out the final film, in particular the scenes concerning dreams, and those between Dr Moebius and his daughter, with their clear sexual undertones of incestuous love (Barron, 1997: 257).

The connections between the synthetic and interference, disruption, infection and repression, run through the filmic use of one of the first electronic instruments heard on film soundtracks, the theremin. This instrument, which resembles a large radio cabinet with two protruding antenna, has no keys, strings or pedals, but is played by moving one's hands through an invisible electromagnetic field to produce the vibrato and portamento electronic sounds that are most often described as 'other-worldly.' In films of the 1940s and 1950s, the sound is often used to signify madness, fear, and emotional distress. In Hitchcock's 1945 film *Spellbound* (tagline: "The maddest love that ever possessed a woman"), Miklos Rozsa's score employed the theremin artistry of Dr Samuel Hoffman to suggest Gregory Peck's paranoid amnesia (Figs. 3.9-3.11).

Fig. 3.9   Fig. 3.10   Fig. 3.11

Figs. 3.9-3.11: Theremin moments from *Spellbound*. Each of Gregory Peck's paranoiac breakdowns is signalled on the soundtrack by the sound of the theremin.

What is important here is that the key to the male protagonist's mental problems lies in the repression of memory, and the accompanying generation of false memories. Once again, synthetic sound weaves its way through themes of noise and repression. Hoffman was always referred to as Dr Hoffman, and although in fact he was a chiropodist by profession, his title displaces both the Theremin and his mastery of it somewhat outside the world of music, and into the realms of science and technology, and perhaps even into the mysterious world of psychology or psychiatry that the sound of the instrument seems

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to connote. The Hoffman-Rozsa team also produced music for Billy Wilder's *The Lost Weekend* (1945). Here, in the story of a chronic alcoholic, the sounds of the Theremin suggest the unsteady psychological state of the central protagonist.

One of the ways in which the theremin sounds its otherness is its lack of adherence to a tempered scale. Although operating over three octaves, the theremin is capable of infinite divisions of tone. However, because of the nature of the way in which it is played, rather than producing single, distinct, isolated notes, the tendency is for the player to produce portamento-like transitions. Thus, the continuous pitch variation of the instrument places it into the category of what musicologists Levarie and Levy (1983) refer to as the 'barbarian', defined by them as any music that "deliberately returns to a precivilised, premusical state in which the unformed, the undistilled, the inarticulate are placed on the throne as supreme values" (Levarie & Levy, 1983: 73). According to their analysis, such sounds are only ever used in classical music to convincingly invoke the barbarian, as in for example, the use of cymbals by Mozart and Haydn. In addition to marking out the territory of musical 'normality', the authors also make the interesting observation that in classical music, portamenti – the smooth transitions from one note to another – are never prescribed, but left to the player's own taste (Levarie & Levy, 1983: 73). This is perhaps because within a musical tradition based on prescribed tonal values, such notation is impossible. That is, the portamento cannot be fully known within the text-based system of Western Classical music, and must therefore remain essentially external to it. If not, the presence of such sounds, which defy neat tonal organisation, challenges the whole foundation of a tempered musical system.[12] In this regard, the sounds of the Theremin parallel the unstable and problematic identity of *Spellbound*'s male protagonist. His shifts in identity, evidenced by paranoiac breakdown, point to a lack of claity, definition and essence, and an instability of subject identity that find their counterpart in the 'barbaric' portamenti of Hoffman's theremin. Thus the film's music signals what is normal (stable

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[12] Such sounds have rarely found their way into western orchestral music, an exception perhaps being Varèse's use of a siren in *Amériques* (1918-21). However, here its worldly associations give it a programmatic value that perhaps reduces the difficulty of accepting the sound within a western art music tradition.

identity) and permissible (sanity), and what is forbidden and monstrous (mental 'illness').[13]

While it is not unreasonable to suppose that as time went on, audiences must have become increasingly familiar with synthetic sound, its power to summon the strange seems to have been maintained. In Antonioni's *Il Deserto Rosso* (1964) Vittorio Gelmetti's electronic score is used to signal the mental breakdown of the film's central protagonist. Similarly Oskar Sala's electronic contribution to the soundtrack of Hitchcock's *The Birds* (1963) signals both breakdown and monstrosity. This film uses no traditional orchestral score, only electronic sound effects suggestive of birdsong, the cries of gulls and the flapping of wings. In the climactic scene in which Melanie Daniels is attacked by gulls, the bird-like sounds become increasingly electronic as the attack intensifies in ferocity. Like other films in which synthetic sounds figure as noise, there is a sense in which, in narrative terms, the threat to normality comes from both outside and within. The normally stable eco-system, in which humans and birds seem to coexist peacefully, is disturbed by the arrival of the beautiful Melanie Daniels. This active, self-confident woman disturbs the existing Oedipal stability of the relationship between Mitch Brenner and his mother Lydia. The disturbance to patriarchal, phallic order is expressed in the unexplained upset of the *natural* order of the ecosystem. Thus the sense is that the violence and noise that erupts when the birds attack has always been there, at least potentially, since this is not an attack from the outside, but rather an internal collapse of the existing order.

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[13] This sense of challenging notions of differentiation and essence is conveyed by Bernard Herrmann's score for Hitchcock's *Psycho* (1960). In dressing as his dead mother, speaking in her voice, and acting out her actions, Norman Bates attempts to challenge and transcend notions of fixed gender, personal identity, the self, the living and the dead. Herrmann's music in the famous shower scene seems to convey what Philip Brophy has termed "dissonant transsexuality" (Brophy, 2004: 10). But there is more at work here than dissonance. The screaming strings stand in for and echo Marion Crane's unheard screams as she is repeatedly stabbed by Bates, a sound that disrupts the neat trichotomy of speech, music and effects by blurring its categories.

The domestication of noise by music

But clearly, within cinema, synthetic sounds are domesticated in the first instance by plugging them into existing musical frameworks. While traditional western music continues to resist worldly sounds, it has a long tradition of absorbing musical effects. Thus, as Attali claims, the disruptive power of noise can be domesticated by music: "Noise is a weapon and music, primordially, is the formation, domestication and ritualization of that weapon as a simulacrum of ritual order" (Attali, 1985: 24). This is the position taken by the Whitneys in their preference for a strict modelling of sonic phenomena, undertaken through the adoption of Schoenberg's ideas. This move to contain electronica through submission to musical codes is also illustrated by the career of Clara Rockmore, which was dedicated to mastering the Theremin in order to enable her to play the work of composers such as Rachmaninov, Ravel and Tchaikovsky.

The interplay between codes of control and the noise of the synthetic illustrates what Attali terms 'controlled panic'. He argues that codes such as music, in their domestication of noise, make it knowable to the listener. In the case of harmonic music, his claim is that harmony resolves the anxiety created by dissonance, and so represents the organisation of controlled panic (Attali, 1985: 27). However, as we have seen, music is not the only code able to domesticate these sounds; both narrative and sound-image relationships also control the terror of the synthetic by increasing its transparency.

But even as a code, music has its own inherent noise potential. Attali states, "Noise... does not exist in itself, but only in relation to the system within which it is inscribed" (Attali, 1985: 26). Noise, potentially destructive to existing order systems, is a challenge to established power relationships. In this way not only can new forms of music stand in relation to established forms as noise, but also music itself might present a source of noise to wider society. Attali argues that for this reason, since the 13th century, music has been repressed and controlled, first by the church and later by capitalist political economy. We see in the history of electronica this very process in operation. While the Whitney's noise project could be accommodated by the existing musical discourse of Schoenberg's twelve-tone system, simultaneously its creators are inscribed in the world

of exchange. After their initial period of collaboration, John continued the trajectory begun with these early films, pursuing his investigations into the complementarity of music and visual art through computer technology, in particular in his research work for IBM. In the late 1950s, after a decade working in commercial film and television, John's experimental work led to the construction of an analogue computer, based on the mechanism used to guide anti-aircraft guns. In 1960 he established Motion Graphics Incorporated, using the computer to produce graphics and title sequences for the film and television industries.[14] In 1966 IBM awarded him its first artist in residence status and a three-year research grant to explore graphic motion using the IBM 360 Digital Computer. The corporation then provided further sponsorship for his work in 1971, demonstrating their faith in the commercial value of artistic experiment. His brother James, however, chose not to be inscribed into the world of exchange, effectively 'dropping out' to pursue his interests in Eastern philosophy and to work in ceramics and painting. He continued to make films, however, producing animations concerned with mystical, spiritual and speculative-scientific issues. His interest in cosmology is a dominant presence in the imagery of *Yantra* (1950-58) and *Lapis* (1963-66), the first two of only five films he made after his collaborative work with John in the 1940s, and which were painstakingly produced from hand-drawn patterns of dots. So in some ways, it is James who works through the logic of the noise of music. If as Attali suggests the musician is a marginal figure whose job it is to repress noise, but yet who remains forever at its edge, then James is the heroic outcast, whose marginality and outsider status is made manifest in his departure from brother John's commercial work.

In film, noise becomes domesticated by its entrainment within narrative, as in the case of *Forbidden Planet*, or by its submission to the visual or other structural logic in the case of the *Film Exercises*. In both cases, to use Adorno's terminology, noise loses its non-identity, and becomes containable within the context of identity thinking. In the case of commercial cinema, noise accepts commercial (exchange) value as it is absorbed into the significatory worlds of narrative film. In the context of the experimental work of the

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[14] The film *Catalogue* (1961) demonstrates the work Whitney produced during this period with the analogue computer.

Whitney Brothers, noise loses its non-identity through submission to established musical structures expressed in visual terms, and hence through its submission to a visually led notion of audio-visual fusion.

Noise and meaning

To recapitulate, one of the things that makes electronic sound monstrous is its ambiguity, its lack of essence. In a world where we conceive sounds in terms of their links with objects, electronic sound offers itself as problematic. Such indeterminacy is a challenge to identity thinking, and what Deleuze and Guattari refer to as an arboreal system of knowledge, reliant as it is on structuring notions of differentiation and essence. The electronic may occasionally sound like a viola, but it will always be Bebe Barron's bastard, deformed viola – and the further that sound moves from resembling a traditional instrument, the more deformed, freakish and monstrous it becomes. Since, as Attali claims, noise has no inherent meaning, it is tempting to think of the synthetic as always the other, always outside, unwelcome, and beyond or outside understanding. But in the films considered so far, and particularly in relation to the classical cinema, these sounds are stripped of their disruptive power through submission to narrative and musical codes. Through this form of domestication, the film weaves meaning through noise. In an art form dominated by narrative or visual structures, such domestication is clearly evident. But at the same time, in the films analysed here, there is enough controlled panic to show the synthetic's potential as noise in a significatory fashion. And this is why these sounds have been used so effectively to generate and signal horror and terror in narrative films.

From the analysis undertaken so far, three key observations can be made. Firstly, sounds which are familiar and wholly known can have noise potential. Secondly, sound can be considered noise not only in relation to other sounds, but also in relation to the image. Thirdly, this audio-visual turbulence is not only to be understood in terms of counterpoint (sound *not* illustrating image), but also as a possibility created by the transsensory or intersensory nature of cinema. Building on these ideas, what I will move on to consider now is whether it is theoretically and creatively possible to rearticulate or reframe electronica in such a way that these sounds maintain their radical potential in

contemporary work. Might there be some form of sonic sublation by which filmmakers could re-engage with the traditions and conventions of these sounds, but in a way that would give them contemporary resonance? And if so, how might such a shift be theorised and actualised in terms of the relationships between sound and image, listening and looking, hearing and seeing? If electronic sounds are no longer shocking, are there other ways in which conventional cinesonic formulations can still have political power, and if so, what might this contribute to our understanding of sound-image relationships?

1996. Deviant Beauty

Tina Keane's 1996 film *Deviant Beauty* has, in many ways, a classical electronic score. Essentially musical in its conception, it employs sampling, looping and various cut-up techniques to create synthetic sounds that entirely dominate the film's soundtrack. Keane explains that the soundtrack is a montage of processed sounds, many of which were recorded by the filmmaker Sandra Lahire who worked with Keane on the project; these include the sounds of running water and location recordings of Victoria Station (Keane, 2003). The sounds were then fed into a computer and processed and manipulated to produce the electronic sounds we hear on the soundtrack. There is in fact only one shot in the film that uses true sync sound, and which stands in opposition to the monumental dominance of wall-to-wall synthetica. Here is a soundtrack in which synchronous location sound has been eschewed in favour of a through-composed music track. Sounds from the diegetic world do make an appearance, such as the sounds of the footsteps and ragged breathing of the protagonist towards the end of the film. However, because these were added during post-production, and are not precisely synchronised with the action on-screen, they are not rendered as entirely diegetic or naturalistic, but rather find their place as narratively-situated sonic textures mixed and looped with the electronica.

To think through how the soundtrack is situated within the film in terms of its audiovisuality, it is necessary to consider first, and in some detail, the ways in which the film's images are organised. The overriding concern of the film is with a problematisation of visual pleasure. Keane writes, "*Deviant Beauty* embodies spectator, erotica, sexuality, death and decay. It questions our expectation of, and pleasure in, the

image, against the death and emptiness that lies beneath the alluring surface (Keane, 2005).

The film, also described by Keane as "an androgynous woman's surreal journey through the carnivalesque" (Keane, 2005), is divided into four parts.[15] In the first section, referred to by Keane as 'The Spectacle', the androgynous protagonist is introduced, observing a female trapeze artist performing in the circus. Notions of spectatorship, voyeurism and pleasure are foregrounded right from the first moments of the film, with the introductory shot of the protagonist observing the circus performer through opera glasses (Figs.3.12 & 3.13).
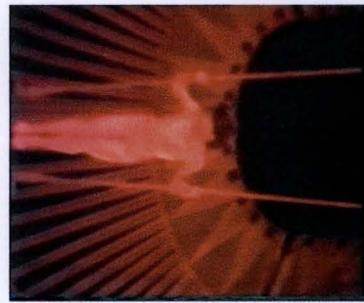
Fig. 3.12   Fig. 3.13

Keane comments:

> … it's all about this idea of pleasure… but the edge. My work always has this edge: where there's all this pleasure, but there's always an edge to it. And so I thought that could be interesting to have the male-female person looking through these glasses at the trapeze artist, which then again takes you into the idea of voyeurism, which also takes you into cinema. So it is again about cinema. So constructing that in a way, and using the glasses… as x-ray eyes that go beyond the body, beyond the skin and see what's actually happening. (Keane, 2003)

The second section, 'The Descent', features the protagonist descending a series of staircases in the dark and slightly shabby interior of what might be a warehouse or other industrial location (Fig.3.14). Her downward progress is intercut with images of trapeze artists, now located within the subterranean world into which she is descending. The various appearances of the two performers are marked by changes to their costume. No

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[15] The four divisions are not marked by these titles within in the film itself, but given in Keane's written description of the film (Keane, 2005).

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longer dressed in circus garb, the performer is shown to be naked beneath her jacket as she spins by her neck from a rope (Fig.3.15).

Fig. 3.14

Fig. 3.15

Another performer appears dressed only in underwear as she performs inelegant turns dangling from a loosely strung rope (Fig. 3.16). Also marking the protagonist's descent is an encounter with a menacing clown, juggling fireballs in the darkness (Fig.3.17).

Fig. 3.16

Fig. 3.17

The third section of the film, 'The Pit', features the protagonist in the dark, seedy environs of a cellar or basement, where she once again encounters the trapeze artists, now naked, swinging in and out of the shadows of this subterranean world (Fig. 3.18). After an encounter with her erotic target, the protagonist tries to escape from the Pit, running along the shadowy walls of the basement (Fig.3.19), as two naked performers, swinging towards each other on a trapeze, and finally succeed in locking hands.

Fig. 3.18

Fig. 3.19

In the last sequence of the film, 'The Landscape', the protagonist exits the Pit through a door opened by the clown, and runs across the landscape of the South Downs as the mocking laughter of the clown echoes across the soundtrack. The film then concludes with vertiginous shots of waves crashing against the base of the cliffs at Beachy Head.

Sound and imagetrack

The visual and narrative strategies deployed by Keane in *Deviant Beauty* can be situated within the project to deconstruct visual and narrative pleasure – a project that was manifested in structural film practice, and later theorised along gender lines by Laura Mulvey in her seminal article *Visual Pleasure and Narrative Cinema* (1975). The film's use of negative (fig. 3.20), the tension it establishes between representation and abstraction (Fig. 3.21), the use of long takes and the mixture of image formats (Super 8, 16mm and Hi8 Video) all serve to establish a dialectic space between materiality and representation.

Fig.3.20

Fig. 3.21

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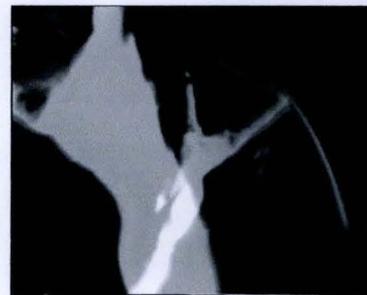
In *Deviant Beauty* this form of deconstructive materialist film practice runs in parallel with narrative strategies that work to problematise the relationships between visual pleasure, voyeurism and spectatorship. At a thematic level, the narrative deals with the tension between surface appearance and what lies beneath. Keane comments:

> It was very much about sense of loss, and also it was about the time of AIDS, and lots of people dying from AIDS at that time, and also quite a few women I'd known who'd died from breast cancer. It was very much about the idea... of the façade, in the sense of the idea of beauty: the façade in the way that people can look OK, but what's *actually* going on mentally and physically? (Keane, 2003)

Both the narrative and the narrative space of the film are key elements through which these themes are developed and explored. The protagonists's descent into the subterranean world taps into mythical surface/underworld dualisms, while the film's visual and narrative references to the carnivalesque and film noir are presented in such a way that their seductive allure is counterbalanced by a pervasive atmosphere of fear and menace. Thus the protagonist's pursuit of her erotic target results in rejection and humiliation. This rebuff is signalled by the cold stare of the circus performer, who returns both the protagonist's and our own voyeuristic gaze (Fig. 3.22).

Fig. 3.22   Fig. 3.23

This exchange of looks opens up to critical scrutiny every image in the film, and our own relationship with those images. The exchange of looks between the protagonist, the performer, and the viewer, foregrounds the mechanisms of cinema that it is usually concerned to repress. This look makes us uncomfortably aware of our own scopic drives, our own pleasure in the spectacle we are presented with, our own reaction to the erotic charge of Keane's imagery. This self-reflexive gaze towards the camera serves to

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implicate the spectator in the problems of voyeurism, signalled by Keane early in film by the shot of the protagonist surveying her erotic target through opera glasses.

Like the film's images, its cinesonic strategy can be contained and domesticated rather neatly within the discourses of deconstruction. There are few sounds that intrude into the electronic without being used up by it, the laughter of the clown towards the end of the film being the one exception, as the only shot with sync sound (Fig. 3.23). At one level, the soundtrack is divorced or distanced from the film's images, so that it exists very clearly within its own milieu. But like most sonic constructions situated within the context of the audio-visual, this independence is limited, and the sound here is rarely completely anempathetic.[16] This now raises the question of exactly how the electronic sounds used here relate to both the images and the narrative of the film.

In *Deviant Beauty* the formulation of the electronic as noise works in two ways to suggest a problem lurks beneath the surface of the visual. Firstly the electronic soundtrack exhibits a glassy indifference to the visual world. Keane explains that electronica was chosen for the soundtrack precisely because the sounds are not naturalistic, and are at some level disconnected from the images: "the idea of actually having electronic-type music – and shifting that – is the fact is it moves you away from how we normally read these films. It takes us into another space" (Keane, 2003).

The film creates an audio-visual dualism that suggests to the viewer the two terms of its binary configuration are not in harmony. That is, sound and image are not singing to the same hymn sheet. The images seem to suggest one thing, the soundtrack another, and at one level the soundtrack is indifferent to the visual. This is the world of the aquarium, a world observed through glass. The cinematic result is to create a feeling of two separate streams operating at different speeds, wherein the visual and the sonic are at some level clearly divorced. This disconcerting dualism at once submerges the viewer in this underwater world, and reflects that estrangement back into the space between the viewer

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[16] The term is used by Chion to describe sounds that exhibit conspicuous indifference to what is happening in a film's plot (Chion, 1994: 221).

and events onscreen[17]. The film opens with a low-angle shot of a trapeze artist performing in a circus tent, swinging in and out of frame (Fig.3.13), accompanied on the soundtrack by a repetitive bass line. The timbral quality of the low frequency sound used here further suggests this estrangement and distance from the image. This is sound which belongs in the distance, a backgrounded sound – the kind of sound that emanates from spaces divorced from our own. Such audio-visual dualism creates its own sense of gentle turbulence; an eddying that serves to signal to the viewer that beyond the binary nature of the surface/below figure, there is something amiss.

The second way in which Keane uses the soundtrack to suggest that a problem lurks beneath the surface of the visual is by harnessing the traditional, tried-and-tested power of the electronic to suggest an unsettling presence, a monstrous presence; in her own words, "the death and emptiness that lurk beneath the alluring surface." So, for example, when the computer generated title 'A leap a fall a figure' is cut into the sequence, the formerly rhythmic bass track is invaded by a detuning tone in a higher register. This repeated single sound racks up the conventional value of the electronic to create turbulence and tension. Its nature as a portamento sound, plus the fact that the sound is discordant as well as being out of synch with the rhythm track, all point to a traditional signification of noise. Through the turbulence generated between sound and image, Keane's electronica begins to unhinge the visual world with which we are presented.

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[17]The device is memorably employed by Godard in *Alphaville* (1965). A film that operates wholly on dual speeds, it is set in an anodyne, emotionless future that also stands for the contemporary Paris of 1965. Out of synch with its numbed inhabitants, the private detective protagonist Lemmy Caution is bemused by the spaced-out, government-issue prostitute who appears to be provided with his hotel room. The situation turns out to be a set-up for an assassination attempt. As Caution violently beats his assailant in the bathroom (while the prostitute calmly takes a bath), the soundtrack changes from a high-profile direct sound aesthetic to a simple use of musak. The technique is also used to great effect by Jacques Tati in *M. Hulot's Holiday* (1953). Hulot's innocent enjoyment playing jazz records at high volume disturbs the guests of the hotel engaged in their various peaceful leisure pursuits, bringing them to converge angrily on the source of the sonic disturbance. Hulot is shown with his back to the camera, peacefully puffing on his pipe as a 78 whizzes on the turntable by his chair, deafening the residents with fiercely up-tempo jazz. In both examples, differential flow of sound and images creates a strangely disconnected visual field. In *Alphaville*, music is truly anempathetic, in the sense that the blank-faced musak stands in meaningful opposition to the ultra-violence of the images.

Moments of synchronism between sound and image also work in a conventional way to suggest that the images with which we are presented should be viewed in a particular way. The first shot of both the protagonist and the clown are marked by changes on the soundtrack; in both cases the introduction of a bubbling, rapid electronic figure generated from recordings of running water, which when processed sound something like the tuning of a radio. The correspondence of the cutting of sound and image serves to fully anchor the effect of this sound at a narrative level. Using a very traditional cinematic device, Keane suggests to the spectator that the characters we are being introduced to are problematic in some way: they are perhaps not to be trusted, perhaps not all that they seem. And so the sound seems to signal problems to come.

This electronic soundtrack makes it clear there are no innocent visual pleasures, and that more is at stake in the subject-object binary formulation of voyeurism that literally meets the eye. All of which, of course, sits very comfortably with 30 years of deconstructive film theory and practice.

However, contrapuntal formulations, oppositional formulations, and deconstructive formulations of film theory and film practice all share one problem: they are in some way binary, in that their value must rest upon the presence of the thing they seek to work against. The value of these formulations is in challenging existing models and structures, but their limitation is that they must always be haunted by these same models and structures, forever returning us to the very thing they try to resist. What the practice of deconstruction produces must always therefore be the secondary term in an axiological binarism. Deconstruction *constructs* nothing; it refers us only to the thing we seek to deconstruct. Deconstruction allows the exploration of existing values, but has no way of disconnecting from a locus determined by that which is deconstructed. As a cinematic practice, deconstruction can only ever be defined in negative terms, and can never escape the conceptual systems it seeks to explore or challenge. The problem of such an approach is expressed more beautifully by Brecht when he asks the question, "What happens to the hole when the cheese is gone?"[18]

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[18] *Mother Courage*, scene VI.

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So, after 30 years of intensive critical undoing, how is it possible to move on to thinking and producing culture in another register? How can we rethink the place and role of sound in art film and video and move beyond the deconstructive and oppositional rationales and practices that have dominated avant-garde film for so long?

A re-conceptualisation of certain sonic practices in terms of noise opens up the possibility of re-energising cinesonic practices and theorisations that have become conventional, trapped in a binary loop. A readerly appropriation of *Deviant Beauty* can turn the film into a creative tool by which we might begin to rethink some aspects of film sound, specifically the undomestication of the electronic, and the existing formulations of sound-image relationships. It is in the sense of a defiance of the binary that the figure of noise can be used to appropriate the film's sonic strategy and resituate it within a range of cultural and political discourses beyond those implied by the comments of its creator or deconstructive film theory. And it is the figure of noise that presents the possibility of reframing electronica and restoring to it the power to engage cinematically with contemporary creative politics. Of course we can never return to the electronic its strangeness, and so it will never again be genuinely monstrous. We must therefore look to another aspect of noise with which the electronic might connect if it is to be reframed and reenergised.

What is this other aspect of noise? In addition to being disruptive and violent, noise is also inescapable, part of every system. In communication theory, noise is that which interrupts a signal; thus Attali states, "A Noise is a resonance that interferes with the audition of a message in the process of emission" (Attali, 1985: 26). The position on noise adopted by this formulation views it from the perspective of signal, thus situating noise as somehow external and separate from the primary term (as is also suggested by Shannon's model of communication). In relation to the signal, noise is therefore figured as the other, always outside, unwelcome, and beyond understanding in the terms proposed by the dominant code. However, this separation of noise and signal is somewhat artificial, since noise in a communication system is carried along with a message,

infecting and inhabiting it. So at the same time as being conceived in terms of externality, noise is in some sense also internal. Neither fully one nor the other, noise stands for the outside but is located within. In the terms proposed by the binary formulation 'internal-external', noise is undecidable, indeterminate. In this way the figure of noise inscribed within a system challenges conceptual formulations founded on isolation, individuation, differentiation and essence. It is in this respect that the noise-value of electronica might represent a challenge to simple binary formulations of sound and image. And it is in this respect, also, that noise presents radical aesthetic and political alternatives to the model of noise as violence.

The ineluctable modality of noise

In *Deviant Beauty* a dissolution of the binary is enacted at a sonic level through the continuous presence of the electronic. The electronica is insistent, inescapable, and inhabits the sonic world of the film to the exclusion of almost all else. The soundtrack is a pervasive viral presence that haunts every image, fills every image, invading the audience's senses. In this way, the relentless electronic soundtrack becomes noise in relation to the image, manifesting the theoretical possibility presented by the earlier analysis of the Whitneys' *Film Exercises*. Keane's electronica maintains a constant *transsensory* presence within the visual throughout the duration of the film. And so while allegiances with characters may change, or while our emotions shift according to events on-screen, the soundtrack continues to infect the visual. This remains a familiar cinesonic formulation, a counterpoint of sound and image, and the sound continues to work on an entirely conventional level to signify the monstrous. But by rethinking the continuous presence of wall-to-wall electronica in terms of the ineluctable modality of noise, we begin to loosen the grip of dyadic formulations over the film and our understanding of it.

The audiovisual noise generated by the soundtrack leads to a recognition and an acceptance of the inescapable turbulence that exists between sound and image: this turbulence is systemic, embodied, and not simply the signifier of a problem that deconstruction invites us to oppose. This noise will be forever present, infecting the images; it will sometimes be intimate, sometimes distant, but this electronic sound is

inescapable. Listened to in this way, the film's cinesonic strategy unlocks the radical potential of the formerly domesticated noise of electronica, letting it loose to inhabit and suffuse the visual experience of looking. It is at the level of audiovisuality that the electronic becomes delinquent once again.

We might now think afresh how the film's formal cinesonic strategy works in relation to one of the Keane's key concerns, the problematisation of visual pleasure. Of course, *Deviant Beauty* shows that the spectator's scopic drives are not innocent. If we listen to the soundtrack as a contrapuntal or deconstructive device, it signals, in Keane's own words, "the death and emptiness that lies beneath the alluring surface" (Keane, 2005). It is in this way that the soundtrack plays its part in the film's questioning of "our expectation of, and pleasure in, the image" (Keane, 2005). But auditioned in this way, the film can go no further than suggesting that is a problem. If, however, we approach the soundtrack as noise, considering sound-image relations in terms of an audiovisuality of permeation, infiltration and invasion, then the film moves beyond a simple condemnation of visual pleasure to propose that the problematic aspects of spectatorship are continually present, unavoidable and inescapable. Just like noise in a communication system, our own personal desires and motivations are continually present and active; they cannot simply by eradicated by a mistaken conceptual move to censor or externalise. In this way the film's audiovisuality proposes a productive acceptance of the desires and pleasures that form our scopic drives, however painful such acceptance might be. In the same way that the image is host to the noise of electronica, and in the same way that the image is unable to resist the persistent presence of the electronic, so we are host to those desires and drives that have been formulated as problematic by a particular strand of discourse relating to visual pleasure. Thus when Keane describes the humiliating laughter of the clown, she might also be describing the way in which the rest of the soundtrack figures the problematic of visual pleasure: "There's no escape from it. You go out to the landscape, you're running, and you're trying to move away from it, but there it is – it's following you" (Keane, 2003).

It is this problematisation of visual pleasure that manifests itself in some aspects of British structural film practice, most particularly in the work of Peter Gidal, from whose films even the representation of the human form is effectively prohibited. The soundtrack of *Deviant Beauty* thus negotiates a place in relation to visual pleasure that is both complex and difficult, rejecting any simplistic, formulaic stance of negation. In this way, the cinesonics of *Deviant Beauty* assume a position and work through a logic that has been identified in the purely visual aspects of Keane's work by the critic Jean Fisher:

> ... in the rather censorial climate against visual pleasure and the imaged female body that prevailed during the 1970s there was always something subversive in Keane's refusal to relinquish either; a recognition above all of the necessarily erotic essence of the image, quite distinct from any depictions of flesh, where a mutual seduction between the work's intensities and the gaze of the viewer is the enabling condition for realising a new perception of existence. (Dyer, Fisher & Wollen, 2004: 8-9)

What the electronica of Keane's film can offer is a route into considering the problematic questions of visual pleasure, through the film's own audiovisuality. *Deviant Beauty*'s formulation of sound-image relationships works in terms of transsensory permeation rather than the isolation, individuation and differentiation of sound and vision normally encountered in deconstructive work that engages with the issue only through negation and opposition. Make no mistake, the film is no celebration of visual pleasure; the protagonist is haunted by the laughter of the clown as she runs away from the Pit, across the Landscape. The final images of the film are of the white chalk cliffs at Beachy Head, a landmark infamous for its lure to those wishing to take their own lives. But in the figure of noise, *Deviant Beauty* actualises Attali's claim that there is no order that does not contain disorder within itself. If the problematic of visual pleasure is viewed as something which we as spectators must engage with and work with, rather than something which we should *simply* recognise and oppose, then we place ourselves in a position in which movement replaces stasis, where we can think in terms other than those of the dialectic or binary opposition.

There has been a consistent tendency to think of noise in the arts in predominantly Futurist/avant-gardist terms, a modernist conception of noise as shocking, violent, and war-like. But the fact is that electronic sounds are no longer shocking. However, they do posses a morphological density that is difficult to resist or escape at a sensory level. The

synthetic nature of these sounds gives them the potential of almost infinite duration. Here is a post-human sound that defies the familiar bodily narratives of plucking, hitting or blowing. In this sense it has an insistence that is rare in acoustic instrumentation, although occasionally heard, for example, in the extended solos of John Coltrane, in which the endless rescrambling of modal phrases presents a barrage of notes that refuses to release the listener. Electronica can present this dense, drone-like saturated feeling as well as its explosive, interruptive qualities. What *Deviant Beauty* demonstrates is that if sound can dog us, bug us, or perhaps even terrorise by saturation, then conventional cinesonic formulations can still have political power, and even hackneyed electronica can find contemporary relevance by reconnecting with its potential as noise.

This radical potential of noise means we no longer need to think of noise as political simply in terms of the discrete, combative attack: noise as warfare. Rather, noise becomes political through its insistent attack on *identity* by permeation and internal dissolution, rather than by deconstruction from without. This is essentially a move from montage to folding. What this in turn offers is a conceptual reformulation of sound-image relationships, in which a potentially radical audiovisuality is thought in terms of permeation, rather than the binary differentiation inherent in the image-plus-sound formulations of deconstruction, or the vertical montage of contrapuntality. And herein lies the value of the figures of noise as a way of negotiating audiovisuality in terms other than those proposed by existing models of sound-image relationships. The ineluctable modality of noise (ever-present within the signal, that materiality from which the signal temporarily emerges) presents a dyadic formulation that resists binary modalities reliant upon differentiation, mutual exclusivity, or opposition. As such, it provides a way of critically negotiating sound-image relationships that truly engages with the notion of *audiovisuality*.

Refrain

The form of audiovisuality considered in this chapter suggests that rather than disentangling the sonic from the visual in both film theory and practice, perhaps we should look to ways in which they can become productively entangled. The relationship

between noise and meaning is one of mutual inscription. Where texts, meanings, constructions and articulations are prioritised, we tend to think of noise as being inscribed within and against a signal. But as Serres suggests, and as my own analysis of the *unheimlich* proposes, noise is a constant presence. So just as noise is inscribed against meaning, meaning is inscribed within and against noise; meaning emerges from noise, the total set of all possibilities, all milieus, all materialities. This relationship is not easily described. Serres explains it in the following terms: "As soon a phenomenon appears, it leaves the noise; as soon as a form looms or pokes through, it reveals itself by veiling noise. So noise is not a matter of phenomenology, so it is a matter of being itself" (Serres, 1995: 13). However, this still creates the problem of the sense of separation; of noise as background, signal as foreground. What the notion of audiovisuality requires is a formulation of mutual inscription that describes a symbiotic relationship. This is the mutual interaction and interdependence that forms what Deleuze and Guattari might describe as a 'refrain' – a kind of counterpoint, but one in which its constituent elements can never be separated. As a conceptual formulation, this configuration engages with dyadic constructions (like sound-image relationships), but in a way that resists the binary separation of elements. As a way of figuring sound-image relationships, it offers to the consideration of audiovisuality an engagement with forms of fusion and inseparability. In the following chapter, these notions are brought to bear on a consideration of the audio-visual practice of 'mickey-mousing' – the pejorative term used in the film industry to describe the sonic illustration of visual events.

As a cinesonic modality, mickey-mousing has often been seen in negative terms within in classical film practice. However, when considered within other cinesonic contexts, a critical engagement with this practice opens up routes into thinking an audiovisuality that differs radically from that proposed by hegemonic forms of dominant cinema. Here sound is not a significatory supplement to the image, but instead fuses with it, so that the two terms of the audiovisual begin to merge in such a way that they lose their individual identities. The practice of mickey-mousing creates moments when, to use Norman

McLaren's definition of synaesthesia, the eye hears and the ear sees[19]. As such mickey-mousing provides a useful case study for further examination of conceptual and creative modalities that embrace forms of fusion, and resist differentiation and deconstruction.

In addition to the practice of mickey-mousing, however, the cartoon is marked by forms of audible sonic montage. Again, this is a practice that seems to run contrary to classical forms of soundtrack construction, which as Doane (1985) and Altman (1985) suggest, tend to work towards inaudible sound editing through the use of fades and audio dissolves. The compositional practices of mickey-mousing and montage have been celebrated by a number of musicians and writers for their radical potential in musical terms. But this raises the question, how does any supposed radical potential of the cartoon soundtrack fare in the complex intersection of audio-visual relationships that define the cartoon genre, and in particular the correspondence of sound and image pejoratively termed mickey-mousing? How does such radicality fare when heard within the context of a *Bugs Bunny* or *Road Runner* cartoon? That, is how does the audiovisuality of the cartoon relate to its sonic dimensions? Can the audio-visual fusion represented by mickey-mousing, for example, be reconciled with the inherent *irreconcilability* of sonic montage?

Asking these questions both allows and necessitates a close mapping of the cinesonic. In previous chapters this has been undertaken in relation to the conceptualisation of sound, and the elements that make up the soundtrack. In the following chapter, it is the notion of morphology that is used to engage more deeply in a consideration of sound-image relationships. What I propose is that the descriptive potential of musical morphology can be productively applied to a consideration of the way in which sound-image relationships play through motifs of freedom and control that mark the cartoon soundtrack. This notion of morphology is explored primarily through the formulations of territorialisation and the refrain proposed by Gilles Deleuze and Felix Guattari in their essay *1837: Of the Refrain* (1988). This serves as a key theoretical resource in what follows, as I propose that the

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[19] McLaren used this phrase to describe his animated film *Synchromy* (1970). Here the graphic patterns created by McLaren on the optical soundtrack, and which generate the electronic sounds we hear, are reprinted on the image track.

ideas contained within it can be usefully applied to thinking through the way in which the film, as an audio-visual construct, claims its territory from both sound and image.

Chapter 4

MICKEY-MOUSING

TERMITE
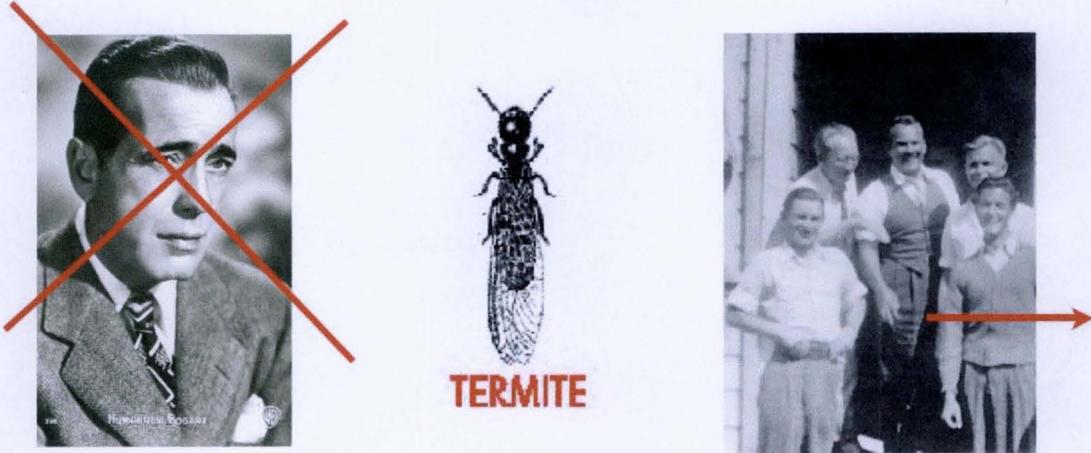
The big stick

Cartoon sound begins with violence, or rather its threat. This is the case with the Warner Bros. cartoons of the 40s and 50s whose soundtracks are emblematic of the genre. Inscribed in the tapes of the recording sessions[1] is the sound of arranger Milt Franklyn tapping his conductor's baton on the music stand as he summons order from chaos. The conversation of the fifty or so people assembled in the recording studio ceases. His rhythmic drumming refrain is a rallying call: a point of focus before engagement with the enemy or amid the swirling violence of battle. Romantically we imagine the members of the Warner Bros. orchestra rallied by Franklyn's rhythmic refrain to work collaboratively for their art, for the common good. But the military associations of the baton hint at control by the threat of violence. Nobody wants to be hit with a big stick. This refrain is a territorial assemblage; it marks Franklyn's territory, declaring those falling within it his

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[1] Released on Stalling (1990) [sound recording: CD].

subjects.

But this surely runs contrary to the cherished image of cartoons as minoritarian, free, anarchic, liberating, anti-establishment, and all the rest of it. After all, the chat that Franklyn silences is one of excitement, of enthusiastic anticipation; these recording sessions represented a break from routine for the musicians involved.

Carl Stalling:	The musicians said they enjoyed the cartoons more than anything else. They looked forward to coming down to record the cartoons. It was screwy stuff, you know. (Barrier, 1971: 26)
Scott Bradley:	I hope Dr. Schoenberg will forgive me for using *his system* to produce funny music, but even the boys in the orchestra laughed when we were recording it. (Bradley, 2002: 118)
Bob Clampett:	Many's the time that Carl, Treg [Brown] and I waited while the fifty-piece Warner Bros. orchestra would finish recording the score for a Bogart or Bette Davis feature, and then bat out one of my *Bugs Bunny* or *Porky* shorts. When Leo Forbstein [the orchestra's director] told them to put our cartoon score on their stands, a wave of relief would spread through the entire orchestra. Suddenly, two violinists would pop up and begin duelling with their bows, or some such horseplay. Others would call out things in jest, and by the time Carl stepped to the podium, raised his baton and they broke into the unnaturally rapid tempo of our *Merrie Melodies* theme song (*'Merrily We Roll Along'*), or subtitle, or whatever, they would be in a completely different mood for Bugs than for Bogey. (Barrier, 1971: 26)

Although cartoons occupy a central and inescapable place in popular culture, they are nevertheless in some ways marginalised in relation to the classical Hollywood film text: the animated cartoon is indeed a major minor form. It is the marginality of its minor mode that grants the cartoon a certain audio-visual license, the possibility of non-conformity to the hegemonic and largely signitive models of sound-image relations proposed by mainstream narrative fiction film. This marginality manifests itself in a number of ways. There is animation's position within the film industry, which in the 30's and '40s represented a craft practice of a particularly labour intensive kind, a cottage industry resistant to mass production and mechanisation situated uncomfortably within an expanding multinational corporation. The animator Tex Avery was famously resistant to working with others, dispensing with a scriptwriter, preferring instead to write his own stories, and working to maintain control over as much of the laborious process of

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animation as possible rather than delegating to assistants. Then there is the marginality of its creators and the marginality of critical writing[2], indicated by John Robert Tebbel's

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[2] One of the best-known and earliest critical commentaries offered on animated cartoons is that associated with the Frankfurt School, in the critiques of Disney offered by Adorno and Benjamin. Adorno sees the work of Disney as essentially reactionary, and locates it squarely within his critiques of mass culture and the culture industry. While he is moderately approving of early cartoons marked by a strong narrative drive, he proposes the evolution of the cartoon as one towards a mere sequencing of violence and destruction: "with the audience in pursuit, the protagonist becomes the worthless object of general violence. The quantity of organized amusement changes into the quality of organized cruelty" (Adorno & Horkheimer, 1997: 138). The psycho-political impact of this on the viewer, and on society, is the promotion of a dehumanising, alienating barbarism and collective sadomasochism. The violence done to, and inflicted by, cartoon characters is seen by Adorno to impact on the psyche of the viewer in a particularly unpleasant, repressive manner: "In so far as cartoons do any more than accustom the senses to a new tempo, they hammer into every brain the old lesson that continuous friction, the breaking down of all individual resistance, is the condition of life in this society. Donald Duck in the cartoons and the unfortunate in real life get their thrashing so that the audience can learn to take their own punishment. The enjoyment of the violence suffered by the movie character turns into violence against the spectator" (Adorno & Horkheimer, 1997: 138-9).

More positively, Benjamin proposes that the value of Disney's *Mickey Mouse* cartoons lies precisely in the fact that they *make visible* the naturalised, dehumanising effects of industrial modernity: "here we see for the first time that it is possible to have one's own arm, even one's own body stolen" (Benjamin, 1999: 545). Thus Benjamin suggests the reason for the popularity of these cartoons lies in the audience's identification with the condition of their protagonists: "the explanation for the huge popularity of these films is not mechanization, their form: nor is it a misunderstanding. It is simply the fact that the public recognizes its own life in them" (Benjamin, 1999: 545). Furthermore, he also seems to suggest that these cartoons may possess emancipatory potential, in proposing the possibility of surviving the most damaging aspects of urban-industrial modernity: "In these films, mankind makes preparations to survive civilisation. Mickey Mouse proves that a creature can still survive even when it has thrown off all resemblance to a human being" (Benjamin, 1999: 545).

Although the Frankfurt School analysis of Disney offers little direct commentary on sound, Adorno and Eisler do provide a few briefs comments on cartoon music in *Composing for the Films*. Here they recognise the creative potential of high-fidelity, surround-sound in Disney's "otherwise questionable" film *Fantasia* (Adorno & Eisler, 1994: 111), and bemoan the 'outdated' use of the whole-tone scale in films as a whole, while admitting that the disproportionate scale of this music can produce comic effects when 'mismatched' with certain images, as in animated cartoons (1994:17). A brief comment made in relation to Eisenstein's observations on the correspondence of sound and image (dealt with separately later in this chapter), would indicate they share the general view that mickey-mousing is poor practice: "If, in the name of higher unity, picture and music were to present this [shared] rhythm incessantly and simultaneously, the relations between the two media would be pedantically restricted, and the result would be unbearable monotony" (1994: 68).

The work of Hansen (1993) and Leslie (2002) provides insightful critical commentary on the Frankfurt School analysis of Disney, assessing and responding to the differences between the stances adopted by Adorno and Benjamin, and the ways in which the cartoon itself may have informed the broader critical project of the two writers. While Frankfurt criticism and the work that draws upon it might offer an interesting and potentially productive means by which to

comment that, "Chuck Jones, for one, has had the good fortune to be alive to bask in a little overdue glory, after having completed his greatest works in nearly complete obscurity" (Tebbel, 1992: 64).

It is this marginality that might just have made it possible for animation to escape the stultifying grasp of the studio, its executives, its power systems, its financial goals, its stars. It is this marginality that gives permission for the *Pepe le Pew* project, a sustained and consistent body of work exploring and celebrating the malodorous; such a project could only ever be sustainable within the cartoon genre. It would be unthinkable to see or hear the effects of Bogart or Bette Davis breaking wind, whereas when Tex Avery farted he instructed an associate to "catch that one and paint it green" (Jones, 1999: 102).

The location of the animation department in the Warner Bros. studio complex fixes this marginality spatially. Renamed by those working there as 'Termite Terrace', it was mythically populated by geeky freaks. Avery would be so driven by his work he would resist the urge to urinate, resulting in a regular sprint from his desk in Termite Terrace to reach a lavatory before he lost bladder control. He once left it too long and ended up in hospital. The entomic address, evoking poverty, decay, the lower orders of life, is a self-mythologisation, an appropriation by the animators of their place at the margins, a place that is almost outside. Avery's bladder-driven antics express the best in marginal behaviour: eccentric, oppositional, uncontainable within the boardrooms of Warner Bros., a bit of an embarrassment, and above all funny, like the silent, imagined farts never dropped by Bogart. This marginality helps to construct for the cartoon a minoritarian, counter-cultural status, which then becomes not only part of the cartoon's identity and cultural value but also, paradoxically, its commercial worth. Thus in his study of the ways in which the Warner Bros. cartoons negotiated the transition to sound, Hank Sartin (1998) proposes that the improvised Heath-Robinsonesque machines and musical instruments

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address some of the issues raised by my own study (see Chapter 3), the specificity of its commentary on cartoons does not engage with the issues of audiovisuality discussed here. Similarly, an engagement with the theoretical specificity of the Frankfurt School's concern with issues relating to the sociology of mass media, and the debates constructed around an opposition between 'high' and 'low' culture, lies beyond the scope of this study.

that appear in cartoons of the early 1930s paralleled a wider perception and understanding of cartoon production at that time. Although this was an image originally cultivated by the animators themselves, "The popular press was happy to perpetuate these myths of the rebellious marginalized auteurs of the cartoon studio" (Sartin, 1998: 83).

Tex Avery's refreshingly literal line of flight is thought through sonically in the cartoon music of Carl Stalling, Musical Director for Warners Bros. animation from 1936 to 1958. It is predominantly through Stalling's termite music that I would like to consider the syntactic and morphological aspects of the cartoon genre, and specifically the interaction of sound and image. There were, and are of course, notable and accomplished composers other than Stalling working in animated cartoons. But for aesthetic and financial reasons explored later in this chapter, Stalling's own particular approach to composition threw the practices of quotation and montage – which I hold to be emblematic of the cartoon genre – into much sharper relief than, say, the music of his best known contemporary, MGM's Scott Bradley.

Ideas about the relationship between the sonic and the visual are thought through and manifested differently in each historical period and film genre, but what is perhaps significant about the cartoon is its departure from the cinesonic model proposed by classical cinema, with its well-modulated, well-behaved and self-effacing soundtrack. And if film sound itself has traditionally occupied a marginal position in relation to the image, both in terms of production and criticism, then Stalling's Termite Art,[3] as subset of a subset, stands at the very outer limits of the world of mainstream cinema. But does

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[3] Manny Farber used the term 'Termite art' in his 1962 article *White Elephant Art Vs. Termite Art* (Reprinted in Farber [1998]). Here Farber identifies films that self-consciously aspire to 'Great art' as White Elephant Art ("Antonioni's aspiration is to pin the viewer to the wall and slug him with wet towels of artiness and significance" [Farber, 1998: 143]). What Farber considers to be Termite Art are those films and performances that appear more modest and self-effacing, yet which prove to be, in his opinion, much more powerful. Thus John Wayne is considered by Farber to be a great Termite performer, while Lee Marvin is described as a "flogging overactor" (1998: 136). While connections could be made between Farber's use of the term and my own, I employ it here simply to refer to and distinguish the work of Carl Stalling, and to make the connection with Termite Terrace.

the marginality of cartoon sound really enable the development or implementation of radical sonic practices?

> Separating his music from the images it was created to support, it becomes clear that Stalling was one of the most revolutionary visionaries in American music – especially in his conception of time. In following the visual logic of screen action rather than the traditional rules of musical form (development, theme, variations, etc.), Stalling created a radical compositional arc unprecedented in the history of music. (Zorn, 1990)

By what right, to what ends, and with what consequences do we follow John Zorn's suggestion of separating Stalling's music from the images it was composed to accompany? Montage, fragmentation, forms of dissonance, and lack of resolution might well place this compositional practice comfortably alongside Cubism, Futurism, Soviet Montage, Hip-Hop, turntablism and video scratching. But how does the supposed radical potential of this music fare in the complex intersection of audio-visual relationships that define the cartoon genre?

Mickey-mousing

In the essay *1837: Of the Refrain*, Deleuze and Guattari (1988: 310-350) propose that territory is borrowed from milieus. In considering an audio-visual construct like the film, we can adopt and transpose this Deleuzian formulation to think of sound and image as two separate milieus. Moment by moment the film bites its territory from sound and image. Within the terms of the contract between sound and image required by the film, there are a number of possible audio-visual relationships; but significantly, what the cartoon genre presents are moments when sound and image *echo to the same refrain* – moments of mickey-mousing.

Sonic montage and the correspondence of sound and image, are two tropes that are emblematic of Stalling's compositional practice. While the radical value of montage has been recognised in many art forms, the correspondence of sound and image in the audio-visual text has traditionally been denigrated and resisted; particularly, but not exclusively, within the context of classical cinematic forms. As an audio-visual practice the sonic illustration of visual events is most often discussed in terms of 'redundancy', a notion that

dogs proper discussion of sound-image relationships. The close matching and correspondence of musical sound and image referred to as mickey-mousing is seen in negative terms. Curtis observes that: "mickey-mousing seems to carry a pejorative meaning, both because of the lower status animated cartoons have traditionally held in film studies and because of the implication that exact illustration is a rather tedious and silly way to relate music and image" (Curtis, 1992: 201).

Mickey-mousing is poor practice. It is considered unsubtle, unnecessary and creates humour when none is required. Max Steiner, whose status in the history of film composition is indicated by the fact that he is popularly referred to as the 'father of sound-film music', arrived in Hollywood in 1929, and in a career that spanned four decades scored many major movies, including *King Kong* (1933), *Gone With the Wind* (1939) *Casablanca* (1942) and *The Searchers* (1956). It was largely Steiner who popularised the model of lush orchestral scores of string-dominated melodic music that came to dominate the soundtrack of classical Hollywood cinema, drawing heavily on the conventions of 19th century European concert music. However, the composer also receives critical attention because of his use of close musical illustration of on-screen action. The following, from Irwin Bazelon's *Knowing the Score: Notes on Film Music* (1975) gives a clear and typical indication of how such a compositional practice is viewed within the field of film music and criticism:

> Steiner was one of the first practitioners of the device known in the trade as 'Mickeymousing'... Steiner had a special weakness for this practice, which often vulgarized the scenes he was scoring. Using highly illustrative music to echo the action and mood of the film, he translated into musical terms the very movements depicted on the screen – sometimes in precise synchronization. This redundancy – the viewer already sees the action unfolding before him – acts as a distraction, amplifying its own musical shortcomings. By constantly calling attention to itself, the Mickeymoused score becomes offensive and tiresome. (Bazelon, 1975: 24)

In addition to characterising mickey-mousing as 'vulgar' and 'redundant', and formulating Steiner's interest in it as a 'weakness', Bazelon also suggests it is somehow primitive, its practice representing a state of cultural and artistic under-development:

> It is easy to take a pejorative attitude toward the technique of Mickeymousing, but one must think of the practice in terms of its time. In those days nobody really understood anything about film music, and the film-makers themselves were often as musically naive as their audience. (Bazelon, 1975: 25)

Even within the small body of writing dedicated to cartoon music, mickey-mousing has been framed in negative terms. Writing in 1949 on the role of the cartoon composer, Ingolf Dahl characterises the practice as "musical illustration", adding, "the degree to which illustration is lifted above the purely mechanical duplication of action depends... on the inventiveness of the composer" (Dahl, 1974: 187). Reflecting on the trends in contemporary scoring for animation, he bemoans the fact that, "the music is added to a predetermined course of hectic events and is in many cases required to do nothing more than duplicate the action by synchronous illustration, taking the role of sound effect together with the role of musical characterization" (Dahl, 1974: 184). Once again, the sense is that mickey-mousing is somehow inferior to other modes of film music composition.

However, behind the value judgment implied in this audio-visual practice is the notion that a sound can 'go with' an image and that there are degrees of closeness of this 'going with.' Hence, music can follow the image *too* closely, and a composer like Steiner can be found guilty of mickey-mousing. But what is it that determines this adhesion of sound to image, and what are the parameters of mickey-mousing?

Musical morphology

A starting point for a consideration of this issue is provided by the notion of morphology, understood here in the sense of 'shape' as development over time. If a film score were to be written whereby a visual quality of texture was accompanied by some sonic equivalent, this would not be considered mickey-mousing, but probably good practice. Thus, it is unlikely that Vittorio Gelmetti's electronic score for Antonioni's *Il Deserto Rosso* (1964) would attract this label, despite the fact that the music seems to be an expression of ideas relating to intensity or diffusion that are also expressed in the images; as, for example, the scene in which the internal psychological state of the film's protagonist, Giuliana, finds expression in amorphous coloured forms projected onto the walls of her bedroom, while at the same time the soundtrack features electronic tones that convey a similar intensity of experience.

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Rather, it is when *change* occurs within a temporal frame that mickey-mousing becomes a factor. In this way, the term could be applied if a change in the visual texture of the image was somehow mirrored by a change on the soundtrack. However, the term is almost exclusively identified with movement of, and in, the image. And in response to this movement the composer can vary tone, texture, timbre, amplitude, rhythm and other dimensions of sound to match movement on screen.

The notion of morphology offers a useful way of recognising, describing and tracking this kind of sonic and visual development within a temporal frame. In a work devoted to the subject of musical morphology, Siegmund Levarie and Ernst Levy attempt to understand musical phenomena in relation to fundamental structural principles. They propose that pairs of concepts such as growth and limitation, division and reconciliation, multiplicity and unity can be applied to an analysis of musical morphology. Furthermore, they contend that the morphological profiles of musical events connect by a form of parallelism to physical and emotional experience: "A basic premise underlying all considerations is the correspondence of outer phenomena and inner experiences. This psycho-physical parallelism, implied or stated, may refer to the composer and his work, or to the work and the listener – it is always assumed to be present" (Levarie and Levy, 1983: ix).

Thus they propose music's ability to follow the "motions and emotions" of the soul, because emotions, like music, have a morphology and can be viewed as expressions of underlying principles of action-reaction, activity-response, the gathering and losing of speed and power, and so on (Levarie & Levy, 1983: 4). According to Levarie and Levy, the morphé of a phenomenon has resonance for the listener, since by psycho-physical parallelism it is registered against "inner experiences". Through its structural arrangement music is therefore able to express or create different moods.

Levarie and Levy's project is an ambitious attempt to map and analyse a large range of musical forms against a limited number of morphological principles, and while their

analyses are personal and provocative, their underlying structuralist approach is not unfamiliar. This structuralist tradition, and the assumptions it makes and relies upon, can be seen to underpin many other studies of music. Already we have come across the idea, referred to in Attali's work, that harmonic music resolves the anxiety created by dissonance, and so represents the organisation of controlled panic. Such an approach to musicology relies on the notion that a structural organisation of sound (harmonic or dissonant) affects the listener, and if Attali's choice of music as the subject of *Noise* is more than an arbitrary metaphor for the power relations of political economy, then sound must be more, and other than, an arbitrary signifier. If this is the case, then dissonance (through its structural arrangement of sound) must be able to create 'panic', or at least generate its analogue.

Similar structuralist notions inform work on the perception and cognition of music. In a parallel to Saussure's notion that in language there is only difference, Harold E. Fiske's study of music perception proceeds from the basis that a form of negative differentiation is central to the way in which listeners perceive musical patterns. These patterns, according to Fiske, are determined by, and limited to, tonal and rhythmic relationships, of which there are three types: "a given pattern P, patterns derived from P (called P'), and patterns distinctly different from P (called Pn)." He continues:

> … pattern comparisons, a major function of music cognition and musical thinking, between say two T-R [tonal and rhythmic] patterns, are limited to three conclusions: (1) the patterns are identical, (2) the second pattern is a derivation from the first, and (3) the second pattern is distinctly different from the first. (Fiske, 1993: 2)

It is the audition of difference, according to Fiske, that determines music cognition and aesthetic attitudes: "realised tonal-rhythmic pattern interrelationships determine musical/aesthetic meaning" (Fiske, 1993: 1). Thus for Fiske, human cognitive mechanisms, rather than acoustical laws, are the principal determinants of musical sensibility and order. The essence of music is therefore assumed to be structural, and its effect on the listener is deemed to be a function of the tracking of tonal and rhythmic patterns through repetition and difference, rather than any inherent quality of the sounds themselves (which would be to suggest that acoustical laws explain music's effect).

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The study of film music has also been influenced by this tradition of a music theory that is essentially the theory of musical practice. For example, Marilyn Boltz's work on the way in which film music affects and determines the cognitive processing of visual scenes, takes just such an approach. As part of a study on the influence of musical soundtracks on audience perception of filmed events, Boltz (2001) characterises a number of pieces of music as expressing either a positive mood or a negative, suspenseful mood which in turn she attributes to 'structural parameters.' "In general" she comments, "negative music displayed a minor mode, atonality, and an irregular rhythm. Conversely, the positive music displayed a major mode, a consistent tonality scheme, and a very predictable rhythm" (2001: 434).

If, in adopting a structural approach, the observations Boltz has to offer seem rather uncontentious, it is perhaps because these notions are so engrained within the craft of music. When a composer inscribes the word *Misterioso* on a score, they signal not only a feeling to be evoked, but also a technique to be employed; the two become indistinguishable. For the film composer, to be told that "negative" music displays a minor mode, atonality and irregular rhythm, is not to be told very much. It is also the case that many attempts to explain the effect of music are little more than parallel figurations of a *theory-of-practice* music theory. In this way, to be informed that harmony has a mathematic basis does not explain the effect harmony might have on the listener, even if one is then told that certain frequencies are pleasing because they resonate with the ear's basilar membrane. Mathematics and physics do not explain music, but simply describe it in other terms. Thus, to be given the formula to LaMonte Young's 'dream chord' as the set of mathematical ratios 12:16:17:18 (Young & Zazeela, 1969: 47), is simply to be given a recipe, an instruction for recreating an effect that differs from traditional musical formulations only in terms of the specifics of graphic notational form (G, C, C♯, D). It gets us no closer to an understanding of the way in which music creates an effect on the listener than the explanation offered to Jim Shadduck by Marvin Hatley, composer of the Laurel and Hardy theme tune, that, "The clash of the major second intervals is what makes it funny" (Shadduck, 1974:179).

The potential limitations of morphology as a simple tool of parallel figuration are perhaps recognised by Levarie and Levy in their attempt to move beyond the identification of common structures to attributing them with significance and value. For these authors, the knowability of repeated structures stands against an abstract world of universal and absolute change – a world without order, a world of chaos that would be unknowable. For Levarie and Levy, it is in resistance to chaos that musical form takes on value. Thus, in their entry for 'barbarianism' they write: "From the unformed world of sound, such unadorned phenomena as noise, continuous pitch variation, and asystematic chance relations have been eliminated to reach the threshold of music" (Levarie & Levy, 1983: 73).

For Lavarie and Levy, music summons order from chaos. The order that results is seen as inherently positive, and much of their approach to music equates morphology with life forces and energy. The writers propose that cadence is a primary rhythmic event, and central to their understanding of music: "cadence is the life form of music. It is its vital form" (Levarie & Levy, 1983: 93). They observe that the notion of cadence presupposes the existence of a departure point, an arrival point and an energetic process connecting the two. That is, in its initial impulse, tension, and relaxation, it shares the morphé that characterises breathing form:

> Breathing proceeds as a life impulse from zero, accumulates energy during the tension of inhaling, and spends it during the relaxation of exhaling. Breathing is in effect the physiological symbol of the primordial form of an energetic process. Music is essentially energetic; it manifests itself through movement. (Levarie & Levy, 1983: 93)

While not claiming that breathing is the universal foundation of music, the writers propose that the energetic process breathing form follows can also underlie musical development; for Levarie and Levy there exists, in the morphological figure of the building and relaxation of tension, a connection between rhythm, psychological experience, and the physiological bodily processes of respiration and circulation.

In contrast to observable musical phenomena, it is perhaps harder to establish the nature of the "inner experience" with which the morphological profile of a musical event supposedly resonates. While it is usually possible to observe parallels or connections

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between textual morphology and physiological or psychological states ('that music is driving me mad' and 'it's nice when it stops'), what Levarie and Levy offer as explanations of this connection must be necessarily speculative. So rather than considering specific points of contact with 'inner experience', or exploring the 'meanings' of a particular morphé, what can be established is that it is possible to recognise morphological states in changes taking place over time. These changes may share abstract similarities that serve to link sound and image. Expressed in other terms, the notion of morphology creates the possibility of a connection being made between two phenomena with the same morphé. What links sound to image in mickey-mousing is some degree of similarity between the morphological attributes of both sound and image; Wile E Coyote sinks into the mud to the sound of a slide trombone.

This both means, and does not mean, that the value of the notion of musical morphology is limited to description. What I propose is that the descriptive potential of musical morphology can be productively shifted into a consideration of the way in which sound-image relationships play through the motifs of control and containment that mark the cartoon. That is, the notion of sonic morphology allows a critical engagement with the play between the radical potential of cartoon sound and its audiovisuality. While Levarie and Levy might suggest that music summons order from chaos, in their own work this emergent order remains an unexplored, fundamental positive: music equals civilisation, music equals life. However, in its Deleuzian formulation, the refrain (and thus morphology) is considered in the spatial terms of territorialisation. Deleuze and Guattari conceptualise the refrain, like that of birdsong, as territorial; the refrain is a territorial assemblage. The Deleuzian formulation of territorialisation proves useful in relation to a consideration of sound-image relationships since it provides a way of thinking how the film, as an audio-visual construct, claims its territory from both sound and image. But in addition, the Deleuzian notion of the refrain brings to a consideration of morphology issues of those issues power and control that underpin territoriality. Unlike the work of Levarie and Levy, this allows an exploration of what is at stake in the order that is brought by the refrain. Applied to a consideration of audiovisuality, this provides a route into thinking how the relationship between radical potential and its containment plays

through the cartoon – that is, how the notion of territorialisation engages with a micropolitics of audiovisuality. So, for example, the power relations inherent in notions of territory might relate directly to the privileged status of what Sarat Maharaj has termed 'retinal regimes' (Hall & Maharaj, 2001: 45), and thus in turn to the sound-image relationships of cinema. As we have seen, both in terms of criticism and practice, the relationship between sound and image is not one of equal terms: the visual has a status and power above and beyond that of the sonic. However, before returning to questions opened up by the critical potential of morphology, it is necessary to map further exactly what comprises the cartoon's soundtrack.

Sound practice

It is important to remember that the term mickey-mousing is derived from a practice of scoring for cartoons, the assumption being that here music very closely matches what takes place on the image track. But this single term fails to acknowledge the variety of relationships that exist between sound and image in Stalling's Termite Art or Bradley's Cat-and-Mouse Music. We can distinguish between two types or classes of musical sounds used by Stalling which are to a certain extent emblematic of the cartoon genre: namely, quotation and musical sound effects.

Quotation

Of all aspects of cartoon music, the use of musical quotation is the most well-documented, particularly in terms of Stalling's own compositional practice.[4] The practice of scoring for cartoons, at least as it was done at Warner Bros. in the 1940s and 1950s, owes a great deal to the formal model of silent film musical accompaniment. Stalling began his musical career as a silent film accompanist and orchestra leader at Kansas City's Isis Theatre. Interviewed by Mike Barrier, Stalling commented on his own approach to scoring for films:

> ... I had played in theaters for about twenty years before sound came in. We improvised all the time, on the organ. I'd have to put music out for the orchestra, for features, but for comedies and newsreels we just improvised at the organ. So I really was used to composing

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[4] See Blackburn (1990), Ford (1990), Goldmark (1997), (Tebbel (1992), Friedwald (2002) and Zorn, (1990).

for films before I started writing for cartoons. I just imagined myself playing for a cartoon in the theater, improvising, and it came easier. (Barrier, 1971: 26)

In silent cinema, an accompanist like Stalling would have access to thematic musical catalogues that would include pieces of music indexed by mood, situation, genre, and so on[5]. Some of these pieces would inevitably be well known to both the accompanist and the audience. A skilled accompanist, with or without the aid of sheet music, would be able to switch between various pieces, improvising to the image on screen. When not supplied with a comprehensive 'synchronised' score for a band or orchestra, which later became the trend for big budget movies from the late 1910s onwards, Stalling's job was to act as a montagist compiling short sections of various genres of music, and improvising with those fragments. It was a practice that supported, and sometimes demanded the skills of pastiche and parody. Whether or not the sequence of short musical pieces was well prepared and rehearsed, in the case of a single accompanist on organ or piano, the effect here would be of the music chasing the image, taking its cue from the action, yet interpreting and fixing the meaning of what is projected on the screen. In this sense, music improvised for silent film tells us what we can already see; it represents not only an interpretation of the action, and a translation from light to sound, but it also presents a form of audio-visual doubling in those cases where the refrain of the music transmutes into a synchronous effect, for example when rhythmic music accompanies dancing on the screen.

At Warner Bros., in addition to music in the public domain available to anyone, Stalling had access to the studio's library of music. The Studio ran two series of cartoons: *Looney Tunes* which, began in 1930, and *Merrie Melodies* which ran from the following year. Originally, the latter series was specifically designed to feature songs from the Warner Collection, and it was one of the responsibilities of the composer for *Merrie Melodies* to include at least one complete chorus of a Warner Bros. owned tune (Schneider, 1994:39). This was in part to recoup the $8.5 Million the studio had invested buying music publishers in 1929 in anticipation of the success of sound film (Curtis, 1992: 193).

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[5] For example, *Sam Fox Moving Picture Music* by J.S. Zamecnik, 1913. Vol. 1 includes sheet music for 26 pieces in different styles and moods, including *Hurry Music for Duels*, *Hurry Music for Struggles*, *Hurry Music for Mob or Fire Scenes*, *Sailor Music*, *Death Scene*, etc.

The relationship between cartoons and popular music was important, even before the introduction of sound. A manual for theatre accompanists written by Edith Lang and George West in 1920, contains the following advice on animated cartoons and slap-stick comedy:

> This part of the show is admirably adapted to the introduction of all sorts of popular songs and dances. The player should keep in touch with the publications of popular music houses, since it will repay him to establish a reputation which will make the public say: "Let's go to the Star Theatre – you always hear the latest tune there." This will prove a never-failing drawing card for the younger generation of movie-fans, and it will react most decidedly to the advantage of the organist in his relation to box-office and his own earning power.
> It is well also to keep in touch with the monthly announcements of the latest phonograph records issued. As a rule, these numbers have proved assured successes, and people like to hear their favorite tunes, either those they already have at home, or new ones which they might want to add to their collection. The player's repertoire should always be kept alive by the infusion of new and up-to-date material. (Lang & West, 1970: 37)

The advice given in the passage above suggests the potentially beneficial nature of this relationship: cartoons plugged music, and music attracted audiences to the theatre. For Warner Bros., who were both music publishers and the producers of cartoons, the inclusion of music from their own Library made sound economic sense. However, the jazz-influenced popular music of this era had significance other than its commercial worth. Jazz music was, first and foremost, dance music. The rhythm-driven physicality of dance is what often animates the animated cartoon, especially in the films of the early sound era, where it is not only people and animals that move to the rhythm of the jazz soundtrack, but also machines, buildings, plants and trees. Jazz's relationship with dance thus maps onto the centrality of mickey-mousing within the cartoon genre, and as we shall see later, it is essentially the *rhythmic* profile of both sound and image on which other aspects of synchronisation are hung.

Jazz also serves to mark the development and differentiation of cartoon forms. The Disney aesthetic had, in a sense, already begun to aspire to the use of classical music with the *Silly Symphony* films. This series, which began in 1929 and ran through the 1930s, had originally been developed in collaboration with Stalling before he moved to Warner Bros., and was conceived as a project in which music would be the primary term of the audio-visual relationship. Disney's use of word 'Symphony' stands in contrast with

Warner's (Looney) Tunes and (Merrie) Melodies. It is a cultural difference that is echoed in other distinctions: Disney aspires to the stage and to the live action film, while Warner Bros. are more obviously heir to the cartoon-strip and vaudeville. Thus, Disney works towards a form of illusionistic representation which includes relatively naturalistic backgrounds. To add a further naturalistic dimension to the animated image, Disney developed the multiplane camera, which enabled the separation of foreground images from various layers of background, creating a photographic depth of field that gave the illusion of depth in space. Disney's desire to move away from the two-dimensionality of the animated cartoon is further evidenced by his plans for *Fantasia* as a form of expanded cinema. He had considered producing the abstract *Toccata and Fugue* sequence in 3-D, providing the audience with Polaroid glasses. According to Culhane (1983:10) Disney had even discussed the possibility of diffusing the smell of flowers through the theatre to provide further sensory depth to the flower ballet sequence. Finally, Disney's desire to resist the spatial limitations of the cartoon form found sonic expression in the *Fantasound* system. Developed specially for *Fantasia*, this sound system employed three tracks of sound played over multiple speakers to create an early form of stereophonic surround-sound (Garity & Hawkins, 1941; Garity & Jones, 1942).

If Disney's space becomes increasingly naturalistic, then it is occupied by a Mickey Mouse who becomes decreasingly plastic and malleable, and whose original rambunctious energy is replaced by a thoughtful sweetness. Contrast this with the flat, graphically pared-down world of the Warner Bros. animated cartoon, in which a character's malevolent energy finds expression in the destruction and deformation of their environment and their peers. Disney aspires to be judged according to the polite, old-world standards set by the European model of classical music, his most obvious bid for approval being *Fantasia*. On the other hand, in its sampling of popular music and in the vital heterogeneity of its sonic montage, the Warner Bros. soundtrack seems to represent a slice of authentic Americana.

Various forms of interpolation, much later to be celebrated in the euphoric terms of post-modern intertextuality, were common in studio productions of this era. Songs which had

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proved popular in one film would appear in others, regardless of the narrative context in which they might have originally been situated. So, for example, the hit song *White Christmas*, which originally appeared in the Paramount film *Holiday Inn* (1942), was reused in the 1954 film that adopted the song's title as its own. Similarly, studio stars like Bogart and the Marx Brothers made occasional 'guest appearances' in animated cartoons.

This use of musical quotation served several functions within the animated cartoon. Firstly there is the use of specific named pieces of music that by convention are associated with particular events or situations; for example, Mendelssohn's *Wedding March*, or the all-purpose circus music of Fučik's *Entry of The Gladiators March*. Then there are those pieces in a generic style that refer to specific activities, events, and atmospheres: fanfares, military marches, lullabies. It is here that pastiche often moves into parody for comic effect. However, it is not just in its reference to, and its departure from, a known musical source that the music quoted can create humour. Additionally the music might exploit what Boltz (2001) refers to as the 'structural elements of music' to generate a humorous effect. Thus Jim Shadduck comments on part of Marvin Hatley's score for the Laurel and Hardy feature *Way Out West* (1937): "In this sequence he used a lot of sickly, whiney oboe music to accompany the awkwardness" (Shadduck, 1974: 181), while on Hatley's famous Laurel and Hardy theme tune he proposes: "The top bugle-call-like theme represents Hardy, very domineering and the constant coo-coo part in the base represents little Stan Laurel, just a little off. They are dissonant together, always arguing" (Shadduck, 1974: 179).

In addition to the above, there are those pieces of music chosen because of the joke made by the relationship between their titles and the action on the screen. These are well documented by Tebbel (1992), Blackburn (1990), and Goldmark (1997). For example, Stalling uses the tune *I'm Looking Over a Four Leaf Clover* as Roadrunner and Coyote run around a clover leaf motorway intersection in *Fast and Furryous* (1949). Tebbel is critical of Stalling's compositional practice in this respect, suggesting that his habitual matching of song title to picture became trite. The animator Chuck Jones, with whom Stalling worked for many years, makes the comment that Stalling would use songs that

were no longer in the popular memory, thus making a joke that the audience would never get. In reference to Stalling's use of *I'm Looking Over a Four Leaf Clover* Jones commented, "It was kind of strange to me for him to do it, and it was okay, but I didn't think everybody knew that it was that music" (Goldmark, 1997). In contrast, however, Goldmark and Blackburn are more positive about this particular sampling technique. Tebbel (1992) observes that Stalling habitually used the virtually unknown tune *A Cup of Coffee, a Sandwich and You* as all-purpose food music; but Goldmark (1997) and Friedwald (2002) both argue that although an audience might not pick up on the specific references made by a song's title, if used often enough, the audience unconsciously makes a connection between the few bars of a motif and the action on screen. While Goldmark characterises this as a gag in itself, Freidwald comments on its development within Stalling's compositional practice:

> As Stalling's tenure stretched from years into decades, he increasingly depended on the ability of the audience to decode his musical hieroglyphics and shorthand, and would fragment these familiar leitmotifs into ever tinier and tinier pieces of the musical mosaic. Just as Tex Avery made a systematic study of the ultimate minimum number of frames needed for an audience to comprehend a visual gag, Stalling could transmit a musical joke or idea with an ever-decreasing number of notes. (Friedwald, 2002: 139)

Friedwald's description of Stalling's technique suggests an aesthetic that is increasingly marked by two potentially radical musical strategies: firstly, the deconstruction and fragmentation of existing musical forms, and secondly a montaging of those fragments. And to this we should add the figure of quotation itself, which as an intertexual strategy was not unknown in music before this time, as demonstrated by Rachmaninov's *Rhapsody on a Theme of Paganini*, Vaughan William's *Fantasia on a Theme by Thomas Tallis*, and all the various reworkings of folk songs by numerous composers.

However, a number of aspects of Stalling's particular formulation of musical quotation mark the composer out from his forebears and peers. His quotation is largely indifferent to the source music: there is no totemic relationship with an original composition or its composer, no attempt by Stalling to identify or align himself with a real or imagined community of artists. This contrasts with the classical sampling of folk song or the work of past 'masters', whereby a composer seeks to celebrate and perhaps romanticise, if only

obliquely, a social class, a real or imagined historical moment, an individual, and so on. Stalling's sampling also contrasts with that of contemporary hip-hop and turntablism in this respect. In this latter case, as Diedrich Diederichsen (2004) has commented, artists tend to be close to the material being quoted, to the extent that work building upon that of previous generations might be seen in some ways as tribute. The breakbeat is more than a convenient rhythmic device – it is a form of tribute, even if cannibalistic. As the DJ Matthew Herbert (aka Radio Boy), has commented:

> ... people only sample good stuff. They only sample Marvin Gaye, Curtis Mayfield and Miles Davis. People don't sample Andrew Lloyd Weber or Gilbert and Sullivan. They'll sample brilliance from the past, and inherit some of that brilliance that lives on in those recordings. (Mixing It, 2002)

Stalling is only close to the material he samples in the sense that he must have been as an accompanist in Kansas, and as a working composer who turned out a score every ten days for twenty-two years at Warner Bros. There is a clear sense that he *is* a working composer, and that source material is simply that: material at hand to be stretched, squashed and cut up, just as the people and animals that populate these cartoons are reduced to the malleable, violently abused and abusable material objects by the image track. Processed by the Stalling machine, the work of the great classical composers fares no better than anything else. Everything – popular music, tin pan alley, folk, jazz and classical – is chopped up, deconstructed, reshaped and reconstructed in a montage of interspersed fragments:

> On first hearing, Stalling's immense musical talents are immediately apparent, and certainly all these basic musical elements are there – but they are broken into shards: a constantly changing kaleidoscope of styles, forms, melodies, quotations, and of course the "Mickey Mousing"... No musical style seemed beyond his reach – and his willingness to include them, any and all, whenever necessary (and never gratuitously, I might add) implies an openness – a non-hierarchical musical overview – typical of today's younger composers, but all too rare before the mid-1960s. All genres of music are equal – no one is inherently better than the other – and with Stalling, all are embraced, chewed up and spit out in a format closer to Burroughs's cut ups, or Godard's film editing of the 60's, than to anything happening in the 40's. (Zorn, 1990)

One of the things that Zorn celebrates here is a perceived democratic impulse in Stalling's work. Certainly the music exhibits an anarchic eclecticism that devalues the classical and violates its norms, and not only through the familiar cartoon tropes of pastiche and parody. In this respect, at least, the work undertaken by Stalling at Warner

Bros. was certainly more radical than that produced for Disney. Despite personal indifference to classical music (Disney said the idea for the Bach Toccata in D sequence in *Fantasia* came to him while dozing at a concert [Care, 2002:23]) it was clear that classical music marked *Fantasia* as *the* serious Disney film; not a *cartoon*, but an animated film with artistic merit. As such, of course, it a provided the animators at Warner Bros. with an attractive target, and which they were to ridicule subsequently in *What's Opera Doc?* (Chuck Jones, 1957).

What is audible in Stalling's work is a logic of quotation in which every act of referencing is marked by a simultaneous act of deconstruction and destruction. Recognisable tunes can be heard, but the status of the original is limited to a marker of difference, only serving to indicate the extent to which it has been cut-up and distorted. Greg Ford hints at this when he writes: "the songs themselves are not the thing but the brilliant manner in which they're squashed and stretched to suit cartoon purposes" (Ford, 1990) And if this, as Zorn suggests, represents the disempowerment of the hegemonic models and personalities of western art music, then it also represents the empowerment of the deconstructor. This is a logic of deconstruction that signals a shift to a modernist objectivism in which everything not only has a material existence, but can also be reduced to the material *object*. What marks Stalling's use of quotation is the violence of appropriation, which at its sharpest and most hard-edged comes close to a stop-start atomisation that finds no equal in the work of his peers.

In contrast, the work of Scott Bradley, Stalling's contemporary at MGM, is dominated by a sense of melodic continuity. In part, this difference is explained by the economics of film production, and the history of the adoption of sound technology in Hollywood. Bradley, who is now perhaps best known for scoring the *Tom and Jerry* cartoons, did not have access to Warners' extensive library of popular music. Other than quoting tunes in the public domain (as did Stalling), Bradley had no option but to write original cues[6]. His

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[6] It is sometimes supposed that Stalling simply took music others had written, and in this respect much has been made of his use of Raymond Scott's music. However, in an interview with Mike Barrier, Stalling claimed that 80-90% of his scores were original cues written specifically for the cartoon in question (Barrier, 1971: 26).

music, however, does reference various genres, and even specific pieces of music. For example, Bradley's score for Tex Avery's *TV of Tomorrow*[7] (1953) fleetingly references Gershwin's *Rhapsody in Blue*. What perhaps distinguishes the two composers is the way that their respective montages are structured. Bradley's music has a sense of flow, in which all the various elements are unified in a continuous track: "My own method, if you could call it such, is in trying to maintain a continuous melodic line, and follow the action with new harmonization and orchestration of conventional patterns" (Bradley, 2002: 117).

Stalling's montage is much more angular, and its sense of fragmentation *foregrounded*. With Stalling, the listener is aware of the suture, while with Bradley this is concealed.

Musical sound effects

In addition to quotation, the other thing that is emblematic of the cartoon soundtrack is the use of musical sound effects: sounds produced by the orchestra to accompany onscreen action. And it is here that we encounter the practice of mickey-mousing. It is an irony that despite the fact that cartoon sound is associated with mickey-mousing, most of the small body of critical literature concentrates almost entirely on other elements of the score, most particularly on quotation.

A broad distinction between two basic types of musical sound effects can be usefully made. Firstly there are relatively realistic musical effects, such as the tapping on woodblocks to accompany the image of a character knocking on a door. Certain instruments of the orchestra, particularly percussion, were sometimes used to create relatively realistic sound effects. These are mostly found in the early cartoons, and are replaced in later works by spot effects produced by sound effects specialists, such as Warner Bros' Treg Brown. These sound effects are of interest because of their status as sounds that have both a musical and a worldly dimension. This is illustrated by the early sound cartoon, *Felix in Astronomeows* (Otto Messmer, 1928). When the film industry began to move to sound in the late 1920s, Pat Sullivan, producer of the *Felix* cartoon

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[7] Bradley's compositions can be heard on Bradley (1993) [sound recording:CD].

series, initially resisted conforming to the demands of the new technology, hoping to wait it out until things settled down. But on seeing that a return to silence was increasingly unlikely, he had soundtracks added to a number of Felix cartoons that were originally released silent (Canemaker, 1996: 129-30). One of these was the 1928 film *Felix in Astronomeows,* a cartoon that provides a clear sample of the cartoon cinseonic practice that developed in the first few years of sound. In the film woodblocks create the footsteps of a robot walking on the surface of Mars. But this walking sound then also forms the rhythmic basis of the music that accompanies the action. There is thus a blurring of the distinction between sound effects and music. According to Scott Curtis (1992), practice of this kind arose in early sound cartoon production because of the technical limitations of recording technology. Before 1933 there was effectively no way of mixing separately recorded sounds together. The playback system, which provided a solution to this problem, entailed playing back recorded sounds from disc over loudspeakers in a studio, while at the same time other sounds – usually dialogue – were performed and recorded live (Altman, 1985: 46). While the resultant recording allowed for a basic form of mixing, it nevertheless entailed an audible loss of quality. As a consequence, a better solution was for all sounds to be recorded live: music, effects and dialogue all at the same time, in the same studio. This created problems of competing volume levels, since without mixing, only one microphone could be used to record everything, with the consequence that music and effects could not be heard distinctly above the studio orchestra. This is certainly the case with *Felix in Astronomeows,* where the voices of the characters are sometimes barely audible above the underscoring. The answer to this problem, at least as far as cartoons were concerned, lay in the arrangement of the music. Breaks were provided in the score, which was constructed of 8 bar phrases, allowing cartoonists to "place significant action on the cadential accent at the end of every 8th measure" (Curtis, 1992: 198). It was within these breaks in the music that dialogue and effects were located. Thus, Curtis identifies an interesting paradox and an emblematic feature of the cartoon soundtrack: the arrangement of the music separates it from effects and dialogue, yet distinctions between sound elements are blurred as music is used as a sound effect, and all sound elements are orchestrated into a continuous musical track. Although the effects are located in the space provided in music, "Produced by musical

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instruments, they became part of the music, entering at rhythmic breaks at a compatible pitch and volume" (Curtis, 1992: 198). In later years, although sounds could be mixed separately, the practice of integrating effects into a continuous musical score continued, even when many effects were no longer provided by the orchestra, but by sound effects specialists. This blurring of the distinction between music and effect, is also a dissolution of the boundary between music and worldly sound, and between the abstract and the signitive. In its acceptance of something approximating worldly sound, cartoon music marks a radical departure from the traditions of western art music, which has always resisted imitative, signitive, or worldly sounds as un-musical.

Morphological sound effects

However, there is another category of sound effect that in no way approximates worldly sounds. As an example of this second category of musical sound effect, consider the opening of a *Looney Tunes* or *Merrie Melodies* cartoon; the Warner Bros. logo expands as if rushing towards the viewer from the background, while simultaneously, on the soundtrack we hear the familiar *boinggg* of a chord played on the electric guitar. Here, sound and image are connected only by a common morphological profile; the sound has no naturalistic or narrative attachment to the action on screen. Curtis (1992) describes other familiar musical sounds employed in a similar fashion as an adjunct to movement in the image: the plucking of bass strings to accompany a character's steps, or the sound of a variable pitch whistle to mark movement up and down. Typically, the sounds of piccolo, bassoon and xylophone feature heavily in this kind of instrumentation, along with trombone slides, comic violin glissandos and misterioso effects on the viola. (Blackburn, 1990) These are sounds that connect with the image only at a morphological level, and it is for this reason that I refer to them as morphological sound effects. These effects may be built into music, but can never fully be part of it since their adherence to the image deterritorialises them as simple musical sounds.

The only writer so far to have considered this use of sound in theoretical terms has been Curtis, who identifies what he refers to as "isomorphic" and "iconic" relationships between music and image. The first term of these two terms refers to, "the close matching

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of image and sound - that is, a relationship based on *rhythm* in both the action and the music. The term 'isomorphic' recognizes not only the specific features of the sound, but also the inseparability and equality of sound/image relationships" (Curtis, 1992: 201).

He states: "An 'isomorphic' use of sound occurs when the sound and image have the same 'shape'"(Curtis, 1992: 201). Curtis identifies as key aspects of this particular type of effect, its inseparability from the image, and the connection made between sound and vision through 'shape.' However, it is necessary to add further clarification to Curtis's work. While he is correct to observe rhythmic parallels between sound and image, this is surely to identify only one manifestation among many other sound-image pairings that offer a similar parallelism. In focusing on rhythm, Curtis simply describes one single phenomenalisation of an underlying structural relationship between sound and image. The clarification that I would like to make is that it is not rhythm that underlines the relationship between sound and image here; rather it is development in time which determines the morphological traits shared by sound and image, whether or not expressed in rhythmic terms. Rhythmic relations are simply one expression of this and not the essential connection, since, as we have seen, sound and image can have the same "shape" regardless of rhythm.

There is perhaps some recognition of this underlying morphological relationship in Curtis's other term, 'iconic.' Curtis uses this in reference to cartoon sound where the relationship between sound effects and visual representation is not one of fidelity but of analogy. For Curtis, isomorphic relations refer to those governed by rhythm and movement, while iconic relations are the analogous relationships between visual events, timbre, volume, pitch and tone; for example, when "the villain pounds his fist on the bar and we hear a cymbal crash and a blare of horns" (Curtis, 1992:202). While Curtis adds that the terms are not mutually exclusive, they are perhaps unnecessarily confusing. As each can be taken as a sub-category of the other, the terms fail to clarify what they set out to describe since the analogous relationship of the 'iconic' is precisely the shared "shape" of the isomorphic. It is for this reason that I choose to focus on the morphological

connection between sound and image when considering this particular musical phenomenon.

The close relationship of sound and image

The term mickey-mousing, of course, refers not to a specific set of sounds, or to any strictly musical dimension of the soundtrack, but rather to an audio-visual *relationship*; remove the picture and there is no mickey-mousing. The precise synchronisation of sound and image that mickey-mousing entails, maps across onto the way in which compositional practices mesh with film production practices. One example of this already encountered is the way in which both sound and image fit to a musical bar-structure. Dahl sees this in negative terms, commenting that the limitations of working to a beat "tends to impart a certain rhythmic squareness to his [the composer's] phrases and it takes much conscious effort on his part to overcome this" (Dahl, 1974: 188). He also comments:

> ... just as the dancer reserves his more spectacular tricks for the cadences at the end of musical phrases so the cartoonist, probably out of instinct, achieved some of his funniest effects by placing outstanding action (be it the bounce of a ball or the impact of a pie on a face) on the same cadential accents with which in popular music every eighth measure ends. (Dahl, 1974:184)

But the close relationship between music and the visual runs deeper than the fact that sound and image are divided into roughly equal sections of corresponding duration. The cartoon production process predetermines, as a minimum, a rhythmic match between sound and image. On this rhythm hang the morphological changes of both the action of the film and the soundtrack. Unlike live-action films, it was not always the case that the music for the cartoons of this period was recorded after the images; Stalling usually had the music recorded before the picture had been completed. As musical director he would meet with the film's director at the start of production, and working from the script, would decide on a beat for each phase of action. This was measured not in musical time of beats per measure or beats per minute, but in frames per beat. In fact, timings were first laid out on music sheets, and only later were transferred to the exposure sheets that provided the timing instructions for the animators.[8] These sheets were tabulated

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[8] Also known as a 'dope sheet', this is a timing chart produced by animators. It breaks down action and dialogue for the animators frame-by-frame, allows the various layers of the image to

according to the number of frame units on which the animation was based; for example 10 or 16 frames. This number represented the smallest *rhythmic* denominator of the scene – its beat – the rhythm to which both music and action would conform. In this way the images were created to coordinate with bars of, as yet, unrecorded music. From this information, Staling would be able to score the whole cartoon without seeing a single completed drawing. This beat would then be reproduced during the recording session by the 'click track', a metronomic loop of the appropriate number of film frames played over headphones that enabled the conductor and musicians to achieve precise timing for each scene. Not every composer, however, would have the opportunity to work with the director so early in the production. Scott Bradley would work directly from the exposure sheets produced for the animators, and a rough cut of the 'pencil reel' of the film[9] (Dahl, 1974: 185) (see Fig. 4.1).

Since both composer and director were working from the same exposure sheets, what this meant was that at the production level there is a conflation of sound and image, of music and action, as if they are one and the same in *some respect*, both equally-valid interpretations of the script. Movement on screen, and the music written to accompany it, were planned in such a way that they would occupy the same duration (working to a bar structure) and would develop to the same rhythm. Over this the composer would hang the morphological changes in tone, amplitude, texture and so on, that seemed to most appropriately express the action first described in the script, and then seen on screen. This is one explanation of why image and sound are so closely linked in these films; in the case of Stalling's work, both sound and image are conceived with, and drawn from, the same morphological profile.

However, synch sound is also a feature of most live action film-making, and particularly so since so many films are dominated by lip-synched dialogue. In this case, the question

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be tracked, and includes instructions relating to camera movement, and 'opticals' e.g. image dissolves and fades.

[9] This is a version of the visuals produced by the animators working only with line drawing, its purpose being to ensure the action and gags work effectively. After this, the individual drawings are copied onto cels and backgrounds and colour added.

to be asked is what factors distinguish the animated cartoon and separate mickey-mousing from other types of synch sound experience?

Fig. 4.1 Detail from dope sheet prepared for the MGM *Tom and Jerry* cartoon, *Heavenly Puss* (1949), showing score by Scott Bradley (Manvell & Huntley, 1975: 175).

The animated cartoon creates a rarefied semiotic and sonic universe. As described earlier in relation to the relatively naturalistic Disney aesthetic, the Warner Bros. cartoons feature imagery that is pared-back, thinned out, and lacking detail. The sonic world of the cartoon, like that of its image, is one of foreground and flatness in which denial of depth allows no distraction from this foreground, no opportunity for auditory wandering. The animated cartoon delivers continuously, upfront; in an almost empty landscape (literally empty in the *Road Runner* cartoons) and in an empty frame, concentration is focused on every detail of what little is presented. The music supports this, since it creates a sonic world without background. There is no ambient synch sound in the cartoon, just as there is no photographic micro-detailing of the image. The sounds that we hear are all upfront: there is little foreground-background mixing outside of the dialogue/non-dialogue relationship, and in any case it is a craft practice to either drop underscoring behind dialogue, or reduce it to a minimum. All non-dialogue sound channeled into a single stream, orchestrated to include its various elements. There is no folding of background and foreground in either sound or image. Rather, and crucially, *it is the foreground that is*

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folded, sound into image, through the close synchronisation that marks the audiovisuality of the cartoon.

The visual world of the cartoon is one under the microscope where everything is stretched and magnified, abstracted until it reaches simple graphic form. And so it is with the soundtrack. Sound is taken to the level of what would normally be considered to be the micro texture, but amplified to huge proportions. When Wile E. Coyote blinks in disbelief, the sprightly notes we hear played on the xylophone territorialise the whole soundtrack – sounds that in most musical modes would simply form part of a deeper sonic texture or linear continuum. This foregrounded aesthetic is cast against silence; there is no sound when the orchestra falls silent, no ambient sounds of passing traffic, no rumble of airconditioning. The cartoon creates sound without sonic context, without environment or noise. In this respect the sonic world of the cartoon parallels its pared-down visual surface. If this is sound in close-up, then the cartoon has more in common with the pornographic film and the action film than with any other form. This *exclusion* of detail is what is precisely absent in Disney's naturalistic background aesthetic. While it might not seem productive to consider Stalling's music pornographic, it does display some of the same tendencies as the porn soundtrack or the action film; that is, the foregrounding or isolation of sounds in which strong morphological traits are themselves foregrounded: panting, grunting, moaning in the porn film, and punches, gunfire, and squealing tyres in the action movie. It is these notions of simplicity and essence as they relate to the cartoon soundtrack that are expressed by Dahl, albeit as a criticism of the genre: "The scope of musical expression is... limited. For how long can a composer continue to restrict himself exclusively to the bright yellows and reds of the musical palette" (Dahl, 1974: 188).

What therefore links sound to image in mickey-mousing is not simply some degree of similarity between morphological attributes of both sound and image, but a clear sonic and visual expression of that relationship. Mickey-mousing is not a by-product or an accident of sloppy scoring – along with violence and caricature, mickey-mousing is what the cartoon has to offer, one of its fundamental pleasures. In paring down both the sonic

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and visual fields, the cartoon works to privilege the relationship between sound and image, often above the minimal semantic content or narrative drive of either. In a sense the repetitive, formulaic nature of the cartoon evidences the centrality of audiovisuality to its appeal. While we might enjoy the invention that the animator brings to each new Roadrunner gag, we know what the final outcome will be since we are wholly familiar with the logic and laws of the Roadrunner-Coyote universe. In the same way, our familiarity with the sonic vocabulary of these cartoons gives a certain sense of predictability to the events that take place, and the way in which they are to develop. The already-knowness of the cartoon creates a form of audience involvement that downplays the role of enigma in narrative development in favour of familiarity, repetition and predictability. The relative weakness of narrative attraction that results is contrasted with the affective impact of the cartoon's audiovisual relationship, which is strengthened rather than reduced by familiarity, repetition and predictability through the audiences predictive engagement in the audiovisual flow. In responding to the familiarity of the cartoon's sonic and visual cues, we prepare ourselves to submit to the affective pleasure of its audiovisuality, the most striking example of which is mickey-mousing.

Quotation revisited and a return to montage

As perhaps the figures of montage and quotation suggest, the animated cartoon has sonic dimensions that seem to have radical potential. Cartoon music exhibits many features that were, and would still be considered unorthodox in many forms of Western art music, and even within the genre of film music itself. In terms of the wider cultural context, Stalling's use of montage, juxtaposition, fragmentation and collision make clear connections with modernist film, particularly the Soviet cinema of the 1920s. And in addition, we might observe parallels between his compositional use of fragmentation and Cubist and Futurist art practices of the early 20th century.

It has already been shown how Stalling's use of quotation challenges a number of orthodoxies, and violates classical norms. But in addition his music can be situated within a wider debate about the use of pre-existing material; this is the same issue raised by the ready-made, and one that has hung over minimalist and conceptual art for decades. A

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point of contention revolves around the place of authorship situated in relation to an apparent tension between the pre-formed or the reproduced, and the handcrafted. From the vantage point of the 21st century, it seems clear that quotation fundamentally challenges those romantic notions of authorship that construct the artist as source of all meaning. But in the period and cultural context in which Stalling was working, quotation simply aligns the artist with the craft notion of *assemblage*, or montage in its most general sense. The assignment of artisanal status within this cultural context coincides with the move to factory production, mass production, mass markets, mechanical reproduction, and the growth of the culture industry that marks 20th century modernity. Paradoxically, the artistic practice of quotation served not so much to challenge the highly resilient model associating true artistry with original creation, and locating the artist as the source of all meaning, but to further strengthen this dominant model. The quoting artist is displaced from that centre ground occupied by those dominant figures whose creative practice conforms to the notion that art has value when it is highly authored, and that this authorship must extend to every element of hand-crafting. Thus, a work of art must be produced by a talented artist, whose gifts extend to technical mastery, and whose thoughts and visions of the world can be transferred directly to material with which they work by technical facility. But these technical skills only have value when placed at the service of one who has something noble, uplifting, or even revolutionary to communicate and express. Of course, in reality successful artists of all kinds have used assistants, and the tradition of quotation surfaces in the visual arts whenever painters tackled subjects undertaken by previous 'masters.' But despite this, the emphasis placed on individual authorship in the arts means that handcrafting only remains relevant to the work of the artist (as opposed to the artisan) in the sense that an individual must employ it in the struggle with material by which they might express themselves. If there was ever, in the notion of the ready-made and in the found object, a serious threat to the dominant model of the artist as technically gifted genius, then Abstract Expressionism and the Beats re-established its primacy with a vengeance, albeit filtered through the process of struggle. In contrast, the standing of composers working on cartoons in this period is evidenced by the fact that it was not until the late 1940s that their scores were given copyright protection (Blackburn, 1990). And if further proof of Stalling's craft status was

needed, consider the critical profile given to Stalling in comparison with that of his *peers* Schoenberg and Stravinsky. Stalling was only interviewed twice in his life, and then not until well after his retirement. Stravinsky's 1945 *Ebony Concerto* sounds like (slow) cartoon music, with its montage construction of sections, its appropriation and quotation of jazz, and a use of dissonance that could quite easily signal comedic drunkenness or a broken merry-go-round if used within the context of a *Merrie Melodies* cartoon. Yet despite the similarity of work, Stalling is viewed simply as an artisan working for the culture industry, while his contemporary is an artist of another order entirely. Of course, the context of production and reception dictates how this music is heard and appreciated – dissonance in Stravinsky is understood to be daring, while dissonance in Stalling's work is 'merely' funny. But this does not detract from the fact that quotation, when seen and heard against the hegemonic model of the artist as originator, becomes associated with forms of theft and parasitism. It thus attributes to the works making use of this practice a secondary, minor status. Quotation is seen as derivative: it does not produce, but reproduces. This perception, of course, is perfectly in tune with others that determine the minoritarian position of cartoons, of 'funny music', and even music itself within a visually dominated film industry.

It is by temporal displacement that the democratic impulse of Stalling's quotation, and its violation of classical norms, reveals itself as a radical strategy. In the context of the debates surrounding postmodernity, the removal of work from its original context becomes an act meaningful in itself, as with the sampling of the rock group *U2* by the audio collective *Negativland*[10]. Hence, Diedrich Diederichsen (2004a) has suggested that montage, in relation to quotation, can be seen in terms of the destruction of an old continuum; a simultaneous act of destruction and construction. So, for example, the act of cutting up and quoting a song by U2 can be thought of as an attack on the dominance of

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[10] In 1991 *Negativland* released their single *U2*, which sampled the work of the famous Irish rock group of the same name. *U2*'s label, Island records, filed a suit against *Negativland* for violation of trademark copyright regulations. *Negativland* argued that the case was an example of a corporate giant crushing an independent label in response to the latter's challenge to the legal status quo. Chris Grigg of *Negativland* commented on the strategy of appropriation: "It's extremely effective to actually apply our hands to this media barrage, cut it up, and turn it into something else that comments on it. That's one of the best ways to make art that we can see right now. But that's the central problem: the laws don't realize the legitimacy of this" (Berry, 1995).

U2-style über-rock, and all that it connotes in terms of its stars, their status, the commercial music industry, that laws that support it, and so on. The montage undertaken in sampling can, in this way, be heard as a decontextualisation of hegemonic sound objects. But in the context of a *Merrie Melodies* cartoon, and judged by the terms of radical postmodern appropriation and expropriation, Stalling's quotation of the work of the great classical composers, or even of contemporary tunesmiths, seems to be subversion without a political aim.

Borrowing the title of Jean-Marie Straub's 1965 film, Diederichsen (2004a) has suggested that another aspect of the radical value of montage lies in its status as the place of the *not reconciled*. Transposed to the cinematic, Diederichsen's formulation reveals itself clearly in 1920s Soviet cinema, where montage editing reveals rather than hides the cut joining (and separating) two shots. This marking of suture is a cinematic practice that makes evident, rather than conceals, the construction of film by editing. Within the context of Soviet Montage this can be understood as a strategy of objectification, whereby the indexical and iconic power of the photographic sign to signify the profilmic event or object is reduced in order to enhance its status as a complex sign. In Soviet montage one plus one equals three, whereby the third term is an intellectual or affective construction, the result and product of the collision or juxtaposition of two shots. Montage manifests a resistance to the power of the naturalistic image, a desire for the signifier to no longer be dominated by the profilmic signified – the 'real' objects and events that the image seems to refer us to. This style of editing stands in contrast to the practice of continuity editing, whereby shots are arranged and recorded in such a way that they can be edited together as seamlessly as possible. Thus, conventions such as the match on action, adherence to the 180-degree rule, consistent screen direction, and rough graphic matching between shots have developed to support narrative film-making by enabling a smooth flow of shots that will not distract the audience from engagement with the narrative, or identification with characters. In the parlance of Brechtian debates, the continuity style of editing supports an illusionistic form of cinematic representation, while montage reveals itself, making the construction of the artwork visible.

Within the context of the animated cartoon, there is indeed a sense in which sonic montage foregrounds musical construction. What is clearly audible in Stalling's music is fragmentation and montage: a rapid change from quotation to morphological sound effect and back. Each element is audible as a brief sonic 'flash', the sections running together as a sequence, yet with each section maintaining its identity, illuminated brilliantly as it passes (sharing some similarities with the John Oswald *Plunderphonics* experience). This sequence of audio events moves so rapidly that setting oneself the task of identifying the changes from sound effect to musical quotation to a morphological use of sound is an exhausting and almost impossible task. But of course, this sonic montage is not isolated from the changes taking place on the image track. The fractured nature of the soundtrack means the relationship between sound and image is not a fixed constant, but rather that it is in *a constant state of flux*. This is a crucial point, and one to which we shall return shortly.

Speed, of course, was another of modernism's emblematic enthusiasms. In addition to the obvious Futurist celebration of speed in all its forms, it also becomes a key trope of jazz music. In the early 1940s bebop introduced a form of playing so rapid that this style of jazz effectively removed itself from tradition of dance music. This, together with the complex, angular melodies that opened and closed individual numbers and bookmarked the players' solos, served to foreground virtuosity. Bebop remained visceral and rhythmically infectious, but it also became intellectual and elite, in some way empowering the black musicians who created and played it. A number like Dizzy Gillespie's *Bebop* wasn't for humming or dancing to; it was designed for head-nodding, finger-popping admiration. Thus, the cranking-up of tempo empowers the bebop musician. When this is then applied to quotation in jazz, we have a position in which the player is demonstrably the master of the material he or she is reworking or appropriating. When bebop musicians play standards, they are judged not by fidelity to the original, but by their virtuosity in restructuring, referencing and distorting source material.[11] It is mastery over the material that is important here, and the transformative powers of the

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[11] And in this respect it is worth pointing out that most original bebop tunes were in any case barely recognizable or unrecognizable reworkings of a limited number of standards, e.g. *How High the Moon, Blue Skies, I Got Rhythm.*

musician that are made manifest. And in a sense, if one makes the John Zorn case for Stalling's work to be appreciated as democratic and anti-hegemonic, then his twisting, stretching and compression of original tunes might also be seen in terms of the empowerment of the deconstructor, the empowerment of the montagist over hegemonic sound objects, particularly in relation to his sampling of classical music.

But there is also a sense in which speed takes a piece of music somewhere else. In their introduction to *A Thousand Plateaus*, Deleuze and Guattari write:

> There are no points or positions in a rhizome, such as those found in a structure, tree, or root. There are only lines. When Glen Gould speeds up the performance of a piece, he is not just displaying virtuosity, he is transforming the musical points into lines, he is making the whole piece proliferate. (Deleuze and Guattari, 1988: 8)

In the cartoon speed transforms montage from a potentially intellectual activity into a purely sensory experience more akin to infection by a speed virus. Quite simply, cartoons are films on speed, a line of flight with no destination. When Stalling puts his source material through his own sampling process, the resultant fragments are articulated with such rapidity that we are indeed taken to a place not previously occupied by the original music. To use Deleuze and Guattari's phrase, Stalling is making the whole piece proliferate, in the sense that the music under his control develops affective and perhaps even significatory dimensions not present in the original.

Dahl sees this rapidity of montage in terms of the plight of the composer:

> Another problem is the excessively short time in which music must make its points and within which it must accomplish changes of mood, of character, of expression. This calls for constant flexibility in the handling of thematic material and the ability of applying the variation technique to phrases of aphoristic brevity. (Dahl, 1974: 187)

This also made for a staccato style, reinforced by the fact that the composition had to correspond to predetermined timings: "tied down, as he is by metronome and timing sheet, it is difficult for him to write music that has flow and overall continuity and that is written across bar lines rather than shackled by them" (Dahl, 1974: 188). More positively Edith Lang and George West, authors of *Musical Accompaniment of Moving Pictures: A Practical Manual of Pianists and Organists* (1920), offer the following guidance:

One important factor in these pictorial fares is the matter of speed. "Pep" is the key-note to the situation, with the current "jazz" tunes as a medium. When special effects are to be introduced, or certain moods and emotions are to be "italicized" and burlesqued, this may be done at any point of the composition played, the piece instantly to be resumed. Above all, keep things "going," like a juggler who may be handling two or twenty balls, and occasionally drops one, but must never cease in throwing and catching something. (Lang and West, 1970: 37)

Speed serves to intensify the affective dimensions of the cartoon. In the same way that rhythm infects the listener, cartoon speed *possesses* the audio-spectator. Soviet montage optimistically sought to enlighten, uncover and awaken the viewer on an intellectual level, thus bringing about a political awareness that might result in the reconstruction of society; in its shaping of film material, and material film, montage plays an interventionist part in constructing a new world. Stalling's montage also has transformative powers, but at a sensory rather than an intellectual level. Stalling's music contributes to the cartoon's celebration of destruction.[12] For Eisenstein destruction is not just a practical matter (clearing the decks for a new Soviet Union), but is also symbolic. For Bugs Bunny, destruction is sensory pleasure: toppling statues is a laugh – they do not necessarily have to be of a Tsar.

A number of critics have considered features of the cartoon soundtrack in terms of their divergence from a number of traditional musical norms, celebrating its radical potential. We have already seen how John Zorn, probably Stalling's most active champion, describes the composer as a 'revolutionary visionary' who created a "radical compositional arc unprecedented in the history of music" (Zorn, 1990). Kevin Whitehead simply describes Stalling as "a great modernist composer" (Whitehead, 2002:141), while Goldmark and Taylor comment:

Cartoon music is among the most engaging and experimental forms of twentieth-century music, exploring the more outrageous extremes of instrumentation, rhythm, and nonmusical sound. It is a genre in which rapid tempo changes, unusual instrumental effects, experimental percussion, post-modern quotation, shock chords, and musical genre-shifting

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[12] This point is indirectly illustrated by the work of Survival Research Laboratories. Since 1978 the group has been mounting genuinely dangerous live events featuring self-destructing machines. The group was set up by founder Mark Pauline to reflect and appropriate the violence that he felt characterises the era we live in. The soundtracks that are compiled to accompany these live events often feature cartoon music. Recordings of some of the shows can be heard on Pauline & Jupitter-Larsen (n.d.) [sound recording:CD].

are de rigeur. (Goldmark & Taylor, 2002: 5)

Elisabeth Vincentelli assesses the value of Stalling's work in terms of its status as authentic Americana: "... Stalling worked within a particularly American tradition of abrupt interplay between high and low culture, and of orchestrated collisions between musical styles" (Vincentelli, 2002: 203). This feature of Stalling's work has caused some writers to connect Stalling with Charles Ives, and by this kind of association attribute value and status to the cartoon composer's work. Ross Care writes of Stalling's score for *Steamboat Willie* in celebratory terms:

> Key musical themes in *Steamboat Willie* were the title tune "Steamboat Bill" (an old Irish folk tune) and "Turkey in the Straw." This same pastiche style was applied even more heavily to the *Plane Crazy* score (1928), which features a catalog of familiar public domain tunes – "Ruben, Ruben," "Yankee Doodle," "Dixie," "Hail to the Chief" – fragments of which are dizzyingly stitched together by Carl Stalling in almost Ivesian fashion, and sometimes heard in two- and three-part contrapuntal development. (Care, 2002: 22)

The promotion of cartoon music by its association with the musical avant-garde continues to this day. In an article on the work of Glen Daum, the composer responsible for the scores for *Mighty Mouse: The New Adventures* (1987-8) and *Chip 'n' Dale's Rescue Rangers* (1989-92), Neil Strauss makes a point of mentioning that the composer studied with Ligetti at Stanford, while Daum himself clearly sees connections between his own work and that of 'serious' composers: "You can be corny or contemporary; you can do anything... At one point, I had four different sections of the orchestra all playing different stuff at the same time. It was like Elliott Carter had scored the episode" (Strauss, 2002: 12).

The heterogeneity of cartoon sound seems guaranteed by a freedom not afforded to other genres of music. Writing originally in 1947 for *The Music Educator's Journal,* Scott Bradley comments: "Established rules of orchestration are blandly ignored, since beauty in cartoons is rarely even skin deep, and we must employ 'shock chords' which sometimes reach the outer limits of harmonic analysis" (Bradley, 2002: 123).

Here, the composer of the *Tom and Jerry* cartoons is clearly cognizant of the avant-garde and of his relationship to it: "Yes, from Schoenberg to Nelson Eddy all in one reel" (Bradley, 2002:123). But it is probably John Zorn who makes the most powerful claims

for the artistic value of cartoon music by associating Stalling's work with that of William Burroughs and Jean-Luc Godard (in reference to the cut-up and the jump-cut), as well as with the musical practices of Zorn's own contemporaries in the 1980s and beyond.

Rupture

However, the limitation of all these viewpoints is that they tend to consider cartoon music in isolation – that is, extracted from the audio-visual complex of which it forms a part. Zorn's claim for the value of Stalling's work begins: "Separating his music from the images it was created to support, it becomes clear that Stalling was one of the most revolutionary visionaries in American music" (Zorn, 1990). But, of course, in the context of the animated cartoon, Stalling's music is *not* separated from the images it was designed to accompany. Adopting a position similar to Zorn, John Corbett writes: "Some of the broadest implications of cartoon music have nothing at all to do with animated images, but are the result of what happens when the visual content is removed altogether and the listener is left to grapple with the sounds on their own terms" (Corbett, 2002: 279).

This is not to say, however, that all critics conveniently dispense with the visual dimension of the cartoon. Interviewed by Brophy, Zorn also notes: "From a young age he was playing for silent movies. That helped create his weird sense of musical logic. His music was always connected with a visual counterpart, and that guided the music to non-musical development, more a filmic sense of development" (Brophy, 2002: 264). However, although Zorn acknowledges the visual as the framework by which Stalling's music is informed, nevertheless his appreciation relies upon the re-situation of Stalling's work within a strictly musical context: it is here that the music seems to take on a radical trajectory. By following a visual logic, Stalling's music challenges hegemonic forms of musical organisation. Placed in the musical context, the image-driven sounds conflict with existing frameworks of music: "In following the visual logic of screen action rather than the traditional rules of musical form (development, theme, variations, etc.), Stalling created a radical compositional arc unprecedented in the history of music" (Zorn, 1990). It is through displacement and recontextualisation that Stalling's termite art challenges

the hegemonic sound-objects constituting dominant forms of music. Hence Zorn's claim that it is "unprecedented *in the history of music*" [author's emphasis], for Stalling's compositional approach is not unprecedented in the history of vaudeville or cartoon sound.

But can these sounds have more value than simply representing a challenge to existing models of strictly musical sonic organisation? Can cartoon music be considered, in a positive sense, an alternative to the hegemonic structural models of music? To engage with the potential of cartoon music in positive terms, consideration needs to be given to the sense in which it takes us to a different place, rather than simply negating established norms.

Western art music has tended to reject those sounds it considers unmusical. It has always held itself – and has been held up to be – the abstract art form par excellence. Douglas Kahn (1999) has argued that Western art music has always been resistant to imitative sounds, and that even the Futurist experiments with noise maintained music's isolation from a wider sonic environment: "In keeping with the conventions of Western art music at that time, Russolo rejected 'imitation' and, in the end, simulated worldliness only through an expansion of timbre" (Kahn, 1999:10). In musical terms, Stalling's use of montage, juxtaposition, collage, fragmentation, collision, speed, pastiche, parody and quotation, forms of dissonance, devaluation of the classical, and lack of closure all point to a radical trajectory in his compositional practice. But in addition to this, the intertextuality of Stalling's work is an intrusion – albeit musicalised – of the outside into the sealed world of Western art music. The practice of quoting well-known pieces of music serves to situate what is currently being played, and what is currently being auditioned, within the context of a specific cultural practice. The self-contained, self-justifying compositions of post-classical western art music seem to engulf the listener, depriving them of a horizon beyond that of the composition's own making. Stalling's use of quotation, in signalling the material heterogeneity of musical forms and practices, removes the possibility of this form of total immersion in a single composition, and in the single, consistent and coherent sonic world it creates. In this sense, Stalling renders music 'audible': his work is simultaneously able to sweep the listener along with his energetic

montage, while still allowing the possibility of auditioning the individual quotations 'from the outside.' This form of intertextuality, coupled with its articulation through montage, foregrounds sonic materiality of both the whole and its constituent parts through its heterogeneity.

However, in a quiet and a noisy way, it is sound's *adherence* to the image, its lack of isolation that is one of the most radical aspects of Termite Art. Mickey-mousing punctures the bubble in which western music has placed itself, forcing an acknowledgement of an 'outside', an other: in this case, the visual. Not only does mickey-mousing destroy the notion of an isolated specificity, of an abstraction from all else, it introduces the possibility that there are other kinds of structuration, other ways of considering structure. What is under consideration here is *not* the Zornian model of a paradigm transplant that results in the extension of the existing range of musical structures, further expanding music's mighty sonic empire. Rather mickey-mousing challenges the notion of how music might *be* – that is, rather than providing other ways of thinking *about* music (i.e. as a pre-determined, substantive entity), mickey-mousing provides new ways of *thinking* music. Audio-visual synaesthetic experience like that of mickey-mousing, presents a sublation of sound and image, in which binary relations, hierarchies and identities are liquefied, where no one milieu is sacrificed to another, but in which each milieu becomes permeable to the point of dissolution. For music this marks an end to the notion of fixed boundaries, fixed identities and empires, to be replaced with a notion of audio-visual flux, of audio-visual becoming. The radical challenge to music is, consequently, not to be thought through in terms of destruction or eradication, but as a dissolution that is enacted without loss: a sublation. Such a liquefaction is liberating, a way out of the identity habit, a way of thinking beyond the parameters of identity and essence.

The refrain contained

Although Stalling's compositions might be considered radical in some respects within a musical context, within the cartoon their potentially turbulent elements are clearly contained. Cartoons are a central and inescapable part of popular culture, whose soundtracks seem to contribute to their broad appeal and commercial success rather than

shaking the culture industry, or hegemonic forms of western art music, to their foundations. Only when taken out of context of the cartoon does Termite Art begin to build a space for itself. This is what has effectively been done by John Zorn, whose musical practice, which draws on both the montage and humour of Stalling's cartoon work, situates him clearly within the contemporary avant-garde. This new context for Termite Art has been hard-won by Zorn, whose occupation of an indeterminate space between rock, jazz and art music, and whose 'maverick' status is indicative of the difficulty faced in inscribing his work within the dominant discourses constructed by music criticism.

But within the cartoon, what is it about the nature of sound-image relationships that seems to remove its potential for turbulence? To return to the idea of the refrain, we could think of the sound and image tracks as two separate milieus in the terms proposed by Deleuze and Guattari. An audio-visual complex such as the film, which is neither a purely visual nor purely sonic art form, territorialises these milieus: it is precisely audio-visual, something other and different from either or both of its constituent terms. It is for this reason that we give this particular audio-visual complex its own name: *the film*. Moment by moment the territory of the film is bitten out of the two milieus: "A territory borrows from all the milieus; it bites into them, seizes them bodily (although it remains vulnerable to intrusions). It is built from aspects or portions of milieus" (Deleuze and Guattari, 1988: 314). In doing this, as we have seen, these two separate milieus might echo to the same territorial refrain. That is, both sound and image can be linked by a common morphology.

Of course, this mickey-mousing is only one manifestation of the contract between sound and image that is required by the film; this is a contract marked by flux and relative positions of dominance within a visually-oriented hierarchy, as we have already observed in relation to the cartoon. There are moments when this contract breaks down, moments when the film fails to territorialise its sounds and images – when, for example, Godard's camera wanders off two characters conversing in a record store in *Vivre sa Vie* (1962) to spy on Parisian street life through the shop window as they continue talking. There is the

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sound of escaping steam in Antonioni's *Il Deserto Rosso* (1964), a sound that fails to know its proper place and amplitude. This is also a feature of marginal film forms and practices, such as the 'badly' dubbed film and the pornographic film of the pre-video age, where a selective matching rather than total matching or total non-matching ('contrapuntal' sound) seems to challenge the legitimacy of the film's contract between sound and image. Such sounds reterriorialise, carving out a chunk of time and space for themselves.

It is precisely this kind of moment that has been celebrated as radical by the deconstructive film practice and criticism that has long been at pains to disentangle the sonic from the visual within the audio-visual constructions of cinema. Here, deconstruction is championed as enlightenment, as an anti-illusionist strategy to empower the formerly passive viewer. In the mickey-mousing contract, however, such possibilities do not present themselves. But does this mean that within an audio-visual text mickey-mousing represents the deradicalisation of both sound and image? Absolutely not, for as I hope to show, mickey-mousing also has a largely unrecognised, and perhaps even repressed radical potential in respect to the deterritorialisation and reterritorialisation of sound and image. While it may disarm music within the audio-visual complex (yet potentially radicalise it outside), it has a more complex relationship with notions of containment within the work as a whole.

There is a belief both within filmmaking and criticism that the soundtrack should not simply echo or illustrate or reinforce the image. This presents itself in discussions on film sound in which the concept of redundancy serves as a value judgment. It was an objection to the coincidence of sound and image that motivated one of the first theorisations of film sound, the joint *Statement* published by the Soviet filmmakers Eisenstein, Pudovkin and Alexandrov in 1928. In *The Sound Film: A Statement from the USSR* (hereafter referred to as *A Statement*), the three filmmakers famously proposed a contrapuntal use of sound. This can be understood within the context of Soviet montage, and specifically its Eisensteinian formulation, as a strategy to objectify sound or image, an attempt to reduce its power to refer to an original profilmic object and to enhance its status as a complex

sign. On the use of synchronous sound, the filmmakers comment: "To use sound in this way will destroy the culture of montage, for every ADHESION of sound to a visual montage piece increases its inertia as a montage piece, and increases the independence of its meaning" (Eisenstein, 1977a: 258). The reference to inertia expresses a Modernist resistance to the naturalistic image, a desire for the signifier to no longer be bound to the 'real.' Sound and image in this Modernist film practice could never be allowed the transparency demanded by the Classic Realist Text, but rather should submit their 'independence of meaning' (i.e. their naturalistic representational function to refer to an absent object) to the authority of the montagist. *A Statement* was thus a theorised response to the 'canned theatre' of Hollywood cinema.

This notion of vertical montage has maintained the moral high ground ever since. In 2000 I attended a talk given by the Hollywood sound designer Claude Letessier to a large group of people made up of film sound professionals, academics and students. Letessier described his work on Terence Malick's *The Thin Red Line*, and other projects he had been working on. He was a charismatic speaker with a solid professional track record, and with a strong sense of presence was more than able to hold the audience; that is, until he showed a clip from *The Last Days* (1998), a film he had been working on recently. This was a documentary about memories of holocaust survivors, and was composed largely of interviews, interspersed with both contemporary and archive footage of the concentration camps. As the film's supervising sound designer, his job appeared to have been fairly straightforward, since the interviews were powerful and moving in themselves. However, he had chosen to lay music under the interview footage, an unremarkable string arrangement guaranteed to create an emotional response. Almost instantly the moment the lights came back on, the audience turned on him. He had broken one of the cardinal rules of sound design: the music he had added, it was felt by the assembled crowd, was *redundant*. It unnecessarily replicated what was already present in the film. Facial expressions, the voices of the speakers, and the personal narratives related by the interviewees, all seemed to do their own emotional work. The audience did not need his music to guide their reactions. The strength of the audience's response was quite extraordinary: Letessier temporarily lost control of the room, and the normal, orderly

call-response of question time turned into an oceanic grumbling over which Letessier was struggling to be heard.

What this incident illustrates so clearly is the fact that a largely art-cinematic model of audio-visual counterpoint, that was originally developed in the early years of sound cinema in opposition to an 'illustrative' use of sound, continues to dominate the way in which the cinesonic is formulated. The Soviet notion of contrapuntal sound remains influential to this day, underpinning a belief within both filmmaking and criticism that sound should not simply echo or illustrate or reinforce the image.

But this dominant focus on montage ignores the fact that Eisenstein saw in the congruence of sound and image tremendous expressive potential. The congruence he argued for was that of mickey-mousing, a morphological congruence: "we cannot deny the fact that the most striking and immediate impression will be gained, of course, from a convergence of the movement of the music with the movement of the visual contour..." (Eisenstein, 1977a: 135). Could it be possible that, like montage, mickey-mousing might also present radical possibilities? Is it even possible that mickey-mousing might present a more radical face than other aspects of the audio-visual contract?

In *The Film Sense* Eisenstein writes in detail on synchronisation of the senses, referring amongst other things (including the work of Kandinsky and Walt Disney) to synaesthesia: the condition in which a stimulus received by one sense gives rise to perception in another. The phenomenon has been of interest to a number of painters, composers and filmmakers, some of whom, like Kandinsky, had themselves encountered some form of synaesthetic experience. Douglas Kahn has been fairly dismissive of the attention it has been given, while nevertheless acknowledging its potential as a productive means within the arts. At the heart of his criticism lies the fact that synaesthesia, as an experience, is wholly personal; the perceptions of one synaesthete will not match those of another:

> ... their arbitrariness cannot be extended to the social sphere, let alone to form the rationalistic spiritual laws of the cosmos. Synesthesia more properly belongs to another class

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of considerations where private experience is mistaken as public, such as the schism involved in the voice one hears while speaking versus the voice others hear... (Kahn, 1999: 122)

But this is to ignore the place that synaesthesia and parallel, related areas, occupied in the development of abstract art in the 19th century. The championing of music as a formal model for abstract painting, and as later as a temporal model for the abstract film, and the growth and popularity of the colour music movement all point towards a shattering paradigmatic change in the visual arts. What synaesthetic experience provides is a hemorrhaging of inside into outside, one into another – as with Stalling in a small way introducing 'the world' into Western art music through quotation and mickey-mousing, popping its bubble, challenging its isolation. If paintings could be structured like music, if they could work in the same way as music, then traditional territorial boundaries become subject to challenge. When painterly concerns began to enter filmmaking in the work of Man Ray, Hans Richter, Viking Eggeling, Walter Ruttmann, Oskar Fischinger and other members of the European avant-garde in the 1920s, synaesthetic notions took on not just a structuring role, but also a radical trajectory. The 'visual music' experiments of animators Walter Ruttmann, Hans Richter and Oskar Fischinger had little future in Nazi Germany, and both Richter and Fischinger emigrated in the 1930s. Once again we return to very literal lines of flight, and to the issues of violence and control as they relate to animation.

What the simplistic celebration of deconstruction as intrinsically radical neglects is the nature of film as an audio-visual complex. Deconstruction proposes a binary model of the audio-visual construct: cinema as image and sound, or sound and image. This way of thinking sound and making sound is problematic for two reasons. Firstly it precludes engagement with the transsensory or intersensory experience of cinema (and in any case, deconstructive approaches to cinema tend to neglect the sensory, preferring instead to focus on textual construction and the meanings thereby created). Secondly, binary models deny access to modes of creative political thought proposed by art works that transcend certain forms of specificity and differentiation. What happens in mickey-mousing can never be understood within the conceptual frameworks upon which montage and deconstruction are founded. What the montagist celebrates is not suture as combination

so much as suture as the mark of separation: the place of the 'not reconciled.' The montagist follows a dominant modernist discourse that privileges individuation, separation, essence, and specificity, irrespective of whether this is articulated through the language of addition or collision. If we return to *A Statement*, the essence that is understood to distinguish cinema from other art forms is identified as montage editing:

> It is known that the basic (and only) means that has brought the cinema to such a powerfully affective strength is MONTAGE. The affirmation of montage, as the chief means of effect, has become the indisputable axiom on which the worldwide culture of cinema has been built. (Eisenstein, 1977b: 257)

What this idea of a separable and identifiable visual essence of cinema creates is the notion that sound must in some sense be added to an already existing, fully functioning art of cinema. Thus sound becomes the secondary term of an axiomatic binary formulation.

But what the example of the cartoon shows is not that sound is *added* to image, but that sound is *folded* in with the image. To understand the radical potential of mickey-mousing, what we need is a model that provides an alternative to the dominant binary formulations of cinema. And it is Deleuze and Guattari's notion of territoriality that provides for a creative and productive exploration of just such a mode of thought.

Audiovisuality's refrain

In the essay *1837: Of the Refrain*, Deleuze and Guattari write: "… all kinds of milieus, each defined by a component, slide in relation to one another, over one another. Every milieu is vibratory, in other words, a block of space-time constituted by the periodic repetition of the component" (Deleuze and Guattari, 1988: 313). In relation to the previously established understanding of film as territory bitten from the milieus of sound and image, what the above suggests is that in some ways these milieus are distinguished from one another: each has its own internal "periodic repetition", each has its own consistency, its own intensity: image and sound are not the same phenomena. However, they are at the same time intimate, connected, and exist in relationship to one another: they "slide in relation to one another." Deleuze and Guattari continue:

> Every milieu is coded, a code being defined by periodic repetition; but each code is in a perpetual state of transcoding or transduction. Transcoding or transduction is the manner in which one milieu serves as the basis for another, or conversely is established atop another milieu, dissipates in it or is constituted in it. The notion of the milieu is not unitary: not only does the living thing continually pass from one milieu to another, but the milieus pass into one another; they are essentially communicating. (Deleuze and Guattari, 1988: 313)

The film as an audiovisual entity can be viewed in precisely these terms. Moment by moment the relationship between sound and image changes – it is in a constant state of flux. Sometimes the image leads, sometimes the sound, while at other times we witness a mickey-mouse fusion of the two: "one milieu serves as the basis for another, or conversely is established atop another milieu, dissipates in it or is constituted in it." Thus, that slippery entity we refer to as the film is not the sum of sound and image, but is rather that living thing that passes from one milieu to another. As Deleuze and Guattari suggest, these milieus "pass into one another, they are essentially communicating."

What constitutes the film itself, as an audiovisual construct (the term 'audio-visual' already seems inadequate) is akin to what Deleuze and Guattari term 'rhythm': "There is rhythm whenever there is a transcoded passage from one milieu to another, a communication of milieus, coordination between heterogeneous space-times" (Deleuze and Guattari, 1988: 313).

The 'rhythm' of film – that which constitutes film as more than sound plus image, that which constitutes the *filmic* – is this communication or passage or flow between one milieu and another. This is the film's audiovisuality. The film is not therefore sound and image communicating (leave that perhaps to music and photography) but communication *between* sound and image. The filmic lies not in either sound or image, but in the movement between them: "Action occurs in a milieu, whereas rhythm is located between two milieus, or between two intermilieus, on the fence, between night and day, at dusk, *twilight* or *Zweilicht*, Haecceity" (Deleuze and Guattari, 1988: 313-4).

Each milieu features its own 'action'; each milieu has its own morphology, its own consistency, its own events. But what defines the filmic is the 'rhythm' that is established between sound and image. And since each milieu is 'in action', in that both sound and

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image are constantly changing on a morphological level, so the 'rhythm' of the film is determined by the fact that sound-image relations are not fixed, but in a constant state of flux. Film is precisely audiovisual, both more and other than the sum of its constituent elements: "Whenever there is a transcoding, we can be sure that there is not a simple addition, but the constitution of a new plane, as of a surplus value. A melodic or rhythmic plane, surplus value of passage or bridging" (Deleuze and Guattari, 1988: 314). Such a formulation allows for a number of relationships between sound and image, but significantly it allows for those moments when sound and image fuse and become indistinguishable. These are those mickey-mouse moments, when for a brief period the identities of individual milieus are lost, when their individual periodic repetition can no longer be identified, when action within a particular milieu can no longer be perceived as such. Deleuze and Guattari draw upon the natural world to describe this close relationship between milieus:

> It has often been noted that the spider web implies that there are sequences of the fly's own code in the spider's code: it is as though the spider had a fly in its head, a fly "motif," a fly "refrain." The implication may be reciprocal, as with the wasp and the orchid, or the snapdragon and the bumblebee. (Deleuze and Guattari, 1988: 314)[13]

When this reciprocity is absolute, we encounter what Chuck Jones has described in the euphoric terms of perfection:

> Here are two examples of what I believe to be the nearly perfect wedding of music and graphics which occurs when the visual and the auditory impacts are simultaneous and almost equal. Both examples are from the picture *Fantasia*; both are bits. One consumed about four seconds in the *Toccata and Fugue* sequence. It pictured simply a ponderous, rocklike, coffinlike mass that waddled into a murky background accompanied by a series of deep bass notes. I should not say "accompanied," because this Thing was the music: to my mind there was no separation; the fusion of the auditory and the visual was perfect. (Jones, 1946: 365)

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[13] This formulation also allows for a contrapuntalism that is familiar from *A Statement*. In reference to the reciprocality of the relationship between the spider and the fly, the wasp and the orchid, and the snapdragon and the bumblebee, Deleuze and Guattari draw upon the work of biologist Jakob von Uexküll, the author of *The Theory of Meaning* (1940) who, they claim, "has elaborated an admirable theory of transcodings. He sees the components as melodies in counterpoint, each of which serves as a motif for another..." (Deleuze and Guattari, 1988:314). An English translation of von Uexküll's work appears in *Semiotica*, Vol 42, no. 1 (1982).

"But where's the politics?"

Along with the various schools of socially-aware realist filmmaking practices such as cinema verité and the Free Cinema Movement, the montagists have territorialised the political, determining what political cinema might be, fighting between themselves from time to time for a bigger share of the pie. The political is always thought to lie in the intellectual productivity of montage or the representational power of drama and documentary, but it is never thought to have any sensory dimension. In 2002 I attended a sound studies conference[14] at which a performance was given by a video scratcher and a musician who at that time were known as *Meta Forester and the Mighty Jungulator*. Their performance took the form of a live laptop audio-visual improvisation, using sounds and video footage selected and processed in various ways by the two performers. Like many performances of this kind, there was a close relationship between sound and image, either because both were being sampled together by the VJ, or because the music and images were evolving in relation to each other. As with many forms of live improvisation, each performer simultaneously took their lead from the other, to produce

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[14] *Sounding Out – an international symposium on the art and practice of sound.* July 11-13, 2002. Staffordshire University, Stoke-on-Trent.

an infinite loop of two-way, simultaneous feedback. Their work was politely received by what must have been an atypical audience for a group more used to performing in a club environment, and was followed by the usual questions and discussion slot. During this one of the less satisfied customers offered the comment to the performers, "It's very nice, but where's the politics?"

In his *History of Montage* (2004a), Diedrich Diederichsen ends his account of montage by referring to morphing, which he frames as a cheap show effect, a populist cinematic trick that nevertheless has political potential. However, the value he places on morphing is that which it provides as a self-conscious moment of interruption within an otherwise continuous flow. In this respect, he suggests, it returns us to one of creative the origins of Soviet montage, the circus's montage of attractions. This is a plausible argument, but it surely neglects the possibility that morphing itself might be radical, and perhaps political in other ways; for morphing simply suggests the possibility of thinking outside of fixed identity. It is in this respect perhaps utopian, in the same way that the synaesthetic has been euphorically conceptualised in terms of a sensory overcoming. But nevertheless identity does matter, and it is temping to imagine the broader political applicability of these ideas, and the ways in which creative conceptualisations based upon them might intersect with the debates and discourses of the postcolonial, or with notions of creolisation. Certainly issues of identity matter, for at the heart of identity lies the figure of negative differentiation, which far from being a knotty linguistic and philosophical problem, is political. It is what costs people their lives in ethnic conflict.

The audiovisuality of morphing and of mickey-mousing represent an important challenge to the dominant notions of what is understood to constitute the radical in audiovisual terms. The political aspect of film is often seen to reside within, or in relation to, its representational dimensions, revealing itself either in debates about the responsiveness of realist texts to 'reality', or in the rejection and deconstruction of those texts. In context of the latter form of film practice, the figures of contrapuntality and montage have been clearly privileged in a consideration of sound-image modalities which offer themselves in terms of resistance to the representational norms of the classic realist text. The

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contrapuntal and the montaged have now had a seventy-year run, and still continue to inform certain areas of filmmaking practice and their theorisation. So, for example, Nicky Hamlyn's 2003 book *Film Art Phenomena* has one chapter dedicated to a consideration of sound. Entitled "Sound, Sync, Performance", Hamlyn's commentary on the sound strategies adopted in the work of Jean-Luc Godard, Mike Dunford, William Raban and others, is framed by the issue of synchronisation. In this respect, Hamlyn's contemporary commentary simply reiterates the well-rehearsed discourse on sound-image relationships established by *A Statement.* Hamlyn places conceptual focus on work that is "wary" of the binding of sound and image, because of cinema's problematic mimetic dimensions:

> Some [experimental filmmakers] have opted to avoid the use of sound as far as possible, while others have produced works in which the fit between sound and image – and, in a more technical sense, synchronisation – is examined, and which these concerns become a key structuring element. (Hamlyn, 2003: 167)

The discourse in which Hamlyn situates adhesion is limited to that of the mimetic; the correspondence of sound and image is offered with no other context in which it might be discussed beyond its representational function. Similarly Diederichson, in what is a highly creative but somewhat perverse argument, reworks morphing by inscribing it into the history of montage, as "part of the great discontinuous aesthetic of montage arts" (Diederichsen, 2004b). Surely this critical take on morphing is a denial of its most significant feature: morphing transcends the *essential suture* of montage. What Diederichsen's problematic solution to the problem of morphing indicates is that there is no established discourse, no solid epistemological framework in which it might be situated in relation to radical creative practice. Morphing seems banal, what Diederichsen refers to as a "cheap show effect", because, perhaps, it appears somewhat in advance of the conceptual vocabulary by which we might engage with its radical potential.

As I have shown, if we return to a careful reading of Eisenstein, we see that both the adhesive and the contrapuntal coexist in his thinking on cinema, despite the fact that it is the figure of montage that has come to dominate our understanding of his contribution to the poetics of film, and remains a dominant presence in thinking on radical poetics. The importance of this return to Eisenstein, and to a consideration of an audiovisuality of adhesion, is that it releases a potentiality which offers the possibility of a different notion

of what constitutes the political. As I have tried to demonstrate throughout this dissertation, contrapuntal and oppositional formulations, in all their various forms, have certain limitations, certain blind spots. This does not mean that the contrapuntal should simply be rejected, overturned, to be replaced by another model of relationality. Rather the key problem the contrapuntal presents is its dominance within the arena of what constitutes a radical poetics. In this context the figure of contrapuntal montage seems somewhat calcified, a fixed and unresponsive position from which to judge the audiovisual text; are there not other ways for Hamlyn to discuss sound-image relationships in contemporary avant-garde film and video? What an engagement with the audiovisuality of adhesion enables is a route into an affirmative poetics that allows us to leave aside the rehearsal and reiteration of generational edicts based purely on the inscription of difference. This move from deconstruction to folding is profoundly difficult; it presents modes of potential radicality that at present have no easy, ready-made framework in which to situate themselves as political. In this sense it is perhaps understandable why the disgruntled member of the audience at the *Metaforester and the Mighty Jungulator* gig should have voiced his disappointment with their performance, or why Diederichsen should seek to situate morphing within a continuous and coherent history of montage. The limitation of existing viewpoints is that they struggle to come to terms with a politics that is immanent in poetics. The potential radical dimension of an adhesive audiovisuality, and of other modes of sonic and visual articulation that work towards fusion, lies not in a series of political protocols 'flown in' from outside the audiovisual text, and applied unresponsively to an array of films, videos and performances, but is immanent to that audiovisuality itself. And if this is the case, then it follows that the political dimensions of audiovisuality might extend to matters of sensation and affect, issues to which I return in the next chapter.

Refrain

Montage and synaesthetic effect can be considered to be two of the most radical aspects of Stalling's Termite Art, but in a cartoon the territorial appropriation of milieus disarms and dissolves the power of sonic montage. Within the audio-visual construct we call *the film*, the soundtrack's montage no longer maintains its identity as such. This is because,

to paraphrase Eisenstein, every adhesion of image to a sonic montage piece increases its inertia as a montage piece, and increases its independence of meaning. Stalling's musical fragments, when auditioned independently of the images, do indeed present a form sonic montage that thoroughly challenges classical notions of musical structure. However, these musical fragments, located within the audio-visual complex are never heard without also being 'seen', and hence lose their sense of being located within a horizontal sonic montage structure. At the same time, while total synaesthesia, that is total mickey-mousing, can be radically challenging – as it is in the work of the Whitney Brothers - this very montage ensures we never get this. Instead we witness only brief moments of mickey-mousing followed by others in which the nature of the contract between sound and image differs. In this way the potentially turbulent elements of Stalling's Termite Art remain well under control, his challenge to the classical contained.

But does this mean that Stalling's sonic strategies can never fulfil their radical potential in an audio-visual context? History would indicate that this might be possible, if only briefly. The *model* of sound-image relationships offered by the cartoon genre represents a radical challenge to Western film sound practices and provides a way of thinking through filmic and other audio-visual texts. Part of the radical potential of Termite Art was realised briefly in the 1980s in some aspects of Scratch Video practice. Here, the articulation of appropriated sounds and images briefly harnessed both montage and the synaesthetic experience to political ends, before being reterritorialised by both pop music and the music industry for marketing purposes. However, as we shall see in the next chapter, the location of Scratch within existing political frames of reference for avant-garde film and video was highly problematic, raising questions of how sensation and affect might be conceptually situated within a radical audiovisuality.

Carl Stalling

Chapter 5

ORGANISED SOUND
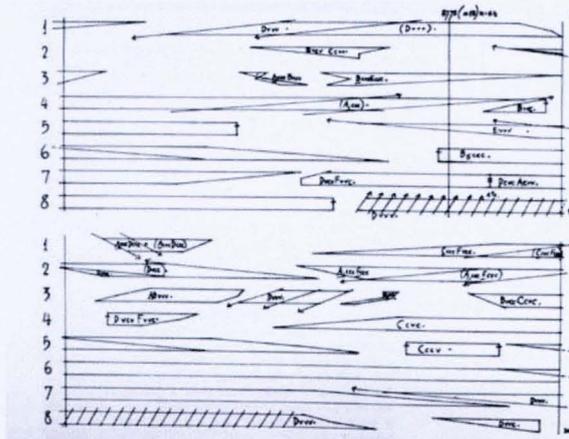
◀◀ Back to the future ‖ 1935, 1937, 1940

As the cases of ground noise, optical crackle and electronica demonstrate, the material dimensions of audiovisuality have a historical aspect that is closely connected with the figure of technology. The model of sound-image relations proposed by Eisenstein, Pudovkin and Alexandrov in *A Statement* (1928) was, of course, a reaction to the introduction of synch sound, a post-hoc theorisation offered in response to the international transition to sound. But there is also a more positive sense in which technology might realise unforeseen potentialities, generating cinesonic possibilities not considered in advance of the availability of that technology. In this way the introduction of optical film sound technology opened up two parallel but related strands of sonic practice that had a profound influence on the soundscape of the 20th century.

The first of these was synthesis, considered in Chapter 3; the second was sound editing. The creative potential that sound editing offers is the opportunity to organise sounds; to determine their relationships with one another, their placement within a temporal frame, and to shape and reshape the source recordings. In this way, the technology of optical

sound recording and reproduction provided the possibility of organising sound in ways other than those proposed by the mimetic or illustrative sound-image relations of classical cinema. In the 1930s and 1940s the potential for organised sound offered by optical sound-on-film technology was not only considered within the film industry, but also by a number of composers, for whom it presented radical possibilities in music. For Jack Ellitt, John Cage and Edgard Varèse this new technology offered forms of control, and a degree of control over sound hitherto unknown in music. Their thoughts on the creative potential of this new technology were recorded in what are in effect three personal manifestos on sound written between 1935 and 1940: Jack Ellitt's article *On Sound* (1935), Cage's now famous talk *The Future of Music: Credo* (1937) and Varèse's *Organized Sound for the Sound Film* (1940). All three composers heard in the technology of film sound a means by which the range of sounds available to the composer could be extended. Thus Cage proposes music that would include those worldly sounds he terms 'noise': "The sound of a truck at fifty miles per hour. Static between the stations. Rain" (Cage, 1993: 3), while Ellitt enthuses "all world sounds of interest now come within a sphere of creative control which may be termed Sound-Construction" (Ellitt, 1935: 182). Similarly, reflecting on the unexplored potential of the film soundtrack, Varèse comments, "Any possible sound we can imagine can be produced with perfect control of its quality, intensity and pitch, opening up entirely new auditory perspectives" (Varèse, 1940: 205). In this respect their response to the potential of optical film sound technology was entirely in accord with the call raised by the Futurist Luigi Russolo earlier in the century for an extension of the range of sounds available to the composer.[1] And like the Futurists, Ellitt, Cage and Varèse heard in sound organised by editing an opportunity to break with existing musical paradigms and the chance to explore sonic experiences that

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[1] In his 1913 manifesto *The Art of Noises*, Luigi Russolo wrote: "The ear of the Eighteenth Century man would not have been able to withstand the inharmonious intensity of certain chords produced by our orchestra (with three times as many performers as that of the orchestra of his time. But our ear takes pleasure in it, since it is already educated to modern life, so prodigal in different noises. Nevertheless, our ear is not satisfied and calls for even greater acoustical emotions" (Russolo, 1986: 24). Referring to concert halls as "hospitals for anemic sounds" (1986: 25). Russolo calls for the extension of music to embrace what had previously been considered noise. While not featured in Russolo's own compositions, which used specially built *intonorumori* to produce noises, his manifesto nevertheless prompted consideration of the musical value of worldly sounds.

were somehow more in sympathy with the changing soundscape of the 20th century. Ellitt writes: "Beauty in terms of sound-colours is not necessarily confined to orchestras, pianos, etc., and musical forms are only the chrysales [sic] from which more beautifully conceived forms will eventually burst forth in complete freedom and independence" (Ellitt, 1935: 185). And in a similar vein Varèse comments: "We are now in possession of scientific means not merely of realistic reproduction of sounds but of *production of entirely new combinations of sound*, with the possibility of creating new emotions, awakening dulled sensibilities" (Varèse, 1940: 205). However, what also attracted these composers to film sound technology, and what distinguishes their thinking from the Futurist celebration of noises, is the opportunity to control, manipulate and organise recorded sounds. Thus Ellitt calls on new technologies such as film to create a new sonic art form he terms "sound-construction", while Cage suggests replacing the term 'music' with "organization of sound", and Varèse offers the near identical "organized sound." These notions of organisation and construction – termed sound editing and mixing in the context of the cinesonic – are understood by the composers to embrace a range of different creative possibilities. In addition to allowing access to previously fugitive or undividable worldly sounds, the tape technology of optical film opened up opportunities for the manipulation of recorded sound:

> We want to capture and control these sounds, to use them not as sound effects but as musical instruments. Every film studio has a library of 'sound effects' recorded on film. With a film phonograph it is now possible to control the amplitude and frequency of any one of these sounds and to give it rhythms within or beyond the reach of the imagination. (Cage, 1999: 3)

This degree of control is seen by Cage to potentially extend to the level of the microsonic. Indeed, without tape technology it was not possible to isolate, combine or separate sounds of very short duration with any degree of control, and in this sense optical film creates the field of the microsonic.[2] Of all three composers, Cage is the only one to identify this field of microsonic potential:

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[2] While discs allowed the incorporation of worldly sounds into music – as in the work of Pierre Schaeffer in the late 1940s – it was not possible to isolate, combine or separate sounds of very short duration without tape technology. Schaeffer's montage in first generation musique concrète works such as the *Etude aux chemins de fer* (1948) was produced by playing sections from discs in succession, rather like a modern DJ. Schaeffer developed a technique of locking the stylus in a groove, to create what we would today refer to as loops of sound. These could not be shorter than

The composer (organizer of sound) will be faced not only with the entire field of sound but also with the entire field of time. The "frame" or fraction of a second, following established film technique, will probably be the basic unit in the measurement of time. No rhythm will be beyond the composer's reach. (Cage, 1999:5)

However, what Ellitt perceives in the new technologies of sound recording and reproduction is the opportunity for personal and democratic exploration of sound, and the potential for a new art of sound that might even extend to the domestic sphere:

When good recording apparatus is easily acquired, many people will record simple and everyday sounds which give them pleasure. The next step would be to mould these sound-snaps into formal continuity. Such sound-construction as this can have no more pretension or esoteric meaning than may be found in the energy expended on arranging some flowers in a vase. (Ellitt, 1935: 183)

Although all three composers heard in optical film the potential to radically alter the forms and sounds of sonic arts, what they also shared in common was the fact that their dreams were never realised, at least in terms of film sound technology. Cage's attempts to gain access to the technical resources of Hollywood did note prove fruitful[3]; Varèse was not given the opportunity to compose for film; and Ellitt continued to work as a commercial film editor, and later as a director of documentaries. Rather it was with quarter-inch tape that each realised their early enthusiasms for the radical creative possibilities of organised sound, in pieces that are loosely described as musique concrète[4]. But what was never realised by these composers, whose primary interest in

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one rotation of the disc. With a 78rpm disc, this determines a loop length of approximately ¾ of a second.

[3] Cage did not have much better luck with the commercial radio industry. The composer's desire to control and manipulate sounds, outlined in the *Credo* of 1937, translated four years later into his 250 page score for the CBS radio production of Kenneth Patchen's *The City Wears a Slouch Hat*. On being told by a member of staff at CBS that there was no limit to what could be done on radio, Cage laboured on a mammoth orchestration of sound effects, each notated in terms of timbre, loudness and pitch. On returning to the studio a week before the programme was to air, Cage's score was rejected as being too complicated to be realised within budget and on schedule. Cage then worked solidly for four days on a much more modest score, this time for percussion. See Pritchett (1995), Kostelanetz (2003: 164-165) and Kahn (1999: 137).

[4] Cage's first work on tape was his 1953 composition *Williams Mix*, for which over 2,000 separate pieces of sound tape from 350 separate recordings were cut and edited according to a graphic score (Austin, 2005). Varèse composed two pieces for tape: *Déserts* (1954) was written for orchestra and tape, and features electronic interludes that employ modified recordings of factory sounds and percussion instruments; *Poème Électronique* was commissioned for the Philips pavilion, designed by Le Corbusier and Xenakis for the 1958 World Fair, and comprises machine noises, bells, piano, percussion and electronic tones. Jack Ellitt became a pioneer of musique concrète. There are no commercial recordings of his work currently available, but

film technology had been in its sonic aspects, was the way in which an art of organised sound reliant on film technology might have been resituated within a cinesonic context. In Varèse's article in particular, a radical cinesonic model generated from musical debates about organised sound is offered directly to the cinema. Needless to say, it was many years before the kind of control and manipulation of film sound envisioned by the composer was realised in an audiovisual form.

Fifty years later, Scratch video of the 1980s could be seen as a realisation of those early notions about what an art of organised sound might be. And it is 'musical' notions of control that surface in Scratch video, a critically neglected moment in British video history. In some ways Scratch offers itself as form of audiovisual musique concrète, the political dimensions of which seem to realise the radical potential of organised sound. Furthermore, in its generation of synaesthetic effects through editing, Scratch seems to realise something of the radical potential of the cartoon examined in the previous chapter. However, while in some ways Scratch continues a trajectory initiated with the introduction of optical film sound technology, the specificity of video, and the cultural, political and historical milieu in which this was situated, release other potentialities, setting in motion key issues about the relationship between audiovisuality and the political. As we shall see, the musical dimensions of Scratch proved problematic for those trying to locate the work within existing political frames of reference for sound-image relationships, in particular raising questions of how sensation and affect might be situated within a radical audiovisuality.

▶ Fast Forward to the past ‖ 1984

If the audio-visual projections of the past were only partially realised in the musique concrète tape experiments of the 1950s, then it was video that finally made this a possibility. Although access to equipment and finance was an issue for radical experiment in the 1930s and 40s, this had become somewhat less of a problem with the arrival of

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extracts from his pieces can be heard in Keith Griffith's 1987 documentary *Doodlin'- Impressions of Len Lye*. According to Roger Horrocks, one of the few people to have interviewed Ellitt, in later years he composed only for his own satisfaction, "no longer interested in the effort required to find sponsors or audiences" (Horrocks, 2001: 168).

video, and particularly with the growth of consumer video in the early 1980s. This is also a period in which we see music and the audio-visual come together in a highly productive manner. But what this period also demonstrates clearly is that the conceptual possibilities thrown up by optical film sound are not those manifested by video. This raises two important questions: firstly, how are notions of control and organisation translated through the specificities of the medium, which itself is situated within a particular historical and cultural context, and secondly, are the cinesonic practices of video best understood by a way of continuity with other audio-visual forms, or in terms of distance and fracture?

British Scratch video of the 1980s, which was largely based on the reworking of images appropriated from television and film, in many ways manifests the ideas of organised sound proposed by Varèse, Cage and Ellitt half a century earlier. Thus, some forms of Scratch can be seen and heard as an audio-visual form of musique concrète. But of course, the technological realisation of these ideas took place within a specific cultural milieu in which technology figured differently from its formulation in the first half of the twentieth century. The specificity of cultural practice linked to the introduction of widely available video technology signals the way in which the organisation of sound becomes a complex issue with ramifications beyond the model of authorship underpinning musical commentary on the potential of moving-image sound technology in the 1930s and 1940s. That is, the issues and concerns of Scratch indicate how musically-informed models of sonic organisation are also informed by the specificities of audio-visual technology, and how these technologies are deployed within specific cultural contexts. Despite the fact that in many ways video seems to be the heir to film, and that it is often treated as part of a seemingly coherent audio-visual continuity founded by film, video is marked significantly by differences and discontinuities with other audio-visual modes.

Scratch is intimately linked with music and musical modes of articulation: it took its name, and in part, its techniques and ethos from New York hip-hop. Furthermore, it developed within the environment of the London club scene of the 1980s. Concordant with the wishes of the organised sound composers, Scratch extends the sonic world of

music to include worldly sounds, noises and sound effects. It enabled a democratic, personal exploration of an art of sound construction, as proposed by Ellitt. It also extended the control an artist-composer had over their sonic materials, allowing what had happened already in musique concrète, and in hip-hop, to find audio-visual expression. Indeed in many ways Scratch is musique concrète , but with a significant difference: it is a properly audiovisual form, of the type perhaps suggested by Varèse. As the organised-sound composers had wished, relatively cheap and available technology allowed the artist the facility of precise placement and manipulation of sounds, even down to the level of the single frame. But perhaps most significantly, Scratch enabled a form of listening not previously encountered in other forays into organised sound: that is, a *listening with the eyes*.

In 1984 Andrew Czezowski and Susan Carrington, owners of *The Fridge* nightclub in Brixton, set up a video lounge featuring the work of filmmakers and video artists like Derek Jarman and John Maybury, as well as a small group of Scratch video artists such as George Barber and Jeffery Hinton. Other Clubs followed, including *Heaven* in London and *The Zap Club* in Brighton. At *The Fridge* work was shown on what, within a fine art context, would be termed an installation: a pile of TV monitors chained together, recalling the beginnings of video art in the sculptural works of Wolf Vostell and Nam June Paik. This visual presentation signals the fact that was already a well-established 'sculptural' mode of address for video in the UK at this time. However, the fact that this work was exhibited not within a gallery, but within a club context, indicates a shift in the concerns and modality of the work. While Scratch seemed to invite the idea that it existed in continuity with established modes of video art, it was perhaps marked to a greater extent by discontinuity. This shift and disjuncture was to cause problems for the handful of critics that sought to engage with it critically, particularly as they were attempting to situate Scratch within the dominant film and video art discourses of the period: discourses that were informed by the established tenets of political modernism.

Film as film

Scratch took place against a critical background that was dominated by political and aesthetic concerns that were in part inherited from the British avant-garde film culture of the 1970s. As Steve Hawley wrote at the time, " There was a surprising degree of orthodoxy in British video in the seventies that did not apply on the continent or in the States. Here it was all structuralism and deconstruction" (Hawley, 1986: 9). British avant-garde film practice in this period was dominated by paradigmatic modernist concerns, most clearly articulated by Structural film. In the work of Peter Gidal, a leading theorist of Structural film, and one of its most significant filmmakers, this took the form of a wholesale rejection of narrative, and an attempt to demystify the illusion of film by engaging with its structure and materiality. This work demanded the involvement of a distanced, yet active, spectator who remains critically aware throughout the screening. Key to an understanding of this practice was the notion of 'film as film'[5]. Film was taken to be a substantive entity that could be differentiated from other art forms, and which would sustain a self-reflexive investigation of specificity. While it was argued by its opponents that this form of filmmaking was inward-looking, lacking political engagement or contemporary relevance, the Structural film was seen by some filmmakers and critics as a political and cultural attack on representation in its various ideological, social, economic and sexual forms (Rees, 1999: 82). The severely reduced imagery of Gidal's films, which avoid even the representation of the human figure, proposes a minimalist film as film: film as silver halide, the celluloid strip, the cone of light, the conditions of projection, space, perception and duration. Structuralist filmmaking set the agenda for a politicised engagement with both the modernist concerns of specificity and materiality, and the problems of representation and narrative.

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[5] This was the title of a major exhibition held at London's Hayward Gallery in 1979 (3 May – 17 June). *Film as Film: formal experiment in film 1910-1975*, featured the work of many of the key avant-garde filmmakers of the period. The exhibition attempted to trace a direct connection between contemporary and earlier modernist works, situating the contemporary in terms of continuity with the past. The exhibition's title proposed the history of avant-garde film from 1910 to 1975 as a concern with formal issues, at the centre of which was the engagement with the specificity of the medium.

While there was definitely an engagement with narrative in the 1980s (which Peter Wollen had called for in his influential 1975 article *The Two Avant-gardes*)[6], the position on it remained critical, as with the work of John Smith, for example. The concern with representation, a central aspect of Structuralist film practice, remained a key issue of this period, as critical debate on the matter was further extended by the impact of feminism, a growing awareness of racism in British society, and a desire to engage more directly with the social dimensions of the political. In one way Scratch video seemed to maintain the avant-garde's concern with the nature of the medium, but whereas avant-garde film and video practice addressed itself through materialist and self-reflexive practices, Scratch turned its attention to the televisual image, prompted and supported by the widespread introduction of the domestic VCR in the early 1980s.

In addition to the critical and artistic context set by the previous decade, the 1980s was a key period of artistic awareness of the British party-political landscape. Socialism was in decline in Britain as the Conservative government began to dismantle the welfare state. Trade Unions were under attack, and 1984 saw the beginning of a long miners strike that ended in failure for the NUM, and the beginning of the downsizing of the British mining industry. Unemployment, at three million, was at its highest since the Depression of the 1930s. What we see in the avant-garde film and video of this period is a largely oppositional practice representing the concerns of an embattled Left, a final playing out of a radical oppositional mode set in train by the events of May 68.

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[6] In the article, published in 1975 in the journal *Studio International*, Wollen identified two strands of avant-garde practice, which differed in terms of aesthetic assumptions, institutional framework, and historical and cultural origins. The 'co-op' avant-garde, it was proposed by Wollen, had its roots in the work of artists such as Hans Richter, Man Ray, Moholy-Nagy and Rene Clair, whose interests had been essentially visual, and whose film practice grew out of the concerns of painting. The other strand of avant-garde film practice, represented by the work of Godard, Straub and Huillet, was more closely associated with the traditions of Soviet cinema, and embraced narrative and language. Wollen's article called for a re-unification of the two traditions. He writes: "The way into narrative cinema is surely not forbidden to the avant-garde film-maker, any more than the way into verbal language. Cinema... is a multiple system – the search for the specifically cinematic can be deceptively purist and reductive. For most people, after all, cinema is unthinkable without words and stories. To recognize this fact is by no means to accept a conventional Hollywood-oriented... attitude to the cinema and the place of stories and words within it" (Wollen, 1975: 175).

Scratch video predominantly featured reworked images from television and feature films, although artists such as Sandra Goldbacher and Kim Flitcroft also used live action footage shot by themselves. In many ways, Scratch was seen as a post-production aesthetic, relying heavily on certain editing figures such as rapid cuts and repeat edits. But in scratching images from television, artists were using what was to hand, what surrounded them in daily life. This was a technological possibility made available by VHS, rather than the tape formats on which Scratch video was edited. What VHS allowed was a timeshifting function that put broadcast images into other modes of circulation. Images of, for example, the miners strike or a Conservative party conference were no longer transitory, broadcast once and then gone forever (unless one had access to the archives of the broadcaster). VHS allowed what was previously an uninterrupted flow of single iteration to be interrupted, stored, and reiterated according to the designs of the scratcher. As Sean Cubitt puts it, "The domestic video cassette recorder (VCR) is itself a production device, as it can be used for seizing moments from TV's incessant flow, compiling, crash editing" (Cubitt, 1991: 4). For the first time ever, the sounds and images of broadcast television became permanently available to almost anyone who wanted to record them. This not only provided, in some cases, Scratch artists with the material content of their work, but also signalled a change in the relationship between the producers and consumers of television. In short, the VCR prompted and supported a culture of appropriation that found its most immediate manifestation in Scratch.

An oppositional use of the TV image is clearly apparent in the work of the Duvet Brothers (Rik Lander and Peter Boyd Maclean), whose agit-scratches dealt with unemployment, strikes, the dismantling of the welfare state, Thatcher's government, and the arms race. Their 1984 tape *Blue Monday* (Figs. 5.1-5.8) features shots taken from documentaries and worker's films of the 1930s: footage of the General Strike, fascist marches, mill workers, and the Chamberlain mannequin taken from Ivor Montagu's 1939 film *Peace and Plenty*. This is montaged with contemporary images of Eton schoolboys, the Miners' Strike, protest marches, and urban desolation. The tape juxtaposes images to critique the repressive and divisive aspects of British life under Conservative rule; shots of the Tory leadership are juxtaposed with images of Russian leaders taking the salute at

a May Day parade in Red Square, and images of Soviet soldiers are edited together with those of British police attacking striking miners.


Fig 5.1

Fig. 5.2

Fig. 5.3
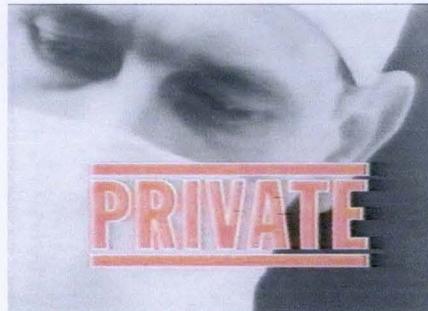
Fig. 5.4

Fig. 5.5

Fig. 5.6

Fig. 5.7

Fig. 5.8

Figs. 5.1-5.7 *Blue Monday* (The Duvet Brothers, 1984)

In Gorilla Tapes' satirical *The President's World* (1985) images from the films of Ronald Reagan are juxtaposed with contemporary news footage of Reagan engaged in presidential duties (Figs 5.9-5.10). Here, montage serves to make darkly comic connections between the two sets of images, suggesting that Reagan saw his role as President of the United States in terms of the heroic characters he played in his movie career.

Fig. 5.9

Fig. 5.10

When Scratch was required to provide its own soundtrack, it sometimes adopted techniques from Hip-hop, but rarely its specific sound. Much more common was the use of the music of pop groups of the time, such as *New Order* and *Joy Division*. In a sense, Scratch was informed by, but also influenced, another cultural phenomenon of the 1980s, the pop video. Indeed, the Scratch aesthetic went on to be incorporated into many of the Techno videos of the late 1980s. While there were certainly many Scratch videos that simply illustrated or interpreted or even worked 'contrapuntally' against a pre-existing music track, there were also others that worked in more varied cinesonic modes, employing synch sound alone or in conjunction with music. What this produces is a complex flux of sound-image relationships, rather like that of the cartoon. But unlike the cartoon, here synaesthetic effects dominate the audio-visual texture of the work, rather than simply forming a part. Thus Scratch lies in an interzone between a number of milieus: it is like pop video, but it isn't pop video; its imagery and style of construction sometimes reminds us of Soviet montage and agit-prop, but at the same time its musical dimensions and its place within club culture mark it apart from this tradition; it also reminds us of the experiments in visual music of the 1920s, but in Scratch representational rather than abstract images and sounds have a significant part to play.

And while there are in some ways clear connections with the synaesthetic use of film in mixed media performances and the expanded cinema of the 1960s, traditional notions of performance are absent from the post-production aesthetic of 1980s Scratch.

This indeterminacy is mirrored in Scratch's critically problematic audiovisuality. In terms of the contemporary discourse of avant-garde film and video practice at this time, the arrival of Scratch represented a challenge to the existing understanding of the political nature of sound-image relationships, and the dominance of the visual. The critical difficulties raised by the avant-garde's attempt to territorialise Scratch mark the point at which existing conceptual models reveal their own deficiencies and biases in terms of the way in which they conceptualise the cinesonic, and the cinesonic experience. What we see and hear in the case of Scratch is the point at which dominant modernist aesthetic formulations are challenged by other radical conceptual models of the cinesonic.

Sound and Scratch

One needs to look quite hard in the critical material of the time to find mention of the sonic strategies employed by Scratch. The common use of the ready-made music soundtrack, to which appropriated TV and film footage were edited, or which was simply selected to accompany a dominant visual track, was a problem for a number of critics of the period. Philip Hayward reviewing a tape by Kim Flitcroft and Sandra Goldbacher in 1986 describes the work as "a disappointingly routine visualisation of Joy Division's vintage 'Love Will Tear Us Apart'" (Hayward, 1986: 10), while elsewhere Ben Keen refers to "the obligatory sugar coating of the up-tempo soundtrack" (Keen, 1986: 10), and Nick Houghton to "a reliance on the supposedly populist appeal of music-tracked tapes" (Houghton, 1986: 9).

However brief this commentary, it nevertheless signals a number of fundamental ideas about the appropriate place of music on the film or video soundtrack. There is a clear notion behind the comments that visualisation of music is somehow an unworthy filmmaking practice, less acceptable than using sound to *accompany* a dominant image track; which of course has a long, although largely unattended, history in avant-garde

film. Thus a clear hierarchy of sound and image is revealed; image as the primary term, with sound as adjunct. This attitude reveals itself with great clarity in the discourse surrounding the work of the animator Oskar Fischinger, who in the 1930s produced a series of films in which abstract graphics were tightly synchronised with famous pieces of light classical or popular music. Writers championing Fischinger's work have always been at pains to describe this relationship between sound and image as something other than a visualisation of the music track. Richard Whitehall figures Fischinger's work in terms of "audio-visual harmony" (Whitehall, 1988: 60), while William Moritz argues that music provided a popular route into potentially challenging abstract imagery: "Fischinger never intended to illustrate music, but rather hoped that the viewer, reminded that music is really abstract 'noise' with a 1000-year artistic tradition behind it, would more easily be able to relate to his graphics" (1979:61). Indeed Fischinger himself commented obliquely on the issue when describing the process by which he had added music to his first experimental abstract film: "On the wings of music faster progress was possible" (Fischinger, 1947: 38). But the fact remains that the movements, transformations and appearances of Fischinger's abstract lines, dots and wedges are not simply suggested, but are actually determined by the rhythm, development and repetition of the music from which they spring. Fischinger would begin work on these films by dividing a phonograph record into sections, like pieces of a pie, and then painstakingly transcribe the sonic events held by the each groove in each section of the disc.[7]

But why resist the model of visualisation? Why should Fischinger's defenders, or even the critics of Scratch, figure it as a problem? What Fischinger's champions set out resist in their figuration of his relationship with music is the idea that visualisation is merely a decoration or interpretation of another art form. What this in turn points to is the modernist notion, expressed so clearly in Dziga Vertov's introductory titles for *A Man With a Movie Camera* (1929), that film should properly be distinguished from other art forms. Since musical *accompaniment* is an accepted tradition in avant-garde and experimental filmmaking, we can see that these views posit the essence of film as

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[7] The process is described by Fischinger's widow Elfriede in Keith Griffiths' 1992 documentary *Oskar Fischinger: Visual Music*.

residing in its visual dimensions. And thus we are returned to the celebration of silent film as the true art of film, and a model of sound film as simply canned theatre; or in this case perhaps, canned music.

In terms of this prioritisation of the visual, the avant-garde proves no different from classical Hollywood cinema. Although, as previously stated, music had an important influence on early avant-garde film, this was purely in terms of how an abstract visual experience might be organised in time. As Wollen notes in *The Two Avant-gardes* (1975), in many ways early avant-garde film simply extends painterly concerns (particularly those of abstraction) into a temporal dimension. The work of the pioneers of early avant-garde film like Man Ray, Hans Richter, Viking Eggeling, Moholy-Nagy and Fischinger proposed kinetic solutions to pictorial problems. Moholy-Nagy wrote in *Painting, Photography, Film* that, "The traditional painting has become a historical relic and is finished with. Eyes and ears have been opened and are filled at every moment with a wealth of optical and phonetic wonders" (Moholy-Nagy, 1969: 45). His book proposes an evolution from the easel painting to film, traced by a trajectory that begins with a chapter entitled "From painting with pigment to light displays" and ends with "Simultaneous or Poly-cinema." Thus, for the Moholy-Nagy project, cinema simply introduces a kinetic element into the formerly static photographic arts. Like other writers and artists, Moholy-Nagy offers the essence of cinema as the visual, locating the filmic in relation to the camera and movement: "everyone today has some idea of what is meant by the proposition – revolutionary in its effect in the early days – of the FILMIC, that is, of the film which proceeds from the potentialities of the camera and the dynamics of motion" (Moholy-Nagy, 1969: 122).

Stan Brakhage, many of whose films were purposely produced without a recorded soundtrack, took the view that film had its own rhythms and 'music' inherent in its construction, and thus its own silent sense of 'sound':

> The sound sense which visual images always evoke and which can become integral with the esthetic experience of film under creative control, often makes actual sound superfluous. On this premise alone, one could disqualify almost every sound film from consideration as a work of art. There is no definition of a work of art which will admit superfluity. (Brakhage, 1960: 67)

Once again, it is the quest for specificity that motivates Brakhage, an artist who had made the decision to film his family and his daily life in order to reduce or eliminate the influence of other arts on filmmaking, most particularly drama (Ganguly, 2002: 141). Yet again, what this reveals quite clearly is the notion that the essence of film taken to be the image. This idea dominates what Wollen referred to as the 'first' avant-garde, and consequently provided the context in which Scratch video – a profoundly audio-visual form – was situated by critics of the time.

In terms of Scratch, this deafness translates into an expression of distrust of music. When Keen refers to "the obligatory sugar coating of the up-tempo soundtrack", (Keen, 1986: 10) he surely signals a notion that the popular music Scratch employed was in some way making something essentially difficult more palatable. There is also the sense that this is in some way negative and inappropriate; that the 'sugar coating' might be deceptive, mystificatory, perhaps even manipulative. Houghton adopts a similar position when he writes about "...a reliance on the supposedly populist appeal of music-tracked tapes" (Houghton, 1986: 9). Here the sense is that somehow music makes the work popular and digestible in a way that is unacceptable to the writer. A profound mistrust of popular music is expressed by both critics, whose comments suggest that somehow music, and specifically pop music, is not properly aligned with the bitter realities and tough messages Scratch might be trying to address in its images; perhaps even that this 'frivolous' music is indifferent to the images. Bearing in mind the overt political imagery of Scratch, much of which was taken from taped news broadcasts of the time, popular music is figured as somehow out of sync with the harsh political and social reality of the struggle of the Left. Catherine Elwes makes this point even more directly:

> Some artists are now trying to make direct social comments with Scratch. The Duvet Brothers for instance, cut together urban wastelands and well-fed Conservative politicians. The pace is snappy and the images are well-oiled by the inevitable disco soundtrack. We are left wondering whether to debate the evils of unemployment or get up and dance. (Elwes, 1985: 22)

What Elwes's comments indicate is a tension between a politically committed imagery, engaging with the issues of the time at an intellectual level, and a cinesonic *experience* engendered by the use of dance music. Significantly Elwes's criticism extends beyond the

nature of the soundtrack to address the perceptual and experiential dimensions of Scratch, specifically the 'well-oiled' nature of sound-image relations. In common with Keen and Houghton, this is figured by Elwes as somehow in opposition to what is properly 'political.'

There is also a sense in which the effect of the 'indifference' of a ready-made soundtrack is further compounded by the club milieu in terms of a diversion of attention from the visual. Scratch's origins in the London club scene, and specifically its place within dance culture, also prove problematic for writers on the subject:

> A bank of TV monitors, a bar, dancefloor, live bands. Nice. But while the sounds might be wild by contrast the vision will probably be dull, decontextualised and operating at a level of attractively vacuous video wallpaper. Shown without the sub-text of sound, primarily because this might disrupt the DJ's programme of vinyl goodies, and located within a situation where the viewers concentration is likely to be minimal, video-art here taken [sic] on the appearance of empty gesture, image without meaning, an impacted form where the tendency toward spectacle serves only to amplify the worst in dominant television and film. (Funking the Frame/Framing the Funk, 1986: 9)

What lies behind this antagonism to Scratch appears to be a feeling that the visual is not occupying its rightful place as the primary term of the audio-visual, and is being usurped by the dance music of the club milieu. This in turn reveals a lack of understanding of the political possibilities of sound and of synaesthetic audiovisuality. It reveals an asynchronicity of critical thinking that results in the fact that these critics can only see this work in terms of insufficiency. What this clearly demonstrates is that at this time there was no conceptual vocabulary in place to engage with the affective dimensions of Scratch's audiovisuality. Hence the comments of these critics simply return us to a set of established and well-rehearsed notions about what constitutes a radical poetics of film in essentially visual terms. This continued prioritisation of the image returns us to Moholy-Nagy's suggestion that the visuality of media specificity was "revolutionary in its effect in the early days" (1969: 122). But perhaps we can revisit Moholy-Nagy's ideas to suggest that the ongoing prioritisation of the visual, and the concern with specificity manifesting itself in critical writing of the 1980s was no longer revolutionary, and perhaps even conservative. What can be clearly perceived in Scratch criticism is a figuration of the political in purely visual terms. But what also lurks behind these comments is an uneasiness about pleasure, and its relationship with the audio-visual

experience. This tension is manifested within the works themselves, which reveal a kind of crisis of the visual. What we see in a tape like the Duvet Brother's *Blue Monday* is a use of juxtaposition that returns us to the intellectual montage of Soviet cinema. When the image of Margaret Thatcher is juxtaposed with that of Soviet Military leaders reviewing a May Day parade, a third meaning is created, suggesting that the Conservative Government is dictatorial and repressive. Elsewhere in the tape we see a shot of a surgeon, taken from a black and white documentary film from the 1940s (Fig. 5.11). The image is frozen and the word 'private' superimposed over it (Fig. 5.12). This is then mixed with the image of a graveyard (Fig. 5.13), producing a combination of images which very clearly reveals the equation: HOSPITALS + PRIVATISATION = DEATH. Here the images are employed to work at a *signitive* level, as in the Eisensteinian formulation of intellectual montage.
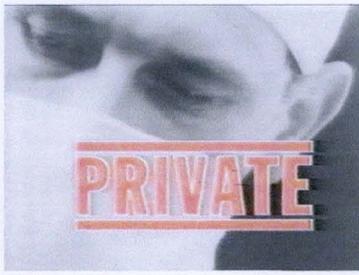
Fig. 5.11   Fig. 5.12   Fig. 5.13

But there are other forces at work here, challenging the dominance of the significatory and the linguistic. Although Joy Division's song *Blue Monday*, which forms the soundtrack of this tape, has lyrics, it is clearly not only operating at the level of signification; also, importantly, the music works in terms of affect. This is also true of the image track, where the affective dimensions of the 'political' imagery are enhanced through the use of cutting. Thus, in a sequence using news footage of police battling with striking miners, the shots are jump cut to the accents of the music. This use of editing is problematic for critics like Elwes: "We are left wondering whether to debate the evils of unemployment or get up and dance." What this cutting creates is a synaesthetic intensification of affect that cannot be understood or valued within those modernist discourses dominated by the conceptual traditions of semiology and structuralism, and

concerned primarily with meaning. The deconstructive modes of criticism, founded on structuralist principles, have no way to engage with certain modes of synthesis. Consequently, at this particular moment in history, there was no space for a consideration of the radical possibilities of synaesthetic experience, of the blending of sound and image rather than their separation.

The way in which images are combined using video technology also adds to this sense of challenge to the former dominance of the signitive political image. Here images lose their essence as they are folded and mixed one into another through the use of chroma key and luma key superimposition; a technique which renders them mutually perforated, and which of course, in its sonic form, is central to music production. Read in this way, the appropriated images taken from Ivor Montagu's 1933 film *Peace and Plenty*, and even the 'ironic' images of the contemporary Soviet military, can also be seen as nostalgic reassurance for a beleaguered Left. At the same time, the tensions identified in the critical writing between the affective and the representational also mark the tapes themselves. What we see and hear in Scratch is a becoming of the visual, a movement towards other modes of being. Importantly, it is music that stands as the marker of what the image begins to aspire to be, just as the image might represent other ways of being for music in the case of mickey-mousing. At the juncture or crossing over of these two becomings lies the audio-visual experience of Scratch.

Paradoxically it is the visual bias of Scratch criticism that is most revealing in terms of the political potential of the form's cinesonic dimensions. If we turn briefly to the way in which the appropriated image was understood within the critical context of the avant-garde at this time, we see with great clarity the discontinuities that mark Scratch and its soundtrack from the work with which it was initially assumed to be comparable. In the 1960s Nam June Paik declared that "Television has been attacking us all our lives... now we can attack it back" (Youngblood, 1970: 302). At first sight, Scratch videotapes might suggest that the widespread availability of technology represented by domestic video finally realises Nam June Paik's democratic dream of an oppositional televisual form. But this was not necessarily the case; the reason why this does not adequately account for

Scratch relates to what appropriation of sound and image might mean to the appropriator, particularly in terms of pleasure.

If the images transmitted by television were attacked by the Scratchers, this did not mean that television itself was necessarily their target. This becomes most apparent in the use of film in Scratch. VHS film rental made movies available on demand, and provided Scratch with another source of appropriated images and sounds. However, when film images entered this new mode of circulation, it was certainly not always the case that the Scratchers were doing so to deconstruct Hollywood film or attack the values it was assumed to stand for by the Left avant-garde. Despite its concern with the medium, Scratch did not offer the same self-reflexivity perceived in, or actually demonstrated by, video art, though claims were made for its formalist potential. Catherine Elwes wrote at the time: "There is no doubt that the fragmentation of seamless television footage robs the image of its narrative anchor and exposes it as a fictitious construct" (Elwes, 1985:22). Phillip Hayward's comment on George Barber's second *Greatest Hits of Scratch* compilation negatively suggest that, at least in the early days, Scratch was taken to have a formalist element: "The mere 'style' no longer has any innate novelty, nor any automatic formalist 'cutting edge'" (Hayward, 1986: 10). But at the heart of the criticism of Scratch lay issues of representation, focused most clearly on the problem of the male gaze:

Fig. 5.14 *Yes Frank No Smoke*
(George Barber, 1986)

"Sumptuous as Barber's reworkings of Nestor Almendros' images may be, does their recontextualisation substantially alter the 'core attraction' element of the exploitation of Brooke Shield's (often naked) body in the source film 'Blue Lagoon.'"

(Hayward, 1986: 10)

Fig. 5.15 *Night of a 1000 Eyes*
(Sandra Goldbacher, Kim Flitcroft, 1984)

"The glamour-scratch tapes of Kim Flitcroft and Sandra Goldbacher are pure celebration. Their video vamps do little to undermine the sexism of their media originals."

(Elwes, 1985: 22)

Fig. 5.16 *Bucks Fizz* (Jeffrey Hinton, 1984)

"The entire existence of a problematic of representation seems unknown to these artists, who operate as if the last 20 years of film history had never occurred or had been so successfully repressed as to have disappeared from the cultural horizon. The political relationships, the ideology encapsulated in television, and in the imagery of television seems unseen."

(Dunford, 1986: 6)

Central to Scratch's problematic relationship with the theorisation of film practice at this time is the issue of the personal interest in sampling, and how this might relate to politicised notions of representation. Taking the case of Jeffrey Hinton's use of a revealing shot of a dancer by way of example, the problem here resides within the image itself – the fact that it retains its sexual charge despite the fact of transplantation and even recontextualisation. Images such as Hinton's shot of the dancer's legs are not stripped of their sexual charge simply by the fact of transplantation. In a period where film criticism drew heavily on the theoretical underpinnings provided by semiology, imagery was subject to close analysis. It is here that we are brought to the key issue that troubled the avant-garde community with regard to the appropriation of the TV image: namely that it did not automatically radicalise it. Catherine Elwes' 1985 article "Through Deconstruction to Reconstruction" identifies the problem:

> There has been a sustained attempt to establish the political credentials of Scratch, but the question remains, does scratch Deconstruct television by reconstructing it? There is no doubt that the fragmentation of seamless television footage robs the image of its narrative

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anchor and exposes it as a fictitious construct. But the deconstructions are also reproductions, they reproduce highly seductive television imagery made all the more captivating by the ingenious new configurations scratchers are inventing. Scratch is being trapped by its own prey. (Elwes, 1985: 22)

Here the question of what constitutes a properly political form of Scratch revolves around the issue of deconstruction. Elwes concedes that radicalism through Scratch is possible, but only under certain conditions:

> ... only when s/he unrelentingly attacks and undermines the dominant readings of the footage s/he is using, when her vision remains clear and unclustered by arty aspirations, when s/he eradicates any weakness s/he might have for the glamour of those flickering fantasies on the screen. (Elwes,1985:22)

Once again the issue of pleasure is offered as a problem in relation to a radical politics of deconstruction.

For Mike Dunford, one of the sternest critics of Scratch, the practice of using television's images is fraught with problems. He writes: "Tremendous confusion exists about what it is that television actually does. Many video artists see it as either a source of neutral imagery to be copied, or reused, or as an example to be emulated for its production values, its narrative models" (Dunford, 1986: 6). Here he suggests a kind of naïveté on the part of scratchers who, he proposes, seem ignorant of the debates about representation that occupied a central place in work of theoretically (and politically) aware film and video makers. What Elwes and the other critics have a problem reconciling is the fact that the appropriation practiced in Scratch is not necessarily in tune with the kind of oppositional deconstruction proposed by the work of the previous decade. Importantly, it is the issue of the nature of organised sound that highlights this new logic of appropriation. I would argue that Dunford is incorrect in suggesting the scratcher's saw TV and film as source of "neutral imagery to be copied, or reused." Rather, these tapes often reveal the scratcher's attraction to their source material, rendering it anything but neutral. As Kodwo Eshun puts it in relation to scratching with vinyl, "The sample, a window into psychoaffective time, exposes and externalizes the instamatic mechanism that is your innermost taste" (Eshun, 1998: 58). This imagery is that externalisation of innermost taste, and thus represents a move from oppositional deconstruction to a form of

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cannibalism motivated in part by pleasure, and which needs to be understood in terms other than those proposed by the critical writing of the time.

Can you dig it?

Where the small amount of critical commentary focuses on the issue of the ready-made pop music soundtrack, what is neglected is the range of other cinesonic strategies employed in Scratch. Some Scratch video makers would use appropriated footage with its accompanying source soundtrack. In this case, the sounds might be incorporated into, and synchronised with, a pre-existing or specially composed piece of music, as in George Barber's *Yes Frank No Smoke* (1986). Here, Barber samples and scratches a number of American feature films of the period, including *The Deep* (1977) and *The Blue Lagoon* (1980). What is significant in the context of the cinesonic is that the original material is being raided as much for its sounds as for its images. Thus, single words, or even parts of words are scratched just as in hip-hop; repeated over and over again, sometimes reversed, sometimes manipulated by the addition of effects. These are then bedded into a composed music track that runs throughout. In one section of the tape Barber works on a sampling of a film starring Roy Scheider, scratching the phrases "no smoke" and "yes Frank" into a stuttering, rhythmic, hip-hopish "n/n/n/-/n/n/n/-/n/n/no smoke" and "y/y/y/-/y/y/y-/y/y/yes Frank/-/yes Frank." In addition, quite mundane pieces of action might be employed to form synchronous sound and image tracks, as when Barber scratches a sequence which builds a rhythmic structure from repeated shots of an actor putting down a telephone handset.

While Barber's manipulation of appropriated dialogue moves in someway towards the close control and manipulation of sound called for by Cage, Ellitt and Varèse fifty years earlier, this is perhaps more fully realised in sonic terms by those video scratchers who worked without a continuous music track, simply using the sound of the appropriated footage as a form of musique concrète. In the Duvet Brothers' 1984 tape *War Machine*, looped sounds of heavy artillery create the basis of a powerful, unrelenting sonic accompaniment to sometimes shocking images of war. The soundtrack also features loops and scratches of words and phrases: we hear "threat" and "safety net" taken from a contemporary speech by Ronald Reagan, the phrase "war machine" from a TV advertisement for a military magazine of the same name, and an ominous "you ain't seen nothin' yet."

A much more technically straightforward, yet equally effective piece of audio-visual musique concrète is the 1984 tape *Take It II*, also produced by the Duvet Brothers. Lasting only 30 seconds, the tape has been produced by scratching a short section from the 1971 movie *Shaft*. As with *War Machine*, no music has been added, and its makers work only with the synchronous sound accompanying the image. The tape opens with the actor Richard Roundtree, playing the eponymous detective John Shaft, emerging from the shadows to deliver the line, "Hey, I don't know about you guys, but me, I've had it up to here," and closes with the actor delivering an aggressive "Take it!" The Duvet Brothers isolate and repeat short sections of the scene, which begins with the ominous sound of the detective's approaching footsteps. Following this, the exclamation "Hey!" is repeated by looping five times. During the course of articulating this single sound, Rowntree's head moves slightly from the top right of the screen towards the bottom left. This is a small movement that would not attract any attention if one were watching the original sequence. However, by scratching this section, the jump cut that results creates a strong kinetic effect, as the actor's head flicks from one side of the screen to another in syncronisation with the sonic accent provided by repetition of the vocal exclamation. The same effect is produced when the actor's partial line "I've had it..." is looped a number of times. In this case, Roundtree is seen drawing an imaginary line across his chest, a gesture that illustrates the complete line "I've had it up to here," which is delivered

finally after several partial samplings. The tape closes with Roundtree gesticulating aggressively towards the camera, his fist and teeth clenched as the words "Take it!" are repeatedly looped, once again producing a strong kinetic effect that synchronises precisely with the repetitions of the soundtrack.

What this particular tape demonstrates very clearly is how cutting can generate synaesthetic effects. Scratch often employed this repeat edit, a short clip of video looped over and over with great rapidity. Edited in this way, the correspondence of sound and image strikes the viewer more clearly than when longer samples are used. The effect of repeating short samples of video is to bond sound and image ever more strongly. A clip of video might feature sounds that do not have a particularly strong morphological relationship with the image. Played once, such a clip would not demonstrate any significant synaesthetic potential. However, when that clip is repeated several or many times – as in Scott Rankin's *Central* (2001), for example – the connections between sound and image begin to crystallise, as by synchresis an element of the image begins to align itself with part or all of the soundtrack, and vice versa. The shorter the clip, the fewer visual and sonic events are included, giving the extract a more concrete morphological profile. Indeed, this kind of editing can release a micro-event (like the slight movement of a head) that would otherwise not offer itself up to synchresis. The more times we have the opportunity to view and hear the clip, the more opportunity we have to explore this micro-morphological domain, and nuances of movement and sound that can be missed at first viewing begin to reveal themselves in repetition. Thus a synaesthetic bond is shaped by the repeat edit. Additionally, it is worth pointing out that Rik Landers' own critical reflection on *Take It,* which was made by his partner Peter Boyd Maclean on VHS, offers a model for a positive poetics of rearticulation, rather than simply viewing Scratch as an essentially negative act of deconstruction:

> The feeling is great when something this simple and powerful comes together. It's like what Barbara Hepworth says about a piece of rock – that there's a form inside the material that you have to reveal with your hacking and tapping. With scratch there's a sense of chipping away and layering and moulding an existing form into something new. (Lander, 2005)

What Lander suggests in his choice of the sculpture simile, is the release of a potential that already lies within the material itself; scratching releases the kinaesthetic and synaesthetic potential of the source material.

What is interesting about the critical material on Scratch is that it tends to neglect, or merely hint at the affective dimension of the kinetic-sonic shocks delivered by the form. The rapidity of the Scratch edit, the possibility of endless repetition, are made sense of by Elwes in terms of an *excess* that aligns Scratch with television in a problematic way:

> Today, a general disenchantment with structuralist prohibitions has led to a euphoric return to television aesthetics. Yesterday's taboos are today's imperatives. Where the deconstructed image of the 70s was unlike television as possible, today's deconstructions are more like television than television itself – 'General Hospital on Acid' as John Sanborn put it. Scratch, the most fashionable form of television deconstruction is proposing excess as the new video aesthetic. Excess is a refusal to engage in rational exchanges with a system which it regards as irrational, autocratic and unassailable through normal political channels. (Elwes, 1985: 21-22)

Elwes picks up on the notion that Scratch might not primarily be concerned with rationality; that is to say, it might not be operating only at an intellectual level. However, she views the 'irrationality' of excess as simply a rational response to the irrationality of another system. Ironically, she touches on the key issue raised by the radical potential of Scratch when she opposes 'excess' and 'normal political channels.' She is absolutely correct that the audiovisual poetics of Scratch, figured here in terms of excess, do not relate to the established notions of what is understood to constitute the political. Her formulation offers failure as an oppositional strategy; a refusal to engage when 'normal political channels' are no longer operative. What this shows is an understanding of the political that is entirely limited to established political norms; there is no understanding that modalities like 'excess' might have immanent political potential. Her logic thus belies her belief in the order of the rational, proposing that irrationality should be challenged by any means if 'normal' political discourse is to no avail.[8] What Elwes

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[8] Elwes has recently re-evaluated Scratch in *Video Art: A Guided Tour* (2005). Here she offers Scratch's televisuality in terms of a refreshing opposition to the theoretically driven work of the previous decade: "Scratch's populist approach to image making was also a healthy antidote to the conceptual acrobatics of a 1970s avant-garde, steeped in theory" (Elwes, 2005: 115). However, her approach to what constitutes a properly political poetics of video remains unchanged, and her focus continues to centre on the problematic relationship between the affective and political

cannot comprehend is that the 'excess' of Scratch might have value beyond a Dadaistic oppositional technique. Scratch sidesteps a logocentrism that proposes, supports and requires individuation and essence; a logocentrism that also forms the core of a range of modernist approaches to the visual. The excess of Scratch replaces the single, isolated, meaningful and representational image or sound with a multiplicity that simply overtakes the audio-viewer in a stream of kinetic-sonic affective shocks. While above I have described in detail some of the basic structural elements of the Duvet Brother's *Take It*, this has been done with the aid of a VHS tape and the video player's pause button; that is, my own deconstruction of the tape is somewhat removed from the actual experience of watching it. When watching the tape without the benefit of freeze-frame, one is swept up in its flow, unable to track or identify the techniques being used, unable to reflect upon the complexity of its synaesthetic dimensions – one simply registers the flow of kinetic-sonic shocks as sound and image become increasingly fused.

The rapidity of the Scratch edit, and the possibility of endless repetition link the video edit controller in some ways with another technological phenomenon of this period, the drum machine. In regard to the speed and rhythm of generated by this particular piece of music technology, Kodwo Eshun writes:

> This is 'humanly impossible' time, this atomization of rhythm which is rhythmatics, opens up the posthuman multiplication of rhythm: the rhythm synthesizer's spastic pulses seize the body, rewiring the sensorium in a kinaesthetic of shockcuts and stutters, a voluptuous epilepsy. (Eshun, 1998: 79)

Eshun makes the point that the body is 'seized' by rhymatics, overtaken, possessed. He also makes a similar case for scratching vinyl, proposing that what the technique does is to create new textures in sound. These textures can be seen as a 'switching on' of the material potential of the scratch (Eshun, 1998:176). In just the same way, scratching

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dimensions of Scratch, figured in mutually exclusive, binary formulations: "internal contradictions arose when the glamorous aesthetics of the pop video were too thickly overlaid onto political sentiments. Many artists accompanied their video découpages with pulsating disco beats that, like [Paul Hardcastle's] '*19*', left the viewer wondering whether she should write to her local M.P. or throw a party" (Elwes, 2005:112). Regarding the use of scratched footage of the Vietnam war in the video for Hardcastle's 1985 hit single *19*, she writes: "Faced with repeating images of explosions and mutilated bodies, it was hard to know whether to weep or get up and dance to the music" (Elwes, 2005:109).

video releases the kinaesthetic and synaesthetic potential of its source material. That is, vinyl scratching isolates and articulates the powerful morphological dimensions of sound. The textures produced by manipulation, and the individual isolated sounds created by sampling, set up an experience that is felt or 'understood' at a bodily rather than an intellectual level. For Eshun, musical samples, scratches and the breakbeat all pay off in kinetic or dermal ways. Making a clear link between morphology, bodily experience, and the connections between film and music, he comments:

> To me, it makes complete sense to see action movies in the same stratum as skratchadelia. There are the same velocities, the same vectors, the same sounds: the sound of a car as it skids round a corner is the same sound the wheels of steel make as they ride around. You're captured, abducted by the same sounds in each. It's this fantastic sound of velocity, as 2 surfaces in friction literally converge and then shoot apart at fantastic speeds. (Eshun, 1998: 180)

Here vectors, velocities and convergence all point to a material sonic morphology that captures and abducts the listener in "voluptuous epilepsy." When Scratch video switches on the material potential of a moving image or a recorded sound, it switches on not *only* the potential to create meaning, but also its affective potential. In Scratch video the image track is given permission to do what music does all the time, moving away from meaning, moving towards affect.

If this 'voluptuous epilepsy', this 'rewiring of the sensorium' provides a way of understanding the audio-visual dimensions of Scratch video, then it also indicates why its true home was in the club environment rather than the gallery or cinema. The Club experience in itself can be thought of in terms of a sensory blending, a meeting of sound and image and bodily movement. Eshun writes: "Rhythmic psychedelia... attracts new kinds of dermal thought, 3rd-Ear hearing, the transensory capacities of embodied thought" (Eshun, 1998: 71-72). In a minor way, this is perhaps the goal to which Scratch video aspires. Scratch is a mode of articulation that places emphasis on blending and folding rather than isolation and specificity.[9] Little wonder then that Scratch received the

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[9] While not understood at the time, Scratch's engagement with folding signals an important cultural and epistemological shift that was affirmed more readily in other arts. For example, the concept of folding took on radical potential in architectural theory in the 1990s. See, for example, Lynn (1993).

reception it did in the 1980s when British avant-garde film culture was rooted in modernist visual paradigms of specificity and individuation.

"People only sample good stuff": the pleasures of cannibalism

In addition to the synaesthetic, there is another key dimension to Scratch that is once again related to the issue of pleasure, although this was clearly not attended to by critics of the period. Cubitt describes the technique of rapid repetition and its effect in the following way:

> Grab-frames, the repetition of a frame or a group of frames to give the impression of a repeated gesture, is one of the most common of mid-1980s video techniques and one which seems to drive on-screen characters to the level of puppets in a particularly disturbing way. (Cubitt, 1991: 95)[10]

He makes the point that such images, particularly those he identifies as representing power and masculinity (for example, the Roy Scheider performance that is sampled in Barber's *Yes Frank No Smoke*), can be read as an attack on the originals, and thus an attack on the values they represent. Diederichsen expresses this approach in terms of the power of montage to simultaneously construct and destroy: "everywhere a cut interrupts a continuum and is joined together with another one, a context, an image is also always lost" (Diederichsen, 2004b). This destruction of continuity can represent, as we have observed in the previous chapter, the destruction of some hegemonic cultural object. Thus Cubitt writes: "When Scratch artists force their on-screen figures to repeat an action over and over, it gives the sensation that some irrational, or malevolent, force has seized them, forcing them to rehearse the rituals we associate with the insane..." (Cubitt, 1991: 94). Cubitt sees this work of deconstruction very much in oppositional terms, as an attack on the original source material, and all that it might stand for and represent. This means, of course, he sees deconstruction as essentially representational. The act of deconstructing, and the deconstructed artefact, marks something other than itself; it marks a position of opposition to what is represented by the source material. This then neglects a positive consideration of the material act of deconstruction, and the materiality of the deconstructed. But as we have seen, it might be that Scratch is not best understood within

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[10] This is not technically correct, since the repetition of a single frame produces a still image, also sometimes referred to as a 'grab' (as in 'frame-grab').

this sort of conceptual framework; as the musician and DJ Matthew Herbert puts it so succinctly, "people only sample the good stuff" (Mixing It, 2002).

The complexity of appropriation extends beyond the oppositional gesture, and can be explored by considering some of the four characteristics of collage/montage proposed by Gregory L Ulmer (1985). Ulmer proposes that collage can be understood as the transfer of materials from one context to another, while montage is the dissemination of that material through a new setting. He identifies four aspects of the form(s): decoupage (severing); preformed or extant messages or materials; assemblage (montage) and discontinuity of heterogeneity. The logic of appropriation proposed by Scratch negotiates a desire that relates to both the act of severing, and an attraction to the extant materials being severed. When the scratcher picks out a single moment from the continuum of images and sounds being appropriated, they are locating, obtaining, and employing atmosphere and style, as well as a particular audio-visual event. In this way the background sounds of film, optical crackle or the hiss of video tape, and the specific sonic qualities rendered by a particular type of microphone, are all bought into in the scratch, just as much as the onscreen action, or the specific visual qualities rendered by the actor, the setting, props, lighting, film stock, and so on. A Scratch tape such as Barber's *Yes Frank, No Smoke* does not simply refer to the Hollywood movies it quotes, but at some level it also buys into them, and the whole artistic and cultural complex that inhabits and surrounds the clip. The images and sounds culled from the source material are surrounded and permeated by associations of historical period, lifestyle, attitude, sounds and atmospheres. Thus a fragment taken from source material can signify many characteristics of that source.

However, this act cannot be understood as simply the aspirational desire of a 'wannabe' Hollywood director. Kodwo Eshun has described the act of sampling in music as both respectful and predatory. Building on this idea we might see in the act of decoupage a form of cannibalism that is indeed both respectful and predatory. Anthropophagy as a metaphor for translation has been employed by the Brazilian poet Haraldo de Campos to describe not a furious aggression, but rather an irreverently amorous devouring. If some

forms of cannibalism are informed by a worldview that conceives spiritual force as inseparable from matter (e.g. forms of animism), then the killing and consumption of an enemy entails a tribute to another's strength that one wishes to combine with one's own. Working de Campos's notion through in terms of literary translation, Else Ribeiro Pires Viera describes "a translation project which murders the father… yet reveres him by creating a continued existence for him in a different corporeality" (Viera, 1999: 97). This complex position describes Scratch in many respects. If it is oppositional in any way, then it is in its positive desire to appropriate the power of its victim; Scratch's use of film and television footage can surely also be viewed as appropriation and theft rather than simply a negation or destruction.

In many ways, this was one of the most difficult things that Scratch presented to critics who saw in its sampled images forms violence and particular representations of women that it was felt needed to be resisted:

> What we are seeing here is the old problem of how to demonstrate sexism, say, without reproducing a sexist image. The 70s solution was to eliminate the image altogether. Today's exposition through excess unwittingly traps the artist in a circular argument with television itself. S/he oscillates between totally denying television imagery and wholeheartedly embracing it. S/he never steps outside it. (Elwes, 1985: 22)

The complexity of the relationship between source and rearticulation is signalled by Derrida's phrase "participation without belonging" (Derrida, 1992: 227). Applied to the Scratch video, this makes the point that the scratched footage forms part of a new text, while simultaneously referring to its original source. The 'participation' of the sample in Scratch takes place, firstly, at the material level. While the ruptures and contrasts of fine art collage might propose a deconstructive function, in opposition to illusionism and mystification, in Scratch such ruptures, although visible and audible, are subsumed by the organisational logic of the piece, whether it be rhythmic structuring or what Eisenstein referred to as Intellectual Montage. The referential element of the clip is guaranteed by its otherness, its belonging elsewhere. In this way, the clip leads to a double reading – of its place in the edit, and in relation to its place of origin. And even though we may not be able to locate the source of a clip, the status of the photographic and phonographic sign as 'representation without reference' guarantees the possibility of this kind of reading.

Indeed it is this very aspect of the clip that allows its reanimation within the Scratch video, enabling a smooth passage into a new context, allowing the potential for it to take on a range of other meanings. In this way, while we may not recognise a clip as an extract of *Shaft*, we know the kind of film it stands for and all the cultural baggage it carries. Severed from its original context, its rearticulation becomes not just possible, but fluid and unresisted. Yet, as Derrida's phrase might suggest, collage never entirely suppresses the alterity of the elements it makes use of.

The material sampled in Scratch clearly had significance to those making the tapes, and this in itself proved problematic for Video Scratchers working within the context of the critical and intellectual climate of the 1980s. Dianne Waldman has written of fine art collage that it "seemed to document the social and political life of the artist – the brand of cigarette he or she smoked, the newspaper he or she read, the articles the artist chose to single out to represent himself or herself to the world" (Waldman, 1992: 11). What we observe in Scratch are the images and sounds that surrounded the artists in their daily lives; in a sense, they simply sampled what was to hand. And here perhaps it is possible to make a distinction between the use of television and film footage. Television footage tends to be employed by scratchers in a significatory manner, in the sense that the images of Thatcher and Reagan culled from news programmes can be employed in a very straightforward and traditional 'political' fashion; for example, in creating meaning through juxtaposition. However, where film footage is used, there is more of a sense of a window into the artist's innermost tastes, even where these seem to be offered half-apologetically through the use of irony. The same might be said of the work of Nam June Paik in the early days of video art. Paik's tapes feature forms of collage that can be understood in terms of tribute, and sampling practices that can be read as ironically affectionate. Paik's admiration of, and affection for, John Cage is undoubted if one reads Paik's letters to his fellow composer.[11] When Cage appears in Paik's *Electronic Fables* (1972) to retell the famous story of his experiences in the anechoic chamber at Harvard, and later to perform a composition in *Good Morning Mr Orwell* (1984), Paik is making a

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[11] Correspondence between Paik and Cage is included in the catalogue *Nam June Paik: Videa 'n' Videology 1959-1973* (Rosebush, 1974), and a brief account of Cage's influence on Paik is given in Decker-Phillips (1998).

tribute to his hero, but also tapping Cage's significance and power by suturing him into the montage that makes up these tapes. Other figures important to Paik appear in his work, either performing for him, or appropriated from sound and video recordings, including Marshall McLuhan, Marcel Duchamp Allen Ginsburg, and Charlotte Moorman. Another aspect of Paik's video practice that relates to the notion of appropriation is his use of TV kitsch. While it is clear that Paik is ironically poking fun at the Japanese advertisements that form a significant part of *Waiting for Commercials* (1972), and which later resurface in *Global Groove* (1974), one also feels that at some level they hold an attraction for Paik, and that they are more than simply a random selection of TV ads.

To return to the issue of Scratch, what we observe in the work is the personal investment made in the selection of the appropriated material. Such expressions of personal desire met with resistance and incomprehension within the politicised art climate of the 1980s; Elwes demonstrates this clearly when she asserts that Scratch can only have radical potential when the Scratcher "eradicates any weakness s/he might have for the glamour of those flickering fantasies on the screen" (Elwes, 1985: 22).

Opening the circle

Both the cultural position of Scratch in the 1980s, and the intervention made by the Scratchers is usefully articulated with reference to the Deleuze and Guattari's notion of the refrain, examined briefly in the last chapter. In the opening to their essay on the refrain, the authors describe three aspects of the way in which the refrain territorialises. First, "A child in the dark, gripped with fear, comforts himself by singing under his breath" (Deleuze and Guattari, 1988: 311). In this way a calm and stable centre is created in the heart of chaos. Second, "The forces of chaos are kept outside as much as possible, and the interior space protects the germinal forces of a task to fulfil or a deed to do" (1988: 311). Here, territory is demarcated around a point of order. Third, "one opens the circle a crack, opens it all the way, lets someone in, calls someone, or else goes out oneself, launches forth" (1988: 311). The authors make it clear that this is not a linear, chronological or historical model for the development of territorialisation: "These are not

three successive moments in an evolution. They are three aspects of a single thing, the Refrain" (Deleuze and Guattari, 1988: 312).

That particular history of avant-garde film which is concerned with differentiation and specificity might well be figured in the first two terms proposed by Deleuze and Guattari. That is, we observe in the history of modernism a tendency towards differentiation of the arts, and a quest for specificity. In relation to avant-garde film, this is what Moholy-Nagy refers to when he writes: "everyone today has some idea of what is meant by the proposition – revolutionary in its effect in the early days – of the FILMIC, that is, of the film which proceeds from the potentialities of the camera and the dynamics of motion" (Moholy-Nagy, 1969: 122).

The attempt to define specificity, and the very search for it is that act of territorialisation described both by the establishment of a centre, and the declaration of the territory surrounding it. This act of territorialisation thus has two aspects – the notion of an essence (a point of focus worthy of, and demanding its own territory and territorial boundaries) and the differentiation of that essence from others. On this second dimension of the refrain, the authors write in terms which resonate with the notion of a modernist search for specificity: "The forces of chaos are kept outside as much as possible, and the interior space protects the germinal forces of a task to fulfil or a deed to do. This involves an activity of selection, elimination and extraction ..." (Deleuze and Guattari, 1988: 311). This search for essence reaches its peak in the minimalist tendencies of structural-materialist film in the late 1960s and early 1970s, and the pursuit of 'film as film'.

This form of minimalism is, in the end, reassuring. That is, while minimalism seems on the one hand to be a radically challenging stripping away or erasure, what remains is hugely comforting. After all, what could be more grounded and reassuring than one of Carl Andre's floor sculptures? Minimalist works like those by Andre, or films like *Wavelength*, seem to present us with something that is completely known, and completely knowable in all its dimensions. Minimalist sculpture, like Structural-Materialist film, is rock-solid, stable, predictable, measured, and consistent. It is precisely this kind of

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thinking that underpins that tradition of political modernism that set the critical context for avant-garde film and video work in Britain in the 1970s and early 80s.

The arrival of Scratch, however, marked a 'new' artistic and epistemological space, sidestepping the creative embargo set up by Structural film. Scratch's presence in the territory staked for, and by, avant-garde film of the period proved problematic, as we have seen. And it is here that we can observe the third of Deleuze and Guattari's aspects of the refrain: "one opens the circle a crack, opens it all the way, lets someone in, calls someone, or else goes out oneself, launches forth" (1988: 311). This can be figured both as an attempt by the established film and video avant-garde of the early 80s to (unsuccessfully) territorialise Scratch, or more positively as that line of escape that opens the territory of avant-garde film to an 'elsewhere'. The line of flight described by this 'launching forth' marks a move from an art form concerned with specificity, demarcation and solidity, to an encounter with something entirely different. What we observe in Scratch are modes of synthesis that can never be known within the traditions of deconstruction articulated by the dominant avant-garde film and video practice of the early 1980s. As noted in Chapters 3 and 4, the synaesthetic audio-visual experience presents a sublation of sound and image, in which binary relations, hierarchies and identities are liquefied, where no one milieu is sacrificed to another, but in which each milieu becomes permeable to the point of dissolution. This is registered not just at an intellectual or critical level, but also by a sensorium and a body that is seized by the affective shocks of Scratch, and in this sense marking a break with the kind of logocentrism that came to dominate avant-garde film and video production of this period.

Of course, as Deleuze and Guattari state, their three aspects of the refrain do not represent an evolution; the synaesthetic and affective possibilities of montage were, after all, recognised by Eisenstein fifty years before Scratch. But the neglect that this aspect of his work has suffered, as well as that of other filmmakers less concerned with meaning than affect, simply highlights the dominance of certain critical modes over others. The case of Scratch represents a clear transvaluative moment. As Rees has commented in regard to Scratch's departure from the norms set down for avant-garde film and video practice by

Structural film, "This was a sure sign that something new was in the air" (Rees, 1999: 96). The problems raised by Scratch and its theorisation reveal starkly what is at stake in a radical poetics of video and film. What we see in this moment is the emergence of an affective turn arising before the vocabulary is in place to deal with it. For the critics of the time, Scratch simply did not make sense; they were unable to situate the affective and sensational dimensions of the form's audiovisuality within critical and theoretical frameworks rooted in the 'linguistic turn'. All the critics of Scratch could see were insufficiencies, and it has taken twenty years for this moment to be affirmed as part of the 'affective turn' that has been confirmed so clearly in recent theoretical work on film and video.

If we care to describe Scratch as a post-modern form, then what the 'post' of post-modern might allow is a clearing of critical ground around those modernist notions that dominated film-making and thinking about film-making for so many years. And, in the case of Scratch, it is at the level of the personal organisation of sound and image, engendered by video technology, that such a reterritorialisation began to take place. What video scratching inherits from its vinyl forebears is the 'physical' act of scraping away at source material to release a potential that cannot be understood in purely *signitive* terms, and in this sense, Scratch revealed itself to be an irritant to the established discourses of political audiovisuality.

Part of Cage's score for *Williams Mix*

Conclusion

This dissertation set out to consider the ways in which it might be possible to negotiate and map the materiality of film sound both beyond, and in relation to, its signitive dimensions. This materiality has been neglected in the critical and theoretical focus on film as a signifying practice. As I have argued, this is even the case, somewhat paradoxically, in the theorisation of those films that seek to destabilise particular representational regimes. Thus while the figure of materiality might seem to occupy a prime position in Structural film practice, that materiality has been largely resolved, at a critical and theoretical level, in relation to issues of signification; materialist film practice has repeatedly been inscribed against naturalistic and narrative modes of representation as a destabilising, oppositional form. The critical challenge raised by materiality is how it might be negotiated in positive terms, and not simply, as in Saussurian formulations of the sign, as that which can be inscribed with difference. This question also raises the related challenge of how to come to terms with materiality without seeing it as secondary to a constitutive other; for example, resisting the constant displacement that takes place when sound is simply conceptualised as that which either supports or refuses signification.

My research has demonstrated that a coming-to-terms with film's materiality needs to be informed by the idea that the material events we term 'the film' or 'the video' are marked by a *relationship* between sound and image. The materiality of that relationship, and hence the materiality of film and video, is manifested through the morphological and semiological play of sound and image. Thus my dissertation, which is concerned to engage with the critically neglected sonic dimensions of film and video, has negotiated its own sounding of these media in relation to that materiality best described as *audiovisuality*. In each of the trajectories offered by the five chapters that form this dissertation, this audiovisuality has been negotiated in ways that have variously revealed and articulated its temporal, historical, morphological, affective and political dimensions.

In itself this mapping and negotiation of audiovisuality stands as a significant contribution to our understanding of the role and place occupied by sound in film and video. Thus my research stands as an addition to the existing body of work on film and video sound. This study was originally motivated by my own perception that sound was either neglected, or given a secondary place in discussions of film and video. My feeling was that in the visually-oriented literature of film studies, and that relating to artists' film and video, any mention of sound read like an after-thought, a nod in the direction of the sonic that recognised its existence, but was undertaken somewhat in the spirit of duty rather than a genuine desire to come to terms with it. Of course, there are notable exceptions to this, and a growing body of literature and interest in the sonic; but nevertheless the deafness and muteness of the body of critical literature cannot be denied. This study was driven by my own belief that despite the recent advances made in this field, much remains to be done in the study of film and video sound. Thus one of its claims to originality is that it looks at and listens to areas and topics not previously considered in terms of sound. The research undertaken on the work of Scott Rankin, Anthea Kennedy, Nick Burton and Tina Keane represents the first consideration of the role played by sound in these filmmakers' work. Similarly, my work on the Whitney Brothers and John Smith offers a new interpretation of neglected aspects of these artists' praxis. Elsewhere in this research, in my work on ground noise, optical crackle, mickey-mousing and Scratch, I have engaged with sounds and sonic practices that have been consistently overlooked or undervalued in studies of film and video and their sonic dimensions.

The research undertaken in respect to the areas listed above cannot be divorced from a critical engagement with the ways in which these films, videos and cinesonic practices have previously been theorised, and the ways in which the sounds deployed have been predominantly conceptualised. The notion of audiovisuality that emerges from this research represents an important methodological and conceptual intervention into the study of film and video sound. As stated elsewhere in this study, deconstructive film criticism and practice have long been at pains to disentangle the sonic from the visual within the audio-visual constructions of cinema. Paradoxically, in staking a claim for

sound, and in clearing a critical space for the sonic it has previously been denied, the risk run is that the relationship between sound and image is lost. The critical move at a theoretical level made by my own study has been that from deconstruction to folding: of finding new ways to think about relationships between sound and image that challenge the dominance of modes of thought which figure notions of identity and essence in terms that privilege individuation, differentiation, mutual exclusivity and opposition. While this study does not try to erase or deny the figure of difference, it proposes that the relationship between sound and image is not always profitably modelled in this way. In the shift and play and flux of audiovisuality, there are of course moments and cinesonic pratices that are usefully understood in terms of separateness or individuation, and even opposition and contrapuntality. However, the dominant critical and theoretical perspectives that support these figures have a necessarily limited horizon, revealed in the blind spots that result from their inability to negotiate other aspects of audiovisuality that are best understood in terms of mutual interaction, interdependence, fusion, blending, blurring, smearing, entanglement and dissolution. The clearest single example of this to emerge from my own research is that provided by Diedrich Diederichsen's recent take on morphing, in which Diederichsen performs the tricky act of shoehorning this becoming-blending of the image into a history of montage, figuring it wholly in terms of rupture; it seems clear to me, however, that morphing begs to be considered in other ways.

However, the significance of my own sounding of audiovisuality extends beyond its function as a way of describing cinesonic phenomena, events or objects. This study does not offer the notion of audiovisuality as simply a better way of modelling the sonic dimensions of film and video. Its raison d'être is not to demolish, discard or discount other established modes of film criticism, other established theories by which we engage with film and its sonic dimensions. To do so would simply be to switch sides, performing a reversal that would inevitably result in the production of new theoretical blindspots. Rather this study explores what is at stake in the audiovisuality it negotiates and maps.

The question of what is important about the model of audiovisuality proposed by my study is perhaps best opened with a return to the concrete 'listening ears' with which this

dissertation began. As stated previously, the failure of this acoustic defence technology outlines two conceptual modalities by which we might come to terms with the sonic. The first proposes isolation, individuation and differentiation, constructing sound as the discrete and contained attributes of objects and events. This is the conceptual foundation on which the value of the sound mirror was thought to rest; that is, its ability to pick out and distinguish the sound of approaching aircraft. As the mode attributing sound to source, this is the conception underlying the common formulation by which we attribute sound to an object or event as source. Transposed to film and video this has a powerful influence on the way in which we think through sound-image relations. However, the other sonic modality, which ultimately proved to be the downfall of the sound mirrors, proposes sound in terms of the undifferentiated, fluid, protean, dispersed and oceanic. In the dominant conceptual frameworks offered for sound, which privelege the notion of sound as signifier of a source, there are few ways of dealing with the oceanic, the continuous, the cognitively-backgrounded, and the unattended sonic other than to brand it as 'noise.' In effect the attribution of this terms simply marks these sounds as 'other', locating them outside the frame of what is knowable within dominant epistemological regimes.

What my research has revealed is that these modalities play through a whole series of conceptual and theoretical frameworks by which we come to terms with sound. The consequence of this is that certain cinesonic practices, and certain ways of conceptualising, theorising and criticising sound become privileged within dominant epistemological regimes, while others simply become marginalised (attributed the otherness of noise) or unknowable. Thus the figure of the sound mirror manifests epistemologiocal and ontological questions that run throughout this dissertation, but which surface at various points and in different ways. One of the central figures my own research has tried to negotiate is the inscription of difference that runs like a fault-line, not only through Saussurian linguistics, but also through the sound-source formulation, noise-signal formulations, additive models of film as image *plus* sound (and thus essentially visual), and deconstructive and oppositional formulations of film theory and practice. All these, in some way, can be understood as manifestations of what Deleuze

and Guattari refer to as arborescent modes of thought: "the most classical and well reflected, oldest, and weariest kind of thought" (Deleuze & Guattari, 1988: 5). The consequence of adopting this type of approach in a consideration of the cinesonic is profound. For example, to return to a key issue raised by the place of materiality within Saussurian linguistics, how does one engage with the material in a positive way when its existence is founded only upon a recognition that it is *not* something else, and when its purpose seems only to be inscribed with difference in order to *support* the processes of signification? How does one map in positive terms a cinesonics of an avant-garde film practice that is defined primarily in contradistiction to classical cinema? How does one engage in positive terms with that which is normally defined as the *non*, the *not*, the *other*, and which therefore must always be the secondary term in an axiological binarism, wholly reliant on a constitutive other? How does one engage with a concrete particularity that must always defer, within signitive and representational regimes, to the absent, the abstract, the other?

It is in respect to the issues raised by these questions that the notion of audiovisuality connects with the political. Central to the figure of what Rodowick (1994) has termed political modernism lies a historical concern with the relationship between film and what might be broadly termed 'ideology'. Within the context of certain forms of theoretically informed modernist film practice, the 'political' has been understood to extend beyond concerns of the 'content' of representational forms, to embrace those forms themselves. In this respect, questions of poetics have been framed as political, and particular ways of constructing the film text understood as radical, not just in terms of their challenge to dominant cultural forms, but also in relation to the ideological underpinning of those forms. A concern which has run throughout this study, and which binds the overall trajectory of the five chapters comprising it, is the notion of what might constitute a radical cinesonic poetics of film and video. There is a tendency to conceptualise radical poetics in terms of opposition to dominant, hegemonic cultural forms. In this way Moderism has been conceptualised in terms of rupture: a radical break with classical modes of representation. Similarly, the radical potential of avant-garde film has been, and continues to be, presented in terms of a negation of other forms of cinema, other forms of

representation. To restate an issue outlined previously, the problem that this conceptual frame creates is that avant-garde film and video is forever bound to the thing it is understood to resist. Consequently, critical focus is always deflected from the concrete particularity of the film or video under consideration, and placed on the absent paradigm it is understood to refuse. Hence this type of film and video practice is always described and negotiated in terms of rupture and difference. Of course there are other ways of negotiating these texts, as the dominant authorship approach of critical literature on artists' film and video demonstrates. However, when it comes to understanding what constitutes the 'political' in film practice, we are returned either to matters of represented 'content' (eg. the ways in which the work of John Smith, William Raban or Patrick Keiller engage with contemporary 'issues'), or to familiar formulations of oppositional film practice. In terms of the latter, the figures of contrapuntality and montage remain central to an understanding of what constitutes that which is properly political in a radical poetics of film. Put in other terms, it is the inscription of difference that links modernist poetics with notions of the political. Thus part of the significance of my research is that it has tried to establish, or perhaps re-establish, a relationship between film theory, critical modes, political conceptions, and film practice. In some ways this can be seen as a revisiting of concerns about the relationship between form and ideology upon which political modernism was founded, but in ways that try to look at and listen to this relationship beyond the narrow focus on strategies of signification and issues of representation prescribed by its calcified tenets.

The challenge this dissertation has taken on has been to try to locate potentialities within existing theoretical resources and film texts that enable a break with these modes and patterns of thought. Thus the methodological drive of this dissertation has been the search for alternatives to these established theoretical perspectives, a search for other ways of thinking sound, a search for other strategies by which we might reflect productively on the ways we register sound and the ways we might know sound. What I have found surprising is that while this is a challenging task, these alternatives have always been around, and often quite close at hand. The potential to shift from the inscription of difference and its associated forms of deconstruction, to modalities that manifest and

embrace folding, is heard and seen in a range of work, including Structural film, cartoons, Soviet Montage and indeed in every film with an optical soundtrack. The problem is that certain aspects of film practice, and certain dimensions of the cinesonic, could not and cannot be described or understood by the existing theoretical and critical modes associated with them; there was not or is not an adequate 'language' to deal with them. Thus film's materiality was understood within a very specific way by the political modernism associated with Structural film. Thus the sound of technology manifested by the optical soundtrack is only considered in terms of noise as failure. And thus the contemporary critics of Scratch video could only see inadequacy in its departure from the established notions of what was taken to constitute appropriate (politically-informed) audio-visual practice; they had no way of dealing with its affective dimensions or the centrality of pleasure other than as problems. This observation also has implications for an understanding of Modernity. The return to Eisenstein undertaken in Chapter 4 revealed a concern with the adhesive and the synaesthetic that has long been neglected in the 60-year run enjoyed by the contrapuntal. It is important not to simply equate modernity with deconstruction, and the post-modern with folding, in ways that suggest the stages of a linear historical progression. Rather, the simplistic distinction that is often made between modernity and post-modernity appears somewhat less clear-cut when modernity reveals itself, as in the case of Eisenstein, to be host to modalities of folding we normally associate with the postmodern. The issue here is that the discourses provided for film practice at the time Eisenstein was writing on the synasethetic, and those discourses which were subsequently employed to make sense of Eisenstein's work, had no way of attributing value to the correspondence of sound and image. The consequence of this was that, as an audiovisual modality, it remained in the long shadow cast by montage – but importantly, never disappeared.

The contribution made by this study has been to return to a number of film texts in ways that release these potentialities, and to find ways of discussing them. The key notion that links these various interventions is that of 'folding'. In order to enable the critical move made by this dissertation from deconstruction to folding, a range of theoretical resources has been drawn upon. Deleuze's work on the time-image, his work with Guattari on the

refrain, Attali's work on noise, and Freud's work on the uncanny have all been used to engage with neglected aspects of the cinesonic through a move to folding: the folding of past and present, the actual and virtual, and of vertical and horizontal time in the drone; the figure of mutual inscription proposed by noise; the transsensory dimensions of the audio-visual; the folding of internal and external in Freud's work; and the folding of sound and image in mickey-mousing and Scratch Video.

This theoretical focus on figures of mutual interaction, interdependence and dissolution one again returns this study to notions of what constitutes the 'properly' political in a radical poetics of audiovisuality. Processes and forms that aren't dialectic have always seemed to have an oblique political potential at best, or none at all. An illustration of this is the problematic place occupied by the synaesthetic in accounts of political modernism. Despite the fact that the affective potential of the synaesthetic is recognised by Eisenstein, it has been sidelined by the figure of montage, since this seems in many ways to represent and manifest the radical rupture of modernity. But this sidelining is in part the neglect that results from the fact that nobody knows what to do with the synaesthetic at a theoretical level within the context of political modernism, or those post-theories which live in the shadow of dominant formulations of modernism. Thus Doug Kahn raises the figure of its medical manifestation to dismiss the synaesthetic as an entirely personal phenomenon. Similarly, studies of those filmmakers who have explored synaesthetic forms, like those on the work of the Whitneys, Fischinger and McLaren, concentrate on technology, technique, or on matters of authorship. Outside of these frames, the only other consistent discourse offered for the synaesthetic is the cosmic and the psychedelic, like that proposed by Gene Youngblood in *Expanded Cinema*; a book which opens with the line, "Gene Youngblood became a passenger of Spaceship Earth on May 30, 1942" (Youngblood, 1970). Thirty-six years on from the publication of that book, Youngblood's take on film and video seems mildly eccentric and certainly personal. But viewed in another way, the launching of the synaesthetic into space is a declaration of its unknowability within existing epistemological regimes. And it is this unknowability that is its political dimension, and which opens a window onto alternate political modes in which the ways we engage with sound, the ways we hear sound, the

ways we feel and live with sound, and the ways in which we make sound are as important as the ways in which sound signifies.

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Abbreviations: Prod. - production ; Dist. - distribution.

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Web. www.vdb.org

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Chapter 1
Headpiece, p.42 (left to right):
Acoustic Mirrors at Lade, Kent. (2002) Photograph by author.
Barking dog. (2005) [Online image]. Available from:
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Chapter 2
Headpiece, p.99 (right) & Tailpiece, p. 140 (right):
The Log Cabin. Berne, Idaho. (2005) [Online image]. Available from:
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Vignette, p.101:
Western Electric's 'Noiseless Recording' logo. Taken from: *Shepperton Babylon* (2005) London, BBC 4, 31st October 2005, [video:VHS].

Chapter 3
Headpiece, p.141:
Untitled publicity shot for 'The Birds'. Taken from: *The Birds* (1963) Directed by Alfred Hitchcock. Hollywood, CA., Universal Pictures. [video:DVD].

Fig. 3.1, p.150: *Single Variable Area Soundtrack.* (2005) [Online image]. Available from:<
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Fig. 3.2, p.150: *Variable density soundtrack.* From: Cowan, L. ed. (1931) *Recording Sound for Motion Pictures.* New York, Mc-Graw Hill, p.94.

Fig. 3.3, p.150: *Kodachrome with "Yellow" (Sulphite) soundtrack.* (2005) [Online image]. Available from:< http://www.paulivester.com/films/filmstock/guide.htm> kchrome.jpg, [Accessed 14th December 2005].

Fig. 3.4, p. 150: *35mm Film frames with variable density soundtrack*. From: Cowan, L. ed. (1931) *Recording Sound for Motion Pictures*. New York, Mc-Graw Hill, p.94.

Fig. 3.6, p. 153: *The Whitney Brothers' pendulum sound recorder*. From: Russett, R. & Starr, C. eds. (1988) *Experimental Animation: Origins of a New Art*. Revised Edition. New York, Da Capo Press, p. 171.

Fig. 3.7, p. 156: *Graphic matrix for 'Twenty Four Variations'* (1939-40) From: Russett, R. & Starr, C. eds. (1988) *Experimental Animation: Origins of a New Art*. Revised Edition. New York, Da Capo Press, p. 173

Chapter 4

Headpiece, p. 191 (left to right):
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Fig. 4.1, p. 218:
Dope sheet with score by Scott Bradley. From: Manvell, R. & Huntley, J. (1975) *The Technique of Film Music*. Revised and enlarged edition. London, Focal Press., p.175.

Vignette, p. 239 (top):
Still Life on a Piano (Cort). (2005) [Online image]. Available from: <http://www.cavant-garde.com/more2/pica008.shtml> pica008.jpg, [Accessed14th December 2005].

Vignette, p. 239 (bottom):
Offensive Play. (2005) [Online image]. Available from:
http://www.artifactsgallery.com/art.asp?!=W&ID=14523> 14523.jpg, [Accessed 14th December 2005].

Tailpiece, p. 244:
Carl Stalling. From untitled and unpaginated booklet accompanying: Stalling, C. (1990) *The Carl Stalling Project: Music from Warner Bros. Cartoons 1936-1958*. Warner Bros.[sound recording:CD].

Chapter 5

Headpiece, p.245 (left) & Tailpiece, p. 280:
John Cage, 'Williams Mix', 1952. (2005) [Online Image]. Available from:
<http://www.medienkunstnetz.de/works/williams-mix/> bild.jpg, [Accessed 14th December 2005].