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Synaesthesia and Similarity

IN THE MOST INCLUSIVE SENSE, music is anything that somebody decides to call music; there is no a priori need to be judgemental about it. But analysing music, at least in the sense that analysis is practised and institutionalized in Western or Westernized academia, necessarily involves something over and above this: it involves a sense of commitment. To analyse music is to be committed to the premiss that music is in some sense more than just a pile of notes; indeed, it is precisely the difference between a pile of notes and a piece of music that constitutes the topic of analysis. But we can be more specific than that. To analyse music is also to be committed to the idea that we perceive the notes in terms of the relationships between them: we perceive each note as influencing, and being influenced by, other notes—or at any rate, if we do not, it is hard to see what we could be analysing. In a nutshell, we analyse the interaction between the elements of the music: that is what analysing music means. And exactly the same applies to multimedia. To analyse something as multimedia is to be committed to the idea that there is some kind of perceptual interaction between its various individual components, such as music, speech, moving images, and so on; for without such interaction there is nothing to analyse.

We can push the analogy between analysing music and analysing multimedia a bit further than this. When we analyse music, we are dealing with commensurable elements: pitches, rhythms, and dynamics, that is to say, can be related directly to other pitches, rhythms, and dynamics. And from there we can go on to conjecture about the more incommensurable relationships *between* categories—to ask how, in a given style, genre, or piece, pitches relate to rhythms or rhythms to dynamics. In principle it is possible to do exactly the same with multimedia: to analyse the relationships within each medium, and then to draw out relationships between one medium and another. In other words, we might think of each medium as an independent variable, and look for the relationships between these variables that hold in any given context (and indeed, that is just what I shall be doing later in this book). The kind of speculative theorizing that underpinned early twentieth-century experimentation in multimedia, however, did not proceed in anything like this manner. The starting-point, rather, was what might be described as an *accontextual, essentializing* one. What, people asked,

are the intrinsic connections that hold between the various different media (musical sound, written or spoken text, moving images, and the rest)? What, in a word, are the *correspondences* between them?

It was, after all, in his poem of that very name—'Correspondances', from *Les Fleurs du Mal* (1857)—that Baudelaire famously proclaimed that *Les parfums, les couleurs et les sons se répondent*.¹ His words echo those of an earlier writer on whose ideas he consciously drew: E. T. A. Hoffmann, who wrote in his *Kreisleriana* that 'Not only in dreams, but also in that state of delirium which precedes sleep, especially when I have been listening to much music, I discover a congruity of colours, sounds, and fragrances'.² And Rimbaud itemized some examples of such congruity in his equally famous 'Sonnet des Voyelles', the opening line of which is 'A noir, E blanc, I rouge, U vert, O bleu'; the remainder of the text fleshes out these correspondences. The last stanza, for instance, reads

O, suprême Clairon plein des strideurs étranges,
Silences traversés des Mondes et des Anges. . .
O l'Oméga, rayon violet des Ses Yeux!³

It was Baudelaire's 'Correspondances' that gave Symbolism its name (one of its lines reads: 'l'homme y passe à travers des forêts de symboles'), and Rimbaud's sonnet is equally emblematic of the preoccupation of Symbolist writers, painters, and musicians with the hidden correspondences between different sensory phenomena. Indeed, these two poems probably represent the best known incursions into literature of synaesthesia, the extensively documented tendency for an input in one sensory mode to excite an involuntary response in another. (The word itself was coined, in the French form *synesthésie*, in 1892.³) Such sensory correspondences were seen as providing a window on to the world that lay beyond the senses, and the Symbolist preoccupation with synaesthesia flourished in a rich and heady context of numerology, theosophy, and other more or less occult studies (indeed, Emdin Starkie

¹ David Charlton (ed.), *E.T.A. Hoffmann's Musical Writings*: Kreisleriana. The Poet and the Composer, *Music Criticism* (Cambridge, 1989), 105. The chain of derivation does not stop there: as Charlton explains, the first part of Hoffmann's sentence echoes Gottlieb Heinrich Schubert's statement that 'In dreams and already in that state of delirium which usually precedes sleep, the soul seems to speak a language quite other than its usual one'. For Baudelaire's knowledge of Hoffmann, see Emdin Starkie, *Baudelaire* (Harmondsworth, 1971), 271.

² O, the great Trumpet strange in its stridences, / The angel-crossed, the world-crossed silences: /—O the Omega, the blue light of the Byest! (trans. Muriel Rukeyser; quoted in Sergei Eisenstein, *The Film Sense*, trans. and ed. Jay Leyda (London, 1968 [1943]), 76).

³ By Jules Millet (cf. Alan Bullock, Oliver Stallybrass, and Stephen Trombley (eds.), *The Fontana Dictionary of Modern Thought*, rev. edn. (London, 1988), 838). For overviews of the topic, including psychoanalytical aspects, see Richard E. Cytowic, *Synaesthesia: A Union of the Senses* (New York, 1989) and Simon Baron-Cohen and John Harrison, *Synaesthesia: Classic and Contemporary Readings* (Oxford, 1996).

has suggested that Rimbaud's sonnet may be, among other things, an alchemical allegory⁴. But there was a scientific, or quasi-scientific, element as well: speculation about the correspondences between colour and music, in particular, tied in with a tradition deriving principally from Newton, which attempted to link the two directly as parallel manifestations of universal laws of vibration. In his classic article 'Colour and Music' in the *Oxford Companion to Music*,⁵ Percy Scholes was scathing about such amalgams of natural science and the supernatural, heaping particular scorn on the early twentieth-century British composer-turned-herbologist, Cyril Scott. And David Kershaw mischievously, but accurately, captures the tenor of composers like Scott when he refers to their 'fond belief that they express some eternal verities, that they grant access to esoteric vibrations which it is the composer's mission to divulge to the less sensitive and well-endowed'.⁶

But synaesthesia is a phenomenon of psychology as well as one of cultural and artistic history. To be sure, when Hoffmann writes (in the persona of Johannes Kreisler) of a coat whose colour 'was in C sharp minor, so in order to give those seeing it some peace of mind I had a collar made for it in the colour of E major'⁷ it would seem reasonable enough to dismiss this as a rather extravagant literary device (Edward Lockspeiser called it 'a fantasy which must be described as thoroughly absurd'⁸). And elsewhere Hoffmann wrote, hardly less extravagantly: 'The fragrance of deep-red carnations exercises a strangely magical power over me; unawares I sink into a dream-like state in which I hear, as though from far away, the dark, alternately swelling and subsiding tones of the basset-horn.'⁹ But here it is possible to cite similar, and certainly no less extravagant, associations from the psychological literature. In his classic case-study *The Mind of a Mnemonist*, the Russian psychologist Alexander Luria described some experiments he made with his subject, S.:

Presented with a tone pitched at 250 cycles per second and having an amplitude of 64 decibels, S. saw a velvet cord with fibers jutting out on all sides. The cord was tinged with a delicately pleasant pink-orange hue. Presented with a

tone pitched at 500 cycles per second and having an amplitude of 100 decibels, he saw a streak of lightning splitting the heavens in two. When the intensity of the sound was lowered to 74 decibels, he saw a dense orange color which made him feel as though a needle had been thrust into his spine.¹⁰

S. also saw words as having their own colours, and according to Lawrence Marks, author of a book-length study of synaesthesia and related psychological phenomena, by far the commonest form of fully-fledged synaesthetic correspondence is that between words and colours. S.'s word-colour synaesthesia, however, was a little anomalous. For him, vowels made words lighter or darker; the colours of words came from their consonants.¹¹ In the dominant form of word-colour synaesthesia, by contrast, it is the vowels that produce an impression of colour. The most widespread experience of synaesthesia, in other words, is exactly the one on which Rimbaud's poem was based.¹²

Or was it? 'Voyelles' is something of an object lesson in the pitfalls that attend the interpretation of synaesthetic correspondences, for (as Marks points out) Rimbaud claimed a few years later that he 'invented the colour of vowels'.¹³ And an invented correspondence is hardly a synaesthetic one in the sense in which I have been using the term: a sensory impression spontaneously resulting from another sensory input. (Even more surely, it is not a revelation of universal laws!) It would appear, then, that Rimbaud's vowel-colour correspondences were not real in a psychological sense, but fictive—in the same sense as, for instance, the elaborate correspondences between music and liqueurs which Huysmans concocted in *A Rebours*, which do not in the least resemble any case of synaesthesia in the psychological literature, and which Huysmans may therefore be assumed to have fabricated in order to lend an exotic, *fin de siècle* atmosphere to his novel. But the story of 'Voyelles' is not quite so simple, for in 1934 it was discovered that the vowel-colour combinations of Rimbaud's sonnet are almost identical to those that appeared in a widely distributed spelling book which Rimbaud is believed to have used as a child.¹⁴ It looks, then, as if Rimbaud's correspondences were after all real, so to speak, to him. But they were purely contingent. And that helps to explain why his specific associations between vowels and colours are so idiosyncratic;

⁴ Paul Starke, *Arthur Rimbaud* (London, 1973), 163-7.

⁵ Percy Scholes, 'Colour and Music', in Percy Scholes (ed.), *The Oxford Companion to Music*, 9th edn. (London, 1955), 200-8; 208; citations below refer to this edition. Scholes's article was reprinted, essentially without change, in Denis Arnold (ed.), *The New Oxford Companion to Music* (Oxford, 1988), i, 424-32.

⁶ David Kershaw, 'Music and Image on Film and Video: An Absolute Alternative', in John Ruyner et al., *Companion to Contemporary Musical Thought* (London, 1992), i, 467-99; 477.

⁷ Chauton (ed.), *Hoffmann's Musical Writings*, 130.

⁸ Edward Lockspeiser, *Music and Painting: A Study in Comparative Ideas from Turner to Schoenberg* (London, 1973), 75.

⁹ Chauton (ed.), *Hoffmann's Musical Writings*, 105. For a discussion of Hoffmann's synaesthesia see R. Murray Schacter, *E. T. A. Hoffmann and Music* (Toronto and Buffalo, 1975), 149-56.

¹⁰ Aleksandr R. Luria, *The Mind of a Mnemonist: A Little Book about a Very Memory*, trans. Lynn Solotaroff (London, 1969), 23. The film-maker Sergei Eisenstein, whose critique of synaesthesia I discuss later in the chapter, met S. and described him in *The Film Sense*, 118-19.

¹¹ Eisenstein, *Film Sense*, 119.

¹² Lawrence E. Marks, *The Utility of the Senses: Interrelations among the Modalities* (New York, 1978), 87.

¹³ Starke, *Arthur Rimbaud*, 164; my emphasis. Rimbaud's claim is in 'Une Saison en Enfer', published in 1873, two years after the publication of 'Voyelles'.

¹⁴ The article reporting this appeared in *La Nouvelle Revue Française*, 1 Oct. 1934; for a discussion see Starke, *Arthur Rimbaud*, 165.

Marks's analysis of the literature indicates that there is some measure of agreement between individuals as regards which vowels go with which colours, but only two of Rimbaud's five associations conform to Marks's pattern.

Marks explains the general correlation between vowels and colours in terms of sound quality: there is, he suggests, a direct correlation between the sound frequency that characterizes a vowel and the brightness of the colour associated with it: that is to say, its position on a scale from black to white.¹⁵ In other words, he is saying that hue as such does not seem to associate directly with vowel sound: it associates only at second hand, via brightness, and that helps to explain the scatter in the data concerning vowel-colour associations. And precisely the same applies to associations between musical pitches and colours. 'Everybody tends to have his own scheme for ascribing colours,' Marks says. 'Nevertheless, one point where virtually all synesthetes agree is on brightness. Regardless of the hue, the higher the note's pitch, the brighter the visual image.'¹⁶ Such associations would probably be fairly reliable if, in musical contexts, we were primarily concerned with classifying notes in terms of their position within the entire auditory range. But in terms of the major-minor system, and in terms of the way in which we talk about music, the most salient identifications are those of pitch-class, not pitch: we locate notes within a pitch spiral, not a single linear dimension. And the dimension of dark to light will not map on to a spiral. The result is a more or less total lack of agreement among synaesthetes as to what notes have what colours, and this is something to which I shall return.¹⁷

Fully-fledged synaesthetic perception, in other words, typically exceeds anything that may be derived systematically from the sensory input; this explains its lack of intersubjectivity, and in consequence its idiosyncratic, not to say bizarre, quality. ('[I]t would appear', Jonathan Bernard remarks, that 'the more particularized and definite the reported responses of an individual, the greater the disparity with those of others.'¹⁸) But at this point we need to distinguish fully-fledged synaesthesia—what Luria observed in S., what Hoffmann described, and what I shall refer to as 'synaesthesia proper'—from a phenomenon that I shall call 'quasi-synaesthesia', which is much more limited in its characteristics, but much more widespread in its occurrence. Almost everybody, if asked, will agree that the sound of a flute in a high register is brighter,

or lighter, than that of a tuba, which by comparison is darker and heavier—or, to go back to correlations of vowels and colours, that 'i' is brighter, or lighter, than 'u', which by comparison is darker and heavier. This does not mean that almost everybody has a visual sensation of bright light or a bright colour when they hear a flute or an 'i', and of a dark colour when they hear a tuba or a 'u', as might be the case with a true synaesthete; it means that, if asked, most people will judge that the one goes with the other. The dimensions of intersubjective concurrence that underlie the idiosyncrasies of synaesthesia proper, then, are in general shared with non-synaesthetic subjects. As Marks puts it, 'dimensions that are linked cross-modally in synesthesia tend also to be linked in non-synaesthetic forms of analogy.'¹⁹

I shall return to the issue of quasi-synaesthesia in Chapter 2, where I will suggest that it forms one of the essential enabling mechanisms of multimedia. Historically, however, it is synaesthesia proper that has stimulated and, by way of a kind of rationalization, been invoked by the pioneers of multimedia. In this chapter I offer case-studies of two pioneering experiments in multimedia, Striabin's *Prometheus* and Schoenberg's *Die glückliche Hand*, preceded by an outline of a particularly well-known example of synaesthetic perception. All three have been quite fully documented by previous writers, and my purpose in reviewing them is to extract what can be learnt from them about the general principles of multimedia. To cut a long story short, I shall argue that, in the end, the similarities between synaesthesia proper and the cross-media relationships of multimedia count for less than the differences between them. Synaesthesia provides some hints as to what multimedia is; but, perhaps more importantly, it supplies an illuminating model of what multimedia is not.

The Colour Hearing of Olivier Messiaen

Of course, Messiaen's music is not multimedia in any literal sense (or at least, it is no more so than any other music). But some of his scores bear colour designations attached to particular passages, usually chords or chord sequences; in the preface to *Couleurs de la Cité céleste* he wrote that 'the form of the work depends entirely on colours', and he subsequently explained: 'I have noted the names of these colours on the score in order to communicate the vision to the conductor, who will, in turn, transmit this vision to the players he is conducting; it is essential, I would go so far as to say, that the brass "play red", that the woodwind "play blue", etc.'²⁰ In interviews Messiaen expanded upon these hints

¹⁵ Marks, *Unity of the Senses*, 89–91.

¹⁷ A concise summary of synaesthetic associations with music may be found in Kenneth Peacock, 'Synaesthetic Perception: Alexander Scriabin's Colour Hearing', *Music Perception*, 2 (1985), 483–505.

¹⁸ Jonathan Bernard, 'Messiaen's Synaesthesia: The Correspondence between Color and Sound Structure in his Music', *Music Perception*, 4 (1986), 41–68; 42.

¹⁶ *Ibid.*, 90.

¹⁹ Marks, *Unity of the Senses*, 99.

²⁰ Quoted and translated by Robert Sherlaw Johnson, *Messiaen* (London, 1975), 166–7.

in such a way as to suggest that the music we hear is only half of the multimedia experience he imagined, a kind of one-dimensional shadow of a multi-dimensional whole. In an authoritative article on the subject of Messiaen's synaesthesia, Jonathan Bernard quotes from an interview that Messiaen gave during the 1960s:

I am . . . affected by a kind of synopsia . . . which allows me, when I hear music, and equally when I read it, to see inwardly, in my mind's eye, colors which move with the music, and I sense the colors in an extremely vivid manner. . . . For me certain complexes of sound and certain sonorities are linked to complexes of color, and I use them in full knowledge of this.²¹

The last clause of this quotation is perhaps the most striking, because it suggests that colour represents an essential, and not merely a peripheral, component of the music; this is a disquieting thought, given that Messiaen's colour hearing is entirely idiosyncratic, and I shall return to it. Bernard, however, focuses on the correlation to which Messiaen refers between sound and colour complexes, and the greater part of his article is taken up with an attempt to discover the rationale underlying the colour labels through analysing the musical contexts with which they are associated. (In effect, he is taking up Messiaen's own challenge: 'Obviously one should be able to prove this relationship scientifically,' said Messiaen, 'but I cannot.'²²) His argument is quite intricate, but for present purposes we can make do with a fairly rough-and-ready simplification of it.

Bernard's first finding is that Messiaen's colour-sound associations are highly consistent: the same chords or chord complexes normally carry the same labels in different contexts. (This is exactly what the psychological literature about synaesthesia would lead one to expect.) Having established this, Bernard goes on to correlate colour labels with the modes of limited transposition on which Messiaen's early musical language was based. He finds that colours are indeed associated with the modes, but that each transposition of each mode has a different colour association. So far, then, colour is associated with absolute pitch, or at least absolute pitch-class, rather than with intervallic make-up. But as he turns to the more recent music, in which the modes of limited transposition play a less dominant role, Bernard discovers a quite different principle of colour association: it is linked with specific chord

²¹ Bernard, 'Messiaen's Synaesthesia', 41-2; the quotation is taken from Claude Samuël, *Conversations with Olivier Messiaen*, trans. Felix Aprahamian (London, 1976), 16-17. (This passage also appears in a more recent translation: Olivier Messiaen, *Music and Color: Conversations with Claude Samuël*, trans. E. Thomas Glasow (Portland, Ore., 1994), 40-1.) The term 'synopsia' refers, of course, to the visual (optical) nature of the correspondence; a variety of terms are used to describe particular kinds of synaesthesia (chromesthesia, colour hearing, and so forth), but they tend to be used inconsistently, and I am therefore avoiding them.

²² Messiaen, *Music and Color*, 41.

spacings, regardless of transposition. Neither principle of association can be collapsed into the other; Messiaen's synaesthesia seems to have two independent sources. And, for Bernard, the fact that Messiaen's colour labels cannot be reduced to a single music-structural principle means that they have great potential as an analytical tool: they allow him to link passages that have common labels, but to which a conventional analytical approach would see as different and to distinguish formations that general-purpose analytical methods would see as identical. (Set theory, for instance, is sensitive neither to transposition nor to intervallic make-up, and accordingly throws together formations whose colour associations are quite different.) In this way what he calls Messiaen's 'private, interior light show' becomes, in Bernard's hands, the basis of an analytical method that reflects not just the sound of the music for us, but the way in which Messiaen himself experienced it. It provides a uniquely privileged perspective from which to evaluate such purely musical issues as, for instance, the strength of modal influence in Messiaen's later music.²³

All this skirts a very obvious issue: given that we can't see Messiaen's private light show, can we experience Messiaen's music properly? Or is what we can hear akin to the sound-track for a film the pictures of which are lost? As I said above, it is the idea of Messiaen choosing his sounds 'in full knowledge' of their colour associations that prompts such questions, and there are a number of instances where Bernard suggests that considerations of colour may have given rise to a particular musical feature.²⁴ Nor are Messiaen's own comments on the subject particularly reassuring. What is the conductor to make of Messiaen's directions about bringing out the colours in *Couleurs de la Cité céleste*? (Is he or she meant to shout 'Not blue enough' to the woodwinds? How is she or he to know whether their playing is blue enough?) And what is a pianist meant to do when confronted by the footnote in *Catalogue des oiseaux* which reads: 'The chords ought to have a sonority akin to a stained-glass window with orange dominating and complemented by specks of blue.'²⁵ Again, with reference to the complex, stratified textures of the 'Strophes' from *Chronochromie*, Messiaen points out how the various note-values are associated with chords of quite different colours (milky-white embellished with orange and gold, for instance, or 'frankly red'), and adds: 'Whether juxtaposed or superimposed, all permutations will be brought to the fore by chord colorations.

²³ Bernard, 'Messiaen's Synaesthesia', 61. Bernard has summarized and extended his analysis in a later publication: 'Colour', in Peter Hill (ed.), *The Messiaen Companion* (London, 1995), 203-19.

²⁴ See in particular ibid., 60: 'Conceivably at least some of the modal choices may have been made to reinforce this effect of enveloping greenness', and 62: 'It is quite likely, in fact, that Messiaen has stepped outside the modal system specifically to obtain this colour.'

²⁵ Johnson, *Messiaen*, 119.

color serving to show the divisions of time.²⁶ But who will it show them to? If, as Bernard says, 'the constantly changing colors are vital to perception of the differences between the various durations',²⁷ where does that leave us, the listeners?

And then there is 'Miyajima et le tori', the fifth of Messiaen's *Sept Haïkai*, which (Messiaen says) is an evocation of the most beautiful landscape in Japan . . . a mountainous island with a hill covered in *matsu* (a very green Japanese pine . . .) . . . a magnificent white and red Shinto temple, facing the blue sea—and what a blue!—and a *torii* (a portico, extremely simple in form, tinted red). You can imagine all these mingled colors, the green of the Japanese pines, the red and white of the Shinto temple, the blue of the sea, the red of the *torii*—That's what I wanted to translate almost literally into my music: this piece is really red and blue, and I added even more colors to it—gray and gold: orange, pale green, and silver; red, black, and violet-purple—by combining different instrumental sounds and timbres.²⁸

If we cannot hear these colours, if we cannot hear the musical representation, can we really claim to have heard the music at all? To ally the question of perceptibility in Messiaen's music with the issue of musical representation, however, is to suggest that the question may not matter very much in the final analysis: most music outside the Western absolute-music tradition purports to represent in some manner, but few listeners are unduly worried at the lack of consensus among philosophers and aestheticians as to how music can represent, and indeed whether it can properly be said to do so at all. Besides, we wouldn't be interested in Messiaen's synaesthesia if we weren't interested in his music in the first place, and we wouldn't be interested in his music if we couldn't derive sufficient pleasure and interest from what we can hear, rather than see, in it. To that extent (as Jean-Jacques Nattiez might put it), whatever the poetic significance of the distinctions that colour labels allow Bernard to make, they don't impinge esthetically, that is to say, on our experience of the music.

But there is a better reason than either of these for jibbing at the idea that Messiaen's music represents a multimedia event the visual dimension of which is unfortunately inaccessible to us. We can approach it by means of Scholes's observation that people can cope with much more rapid changes in sound than they can in colour. He cites complaints about the Rimington colour organ, an invention of the late nineteenth century which enabled colours to be 'played' by means of a piano-style keyboard. 'When the keys are played at all rapidly', a con-

temporary critic wrote, 'the effect is almost blinding.'²⁹ Now Messiaen's colour chords often change at a rate that would surely induce the effect of which Rimington's critic complained. Does that mean that Messiaen was almost blinded by his own music, then? It is true that Messiaen spoke of the 'dazzlement' induced by sound and colour, but for him it was a spiritual and not a physiological experience (indeed he associated it with Thomas Aquinas's maxim 'God dazzles us by excess of truth').³⁰ As Messiaen was himself aware, the colours he experienced when he listened to, or conceived, music were not real colours that had somehow been internalized. They were *imagined* colours: to borrow Roger Scruton's distinction, they were not colours he saw, but colours he 'saw'. Or, to put it another way, they consisted in the grafting of visual attributes on to a perception that remained in essence musical—something that becomes very clear as Messiaen describes the effects that give rise to dazzlement: 'blue, red, violet, orange, green spirals, which move and turn with the sounds, at the same speed as the sounds, with the same opposition of intensities, the same conflicts of duration, the same contrapuntal twists as the sounds'. There can, then, be no question of a genuine combination of, or interaction between, sound and colour in his music; real sounds cannot interact with imaginary colours. And this means that Messiaen's music cannot function as a model for multimedia, which, by definition, consists of the perceived interaction of real sounds and real colours. In other words, multimedia is not simply externalized synaesthesia. Synaesthesia, or at any rate quasi-synaesthesia, may be an enabling condition for multimedia, but it is not a sufficient one.

There is a larger conclusion to be drawn from this as well: the analysis of multimedia needs to be grounded, at least in the first instance, on the plane of reception rather than that of production. (The limitation of Messiaen's synaesthesia as a model of multimedia lies precisely in the distinction between the poetic and the esthetic.) In a sense we have gone round in a circle and returned to our starting-point: multimedia lies in the *perceived* interaction of media. And if the example of Messiaen underlines the significance of the word 'perceived' in this formulation, the next case-study will underline that of 'interaction'.

²⁶ Messiaen, *Music and Color*, 136.

²⁸ Messiaen, *Music and Color*, 137–8.

²⁷ Bernard, 'Messiaen's Synaesthesia', 65.

²⁹ Scholes, 'Colour and Music', 205; another account, which includes almost exactly the same formulation and is evidently based on the same sources, may be found in A. Eaglefield Hill, *A Great Russian Tone-Poet: Scriabin*, 2nd edn. (London, 1920), 224–6. Rimington was Professor of Fine Arts at Queen's College, London.

³⁰ See Almut Rosser, *Contributors to the Spiritual World of Olivier Messiaen* (Duisburg, 1986), 63–4.

Skriabin's Colour Hearing and *Prometheus*

Messiaen's synaesthesia, to judge by the composer's own account, was involuntary; he did not invent his colour-sound associations (in the way that Rimbaud claimed to have invented his vowel-colour associations, but perhaps did not); nor could he choose to 'see' a given chord in one way or another. To describe such perception as synaesthetic is to describe it as, in effect, hard-wired. But this criterion, perhaps easy enough to establish in the psychological laboratory, can become problematic when applied to such historical instances of synaesthesia as Skriabin's colour hearing—if, indeed, such a term can be properly applied to Skriabin. The focus for study in this case is Skriabin's fifth symphony, *Prometheus* (otherwise known as *Le Poème du Feu*), which includes a part for a *Tastiera per luce*, or colour keyboard. The *luce* part is written in standard music notation using a treble clef, mainly in two parts though at one point in three; but the published score is remarkably coy about how it is to be realized. In the first place, it is not clear whether the colours were meant to be realized by concealed lights, flooding the auditorium, or whether the colours were to be projected on a screen. Charles Myers, a Cambridge professor who interviewed Skriabin in 1914, said the former; but such performances as include the light part at all have usually featured the latter.³¹ The second source of doubt arises from the fact that the score nowhere says what specific colours the notated pitches are actually intended to correspond to. This, fortunately, was clarified in 1978, when a copy of the printed score bearing Skriabin's annotations was acquired by the Bibliothèque Nationale, Paris, including among other things a full table of colours.³²

There are three principal sources for Skriabin's specific associations between colours and sounds. One is the annotated score of *Prometheus*; the other two are articles published respectively by Myers and by Leonid Sabaneev. Sabaneev conducted a whole series of psychological experiments in which Skriabin took part (along with Rimsky-Korsakov and

³¹ The best source of information on performances of the *luce* part is Hugh Macdonald, 'Lighting the Fire', *Musical Times*, 124 (1983), 600-2, an article written to mark a performance at the Leeds Festival for which Macdonald collaborated in the lighting design; because of this it has a practical orientation unmatched by other writings on the subject. (He has particularly interesting things to say regarding the differentiation of the faster- and slower-moving *luce* parts.) The whole subject of Skriabin's lighting is plunged in a paradoxical obscurity. As an illustration, Macdonald's statement that the first (Moscow) performance of *Prometheus*, in 1911, had no lighting since the planned apparatus was 'not ready', and that the first performance with lighting was the 1915 one in New York, has somehow to be reconciled with an article by Leonid Sabaneev which was published in 1911 and speaks of 'those who listened to the *Prometheus* with the corresponding light effects' (see n. 46 below). Contemporary critics explicitly stated that the New York premiere of *Prometheus* (which Hall seems to imply used a Rimington colour organ) involved colours projected on a screen (*Great Russian Tone-Poet*, 225-6).

³² Macdonald, 'Lighting the Fire', 600-1. The catalogue number of the score is R&S. Vma 228.

many less illustrious musicians).³³ Each of these sources gives a slightly different correlation of colours and sounds, but fortunately the variations are small enough that for present purposes we can ignore them. It is clear that for Skriabin it was keys, rather than individual notes or timbres, that possessed colours. In effect, he mapped the colour wheel on to the circle of fifths, beginning with C major (red), G major (orange), D major (yellow), and so on, then passing by means of harmonic equivalence from the sharp side to the flat side, and so returning through F (dark red) to C.³⁴ (If the chart in Sabaneev's article in *Music & Letters* is to be believed, Skriabin did not associate colours with minor keys.) Now there is a long history of association between colours and keys, and it is notorious that there is a general lack of agreement between the colour-key associations advanced by different musicians. While Skriabin considered C major red, his fellow countryman Rimsky-Korsakov considered it to be white; and though both Russians agreed that D major was yellow, this brought them into conflict with a relatively consistent tradition in early nineteenth-century Germany that the yellow key was E major.³⁵ (For what it is worth, my personal view is that E major—Hiszt's holy key—is a light, metallic blue.)

The conflicts between such associations, which it would be easy to multiply both endlessly and pointlessly, do not mean, however, that there is no rhyme or reason behind them. In her book on key characteristics up to the middle of the nineteenth century, Rita Steblin provides a considerable amount of information regarding the association of colours and keys, and she does so in the context of a kind of

³³ Myers published the results of his interview in 'Two Cases of Synaesthesia', *British Journal of Psychology*, 7 (1914), 112-17. Sabaneev published a general account of his experiments in 'The Relation between Sound and Colour', *Music & Letters*, 10 (1929), 266-77. He also contributed an article on *Prometheus* to the *Blaue Kelter* almanac: Skriabin's 'Prometheus', in Wassily Kandinsky and Franz Marc (eds.), *The Blaue Kelter Almanac*, trans. Henning Falkenstein, ed. Klaus Lankester (London, 1974), 127-40. An editorial footnote on p. 131 paraphrases a further article published in *Music* (Moscow), 9 (1911). In his 'Synesthetic Perception', Peacock cites other Russian-language publications by Sabaneev.

³⁴ One uncertainty which arises out of this, and which I have not seen discussed in the literature, is what register signifies in the *luce* part. On the mapping principle, any F# for instance, ought to signify the same colour. But the slower voice of the *luce* rises from F# to F#, while the faster voice includes a number of 'pitches' outside this range. It would be simplest, of course, to assume that octave-related notes were in fact identical (as was apparently the case with the Rimington colour organ; see Hall, *Great Russian Tone-Poet*, 224), and that Skriabin was guided by notational convenience or the appearance of musical voice-leading.

³⁵ Another Russian, Serge Koussevitzky, who conducted the first performance of *Prometheus*, added to the confusion by proclaiming that 'Surely for everybody sunlight is C major . . . And F# is decidedly strawberry red!' (*The Observer*, 4 June 1922; quoted in Peacock, 'Synesthetic Perception', 493). It is worth pointing out that in Sabaneev's experiments, 78 per cent of the participants (who were presumably mainly Russians) agreed with Skriabin and Rimsky-Korsakov that D major was yellow, and the same number agreed with Koussevitzky that C major (along with D major) was the most brilliant key ('Relation between Sound and Colour', 275).

structural history of key.³⁶ In a nutshell, she charts the decline of a primary opposition between major and minor keys, and the rise of a principle that combines the binary opposition of sharp versus flat with the cycle of fifths. The various associations of keys, including emotional and anecdotal associations as well as colour, can be seen as articulated around these historically changing structural models. In this context, Scriabin's synaesthesia may be seen as in part historically determined; his mapping of the colour wheel on to the cycle of fifths differs from the early nineteenth-century schemes, and conforms with later thinking, in that it passes effortlessly from the blue of F# major to the violet of D# major. Reflecting his compositional assumption of enharmonic equivalence, in other words, Scriabin saw the cycle of fifths as a true circle of fifths, and hence isomorphic with the colour wheel.

But what might be termed the cultural, as opposed to the psychological, aspect of Scriabin's colour hearing goes further than this. As Sabaneev puts it,

I know that originally he [Scriabin] recognised clearly no more than three colours—red, yellow, and blue, corresponding to C, D, and F sharp respectively. The others he deduced rationally, as it were, starting from the assumption that related keys correspond to related colours; that in the realm of colour the closest relationship coincides with proximity in the spectrum; and that as regards tonalities it is connected with the circle of fifths. Scriabin simplified the problem to the extreme, rationalising it prematurely, and possibly destroying thereby the vitality of the association, which for him became a habitual one.³⁷

In referring to the association as a habitual one, Sabaneev is pointing out that any association between two phenomena, however arbitrary or contingent, may acquire a degree of psychological reality simply by virtue of being continually reinforced—through conditioning, in other words. But his comment about destroying the vitality of the association implicitly questions how far Scriabin's associations of keys and colours were genuinely perceptual at all, other than in the case of C major, D major, and F# major. And here there is a further complicating factor. In the course of his experiments, Sabaneev found that for many subjects the most consistent associations were between colours and the names of keys; if subjects heard music in D major but were told it was in D₁, they would ascribe to it whatever colours they associated with D. This kind of divergence did not occur, of course, with subjects who had absolute pitch, like Scriabin. The suspicion persists, however, that even in such subjects the association of colour and key is not a direct.

³⁶ Rita Steblin, *A History of Key Characteristics in the Eighteenth and Early Nineteenth Centuries* (Ann Arbor, 1983).

³⁷ Sabaneev, 'Relation between Sound and Colour', 273. Myers adds B major, corresponding to whitish-blue, to Sabaneev's list of spontaneous associations.

one, but is mediated by verbal categorization. All this qualifies, if it does not undermine, the extent to which Scriabin's associations can be described as genuinely spontaneous—as 'colour hearing' in the same sense as Messiaen's.

In Sabaneev's disapproval of Scriabin's 'premature rationalisation' of his own synaesthesia, we may perhaps hear the voice of the scientist whose subject has gratuitously perturbed the phenomenon under investigation. (Towards the end of his *Music & Letters* article, Sabaneev spells out what he wants to discover: 'not a simple, fortuitous association . . . but an organic connection between the sensations of sound and colour' constituting 'a conformity to law'.³⁸ From this perspective, Scriabin was in effect tinkering with the laws of nature.) From a music-theoretical or aesthetic point of view, however, there is no compelling reason why we should share Sabaneev's negative reaction. If in *Prometheus* Scriabin systematized the relationship of sound and colour in a way that goes well beyond any perceptual given, then exactly the same kind of criticism might be made of Schoenbergian serialism (or, for that matter, the quasi-serial construction of Scriabin's Seventh Sonata). But to say this is not to invalidate either Scriabin's or Schoenberg's compositions, because compositional methods are not theories of perception, at least in any scientifically intelligible sense of the word 'theory'.³⁹ At the same time, the relative lack of perceptual salience in the visual structure in *Prometheus*, even as the composer experienced it, might lead us to expect the visual component of the work to be effectively subordinate to the auditory one. And there are several ways in which this can be seen to be the case.

For one thing, the very fact that the *luce* part is notated on a musical stave subordinates colour to musical principles. There may be an isomorphism between the colour wheel and the circle of fifths, but the division of the colour wheel into twelve equal segments that results from the adoption of musical notation has no privileged basis in perception; in terms of colour, that is to say, the division is arbitrary.⁴⁰ What, then, does it mean when the slower *luce* part rises through a series of pedal points from f# to f#⁺? The general idea seems clear; there is a single revolution, so to speak, of the colour wheel. Expressed in

³⁸ *Ibid.* 272-3.

³⁹ Readers who consider this formulation excessively flip may refer to Nicholas Cook, 'Music Theory and "Good Comparison": A Viennese Perspective', *Journal of Music Theory*, 33 (1989), 117-41, or *idem*, 'A Theorist's Perspective on Perception', in Rita Aiello (ed.), *Musical Perceptions* (New York, 1994), 64-95.

⁴⁰ In his article 'Colour and Music', Scholes provides details of a number of nineteenth-century and early twentieth-century colour keyboards, some of which (including the Rimington colour organ) divided the spectrum into twelve 'sentiones'. Such practices might be seen as an updating of Newton's division of the light spectrum into seven parts on the model of the diatonic scale.

musical terms, the rise takes the form of a whole-note scale (according to Fabian Bowers, this 'represents the breathing in and breathing out of the Brahman, the evolution of the race by steps'⁴¹), between which are interpolated a number of chromatic notes: B, D, and E \sharp ; the durations of which are shorter than those of the whole-tone scale steps. The notation makes it look as if these interpolations are simply intervening values between the main ones, something along the lines of a written-out glissando. But of course the effect in terms of colour is quite different; a semitone rise, such as from E \sharp to F \sharp , represents a dislocation of nearly 180° on the colour wheel, corresponding in Scriabin's terms to the transition from dark red to saturated blue. It is hard to see any internal rationale for such a staggered colour sequence, and equally hard to discern any compelling link between the lower *luce* part and the structure of the music. The impression remains, then, that Scriabin has simply subordinated his colours to a principle that is not so much musical as notational, and that he has done so without regard to its perceptual effect.

If the lower *luce* part has no readily discernible relationship to the musical structure, quite the opposite is true of the upper (and more rapidly moving) part. Scholes notes that the *luce* part 'often coincides with some note or notes in the musical score, and occasionally faithfully follows the bass'.⁴² But the relationship is in fact much tighter than this. It turns on the six-note 'mystic chord' on which the musical language of *Prometheus* is based: the faster *luce* part simply replicates the root of the 'mystic chord' transposition that appears at the same time in the music.⁴³ (Such an association, of course, implies that Scriabin saw the mystic chord as less a chord than a key, or, more precisely, a scale-set.) Any analyst who knew this could, then, reconstruct the faster line of the *luce* part on the basis of the orchestral score alone. In this way, as Peacock points out, the use of colour does exactly what Scriabin claimed in his discussion with Myers: it literally 'underlines the tonality; it makes the tonality more evident'.⁴⁴ Or, to put it another way, it provides a visual analysis concurrently with the music. It duplicates the musical information through a direct translation to another medium, without adding any additional information of its own. (In his *Blue Rider* article, Sabaneyev explains that because 'undeveloped' media such as light and smell cannot 'express the will directly', they are necessarily subordinate to music, word, and plastic movement;

'their purpose is resonance, strengthening the impression of the primary arts'.⁴⁵) And it is because the *luce* part has, in this sense, a purely supplementary role that it makes perfect sense to perform the music without the light part—as Scriabin himself said in the score. Indeed, that is how most performances of *Prometheus* have taken place, and according to Scholes the general opinion after the New York premiere, which included the *luce* part, was that 'the music gained nothing from the use of the colour effects'.⁴⁶

Why might this have been? The obvious reply might be the one I explored in relation to Messiaen: the divergence between the poetic and the esthetic, between what Scriabin experienced (or intended to be experienced) and what actually is experienced by audiences who do not share Scriabin's particular variety of colour hearing. But three factors complicate this reply. The first is that, as we have seen, Scriabin's own synaesthesia was limited to keys built on three (or possibly four) out of the twelve pitch-classes of the chromatic scale; Scriabin may have believed in the occult correspondences of colour and sound (Eaglefield Hull called *Prometheus* 'the most densely theosophical piece of music ever written'⁴⁷), but it is hard to believe that he would intentionally set out to create a work that even he was incapable of perceiving properly. The second factor follows on from this: it appears that the equipment of the *tashtira per luce* did not actually exist at the time when Scriabin composed the music of *Prometheus*. Scriabin had discussed such a machine with his friend Alexander Mozer, who was a professor of electromechanics at the Moscow School for Higher Technical Training, and had been assured by Mozer that it could be made. But that seems to be as far as the project had gone, and consequently the compositional incorporation of colour effects must have been essentially

⁴⁵ Sabaneyev, 'Scriabin's "Prometheus"', 131. In *Music and Color*, Messiaen speaks in very much the same way of the 'natural resonance' that links colours to sounds.

⁴⁶ Scholes, 'Colour and Music', 208. According to Hugh Macdonald, 'critical response on those rare occasions in modern times when *Prometheus* has been performed with colour effects has noted the incapacity of changing colours, even of coloured shapes, to hold our attention for twenty minutes' (*Scriabin* (London, 1978), 57). By 1983, however, Macdonald seems to have changed his mind, for he calls it 'the most musically successful of a number of attempts to create an art of moving colour' ('Lighting the Fire', 600). Similarly, Sabaneyev wrote in his 1911 article that 'those who listened to the *Prometheus* with the corresponding light effects admitted that the musical impression was in fact absolutely equalled by the corresponding lighting. Its power was doubled and increased to the last degree. This happened despite a very primitive lighting, which produced only an approximation of the colors' (paraphrased in an editorial footnote to Sabaneyev, 'Scriabin's "Prometheus"', 131). And Hull cites a review of the New York premiere in the *Musical Courier* which began by saying that the colours 'had no possible connection with the music', but went on to compare this with the 'divided attention' of opera, and concluded that 'This *Prometheus* music of Scriabin is not at all extraordinary or absurd when heard under the conditions imagined by the composer' (*Great Russian Tone-Poet*, 227).

⁴⁷ Hull, *Great Russian Tone-Poet*, 192.

⁴¹ Fabian Bowers, *The New Scriabin Enigma and Answers* (Newton Abbot, 1974), 191.

⁴² Scholes, 'Colour and Music', 208.

⁴³ For a systematic explanation of this relationship, following the set-theoretical analysis of Clemens-Christoph von Gleich, see James Baker, *The Music of Alexander Scriabin* (New Haven, 1986), 259.

⁴⁴ Quoted in Peacock, 'Synesthetic Perception', 496.

speculative rather than empirical.⁴⁸ Both these factors, then, tend to diminish the poetic significance of colour in *Prometheus*. They confirm that it was conceived primarily as a musical composition, and not as Hull described it: 'a dual Symphony of Sound and Colour—two Symphonies at once in fact'.⁴⁹

The final factor, by contrast, concerns the esthetic dimension, and it suggests that we should not be too ready to write off the possibilities for meaningful combinations of colours and sounds. Even if audiences do not share Scriabin's particular associations between colours and sounds, even if they do not possess the absolute pitch that may be the pre-condition for any such perceptual associations, this does not mean that they cannot respond to changes from one colour to another—to the rhythm such changes articulate, and to the patterning that emerges from colour repetitions. The same applies to relationships of intensity: when Sabaneev says that 'According to the composer's idea the whole hall is filled with blinding rays at the same time that all the forces of the orchestra and the chorus are mobilized and the main theme is played by the trumpets against the background of broad orchestral and organ harmonies',⁵⁰ he is describing an alignment of light and sound that could hardly be more readily perceptible. And here there is an essential difference as against the situation with Messiaen's music, where there simply is no literal experience of colour. Provided of course that the light show is there at all, the colours in *Prometheus* are really there: they change and pattern themselves, and increase or decrease in intensity, just as Scriabin intended. All that is different is that Scriabin's specific associations between the colours and the roots of the concurrent 'mystic chords' will appear arbitrary to most listeners. At most they might perhaps acquire a certain degree of motivation from their consistent employment within the context of this particular composition.

To understand why the *luce* part adds little to the experience of *Prometheus*, then, we do not need to invoke the relationship between what Scriabin conceived and what audiences see or hear. There is a much simpler explanation: the *luce* part literally does add little; for while the slower part has no discernible relationship to what is heard, the faster part simply duplicates information that is already present in the

visual & acoustic information
→ different!

⁴⁸ See Hull, *Great Russian Tone-Poet*, 191, and Bowers, *New Scriabin*, 82. MacDonald says that in the Scriabin Museum in Moscow there is a circular board with paired light bulbs on it that is supposed to have been used by Scriabin during the composition of *Prometheus*, but he adds wistfully that 'the chances that [the bulbs] are sufficiently antique . . . are remote' ('Lighting the Fire', 600).

⁴⁹ Hull, *Great Russian Tone-Poet*, 226.
⁵⁰ Sabaneev, Scriabin's "Prometheus", 140.

music.⁵¹ In neither case is there a substantial degree of perceptual interaction between what is seen and what is heard—which means that, in a significant sense, *Prometheus* does not belong to the history of multimedia at all. And to say this is to suggest that there is a definite limit to what the phenomenon of synaesthesia can tell us about multimedia, because synaesthesia consists precisely of the duplication of information across different sensory modes. To demand something other than duplication is to go beyond the bounds of synaesthetic correspondence.

Schoenberg's *Die glückliche Hand*

Die glückliche Hand, Schoenberg's nearest approach to a *Gesamtkunstwerk*, undoubtedly does belong to the history of multimedia. Predictably, then, the extent to which it is genuinely grounded in synaesthetic perception is open to significant doubt. Completed in 1913 after a protracted genesis, but not performed until 1924, *Die glückliche Hand* is an expressionist drama in the Strindbergian mould. As Alan Lessen points out, however, the drama is shaped by 'architectonic, recurrences, parallels, and symmetries'⁵² rather than the stream-of-consciousness process of *Erwartung*; it is not so much a psychological drama as a symbolical and mythological one. The stage personae have universal designations: the Man, who is the central character, is complemented by the Woman, who veers between two characteristically Romantic roles, the source of artistic inspiration and the *femme fatale*. In the second role she elopes with the Gentleman, a figure reminiscent of the objectionably elegant Englishman of Wagner's story 'A Pilgrimage to Beethoven'. (Commentators have not been slow to connect the drama's evident misogyny with the events of 1908, the year of Schoenberg's first sketches for *Die glückliche Hand*, when the composer's wife Mathilde temporarily left him for the painter Richard

⁵¹ There is one sense in which this is not true. Since it is normal to perceive colour but not pitch in absolute terms—i.e. to recognize red as red, but not C major as C major unless some special context is provided for the identification—the *luce* part makes it possible to observe large-scale recurrences of 'mystic chord' transposition in a way that, for most listeners, the sound by itself does not. The result is, in principle, to give immediate access to aspects of structure that otherwise require analysis. (The equivalent in the classical repertoire would be a light show that represented the tonic in blue, say, and the dominant in red, with other keys having their own colours, so that large-scale tonal patterning was visible at a glance.)

⁵² Alan Lessen, *Music and Text in the Works of Arnold Schoenberg* (Ann Arbor, 1979), 119. The final (1926) version of Schoenberg's libretto is given in English in Jelena Halil-Koch (ed.), *Arnold Schoenberg, Massiv Kaminsky: Letters, Pictures and Documents*, trans. John Crawford (London, 1984), 91–8. Although the words of the opening and closing choruses might have been thought to make it sufficiently clear, Schoenberg specifically emphasized the parallelism between the opening and closing scenes, which, as he put it, was 'meant to say: etcetera, every time the same again' (from Schoenberg's unpublished response to the critic Peschnig, trans. in Eina Steiner, 'The "Happy" Hand Genesis and Interpretation of Schoenberg's *Monumentalkunstwerk*', *Music Review*, 41 (1980), 207–22, 217).

There may be for the viewer/listener
→ a cool oddity here at the poetic level
→ level of artwork

is terms of structure (i.e. not only the music but the structure - that's Cool's argument)

Gerstl.⁵³) Finally, a half-hidden chorus comments on the drama, chiding the Man for the betrayal of his calling. *Die glückliche Hand* is a thinly disguised allegory of the true artist's need to rise above such worldly concerns as the carping of critics and the pursuit of beauty as conventionally conceived; it represents a kind of half-way house between *Die Meistersinger* and *Moses und Aron*.

The stage action, such as it is, is complemented not only by music (scored for full orchestra), but by mime, costume, the stage set, and lighting. The last three all involve carefully co-ordinated use of colour, which fulfils a variety of roles. Some of these might best be described as symbolic. Philip Truman sees a recurrent association of red with the Man, as against the combination of different colours with the Woman (this, he says, 'reflects, no doubt, the Woman's "multicoloured", inconstant personality'⁵⁴); he also points out that the former is associated with the use of the cello and the latter with solo violin, often accompanied by other instruments. The semiotic principle involved in this is essentially that of leitmotivic recurrence, and Truman implies that Schoenberg's use of colour is effectively subordinated to established musical principles when he writes that 'the colour element is a useful, additional aid in following the symbolism and the musical organization of a score that lacks a conventional grammar in its atonality and comparative formlessness'.⁵⁵ To say this is to suggest that colour in *Die glückliche Hand* serves very much the same function as colour in *Prometheus*: to clarify what is already there in the music. And if the argument I have been developing in this chapter is correct, that would in turn suggest that *Die glückliche Hand* is in a significant sense something less than—or at any rate other than—multimedia. In order to avoid such a conclusion, we would need to show that the relationship between colour and sound is not the direct one that Truman's description indicates.

Lessem (and closely following him, Truman) suggests another and perhaps more significant Wagnerian precedent for *Die glückliche Hand*: the productions of *Tristan und Isolde* and other music dramas that were mounted at the Vienna Opera while Mahler was musical director. (Schoenberg saw the production of *Tristan* in the summer of 1903⁵⁶) In these productions Mahler collaborated with the stage designer Alfred

⁵³ John C. Crawford, 'Die glückliche Hand: Schoenberg's Gesamtwerk', *Musical Quarterly*, 60 (1974), 583–601: 584; *idem*, 'Die glückliche Hand: Further Notes', *Journal of the Arnold Schoenberg Institute*, 4 (1980), 69–76: 74; Philip Truman, *Synaesthesia and Die glückliche Hand*, *Intégrale*, 12 (1983), 481–503: 487; but see Joseph Auner's arguments to the contrary in 'Schoenberg's Compositional and Aesthetic Transformations 1910–13: The Genesis of *Die glückliche Hand*' (Ph.D. diss., University of Chicago, 1991), 10–14.

⁵⁴ Truman, 'Synaesthesia and *Die glückliche Hand*', 496.
⁵⁵ Steiner, 'Happy' *Hand*, 212.

⁵⁶ *Ibid.*, 497.

Roller,⁵⁷ and different-coloured lights were used in order to symbolize the developing psychological content of the drama. The effect was suddenly complex for a contemporary critic, Oskar Ble, to refer to it as 'Lichtmusik'.⁵⁸ Lessem, and Truman, go on to explain that Mahler and Roller were much influenced in this by the writings of Adolph Appia, who attacked the traditional realistic staging of Wagnerian music drama, arguing that 'One could restore Wagner's essential conception . . . by eliminating external props and trappings and by projecting on the stage only the inner drama as it is experienced by the protagonists'.⁵⁹ It would perhaps be going too far to suggest that, for Appia, the staging (including, of course, the lighting) should serve the same function that Wagner assigned to the orchestra in *Oper und Drama*: that of saying what words cannot express, creating a sense of foreboding, and invoking remembrance. But a full integration of the staging in the dramatic process is certainly suggested by a lighting effect that Appia conceived for Tristan's monologue in Act III of *Tristan*, which Lessem describes as 'a light crescendo-diminuendo which, matching Tristan's rising expectations and relapse into despair, bears a direct relation to Schoenberg's own idea in the third scene of *Die glückliche Hand*'.⁶⁰

The idea to which Lessem refers is the famous 'Lighting Crescendo' which takes place in bars 125–53 of *Die glückliche Hand*, and represents a climactic integration of colour, musical structure, instrumentation, and dramatic content. In the libretto, Schoenberg described the 'Crescendo' as follows:

As [the stage] darkens, a wind springs up. At first it murmurs softly, then steadily louder (along with the music).

Conjoined with this wind-crescendo is a light-crescendo. It begins with dull red light (from above) that turns to brown and then a dirty green. Next it changes to a dark blue-gray, followed by violet. This grows, in turn, into an intense dark red which becomes ever brighter and more glaring until, after

⁵⁷ The link with Roller is strengthened by the fact that Schoenberg suggested him as a possible scene designer for the proposed film version of *Die glückliche Hand*—though in third place, after Kokoschka and Kandinsky (undated letter, probably from 1913, to Emil Hertka, trans. in Hahl-Koch (ed.), *Arnold Schoenberg, Vasily Kandinsky*, 101). Auner also stresses the possible influence of the anti-naturalistic dramatic productions of the Munich Artists' Theatre, which opened in 1908 (Schoenberg's Compositional and Aesthetic Transformations, 231–3); other dramatic parallels are discussed by Hahl-Koch in *Arnold Schoenberg, Vasily Kandinsky*, 161–4.

⁵⁸ Steiner, 'Happy' *Hand*, 212.
⁵⁹ Lessem, *Music and Text*, 101. In view of Wagner's own preference for realistic staging, it is clear that Appia's talk of restoring Wagner's essential conception was of a piece with Wagner's talk about realizing Beethoven's true intentions when he rescored the Ninth Symphony. What was at issue was not what Wagner and Beethoven intended, but what Appia and Wagner respectively thought they ought to have intended.

⁶⁰ *Ibid.*, 101. Lessem is summarizing a passage from Appia's *Die Musik und die Inszenierung* (Munich, 1899).

reaching a blood-red, it is mixed more and more with orange and then bright yellow; finally a glaring yellow light alone remains. . . .

During this crescendo of light and storm, the man reacts as though both emanated from him. He looks first at his hand (the reddish light); it sinks, completely exhausted; slowly, his eyes grow excited (dirty green). His excitement increases; his limbs stiffen convulsively, trembling, he stretches both arms out (blood-red); his eyes start from his head and he opens his mouth in horror. When the yellow light appears, his head seems as though it is about to burst.⁶¹

Unlike the symbolic associations to which Truman refers, the 'Crescendo' involves the co-ordination of processes across different sensory modes and compositional media. It follows the scene in which the Man has created an elaborate diadem with a single blow of his hammer; in terms of the Schoenbergian aesthetic of artistic expression, which can more or less be assimilated to the Romantic distinction between the beautiful and the sublime, this represents a travesty of the artist's mission. (In particular, the striking idea of the single hammer blow resonates with Romantic conceptions of the flash of inspiration in which all the details of an artistic work are conceived at once, commonly seen as the emblem of the very genius that Schoenberg's Man betrays.) The 'Crescendo', then, corresponds to the Man's reaction to this betrayal and the attempt to recapture his artistic integrity, an inner struggle that issues in the exteriorization of his emotions.⁶² This psychological process is represented most obviously by the sustained crescendo of the music, which builds up by stages from the triple pianissimo *ostinato* of bar 125 (low flute, bassoon, and harp) to the triple fortissimo fanfare for three trumpets in bar 148. The musical crescendo is not just a matter of dynamic markings, however: it is composed into the musical texture, which is at first diffuse, then congeals into a kind of figure-ground model, and becomes thicker and more homogeneous as the crescendo reaches its climax.⁶³ Running in parallel with all this is the lighting, which builds up from black through a succession of different reds interspersed with other colours to orange and finally a piercing yellow, coinciding with the trumpets. The overall parallelism of the processes within the various media is obvious enough: from pianissimo to fortissimo, from diffuse to homogeneous, from black to piercing yellow. But it is also possible to provide evidence that Schoenberg intended

⁶¹ Taken from the translation of the libretto in Hahl-Koch (ed.), *Arnold Schoenberg, Wasily Kandinsky*, 96.

⁶² In a lecture that Schoenberg gave in connection with a 1928 performance of *Die glückliche Hand* in Breslau, trans. in *Ibid.*, 102–7, Schoenberg indicated that the passage also expresses the Man's premonitions of his sexual betrayal by the Woman (p. 106).

⁶³ Lessen provides a motive table illustrating the rhythmic aspect of this process (*Music and Text*, 114). Convenient tabulations of the 'Crescendo' as a whole may be found in both Crawford, *Schoenberg's Gesamtkunstwerk*, 586–8, and Truman, *Synaesthesia and Die glückliche Hand*, 498–9.

a more detailed parallelism, in particular as regards the co-ordination of colour and instrumentation, and it is here that the issue of colour-sound synaesthesia arises—though only perhaps, at a remove.

Virtually all commentators on *Die glückliche Hand* have emphasized the relevance to it of Schoenberg's relationship with the painter Wasily Kandinsky, who was the leading spirit behind *Der blaue Reiter* (a group of expressionist artists that also included Franz Marc); and Kandinsky's abstract stage composition *Der gelbe Klang*, which dates from 1909, perhaps provides the closest parallel to *Die glückliche Hand* in terms of what Schoenberg himself described as 'the renunciation of any conscious thought, any conventional plot'.⁶⁴ The relationship between Kandinsky and Schoenberg began with a letter that Kandinsky wrote after hearing a concert of Schoenberg's music in January 1911, to which Schoenberg wrote a cordial reply. The two met in the autumn of that year, and remained in touch on a regular basis until 1914, as well as sporadically thereafter.⁶⁵ It was at this time that Schoenberg was most active as an artist, and the first exhibition of *Der blaue Reiter*, held in Munich in December 1911, included paintings by Schoenberg; in addition he contributed an essay and a song ('Herzgewachse', Op. 20) to the group's almanac, also called *Der blaue Reiter*, which was published in 1912. It is significant that the almanac also included the essay by Sabanev on Scriabin's *Prometheus* which I have already cited: synaesthetic correspondences between colour and music, and more generally between sight and sound, played a major role in the philosophy of art which Kandinsky was developing throughout this period, and which received its definitive statement in his book *Über das Geistige in der Kunst*, also published in 1912.⁶⁶ In this book, Kandinsky described Scriabin's attempt to synthesize sight and sound as 'elementary', and outlined a much more comprehensive—and indeed metaphysical—theory of their relationship. Although avoiding numerical

⁶⁴ The text of *Der gelbe Klang* was published in the *Blaue Reiter* almanac as 'The Yellow Sound: A Stage Composition', 207–24; alternative trans. in Hahl-Koch (ed.), *Arnold Schoenberg, Wasily Kandinsky*, 117–25. The music, by Thomas von Hartmann, was apparently no more than sketched, and was in any case lost during the Russian Revolution (*Ibid.*, 158–9). This abstract drama, of which more shortly, included the same coloured costumes and lights as *Die glückliche Hand* and Kandinsky's epigrammatic indications of the music include a number of references to instrumental colours, though specific associations of colour and timbre are not spelt out. Schoenberg's comments on *Der gelbe Klang*, which he said pleased him 'extraneously', may be found in his letter to Kandinsky of 19 Aug. 1912 (in *Ibid.*, 54): it seems clear from what Schoenberg says that it was through the almanac that he first came to know of Kandinsky's drama.

⁶⁵ See *Ibid.* 135–40, and the letters trans. therein.

⁶⁶ Wasily Kandinsky, *Über das Geistige in der Kunst* (Munich, 1912). English trans.: On the *Spiritual in Art*, ed. Hilla Rebay (New York, 1946). Many of Kandinsky's basic aesthetic premises are also expressed in the articles he contributed to the *Blaue Reiter* almanac ('On the Question of Form' and 'On Stage Composition', 147–87 and 190–206 respectively; another translation of 'On Stage Composition' by John Crawford) may be found in Hahl-Koch (ed.), *Arnold Schoenberg, Wasily Kandinsky*, 111–17).

speculation, Kandinsky was much influenced by theosophical thought,⁶⁷ and the starting-point for his theory is that the universe consists essentially of the play of vibrations, and that these vibrations have a fundamentally spiritual significance. Or, to put it another way, colour and sound are primary attributes of the spiritual. The Pythagorean notion of the music of the spheres lies unmistakably in the ancestry of Kandinsky's notion of the spiritual sound; he differentiates it from the 'neutral' sound that we hear, but at the same time stresses the intimate linkage of the two.⁶⁸

Über das Geistige is predicated on the same aesthetic premiss as *Die glückliche Hand*: that the proper subject for art is not what is conventionally defined as the beautiful, but something higher and more ethically charged—what Kandinsky calls the spiritual, and what both he and Schoenberg identified with a sense of 'inner necessity'. And Kandinsky's philosophy becomes a philosophy of art to the extent that he demonstrates the parallel realization of this spiritual quality in perceptible sound and in colour. Truman points out that Kandinsky makes frequent references to Goethe's colour system, as expressed in his *Farbenlehre*, and that like Goethe, Kandinsky 'correlates colour not only with sounds, but senses, thoughts, actions, temperaments, etc.'⁶⁹ The crucial point, however, is that Kandinsky borrows the basic structure of his theory from Goethe. As Goethe put it,

Colour and sound do not admit of being compared in any way, but both are referable to a higher formula: both are derivable, though each for itself, from a higher law. They are like two rivers that have their source in one and the same mountain, but subsequently pursue their way, under totally different conditions, in two totally different regions, so that throughout the course of both no two points can be compared.⁷⁰

Another way to visualize this would be a triangle, with Kandinsky's 'spiritual' (Goethe's 'higher law') at the apex; understood this way, sound and colour do not relate directly to one another, but relate indirectly through a common relationship with the spiritual. There is no question, then, of mapping the structures of sound and colour on to one another, in the manner of Scriabin's mapping of the colour wheel onto the circle of fifths. Instead, sound and colour correspond to one another in so far as they embody the same ultimate meaning.⁷¹

⁶⁷ For a brief outline of theosophical influences on Kandinsky and Schoenberg, with references, see Hahl-Koch (ed.), *Arnold Schoenberg, Wasily Kandinsky*, 144–5.

⁶⁸ For a concise exposition of Kandinsky's philosophy of art, see Jerome Ashmore, 'Sound in Kandinsky's *Painting*', *Journal of Aesthetics and Art Criticism*, 35 (1977), 329–36.

⁶⁹ Truman, *Synaesthesia and Die glückliche Hand*, 489.

⁷⁰ From *Zur Farbenlehre*, quoted by Scholes, 'Colour and Music', 204.

⁷¹ Schoenberg, then, was entirely in conformity with Kandinsky's thinking when he said in the Breslau lecture that 'in reality, tones, if viewed clearly and positively, are nothing else but a

In the course of his book, Kandinsky gives his metaphysical concept of the spiritual a more practical orientation in terms of artistic expression by setting out the emotional properties of different sounds, specifically instrumental timbres, and colours. He also provides a table that places the colours in ascending order of emotional intensity (table III in *Über das Geistige*). And this is where the specific compositional link with *Die glückliche Hand*, and in particular with the 'Lighting Crescendo', comes in. There is, in the first place, a similarity between the sequence of colours in the 'Crescendo' and in Kandinsky's table; both begin with black, and pass through increasingly intense reds to orange and yellow.⁷² More compellingly, there is a high level of coincidence between the instrumental timbres that Kandinsky associates with these colours and those in Schoenberg's score: Schoenberg, like Kandinsky, couples the violin with green, deep woodwinds with violet, drums with vermilion, the lower brass instruments with light red, and the trumpet with yellow. And when read in terms of Kandinsky's emotional characterizations, this colour-sound sequence results in an emotional trajectory that is entirely consistent with the action of *Die glückliche Hand*, beginning with apathy and passing through mounting passion to excitement, strength, and finally an unbalanced state bordering, as Kandinsky says, on insanity. Was Schoenberg, then, simply composing with Kandinsky's colour-sound tables in hand, just as, in later life, he composed with tables of row-forms in hand?⁷³

The issue of influence, as between Kandinsky and Schoenberg is complicated by issues of chronology. Until recently, it was believed that the two had met earlier than 1911—in 1909, or even perhaps 1906—and there was accordingly a general assumption that Schoenberg's experiments in multimedia drama had been prompted by Kandinsky's.⁷⁴ When it was established that they did not in fact meet or even know of each other's work until 1911, this assumption was naturally reversed;

particular kind of vibrations of the air. As such they indeed make some sort of impression on the affected sense organ, the ear. By being joined with each other in a special way, they bring about certain artistic, and, if I may be permitted the expression, certain spiritual impressions' (trans. in Hahl-Koch (ed.), *Arnold Schoenberg, Wasily Kandinsky*, 105). There is also a link with what Jan Paster, borrowing the terminology of commentators on Baudelaire, calls 'vertical' correspondences between sense impressions and the world of ideas as opposed to 'horizontal' correspondences *Confronting Stravinsky, Man, Musician, and Modernist* (Berkeley, 1986), 53–81: 59).

⁷² The principal differences are Schoenberg's interpolation of red between black and brown and his omission of blue. The latter can presumably be explained by the inappropriateness in terms of the action of *Die glückliche Hand* of the peaceful, celestial qualities Kandinsky ascribed to blue.

⁷³ Martha Hyde, 'The Format and Function of Schoenberg's Twelve-Tone Sketches', *Journal of the American Musicological Society*, 36 (1983), 453–80.

⁷⁴ See Hahl-Koch (ed.), *Arnold Schoenberg, Wasily Kandinsky*, 137, 152; both Lessen (*Music and Text*, 58–62) and Crawford ('Schoenberg's *Gesamtkunstwerk*') work on the basis of this erroneous dating.

'the dates of the letters', says Jelena Hahl-Koch, 'show the impossibility of such an influence'.⁷⁵ But here we come to another chronological confusion. It was until recently believed that Schoenberg composed much of the music of *Die glückliche Hand* soon after completing the libretto, in 1910, whereas it is now known that most of the music dates from no earlier than 1912.⁷⁶ This effectively reopens the question of influence where compositional details are concerned, as in the case of the colour-timbre associations in the 'Lighting Crescendo'. Lessem observes that Schoenberg's 'independence from Kandinsky seems assured by the fact that his scenario for *Die glückliche Hand* was completed eighteen months before the publication of Kandinsky's book'.⁷⁷ But, as Joseph Auner has pointed out, the scenario (what I have been calling the libretto) of the 'Crescendo' specifies the colours, but not the instruments associated with them. And whereas this is one of the passages which Schoenberg apparently *did* sketch at an early stage, he comprehensively revised it in 1912—by which time he is known (on the evidence of his letters to Kandinsky) to have read *Über das Geistige*.⁷⁸ In particular, the passage corresponding to 'dirty green' is assigned in the original sketch to woodwinds and trumpet; the introduction of the solo violin (marked 'extended' in the score), paralleling Kandinsky's association of green with 'peaceful, extended, medium range tones of the violin', dates from the final revision. There is good reason to believe, then, that whereas Schoenberg and Kandinsky arrived independently at the idea of an expressionist stage composition, the specific correlations between colour and musical timbre in *Die glückliche Hand* do, after all, reflect Kandinsky's influence.

⁷⁵ Hahl-Koch (ed.), *Arnold Schoenberg, Wasily Kandinsky*, 160. Crawford adds in a rather desperate Translator's note that 'Even though the influence of Kandinsky on Schoenberg's text for *Die glückliche Hand* is a chronological impossibility, the synaesthetic ideas of the two men regarding equivalent colors, instrumental timbres and emotions are so similar as to suggest that both were influenced by a common, earlier source' (ibid. 198 n. 86). But he suggests no candidates.

⁷⁶ 'Soon it will be three years old', Schoenberg wrote in a letter to Kandinsky dated 19 Aug. 1912, 'and it is still not composed' (trans. ibid. 54). For a discussion of the compositional chronology see Auner, 'Schoenberg's Compositional and Aesthetic Transformations', 113–35, summarized in his fig. 7 (p. 114). There is a final chronological complication when it comes to making comparisons between *Der gelbe Klang* and *Die glückliche Hand*: whereas most of the former was written in 1909, the published version includes additions made in 1912 (Hahl-Koch (ed.), *Arnold Schoenberg, Wasily Kandinsky*, 159–60).

⁷⁷ Lessem, *Music and Text*, 100.

⁷⁸ Auner, 'Schoenberg's Compositional and Aesthetic Transformations', 123–4. Curiously, Auner contradicts his own suggestion that 'Schoenberg discarded the original CV [Compositors Vorlage] sketch in order to allow him to better integrate Kandinsky's color-timbre parallels' (p. 124) when he argues that 'The fact that there is no indication of color in [the revision], unlike the original CV sketch, suggests that with the decline in his faith in intuition Schoenberg was less concerned with the synaesthetic aspect of the work' (p. 351). The CV sketch is reproduced in Harald Krebs, 'New Light on the Source Materials of Schoenberg's *Die glückliche Hand*', *Journal of the Arnold Schoenberg Institute*, 11 (1988), 123–41: 139 (ex. 8g). Krebs offers a purely musical interpretation of the revisions in 'The "Color Crescendo" from *Die glückliche Hand*: A Comparison on Sketch and Final Version', *Journal of the Arnold Schoenberg Institute*, 12 (1989), 61–7.

But of course this brings with it a thoroughly problematic implication. It seems clear that Kandinsky was a spontaneous synaesthete; when he listened to *Lohengrin*, he said, vivid colours 'stood before my eyes. Wild, almost crazy lines were sketched in front of me'.⁷⁹ Schoenberg, on the other hand, never claimed anything of the sort (and even if he had possessed such synaesthesia, the chances of his colour-sound associations coinciding with Kandinsky's would have been vanishingly small). And whereas sound-colour correlations were a lifelong preoccupation for Kandinsky, as they were for Scriabin, they seem to have been more of a one-off experiment for Schoenberg—as if he was just dabbling with an idea that happened to be in the air at the time. If the colour-sound combinations in *Die glückliche Hand* have their origin in synaesthetic perception, then, it appears to have been not Schoenberg's but somebody else's. We might call this 'synaesthesia by proxy', or (if it is not a contradiction in terms) 'cultural synaesthesia'.

Eisenstein's Critique

Kandinsky was an emigré Russian (quite improbably, he studied law and political economy at the University of Moscow), and the notion of cultural synaesthesia gains credibility from the extent to which the phenomenon, or at least the attempt to use it as a basis for artistic experimentation, was associated around the turn of the century with Russia. (One might even suggest that, as a historical phenomenon, synaesthesia migrated from Germany to France around the middle of the nineteenth century, and from there to Russia.) So it is appropriate at this point to invoke the critique of such attempts that another Russian, Sergei Eisenstein, offered some 30 years later in his classic text, *The Film Sense*. Astonishingly, Eisenstein's almost wholly negative critique, which once again focuses on colour correspondences, occupies over a quarter of the book.⁸⁰ And what gives this critique particular value in the present context is that it enables us to isolate key aspects of the coordination of media in *Die glückliche Hand* that deviate significantly from synaesthesia-based models.

Kandinsky is one of the main butts of Eisenstein's criticism. Eisenstein quotes two whole pages of *Der gelbe Klang*, and comments witheringly that 'The contents of this work cannot be satisfactorily conveyed, due

⁷⁹ Trans. in Hahl-Koch (ed.), *Arnold Schoenberg, Wasily Kandinsky*, 149; see also the brief discussion (with references) of Kandinsky's synaesthesia on p. 151.

⁸⁰ Claudia Wildgeny, who is clearly uncomfortable with the prominence of arguments about synaesthesia in Eisenstein's text, points out that they were 'undoubtedly sparked by the emergence of color technology in a medium that had been limited to black and white for most of three decades' ('The Kinetic and Temporal Interaction of Music and Film: Three Documentaries of 1930's America' (Ph.D. diss., University of Maryland, College Park, 1990, UMI order no. 9121449), 39–40).

to the total absence of content.⁸¹ Again, he complains that people like Kandinsky 'propose an aimless, vague, "absolutely free" inner tonality (*der innere Klang*), neither as a direction nor as a means, but as an end in itself, as the summit of achievement'.⁸² What Eisenstein is objecting to is the abstract quality of *Der gelbe Klang*: it is a play of pure colours, sounds and sensations, sometimes allied to isolated representational images (some 'intensely yellow giants . . . with strange, indistinct, yellow faces',⁸³ a yellow flower, rocks), but never in the service of any kind of narrative process. Now it is a basic part of Eisenstein's concept of montage, which I shall discuss in Chapter 2, that different media relate to one another through shared qualities, and in particular through shared emotional qualities: to this extent Eisenstein's theory of cross-media relationships is very like Kandinsky's. But for Eisenstein these abstract relationships articulate the essentially distinct contents of individual media. A crowd of people on a screen and a musical sound-track may be linked through a rhythmic or kinetic pattern, but each medium retains its own specificity. By contrast, Kandinsky eliminates virtually everything except the abstract qualities that the various media have in common. This is in line with his belief that, as Ashmore puts it, 'in realistic painting it is not the outer surfaces or shells of physical objects which are important. . . . [A]ll physical things, if reduced to vibrations, will disappear and . . . what remains will be the plastic elements in a pure state.'⁸⁴ Such a method, Eisenstein protests, 'consciously attempts to divorce all formal elements from all content elements; everything touching theme or subject is dismissed, leaving only those extreme formal elements that in normal creative work play only a partial role.'⁸⁵

Such disagreement might perhaps be expected in the encounter between a film-maker and an abstract painter. Nevertheless, it allows us to identify an essential difference between *Der gelbe Klang* and *Die glückliche Hand*. Lessen draws what he calls an 'important distinction' between the Wagner productions of Alfred Roller and Schoenberg's expressionist drama: in the former, he says, 'the symbol functions as an abstraction of a reality which is commonly known and which provides the explanatory framework through which the meaning of the symbol can be understood. . . . The Expressionists, on the other hand, minimized the framework around the vision and, thus, the distinction

between the inner and the outer world.'⁸⁶ Now this description fits *Der gelbe Klang* very well. But it does not fit so well with Schoenberg's drama, with its clear narrative organization (however circular) and its unities of time and place (however mythically universalized). It jars with Schoenberg's statement, admittedly made nearly 20 years later, that he disliked 'what is called "stylized" decoration[s] (what style?) and always want to see a set done by the good old experienced hand of a painter who can draw a straight line straight and not model his work on children's drawings or the art of primitive peoples'.⁸⁷ And it is altogether controverted by some of the directions contained in Schoenberg's libretto, especially in the third scene, where, in a groto that looks 'something between a machine shop and a goldsmith's workshop, several workers are seen at work in realistic workmen's dress. (One files, one sits at a machine, one hammers, etc.) . . . In the middle stands an anvil, near it a heavy hammer.'⁸⁸ According to Crawford, such directions betray a 'conflict between the allegorical/symbolic nature of the drama and the often naturalistic concept of the stage setting'. Hahl-Koch goes further, disparaging them as 'crass collisions' and 'formal blunders'.⁸⁹ But in making such a criticism, these critics are implicitly privileging the Kandinsky viewpoint over the Eisenstein one, according to which it is the divergence between different media that gives meaning to their juxtaposition. The conflict to which they refer may, in other words, have been exactly what Schoenberg intended, and to say this is to highlight a major distinction between Schoenberg's thinking and Kandinsky's.

A second main theme in Eisenstein's critique of synaesthesia is that much of what passes as synaesthetic association is not in fact synaesthetic at all (in the sense of 'an effect immediately communicated to the soul', as Kandinsky put it in *Über das Geistige*⁹⁰), but cultural and

⁸⁶ Lessen, *Music and Text*, 101.

⁸⁷ From a letter dated 14 Apr. 1930 to Ernst Legal of the Kroll Opera in Berlin, concerning a proposed production of *Die glückliche Hand*; trans. in Hahl-Koch (ed.), *Arnold Schoenberg, Wassily Kandinsky*, 99.

⁸⁸ *Ibid.*, 95.

⁸⁹ Crawford, Schoenberg's *Gesamtkunstwerk*, 589; Hahl-Koch (ed.), *Arnold Schoenberg, Wassily Kandinsky*, 160. A rather similar complaint was made as early as 1910—on the basis of the libretto—by the dramatist Hermann Bahr, who told Schoenberg that the Gentlemen brought 'an unpleasantly real day-to-day character into the work whose effect through its compression is otherwise that of eternity' (quoted in H. H. Stückenschmidt, *Schoenberg: His Life, World, and Work*, trans. Humphrey Searle (New York, 1977), 124). Schoenberg's demand in his letter to Emil Hertzka, concerning the proposed film version of *Die glückliche Hand*, that the visualization convey 'the basic unreality of the events . . . The utmost unreality!' (trans. in Hahl-Koch (ed.), *Arnold Schoenberg, Wassily Kandinsky*, 100) is sometimes cited in this connection, but is misleading when taken out of context. Schoenberg is talking not about abstraction but about effects of trick photography ('For instance, in the film, if the goblet suddenly vanishes as if it had never been there, just as if it had simply been forgotten, that is quite different from the way it is on the stage where it has to be removed by some device').

⁹⁰ Auner, 'Schoenberg's Compositional and Aesthetic Transformations', 229.

⁸¹ Eisenstein, *Film Sense*, 93.
⁸² *Ibid.*, 92–3; emphases original, as in all subsequent quotations from *Film Sense*.
⁸³ Kandinsky, 'Yellow Sound', 213.
⁸⁴ Ashmore, 'Sound in Kandinsky's Painting', 333, 334.
⁸⁵ Eisenstein, *Film Sense*, 95. Elsewhere Eisenstein compares such a feat of abstraction with the behaviour of a madman whom Diderot described: the madman 'holds a blade of shiny yellow straw in his hand', says Eisenstein, 'and he shouts that he has caught a sunbeam'. And he adds: 'This madman was an ultra-formalist' (p. 111).

historical. He piles instance upon instance in which rational explanations can be given for the supposedly intrinsic meanings of colours. For instance, he says, yellow was one of the favourite colours of Greek and Roman civilization: accordingly, early Christianity associated it with paganism, and hence with treachery (Judas Iscariot was painted in yellow garments) and, by association, jealousy.⁹¹ And after a succession of such demonstrations he concludes gleefully: "These are the "mystic" sources from which the symbolists tried to extract "eternal" colour meanings, and determine the irrevocable influences of colours on the human psyche."⁹² Eventually, however, he turns this argument in a positive direction. He begins by retrenching a little: 'purely physical relations do exist between sound and colour vibrations,' he says, and traditional associations, whatever their origin, 'may serve as an impetus, and an effective one at that, in the construction of the colour-imagery of the drama.'⁹³ But these relationships can be no more than a starting-point: 'In art it is not the absolute relationships that are decisive, but those arbitrary relationships within a system of images dictated by the particular work of art. The problem is not, nor ever will be, solved by a fixed catalogue of colour-symbols, but the emotional intelligibility and function of colour will rise from the natural order of establishing the colour imagery of the work, coincidental with the process of shaping the living movement of the whole work.'⁹⁴ Or, to put it in a word, these associations are contextual: 'we ourselves decide which colours and sounds will best serve the given assignment or emotion as we need them.'⁹⁵

And of course to say this is to establish an immediate link with what Milton Babbitt has always wanted us to call the 'contextual' nature of Schoenberg's post-tonal but pre-serial style—a style whose underlying principle is that the meaning of any compositional element derives from what, borrowing from Eisenstein, we might call a system of sounds dictated by the particular work of art. (Serialism can be seen as an extension of this principle.) Lessen specifically comments on the importance in *Die glückliche Hand* of identifiable motivic contents which, through repetition and variation, acquire referential meanings determined by recurring dramatic contexts.⁹⁶ In the same way, Schönberg's triadic correspondences of colour, instrumental timbre, and emotional meaning may conform with Kandinsky's pronouncements of their metaphysical nature, but that is not to say that their perceptual effects in *Die glückliche Hand* derive from their immanent qualities, or even from their traditional associations. But neither is it to say that immanent qualities or traditional associations are wholly irrelevant to the signifi-

cation established within a given compositional context; they might motivate contextual signification, or in Eisenstein's words 'serve as an impetus' for it. The 'Lighting Crescendo', for instance, would surely tend to turn into a 'Lighting Diminuendo' if it went from yellow to black instead of from black to yellow, because of the difference in brightness between the colours, not to mention the traditional associations of black with death and yellow with sunlight and vitality (as well as treachery and jealousy). Eisenstein's point, however, is that the influence of context is in general likely to outweigh immanent qualities or traditional associations: that is why, as he says, a given colour 'not only evades being given a single "value" as an absolute image, but can even assume absolutely contradictory meanings, dependent only upon the general system of imagery that has been decided upon for the particular film'.⁹⁷

But perhaps the most interesting consequence of Eisenstein's critique of synaesthesia in general, and Kandinsky's system of correspondences in particular, has to do with the specific patterns of alignment between media. As we have seen, Scriabin's more or less mechanical association of colour and key in *Prometheus* was based on the assumption that the one medium should be congruent with the other, and Sabaneev's distinction between primary and secondary arts (a distinction which Schönberg echoes in his Breslau lecture⁹⁸) effectively turned this into a theoretical principle. Any other alignment would simply be a misalignment, a kind of mathematical error.⁹⁹ The same applies to Kandinsky's scheme: if compositional alignments of colours and instrumental timbres reflect the metaphysical affinities between them—if colours and timbres derive their meaning from their common source in vibration—then it is hard to see in what context it might make sense to set a particular colour with a timbre that does not belong with it.¹⁰⁰ (The whole idea of the music of the spheres, after all, is based on the idea of harmony, of congruence.) There is, so to speak, no middle ground between a relationship of congruence and no relationship at all. But if 'we ourselves decide which colours and sounds will best serve the

⁹⁷ Eisenstein, *Film Sense*, 120-1.

⁹⁸ He contrasts the role of less 'complicated' dynamic elements such as the sound of the wind machine with that of 'the higher type of elements', including music and coloured lights (trans. in Hahl-Koch (ed.), *Arnold Schönberg, Vassily Kandinsky*, 106).

⁹⁹ The same principle is inherent in Messiaen's complaint about a ballet which he once saw, in which music in G major was accompanied by violet lighting: 'the colour violet and the key of G major produce an absolutely appalling dissonance!', he wrote. '[I]t clashed terribly and made me sick in my stomach' (Messiaen, *Music and Color*, 42).

¹⁰⁰ There are a few instances in *Der gelbe Klang* of inverted tensional morphologies (e.g. in Picture 3. 'As the light increases, the music becomes lower and darker... When the light is most intense, the music has faded away entirely', in Kandinsky and Marc (eds.), *Blanc Reter Alhambra* 219); they come mainly in the passages which Kandinsky added in 1912. But Kandinsky does not theorize such morphologies, and consequently such inversions fall outside the framework of his synaesthetically based theory.

⁹¹ Eisenstein, *Film Sense*, 102; he is drawing his information from Havelock Ellis.

⁹² *Ibid.*, 106.

⁹³ *Ibid.*, 119, 122.

⁹⁶ Lessen, *Music and Text*, 119.

⁹⁴ *Ibid.*, 120.

⁹⁵ *Ibid.*, 122.

intention a concern
perception always intricately tied
with it

given assignment or emotion as we need them', to repeat Eisenstein's words, then the nature of the relationship between different media becomes a perfectly legitimate matter of compositional choice. Eisenstein makes this point over and over again in his book. 'Modern esthetics is built upon the disjunction of elements,' he says, quoting from René Guilleré; accordingly, 'Matching of picture and sound . . . may be built upon a combination of unlike elements, without attempting to conceal the resulting dissonance between the aural and the visual.'¹⁰¹ And he adds: 'This occurs frequently.'¹⁰² To say this is not to suggest that the two media should simply go their own way (as, for instance, in John Cage's and Merce Cunningham's collaborations), however; the media may correspond with one another or they may not, Eisenstein says, but 'in either circumstance the relationship must be compositionally controlled.'¹⁰³

And again this proves to be a valid way of seeing Schoenberg's score. Admittedly, because of the lack of inherent perceptual salience in the colour-sound-emotion associations, it is hard to know how far instances of non-correspondence between them should be seen as genuine—which is to say, intentional—examples of what might be called the oppositional alignment of media. Lessem points out significant discrepancies between the emotional characteristics Schoenberg appears to associate with some colours (green and violet) and Kandinsky's characterizations of them.¹⁰⁴ But are these really oppositional alignments? Or is it just that Schoenberg decided to characterize these colours differently from Kandinsky? In view of these difficulties of interpretation, it is fortunate that, in the lecture on *Die glückliche Hand* which he gave in Breslau, Schoenberg addressed precisely this issue. He explained how he had purposely incorporated elements of difference within the generally parallel alignment of elements in the 'Lighting Crescendo':

[T]his crescendo is clothed externally in the form of an *increasing pain*. But this clothing is only an outer husk, only a line of demarcation. This can be discerned most clearly in the fact that the light and also the colors, and particularly the music, follow paths that by no means lead so directly upward as those of the wind machine or other dynamic elements. These last are less suited to more complicated developments and therefore remain limited to a straight line, to a direct ascent. . . . The play of light and of colors, however, is not based *only* on intensities, but on values that can only be compared to pitches.¹⁰⁵

¹⁰¹ Eisenstein, *Film Sense*, 80, 72.

¹⁰² Despite this, as we shall see in Ch. 2, Eisler vehemently attacked Eisenstein for always insisting on congruence between sound and pictures.

¹⁰³ Eisenstein, *Film Sense*, 72.

¹⁰⁴ Lessem, *Music and Text*, 102-3; see also p. 223 nn. 111, 114.

¹⁰⁵ Hahl-Koch (ed.), *Arnold Schoenberg, Wasily Kandinsky*, 106.

Elsewhere in the Breslau lecture, Schoenberg described *Die glückliche Hand* as 'making music with the media of the stage'; this, he explained, meant 'that gestures, colors and light are treated . . . similarly to the way tones are usually treated—that music is made with them, that figures and shapes, so to speak, are formed from individual light values and shades of color, which resemble the forms, figures and motives of music.'¹⁰⁶ As soon as the combination of music with other media is described in this way, the assumption that there should be congruence between them is revealed as no more than that—an assumption, and thus one option amongst others. In his account of the 'Lighting Crescendo' Schoenberg seems to be describing, if not a 'counterpoint' between the various media (to borrow the standard term used by film critics to describe oppositional scoring), then at least a kind of multimedia heterophony. This is as much as to say that he is ascribing the effect of the 'Crescendo' not only to the evident similarity between its various components, but also to a significant play of difference between them. And this is where he departs crucially from the synaesthetically based models of Kandinsky. In 'On Stage Composition', his preface to the published version of *Der gelbe Klang*, Kandinsky discussed the theoretical possibility that different media 'could run in entirely separate, externally different directions'.¹⁰⁷ But the word 'externally' gives the game away: in terms of inner, spiritual meaning the assumption of congruence remains intact, and the effect of Kandinsky's formulation is to deny significance to the external differences. It is rather like the familiar music-analytical ploy of stripping off the differentiated surface of the music like so much wrapping-paper.

The less *Die glückliche Hand* seems to have to do with synaesthesia, the more it seems like a viable model of multimedia. Synaesthesia is predicated upon low-level relationships; that is why, as I said, the translation of Skriabin's music in *Prometheus* into coloured light is an entirely mechanical process which any analyst could carry out (indeed, a suitably programmed computer could do it). But the same could not be said of *Die glückliche Hand*. As I have explained, Schoenberg and Kandinsky saw colour and sound as related to one another not directly, but through their common association with transcendent spiritual or emotional values. The music in *Die glückliche Hand* does not exhaust the signification of the colours, any more than the colours exhaust the signification of the sound; no mechanical translation from the one to the other is possible. Instead both media, together and in conjunction with

¹⁰⁶ *Ibid.* 105, 106-7 (emphases Schoenberg's). A contemporary critic ('Dr H. H.') described the original production in terms that fit nicely with Schoenberg's formulation: it was, he said, 'as if the musician had burst open his score, conquering new systems for it' (quoted, *ibid.* 156).

¹⁰⁷ Kandinsky and Marc (eds.), *Blaue Reiter Almanach*, 206.

the other elements of Schoenberg's *Gesamtkunstwerk*, converge upon a cumulative meaning which is emotional and, in the broadest sense, dramatic. Whereas synaesthesia is predicated on similarity, then, multimedia is predicated on difference; what distinguishes Schoenberg from Kandinsky is his explicit awareness of this—though, to be sure, the few remarks in his Breslau lecture fall far short of a theoretical formulation. But, as Eisenstein pointed out in relation to film music, multimedia is not predicated *just* on difference, and that is why the kind of correspondence that I have described as quasi-synaesthetic constitutes a necessary, though not a sufficient, condition for the emergence of perceived interactions between media. In the next chapter, then, I shall follow Eisenstein's lead and focus on the specific relationship between similarity and difference that forms the basis of multimedia.

CHAPTER

2

Multimedia as Metaphor

Eisler's Error

As we saw in Chapter 1, Eisenstein rejected synaesthetic correspondences as a viable basis for the relationship between music and moving pictures, and emphasised, instead, the need to forge associations between the two media within the context of the individual film. But how is this to be done? Eisenstein's model of music–picture relationships turns out to be less different from Kandinsky's than the acerbic nature of his critique of the painter might suggest. Like Kandinsky's, his basic model of cross-media relationships seems to be triadic: picture and music are related *not directly*, but by virtue of something that they both embody. And at first sight this something is not very different from the 'inner sound' which, for Kandinsky, unified sound and colour; indeed, there is one place in *The Film Sense* where Eisenstein actually talks about 'the unified "inner sounding"'¹ of a sequence in his film 'Alexander Nevsky'.¹ Similar terms are scattered throughout the book, and sometimes they suggest what might be dubbed the occult nature of music–sound relationships: Eisenstein speaks at one point of a "hidden" inner synchronization, and at another of the "secret" of those sequential vertical correspondences which, step by step, relate the music to the shots *through an identical motion* that lies at the base of the musical as well as the pictorial movement.² The consistent, and otherwise unmotivated, use of inverted commas in these quotations—'inner sounding', 'hidden', 'secret'—perhaps signals a tension in Eisenstein's thinking; it is as if he wants to have it both ways, harping on the occult nature of music–sound relationships but not committing himself to it. It is hardly surprising, then, that Eisler accused Eisenstein of obscurantism. His manner of thinking, Eisler complained, is 'both too narrow and too vague'; worse still, it is 'formalistic'.³

Eisenstein did, however, make it quite clear what he meant by the 'identical motion' linking pictures and music; he even provided a

¹ Eisenstein, *Film Sense*, 125.

² Ibid. 70, 136; the second quotation relates to his concept of 'vertical montage', which I discuss below (pp. 84–5). Examples of other similar terms include 'inner process' (p. 37); 'inner synchronization' (p. 70); 'inner unity' (p. 71); 'inner harmony' and 'inner tonality' (both p. 92).

³ Hanns Eisler (and T. W. Adorno), *Composing for the Films* (New York, 1973 [1947]), 67. I shall return to the question of whether it is Eisler's or Adorno's voice that we hear in such passages.