

Locales of Art: Synaesthesia and the Interruptions of Orientational Aesthetics

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Abstract

This paper argues that the significance of questions of synaesthesia in relation to modern philosophies of experience and art lies in its challenge to rethink accounts of the localisation of experience in general, and of the locales of experience provided by art in particular. To do this, the paper reviews the history of psychological research into synaesthesia, including recent neurological accounts, pointing to contentions in biological and techno-socio-cultural informed versions of these. It draws parallels between these contentions and the history of aesthetic thinking, of music and painting in particular, and with recent accounts of synaesthesia as a model of the technical possibilities of digital media.

Borrowing from Levinas' account of the experience of art, the paper then argues that trans-modal sensing and the complexity of corporeal experience it implies upsets Kantian divisions of aesthetic experience. Further, synaesthesia accompanies the Lockean account of the formation of ideas, exposing in particular the exclusionary normativities of this empiricist account of senses of space. The paper then reviews the return of this question in the phenomenology of Merleau-Ponty, and, with reference to work by Massumi and Stiegler, argues that acknowledgement of synaesthesia and trans-modal experience requires both the transcendental and the immanent in accounts of experience, and their implication in questions of memorization. The paper concludes by showing this to be at stake in Sartre's attempt to acknowledge synaesthesia in *The Psychology of the Imagination* in ways that confirm questions of the significance of the localisation of the experience of art, allowing for a reformulation of Levinas' account of the apprehension of art.

Key Words: Synaesthesia, Aesthetics, Art, Experience, Neurology, Empiricism, Idealism, Phenomenology, Memorization, Localisation.

There are a number of different currents in what seems to be something of a recent overflowing of interest in synaesthesia, in neurology, psychology, media and cultural theory. This paper will argue that reading this overflow philosophically can serve to reawaken consideration of divisions between aesthetics, ethics and politics on the other side of the complicity in traditions of aesthetic thinking between anthropological and phenomenological normativities. In so doing, the philosophical thinking of art may better acknowledge not only the idioms as well as the hierarchies of the arts of different cultures, but may better formalise questions of the locales of the experience of art as something which opens onto the most pressing of issues, concerning a politics of what survives, in and across the unstable regions of the world today.

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Work by V. S. Ramachandran or Richard E. Cytowic in neurology and psychology has been part of what Jamie Ward, himself a notable psychologist with significant work in the field, might term the rise after ‘the rise and fall’ of interest in what Cytowic usually calls, in an apparently careful and appropriate phenomenologically-derived phrasing, ‘cross-modal’ sensing.² The late Oliver Sacks, whose own work in psychology and psychopathology is renowned as well as widely read, credits Cytowic and co-author Eagleton with changing ‘the way we think of the human brain.’ The same writer insists that their *Wednesday is Indigo Blue* is ‘a unique and indispensable guide for anyone interested in how we perceive the world.’³ Among others, Jamie Ward’s history of interest in and study of synaesthesia attributes the neglect of its study, after its emergence in medical literature in the early nineteenth century and a growth in rival accounts offering by turns physicalist and associationist accounts of cross-modal sensing, to the rise of behaviourism. Ward claims that science ‘was not ready’ to explain synaesthesia neurologically, with behaviourism betraying psychology as a ‘science of the mind’ in favour of ‘a science of behavior,’ turning back the clock on a ‘golden age’ of research in the 1880s and 1890s.⁴

The re-emergence of scientific interest in the 1980s, preceded, as Ward outlines, by counter-cultural experimentation with hallucinogens, was sustained, as Sacks concurs, by new accounts of the brain: new ways of observing and testing that have led to more precise and localised accounts of the workings of particular areas of the brain, such as Semir Zeki’s V4 for colour, which in turn have allowed for terms of recognition of the more common of types of synaesthesia.⁵ One relatively recent study has grapheme-colour synaesthesia as the most common, at around sixty six per cent of a self-reporting sample of 738 adult synaesthetes, with the next most frequent, again involving the perception of colour now with units of time, being about a third of that. The most frequently found type of synaesthesia not involving colour was the occurrence of a sense of taste when sound is heard, at only 6.2 per cent.⁶

As research has proceeded, however, something of a tension has emerged. Research by experimental psychologists at the University of Parma in the 1980s, was initially passed over as of little interest. Giacomo Rizzolatti and Laila Craighero claimed that they had isolated what they called the ‘mirror neuron system’ in humans, having earlier noted traces of a similar system in monkeys. They localised the activity of these neurons, which ‘fire’ whether an action is performed by an agent or observed by that same agent when done by another, in a greater number of brain areas in humans than in monkeys, claiming that the more complex system in humans led to ‘action imitation’ as well as ‘action understanding.’⁷ V. S. Ramachandran was then led to claim that such functioning of mirror neurons is responsible for “‘the great leap forward’ in human evolution:’ that is, “‘standardized” multi-part tools, tailored clothes, art, religious belief and perhaps even language’ occurring rapidly, around 40,000 years ago, because of the role played by imitative mirror-neurons.⁸

² Jamie Ward, *The Frog Who Croaked Blue: Synesthesia and the Mixing of the Senses*, (Hove and New York: Routledge, 2008), 12.

³ ‘Cross-modal’ sensing is used throughout work by Richard E. Cytowic, such as *Synesthesia: The Union of the Senses* (Putnam, 1993) and with David M. Eagleton, *Wednesday is Indigo Blue: Discovering the Brain of Synesthesia*, (Boston: MIT Press, 2009).

⁴ Oliver Sacks, accessed March, 2016, quoted at <https://mitpress.mit.edu/books/wednesday-indigo-blue>.

⁵ Ward, *The Frog Who Croaked Blue*, 14-16.

⁶ *Ibid.*, 23-4.

⁷ Table 2.1, ‘Relative frequency of different types of synesthesia,’ study by Sean Day, cited in Cytowic and Eagleton, *Wednesday is Indigo Blue*, 24. The results of Day’s surveys have been variously read; for instance, by Simon Shaw-Miller to argue that ‘over 90 per cent of cases are forms of coloured hearing (chromothesia)’ (*Eye hEar the visual in music*, (Farnham and Burlington, VT: Ashgate, 2013) 2), but this relies on taking seeing colours while reading as mediated by hearing, when sound-, music- or phoneme-colour is already distinguished from grapheme-colour synaesthesia in Day’s survey.

⁸ See Laila Craighero and Giacomo Rizzolatti, ‘The Mirror-Neuron System’, *Annual Review of Neuroscience*, 27, (July 2004) : 169-92.

⁹ Vilayanur S. Ramachandran, ‘Mirror Neurons and imitation learning as the driving force behind ‘the great leap forward’ in human evolution,’ *Edge*, 2000, accessed March, 2016, http://www.edge.org/3rd_culture/ramachandran/ramachandran_index.html.



This willingness to credit mirror neurons with a key role as means of evolutionary adaptation has, however, subsequently been contested, on a series of different grounds. More precise comparison of results obtained from monkeys and humans indicates significant differences in the roles of mirror-neurons, for instance that such activity in the latter can be initiated by observation of particular parts of bodies and is not as easily disrupted by obstructions of viewing. The greater range of brain areas involved in humans, it has been argued, suggests that, far from being responsible for evolutionary adaptation, the functioning of mirror neurons in humans is not clearly systematic and, as other studies have indicated, is significantly influenced—to the point of supporting the existence of ‘counter-mirror neurons’—by prior sensorimotor experience and should therefore be understood to be open to association.⁹ Far from being the key to an understanding of specifically human evolution as dependent on imitation, this attempt to ground human culture in neuropsychological terms only points to the role of culture in the pre- and reforming of neurological functions through sensory-motor experience. Further, along with mirror and counter-mirror neurons, and against the ‘doctrine of specific nerve energies’ of the founding father of neurological research, Johannes Müller, the same processes of observation have led to the isolation of ‘multisensory neurons’ carrying ‘both auditory and visual information,’ leading Ward to argue that we are all inclined to decipher simultaneous sound *and* vision as emanating from a single source, as in ventriloquism or in the synching of sound with vision in the cinema.¹⁰ Can we with certainty, though, quite isolate this as purely natural, segregated from any particular reiterative technico-cultural framings of sensorimotor experience? Recent preoccupation with historically-informed cultural studies of the norms, hierarchies, exclusions and disturbances of modes and activities of sensory perception would suggest we ought not to think simply that we can, even while neurological research is not infrequently invoked as ground.

There are some uncannily similar tensions in the consideration of synaesthesia in connection with the emergence and conceptualisation of the potentialities of digital media and of media theory more widely. Earlier versions of digital culture tended to assume that the significance of synaesthesia was as a model of the experience of audio-visual multimedia, something Ward’s (as yet) not very variously ‘multisensory neurons’ would apparently support. From the homepage of the website headed ‘Synaesthesia and the Synesthetic Experience,’ first published in June 1996, last updated in July 1997, on the MIT host, comes the following, somewhat abbreviated, if not confusing claims:

This site provides information about the neurological condition called synesthesia. We hope to give viewers a sense of different synesthetic’s personal perceptual abilities. Equally important, however, is the idea that a creative person can also use his/her unique synesthetic abilities to make a living and bring significant contributions to the world. Such talents as utilized by artists and other creative individuals are highlighted within. *Because there are different forms of synesthesia, many links between the senses, we have also linked this page to others which communicate the synesthetic experience in different ways.*¹¹[my italics]

The operative analogy would seem to be between the neurological and the technological. As with all analogies, if not according to the aestheticism of analogy as such, it opens onto its possible failure as well as its success. Synaesthesia suggests a uniqueness of experience, which is also undecidably deviant from a norm, while yet being recognisable as a particular type of cross-modal sensing. Such ‘links’ between the senses may be communicated, so the drift of these

⁹ See Cecilia Heyes, ‘Where do mirror neurons come from?’ *Neuroscience and Biobehavioral Reviews*, 34, no. 4 (2010): 575-83.

¹⁰ Ward, *The Frog Who Croaked Blue*, 49-50.

¹¹ ‘Synesthesia and the Synesthetic Experience,’ last modified October 7th, 1997, accessed March, 2016, <http://web.mit.edu/synaesthesia/www/synaesthesia.html>.



claims suggests, by what is presented here and now, on this webpage, or elsewhere; but perhaps the better model of this sort of apparently automatic but typically unexpected recurrence is the hypertext link which might in its linking communicate, perhaps by simulation, synaesthetic experience as such. At the head of the page, synaesthesia is defined as ‘Sensation produced at a point other than or remote from the point of stimulation, as of a colour from hearing a certain sound.’ Sensory experience is problematically localised, equivocally in the region of the organ and in relation to the site of its occurrence or manifestation, its phenomenality. Remoteness is claimed, but what is remote from what, or by how much, is not further specified, sustaining though without clarification the analogy with the hypertext link.

The MIT webpage’s ‘Virtual Synaesthesia’ tag links only with two projects, one on coloured letters and the other colour-block animations of music, neither of which now function. If experimental practices of synaesthetic perception have come and (sometimes) gone, representing their own problems of digital archiving, synaesthetically-informed accounts of the perception or reception of the arts have multiplied, although, as I shall argue in this paper, the ramifications of an understanding of questions of the locales of the experience of art have yet to be quite acknowledged. I shall not attempt here to assess any particular artistic project from among the many that have been linked with recent re-thinkings of synaesthesia. There is something of an unacknowledged recurrence of interest in interrelations of vision and the tactile.¹² Annie Cattrell’s *Seeing* (2001), a sculptural model-form developed from functional magnetic resonance images of brain activity suspended in a transparent cuboid illustrates editor Francesca Bacci’s introduction to a recent anthology on art and the senses. ‘They are the impenetrable made visual and tactile,’ she states, while not acknowledging the withholding from tactile accessibility of that model-form. Also taking issue with Ramachandran, she argues that art is not simply a matter of the emotional reward, delivered by the limbic system, of the isolation of an object against background noise, but of the ‘extra intellectual pleasure of internal image-making itself and our self-conscious awareness of the process.’ She criticises an ‘Aristotelean separateness’ of the five senses overcome in this linking of the visual and tactile, but does not acknowledge Aristotle’s own positing of a ‘common sense’ that would make possible the functioning of the relatively discrete seeing, hearing, touching, smelling or tasting (let alone its Kantian rewriting) while insisting on the ‘intellectual’ bonus of the feedback loops of higher and lower brain functions.¹³

I shall return to comparable formulations, below, in connection with their more philosophically informed articulation in recent work by Brian Massumi, concerning synaesthesia and digital modelling, to suggest how to think locales of architecture. Even a partial history of changing accounts of synaesthesia and their relations to the arts and its instruments, however, can expose something more than varieties of inner experience suggested by Bacci. Cytowic, among others, was concerned to exclude artistic experimentation in cross-modal sensing as not clearly meeting his five criteria for synaesthetic experiences, namely that they are ‘involuntary (but elicited), projected, durable (discrete and generic), memorable, emotional (and noetic).’¹⁴ Nevertheless he did, as Crétien van Campen admits, demonstrate an interest in the history of the manufacture of multimedia instruments, from Castel’s ocular harpsichord of around 1725, Rimington’s colour-organ of the late 1800s, played by Sir Arthur Sullivan with his eyes closed,¹⁵ and the *tastiera*

¹² For an early interest in synaesthesia, tactility and digital media in work by Mark Quinn and blind photographer Evgen Bacay see Roy Arscott, ‘What Shape Does a Chicken Taste?’ in *noise: Universal Language, Pattern Recognition, Data Synaesthetics*, ed. Alfred Birnbaum, (Cambridge: Kettle’s Yard, 2000), n.p.

¹³ Francesca Bracci, *Art and the Senses*, (Oxford: Oxford University Press, 2013), ix.

¹⁴ Crétien van Campen, ‘Synaesthesia and Artistic Experimentation,’ *Psyche* 3, no. 6 (1997), accessed March, 2016, <http://www.theassoc.org/files/assoc/2290.pdf>.

¹⁵ Some of the work for this article was developed in a paper given in the Sullivan Room, named after Sir Arthur Sullivan, in Leeds Town Hall at *Writing Aesthetics*, International Association for Philosophy and Literature conference, 2003.



per luce, an instrument invented by Alexander Scriabin for which he wrote a part in his *Prometheus, The Poem of Fire*, a piece for extended orchestra first performed in 1911. Van Campen tries to insist that Cytowic illegitimately disallows artistic work from contributing to research in synaesthesia by drawing ‘a sharp demarcation line in history between scientific study and artistic experiments.’¹⁶ Van Campen tries to support his argument that the artistic work of Scriabin and Kandinsky can contribute to research in synaesthesia by claiming that they were both *bona fide* synaesthetes who were seeking, as it were, to render their experience more ‘durable’ if not discrete by including a part for a keyboard that played coloured lights at the same time as notes of the scale, or by getting a dancer to try to identify a particular watercolour among several that a musician has just interpreted through improvisation, to which that same dancer had just danced. Doubt has been cast on whether either Kandinsky or Scriabin were synaesthetics, with the part written for the *tastiera per luce*, for instance, linking colours of the spectrum in sequence with musical notes in the circle of fifths, that interval which, in principle—though not simply in fact—guarantees the harmonic transposition of a piece of music from key to key. Scriabin’s system seems too systematic to be the product of music-colour synaesthesia.

Van Campen also argues that the repertoire of figures, lines, blobs, spirals and lattices in Kandinsky’s abstract painting is generic as well as durable in Cytowic’s senses, though it is not clear what this argument serves other than what is only a slightly less narrow than usual psychologicist explanation of the paintings. I shall come back to his passing mention of Olivier Messiaen’s report that the colours he experienced while listening to music ‘were sometimes internal and sometimes external.’ Both van Campen and Cytowic, however, fail to note that this history of colour-sound multimedia instruments points to the implication of Western music in a history of the invention and reinvention of performance. If Castel claimed his ocular harpsichord produced an experience of a lost language of Paradise, it could also, so he believed, provide the deaf with access to this cosmopolitan ideal of communication beyond language.¹⁷ Seeking to widen access to music, Castel’s work, like Scriabin who believed his *Prometheus* expressed the destruction and rebirth of the universe, also bespeaks an era of Western music for and in performance in which music could, in rivalry with theatre, communicate with and about the cosmic by being about everywhere, or anywhere and for everyone, or anyone.¹⁸

In this paper I shall argue, therefore, that, in an open series of modes and contexts, questions of the synaesthetic have significantly accompanied formulations of particular Western enlightenment notions of art, its means and ends, in ways that insist on the retracing of questions of the relation between the meanings of the experience of art and the localisability of that experience, whether or not we, like Messiaen, are unsure of the localities of particular effects of some piece of music as colour, or just as sound. In a short paper, I shan’t be able to draw out all of the implications of this question of localisability, but I will seek to show that a philosophical account of synaesthesia can provide us with axioms that can illuminate the variously social, cultural and political significance of art by calling for an understanding of its communicability as open

¹⁶ Van Campen, ‘Synaesthesia and Artistic Experimentation.’

¹⁷ See James Peel, ‘The Scale and the Spectrum,’ *Cabinet*, no. 22, Winter 2006, accessed March 2016, <http://cabinetmagazine.org/issues/22/peel.php>.

¹⁸ A brief history of performance of Scriabin’s ‘cosmic’ *Prometheus, The Poem of Fire* suggests that such ambition tends towards the promotion of a forgetting of staging as such. A recent performance by the Yale Symphony Orchestra in February 2010 with a digital *tastiera per luce*, video, 28:54, September 14th, 2010, accessed March 2016, <https://www.youtube.com/watch?v=V3B7uQ5KoIU> makes no acknowledgement of an earlier performance with laser lights by Lowell Cross and the University of Iowa Symphony Orchestra on September 24, 1975 (see Lowell Cross, ‘Alexander Scriabin’s *Prometheus The Poem of Fire* 1909-1910,’ last modified 2005, accessed March 2016, <http://www.lowellcross.com/articles/prometheus/>). For a suggestive account of the history of Western music in performance, comparing the site of the concert hall to the museum via the notion of the white cube, but restricted by a model of the synaesthetic as critique of musical modernism, in Salonen and Stockhausen but also Kubrick’s 2001: A Space Odyssey, see Shaw-Miller, ‘White Cubes and Black Monoliths: A Fantasia,’ *Eye hEar*, 92-133.



to misconstrual, while it yet solicits participation in critical questions of locale. The reach of this notion of 'locale' may echo, with differences, the innovative account in *The Location of Culture* by Homi Bhabha of Levinas' formulation concerning the image of art as 'the very event of obscuring, a descent into night, an invasion of the shadow,' such that:

The 'completion' of the aesthetic, the distancing of the world in the image, is precisely not a transcendental activity. The image—or the metaphoric, 'fictional' activity of discourse—makes visible "an interruption of time by a movement going on on the hither side of time, in its interstices."¹⁹

The logic of the 'distancing' aesthetic image as negation of the world or reality will be considered in more detail below in connection Sartre's account of synaesthesia, and it will emerge that, while immanence is indeed implicated in the experience of art, the interruption of time plotted by Levinas does solicit "completion", between the 'interstices' of a temporality that can be thought according to a sense of a spatiality that sustains a 'movement' through or across it even while an 'image' of that is, indeed, too complete or totalising.

Commenting on the literary work of Nadine Gordimer and Toni Morrison, Bhabha, in the spirit of Levinasian thought, draws attention to the sense of an opening of the ethical via their fictions of characters like Gordimer's coloured Aila haunting polarised political realities of white and black in South Africa, or the haunting of spaces of dwelling by the traumas of slavery in post-Civil War U.S.A. through Morrison's character Beloved. As Bhabha pursues it, the political meaning of these hauntings requires acknowledgement of 'dissensus, alterity and otherness [that] are the discursive conditions for the circulation and recognition of a politicized subject and a public "truth".' Altering this framing somewhat, against the grain of a Levinasian ethical, we may note that the otherness of the other in these interruptive fictions politicizes precisely through the breaches in the orders of narration occasioned by those characters haunting the locations of those fictions, and any consistent image of their truths. It is not that this art entails a search for 'a public "truth",' as it solicits the making "public" of its truths.

The *arche*-ethical is also undecidably the *arche*-socio-political in ways that could send us to re-read the hauntings of Kantian notions of the interest of the disinterested beautiful lying in its 'communicability', if also to the sense, as Lyotard argued, that in Kant the sublime, being the 'destruction' of 'moral universality' through 'aesthetic universalization', or the other way around, renders any demand for communication groundless.²⁰ Synaesthesia betokens something inassimilable within the horizon of aesthetic universalization as witnessed by the morality of judgement as practical reason: the moral universality of apparently seeking to found the community through the discursivity of judgement that accepts when it cannot master or control the sublime power of nature, if not of art, but which nevertheless—and as a bonus for the sacrifice of orientation in the sublime—feels justified in seeking a community through the communicability of the beautiful. I shall not here pursue a detailed reading of Kant and the closure of a metaphysics of orientation by means of the sublime, though this would be consistent with both the 'discursivity in the structure of the beautiful' and the measure taken by the body of man as model in the mathematical sublime that segregates the colossal from the monstrous, as noted by Derrida.²¹

The usual reading of the idealism of Kantian thought is undermined by the idealisations at work in the discriminations of pure from adherent beauty, beauty purely without and with con-

¹⁹ Homi Bhabha, *The Location of Culture* (London and New York: Routledge, 1994), 15 quoting Emmanuel Lévinas, 'Reality and its shadow,' in *Collected Philosophical Papers*, trans. Alfonso Lingis, (Dordrecht: Martinus Nijhoff, 1987), 1-13.

²⁰ Jean-François Lyotard, *Lessons on the Analytic of the Sublime*, trans. Elizabeth Rottenberg, (Stanford: Stanford University Press, 1994), 239.

²¹ See Jacques Derrida, *The Truth in Painting*, trans. Geoffrey Bennington and Ian McLeod, (Chicago: Chicago University Press, 1987) 48; 140-4.



ceptuality, and the too-large from the excluded too-small, along with the median position, dictated by the former, viewing the colossal object from neither too close nor too far away. The return of the excluded, repressed of corporeality in Kant's text takes place, as it were, in parentheses, as Derrida points out:

... this subjective maximum constitutes the absolute reference which arouses the feeling of the sublime; no mathematical evaluation or comparativity is capable of this, unless—and this remark of Kant's dropped as in passing, in brackets, is striking—the fundamental aesthetic measure remains alive, is kept alive (*lebendig erhalten wird*) in the imagination which presents the mathematical numbers. Which shows well that the fundamental evaluation of size in its maximum is subjective and living, however enigmatic this 'life' remains, this vivacity or this aliveness.

The isolation of this enigma of liveliness is also the enigma of its isolation, passing as it would through a non-living graphematic series, erected as it were on the 'body' of the first ordinal that is also taken as cardinal, the model of the subject of aesthetic judgement, salvaged in its orientation in relation to the maximum of apprehension. As we know also, Kant elsewhere excludes calculation from the aesthetic, segregating art from science and economics, corralling this including-exclusion of the sublime as the guarantor of this forgetting of the externality of otherness and the otherness of externality as idealist aesthetics.²²

As far as I can tell, the recent literature on synaesthesia has not noted this corporeal graphematics in Kant, nor read it as the return of the repressed of the synaesthetic. Accounts of Kant that accept space and time as the pure forms of intuition founder here, and cannot accommodate this moment of the included exclusion of the implication of the body in space. An excess of what the process of intuition cannot master, the sublime thus re-inscribes the arrhythmia of interruptive duration in the failure wholly to apprehend the spatial. Claims that Kant's segregation of time and space and their correlation with the inner and outer reverses 'both Aristotle's and, especially, Locke's theories' are clearly enough at odds with the letter of Kant's explicit account, though they do echo this problem of duration.²³ Kant's refusal of Lockean simple ideas, however, does not quite stand or fall on such a reversal. Rather, space and time as pure forms of intuition are posited by Kant with the effect of indicating that Locke's notion of simple ideas are not so simply constituted, and it is this that we may follow in the certainty that Locke seeks in his account of ideas of space and which is undermined by what has been taken, by some, to be the first mention of synaesthesia in the canonical texts of philosophy.

Corrections concerning the relation to synaesthesia of Locke's mention of the blind man who 'fancied that the idea of scarlet was like the sound of a trumpet'²⁴ have been offered. Ward does so categorically, calling it 'a hypothetical example,' although he does not resist indicating how Locke might be corrected: there are blind people who experience grapheme-colour synaesthesia and, although no cases are known among the congenitally blind, this might mean that such people would not know that colour or some other 'property' of vision was not a 'property of sound,' for instance. Locke is 'half-right', however, according to the psychologist, in that such a blind person 'could never accurately use the word scarlet to denote a sound.'²⁵ We need to be clearer, however, what accepting or rejecting Locke's claim means here. As evidence in the construction of the argument for simple ideas deriving from sensation, Locke does not simply disavow the

²² On the opposition between 'free' and 'liberal' art in Kant see Jacques Derrida, 'Economimesis,' trans. Richard Klein, *Diacritics* 11, no. 2 (1981): 3-25.

²³ Shaw-Miller, 'Synaesthesia and Artistic Experimentation', *Eye hEar The Visual in Music*, 14.

²⁴ John Locke, *An Essay Concerning Human Understanding*, ed. Alexander Campbell Fraser, (New York: Dover, 1959), 156. [Book II, chapter IV, section 4.]

²⁵ Ward, *The Frog Who Croaked Blue*, 17-18.



possibility of synaesthetic experience. The citation of this narrative serves, rather, to generate normative notions of space that do exclude non-discrete, trans-modal sensing, ways of understanding the reporting of this, if also any conclusions concerning ways of thinking space and the spatial that regularised synaesthetic experience contests. For it should also be noted that this narrative of ‘fancying’ may also have been something of a provocation or even a defensive association. The British army blew trumpets, wore red, from 1658, and came to be known as ‘redcoats.’ The founding of the very simplicity of simple ideas, in this founding text of British empiricism, in contradistinction to ideas of reflection obtains its purchase and claim by excluding a sense of space that is not either empty or full; either a product of reflection or a scene of certain observation guided by that model negation.

The first mention of the narrative of the blind man in Locke’s *Essay* is in connection with the account of solidity in chapter four, book two by means of which Locke endeavours to distinguish between an idea of ‘pure space’, or space ‘without anything in it that resists or is protruded by body’, and ‘*something that fills space*, that can be protruded by the impulse of other bodies, or resist their motion’.²⁶ Those who do not ‘have these two ideas distinct’ would be disqualified from discourse, in confusion beyond clarification, charged with confounding names and ideas in the manner of the blind man’s account of scarlet and the sound of a trumpet. It is thus, moreover, that the response to what has been taken to be tactile-visual synaesthetic experience—Locke’s response to what is known as Molyneux’s question—sustains this inside/outside segregation of normative spatiality.

Irish lawyer and M.P. Molyneux asked whether a man born blind would, on becoming able to see, be able to distinguish a cube from a globe without recourse to touch. Locke’s answer to this, in chapter nine, book two, is to echo Molyneux and deny that the newly-sighted could ‘with certainty’ distinguish two solids one from another by sight alone. Ward again seeks to correct Locke, this time on the grounds that his assumption that ‘once sight was restored vision would be instantly normal’ is incorrect.²⁷ Locke is concerned, however, with what he takes to be the norm of sensation and its role in the formation of simple ideas. The recently blind would not be able correctly to identify what their vision showed them as their recollections of touch, of ‘protruding’ bodies as it were, would obstruct this. Ward points out that transfer of ‘information’ across the senses is much more ‘remarkable,’ for instance in its speed in babies, than this; and, reviewing an opposing case, that those who go blind can become synaesthetic. The double philosophical significance of Locke’s claim, however, goes missing. It is the habitual character of making sense that Locke needs, from this scene of experience, in order to sustain his claims on the role of philosophy as relieving us of ‘acquired notions.’ But also it provides him with a way of explaining how—mentioning Molyneux’s claim that responders to his question invariably change their minds—we are prone to be deceived by sight into taking sensations for judgements. Philosophy is to repair the want of reflection in the formation of our ideas of ‘light and colours’ if also of the failures of reflection concerning the ‘far different ideas of space, figure and motion.’

Locke’s later, apparently fundamental and influential contentions, at the end of chapter twelve, book two, against ‘either innate ideas or infused principles’ and his segregation of ‘external and internal sensations’ as the ‘only passages I can find of knowledge to the understanding,’ ‘the windows by which light is let into this *dark room*,’ thus depend on his denegation of the narrative of the blind man ‘fancying’ that the ‘idea of scarlet was like the sound of a trumpet’ and the norms of habit and its overcoming he takes from Molyneux.²⁸ Knowledge of colours depends

²⁶ Locke, *An Essay Concerning Human Understanding*, 155-6. [Book II, chapter IV, section 4.] His italics.

²⁷ Ward, *The Frog Who Croaked Blue*, 18.

²⁸ Locke, *An Essay Concerning Human Understanding*, 211-12. [Book II, chapter XI]. His italics.



on ‘external’ sensation, and blindness would be wholly ignorant of them, playing with names, of colours and of ideas, until the moment of the revelation of that ignorance. Meanwhile, any thinking of colour not experienced as vision, or of unlocalised sensation inside the architectural, *camera obscura* metaphors of the mind, let alone of the temporalities of the spatial as event, is put aside in Locke’s anaesthetic account of inward-oriented proto-aesthetics.

It has become common for a certain phenomenology to be called on in the recent resurrection of interest in synaesthesia, according to claims perhaps summarised by Merleau-Ponty in *The Phenomenology of Perception*. We have, because of ‘scientific knowledge [...] unlearned how to see, hear, and generally speaking, feel,’ becoming ‘unaware’ that ‘synaesthetic perception is the rule.’²⁹ Whether this is taken to bear more on the discreteness of the sensory experience or variations in cultural hierarchies of their value and significance, ‘multisensoriness’ threatens to become the mantra, if not always modelled by kinaesthetic modes of proprioceptive trans-modal sensing. It would be this that tends to preoccupy Massumi’s sophisticated account of architecture, architectural invention and digital media, in which he pursues a Deleuzian or/and Guattarian account of the ‘overcoding’ of the ‘fold’ of ‘cognitive mapping’ (too quickly identified with the Euclidean) on the kinaesthetic and proprioceptive apprehension of the ‘experience of space, or the space of experience.’³⁰ He tends not to explore the political values nesting in the notion of ‘overcoding’, which goes back to Deleuze and Guattari’s account of the birth and maintenance of the despotic war-machine by means hieratic cultures of ‘the signifier,’ concentrating instead on this ‘fold,’ where—given that ‘all orientation, all spatialization is operatively encompassed by topological movement’—‘*we always find ourselves in this fold in experience.*’³¹ Architecture ought to address this fold, with Massumi thus under-estimating the interest in the political meanings of architecture, seeking to formulate the ‘transducing’ of the far into the near of architectural space by means of digital media. Insisting on the abstractness of the body as topological, and thus posing such model-bodies against rejections of the abstraction of digital media, the inventive formulations of the exceeding of this nevertheless also have difficulty escaping from the paradoxical.

They do so, however, via a privileging of the temporal dimension of the virtuality of experience. The present would not pass if there were not some “passness” or pastness to fold aspects of itself into as it folds out into others.³² The future and past would thus be ‘in direct, topological proximity’ to the sense of the present, and architecture ought, on Massumi’s account, to enable access not to some linear history of buildings competing for monumentality, or to a stigmatized ‘deconstructivist’ preoccupation with ‘mediated readings’, but to a non-linear temporality of experience. Interrupting the sense of the near by means of an interruptively distant introduced by digital media environments ‘responsive’ to their users, the estrangement of the users of architecture would pass by way of the always accompanying pastness into which presents pass. Yet does this not still heroicise architectural invention? Does architecture not have to proffer locales, if only as the frame of the mediating representations that already preoccupy if not dominate built environments? The undecidability of locale is not a recipe for architecture as a ‘technology of time,’ as he puts it, but it is a way of interrupting the sameness of dwelling, the model of the domestic, if only by means of distinctive temperatures of colour, or distinctively unfamiliar textures. (How often, we might note, new material compounds are convoked as architecture by means of familiar colouring, in defiance of the strangeness of surface texture, volume or mass.)

²⁹ Maurice Merleau-Ponty, *The Phenomenology of Perception*, trans. Colin Smith, (London and New York: Routledge, 2005) 266.

³⁰ Brian Massumi, ‘Strange Horizon: Buildings, Biogram, and the Body Topologic,’ in *Parables for the Virtual: Movement, Affect, Sensation*, (Durham: Duke University Press, 2002), (177-207) 181.

³¹ *Ibid.*, 182. His italics.

³² *Ibid.*, 200.



The art of architecture, as much as any other art, is not committed either to the paths of negation or of excess, nor is it guaranteed effectiveness by either. To return briefly to Levinas, the ‘hither side’ of time, and the recall to the surprising ‘here’ of the ‘now’, is attested through affirmation of the interruption of temporal passing, and the implication of experience in some otherness of externality.

Phenomenology offers a *déjà vu* without the portent of the new,’ argues Massumi. By means of an intentionalising that would domesticate the new, ‘Every phenomenological event is like returning home,’ he writes, promoting an account of experience, as if in recognition of synaesthesia, as ‘never fully intentional.’³³ The question of experience to pose in relation to a phenomenology of art does not, however, derive from its essential sameness to the experience of non-art, the ordinariness of the domesticated new, important though it may be to allow for similarity here. Concluding this enquiry into the significance of synaesthesia across the margins of aesthetics so as to try to show this, and in order to suggest how thinking the locales of art may be further specified, I shall try to draw out the equivocality of a case of the mention of the synaesthetic in the text that Levinas was responding to in writing ‘Reality and its Shadow,’ namely Sartre’s *The Psychology of Imagination*. If Levinas wanted to insist on a ‘movement’ across the ‘interstices of time,’ and suggest that the experience of art was not simply one of transcendence, then returning to Sartre can show that it is not simply a matter of immanence either, but rather a sort of complexification of experience by means of the modes of its memorization, which—in echo of the recent work of Bernard Stiegler, but also of founding texts of Western philosophy—I shall refer to as ‘hypomnesic.’

It would require much careful reconstruction of the sources in psychological research to which Sartre refers, as well as of his negotiations of the work of Husserl and Heidegger, fully to explore the value of his account of the image as the key to imagination. I take the dedication to Sartre’s book by Roland Barthes of his late book on photography, *Camera Lucida*, its search for the ‘noeme’ of photography in relation to his mourning of his mother by means of a photograph of her, as a qualified homage to the suggestiveness of Sartre’s account of mental images, even while it insists, finally, on the power of the external image.³⁴ For Sartre is as clear as he can be that it is to mental images that his account of imagination typically refers us, even while it is not always clear how they are to be distinguished from perception or non-mental images, or pictures. Sartre does not go back to Locke, but stages his account of imagination in relation to empiricism, criticising ‘the illusion of immanence’ which obtains in Hume’s account of the relations between impressions and ideas, such that, ‘for Hume, the idea of chair and the chair as idea are one and the same thing’. Re-opening the thought of the image ought to enable us to understand that the image is not ‘in consciousness’ and that the object of the image is not ‘in the image.’³⁵ These stipulations will not finally serve to restrict Sartre’s text to the understanding of the imagination as transcendental he insists on, even while they are given by the sense of consciousness as intentional.

Intentional consciousness gives us images, negates the perception of the world, or of reality. This privilege of the image as the ‘name’ for ‘the whole system of the imaginative consciousness and its objects’ is sustained by the claim that ‘the word... is internal’ to this system. ‘Words are not images’, he states at the beginning of section four, chapter two, ‘The role of the word in the mental image.’ Consciousness may, by words as with images, be ‘directed in its own way towards

³³ Ibid., 191.

³⁴ On the ‘noeme’ of photography as the ‘superimposition of reality and the past’, missing questions of its locales, see Roland Barthes, *Camera Lucida: Reflections on Photography*, trans. Richard Howard (New York: Hill and Wang, 1980), 76.

³⁵ Jean-Paul Sartre, *The Psychology of the Imagination*, trans. Bernard Frechtman, (London: Methuen, 1972) 2-3.



an object through another object.’ This is ‘the only common trait’ between the consciousness of word and of image. For Sartre a word acts as an ‘intercalated object’, making present something else ‘by proxy,’ whereas images are more properly transcendental and ‘direct’ consciousness to things ‘which continue to be absent.’ Yet, as Levinas might have noted, this continuousness of the image, and suspending its difference from the word as proxy, has to be construed as interrupted, bringing a sense of presence back despite a sense of absence.

Privileged, then, as the source of a ‘certain fullness together with a certain nothingness’, the image—as the text reiterates—is a presentness of absence, while the word insists on its status as empty proxy.³⁶ Sartre knows, somewhere, that the written word does not act like this. Aiming to contain matters within the framework of an imaging imagination, Sartre admits as exceptions cases in which words are no longer signs, but act instead to ‘presentify (*presentifier*)’ the leaves of a notebook, the pages of a book or the total physiognomy of a word, a phrase etc.—as Barthes might have said, the written word as iconic sign.³⁷ Yet these locales of the word give us more than the word as discontinuous proxy for ‘objects’ within the life-giving negation of the imaging imagination. Sartre tries to relegate this disturbance to his phenomenological orientation with footnoted remarks about so-called “‘visuals” or “‘auditives”” being people ‘who do not know how to observe very well.’ But the *hypomnemata* of the written word—the supplementary ‘supports’ of memory—has already deported us from a scene of consciousness orienting itself by means of its absent objects to simulacral physiognomies.

Sartre puts aside this scene of reading, without fully registering the graphematic synaesthetics his notion of physiognomy suggests, and moves on to try to specify the roles of images in serving thought, as given in the model form of intentional consciousness. In a section headed ‘Symbolic schema and illustrations of thought’, in chapter three, ‘The role of the image in mental life,’ Sartre’s text opens up, however, towards a series of critical questions that synaesthesia betokens almost to the point of acknowledging the abrogation of typical modes of the apprehension and understanding of space or their idiomatic re-articulation through art as what I have termed here ‘locales.’ Quoting August Flach, and in a passage that introduces his explicit treatment of synaesthesia, Sartre contests the psychologist’s typology of the ‘schema’ of thought, namely ‘illustrations of thought,’ ‘schematic representations,’ ‘diagrams,’ ‘synaesthesias and synopsis [grapheme-colour synaesthesias] and ‘auto-symbolic phenomena.’³⁸ Sartre’s initial presentation of Flach’s argument expands, in particular, when it comes to the diagram, which differs from the schema proper in that it provides thought with ‘a definite localization in space’ and serves ‘as a mooring, an attachment, an orientation for our memory, but plays no role in our thought’. Yet Sartre is concerned to contest this division between schema and diagram, pointing to Flach’s admission that ‘a dominant preoccupation’ may affect how particular diagrams of temporal periods are constructed. A little less like the earlier ‘presentifiers’ of the word, diagrams can serve to orient or mis-orient memory as subjective, with months of trauma left out by one of Flach’s case-studies or ‘professional vocation’ dividing the year in less exceptional cases. The ‘localization’ provided by the diagram-schema is no longer quite so certain.

Synaesthesia comes next, as it too brings orientation in this version of the transcendental aesthetic into question. Sartre arrives at the synaesthetic as the oft-reported case of an experience of letters as colours, objecting to Flach’s psychological approach on the grounds that ‘The image is a form of consciousness.’³⁹ More in line with recent psychology, Sartre argues against Flach’s ‘association,’ but also against Flournoy:

³⁶ Ibid., 94-5.

³⁷ Ibid., 96.

³⁸ Ibid., 121-2.

³⁹ Ibid., 122.



Synaesthesia never occurs as the product of a pure association. The colour occurs as the *sense* of a vowel. 'A man forty years of age, who experiences very definite colours for a, o and u, but not for i; he understands that if need be the sound can be seen white or yellow, but he feels that in order to find it red one must have a distorted mind or a perverted imagination.' When Flounoy tries to explain synaesthesias by what he calls 'identity of emotional basis' he does not take into account the sort of logical resistance one experiences when one attempts to change the colour aroused by a vowel. This happens because the colour occurs as the sound 'in person' just as the 'vague sea' occurs as the proletariat in person.⁴⁰

Like the 'physiognomy' of the written word or phrase, grapheme-colour synaesthesia calls up something that, 'in person,' is more simulacrum of than simple resemblance to a body. 'Logical resistance,' according to the ambitions of a phenomenological renewal of philosophy, misses the question of memorization that synaesthesia recalls us to, the deporting of remembering and the remembered via what Stiegler termed memory's 'tertiary supports'—with the crucial proviso that, as synaesthesia demonstrates, these may be internal as much as they are external, as Stiegler has it, in his philosophical anthropology.⁴¹

Sartre's brings us closer to the critical questions posed by synaesthetic experience, but muddies the waters, as it were, both incorporating the synaesthetic and putting it to one side in the narrative of the condensation of the proletariat as the 'vague sea.' For this is not clearly a case of synaesthesia, but of Flounoy's report of a case of a mental image summoned up in a psychological experiment in response to the provocation of the word 'proletariat.' As Sartre had it earlier:

That 'flat and black area' with the 'vaguely flowing sea' is neither a sign nor a symbol for the proletariat. It is the proletariat in person. Here we reach the real meaning of the symbolic schema: the schema is the object of our thought giving itself to our consciousness.⁴²

As Sartre's own condensed text tells us, in the symbolic schema of this mental image, the sense of the 'flat and black area' shades into the 'vaguely flowing sea,' sustaining the hypomnesic recalling, the recollection without clearly recollected recall, of the proletariat; 'in person,' Sartre insists, but in defiance of the 'mass' extending across 'the entire world' reported by the individual and quoted by Sartre previously from Flach's case-study.

Sartre's consideration of synaesthesia notes the play of sense across a mental image, but it assimilates the instabilities of localisation in the shifting in and out of signification, from 'area' to 'sea' to 'wave' to 'dark and thick mass,' to an 'object of thought,' a transcendence of immanence that would re-establish the prospects of orientation through and as interiority. Synaesthesia leaves the stage, while the complexities of memory return only to be dealt with in Sartre's account of hallucination. Excluded from the imagination proper on the grounds that it is a phenomenon '*the experience of which can be made only by memory*' [his italics], hallucination becomes the re-orientation to exteriority via the experience of the absence of its object. Running close to the dream, which he is at pains elsewhere to keep apart, 'somewhat like the sudden awakening of a sleeping person by a violent noise,' in response to hallucination:

Consciousness is up in arms, orients itself, it is ready to observe, but, naturally, the unreal object has disappeared; confronting it is nothing but a memory.⁴³

⁴⁰ Ibid., 123.

⁴¹ For a brief account of Bernard Stiegler's account of hypomnesis as technical 'support' see his 'Derrida and Technology: fidelity at the limits of deconstruction and the prosthesis of faith,' in *Jacques Derrida and the humanities: a critical reader*, ed. Tom Cohen, (Cambridge: Cambridge University Press, 2001), 256-69. I follow Geoffrey Bennington, who reads Stiegler as writing a '*phenomenological anthropology of deconstruction* he thinks just is deconstruction' [his italics] in 'Emergencies', in *Interrupting Derrida*, (London and New York: Routledge, 2000), (162-179), 171.

⁴² Sartre, *The Psychology of Imagination*, 119.

⁴³ Ibid., 184.



Hallucination disarms, but re-arms the subject of consciousness, serving as a model of the absent presence of the object in the mental image, now a mere memory screening out only the unreality of the disappeared, re-admitting exteriority. The challenge of synaesthesia is finally put aside when seeking to explain, in the final chapter, how disgust or desire affects memory, Sartre argues that affective memory necessarily confuses the object as present and the object as image, because ‘real and unreal objects appear before it as memories, that is, as past.’⁴⁴ Memory remembers its tertiary supports, but without Sartre’s acknowledgment.

Among the most striking of issues emerging from recent neuro-psychological studies of synaesthetic experience—as Sartre’s case of the ‘proletariat’ foreshadows—is the idiomatic complexity of the location of that experience. In echo of Messiaen, but in favour of complexification, it has become clearer that the distinction between inside and out or between so-called associator and projector synaesthetes, while relatively valid as categories, can also repress important differences in senses of location. There are projector grapheme-colour synaesthetes for whom colours, and even multiple colours, appear where the characters do, but without obscuring the actual colours of those characters. An associator synaesthete sees her colours on a ‘sort of semicircle, filling the top part of my head, but definitely inside,’ while she also projects or associates other synaesthetic thoughts, like ‘my route home,’ on a ‘screen at an angle to my synesthetic screen.’ Pursuing the prospect that understanding the different modalities of the mapping of space, will ‘provide a unique window into how the brain creates a sense of space,’⁴⁵ Ward outlines the different origins of such ‘maps’ not simply in terms of cognitive or kinaesthetic mappings, as Masumi’s account tends to suggest, but often in terms of relatively discrete zones of proprioception—vision as generated by eyes and head, or hands inter-related with retinal stimulation—in which the body is not simply the unstable source of kinaesthetic sensation, but also the framer of retinal movement or variation. The senses of hearing and touch are also framed in this way, and it is this ‘normal multisensoriness’ that synaesthetic experience ‘parasites,’ in associator, projector or variant modes, to remind us that senses of space are typically locational and axiomatically complex, as Locke’s blind man might have understood better than his philosophically dogmatic chronicler.⁴⁶

Whether upsetting the empiricist insistence on the distinction between simple and complex ideas, the fictions of intuition in idealism, the transcendental imagination of various humanisms, or phenomenological anthropologies of the technical supports of memory, synaesthesia threatens to continue to smuggle in questions of idioms of the localisation of experience into the texts of aesthetic thought. Notwithstanding the apparent norms of the multisensory—which are, to recall earlier arguments and observations of this piece, open to historico-techno-cultural variation—or the demands of preoccupations with the potential of multimedia, digital or otherwise, the challenge, so far as the thinking of art is concerned, is to seek to acknowledge the complexity of spatio-temporal experience that synaesthesia draws attention to by seeking to find ways of attesting not simply to the ‘obscuring’ of apprehension noted by Levinas, but to what can be deciphered in the alteration between modes of apprehension and the instabilities of their comprehension: the generation of questions of locales of experience in and across the frames—institutional and socio-cultural as well as generic—of art. Thus, dominance of the aesthetic thinking of art may be suspended, or displaced; and the witnessing of art to the conditions of existence across the globe better communicated.

⁴⁴ Ibid., 158.

⁴⁵ Ward, *The Frog Who Croaked Blue*, 89–90.

⁴⁶ Ibid., 97.



Bibliography

- ARSCOTT, Roy. 'What Shape Does a Chicken Taste?' In *no1se: Universal Language, Pattern Recognition, Data Synaesthetics*, ed. Alfred Birnbaum, n.p., Cambridge: Kettle's Yard, 2000.
- BARTHES, Roland. *Camera Lucida: Reflections on Photography*. Translated by Richard Howard. New York: Hill and Wang, 1980.
- BENNINGTON, Geoffrey. 'Emergencies.' In *Interrupting Derrida*, (London and New York: Routledge, 2000), 162-79.
- BHABHA, Homi. *The Location of Culture*. London and New York: Routledge, 1994.
- BRACCI, Francesca Bracci. *Art and the Senses*. Oxford: Oxford University Press, 2013.
- CRAIGHERO, Laila and RIZZOLATTI, Giacomo. 'The Mirror-Neuron System.' *Annual Review of Neuroscience*, 27, (2004) : 169-92.
- CROSS, Lowell. 'Alexander Scriabin's Prometheus The Poem of Fire 1909-1910.' Last modified 2005, accessed March, 2016, <http://www.lowellcross.com/articles/prometheus/>.
- CYTOWIC, Richard E. *Synesthesia: The Union of the Senses*. New York: Springer-Verlag, 1989.
- CYTOWIC, Richard E. and EAGLETON, David M. *Wednesday is Indigo Blue: Discovering the Brain of Synesthesia*. Boston: MIT Press, 2009.
- DERRIDA, Jacques. 'Economimesis.' Translated by Richard Klein. *Diacritics* 11, no. 2 (1981): 3-25.
- DERRIDA, Jacques. *The Truth in Painting*. Translated by Geoffrey Bennington and Ian McLeod. Chicago: Chicago University Press, 1987.
- HEYES, Cecilia. 'Where do mirror neurons come from?' *Neuroscience and Biobehavioral Reviews*. 34, no. 4 (2010): 575-83.
- LEVINAS, Emmanuel. 'Reality and its shadow.' In *Collected Philosophical Papers*, translated by Alfonso Lingis, (Dordrecht: Martinus Nijhoff, 1987), 1-13.
- LOCKE, John. *An Essay Concerning Human Understanding*. Edited Alexander Campbell Fraser. New York: Dover, 1959.
- LYOTARD, Jean-François Lyotard. *Lessons on the Analytic of the Sublime*. Translated by Elizabeth Rottenberg. Stanford; Stanford University Press, 1994.
- MASSUMI, Brian. 'Strange Horizon: Buildings, Biogram, and the Body Topologic.' In *Parables for the Virtual: Movement, Affect, Sensation*. Durham NC: Duke University Press, 2002, 177-207.
- MERLEAU-PONTY, Maurice. *The Phenomenology of Perception*. Translated by Colin Smith. London and New York: Routledge, 2005.
- PEEL, James. 'The Scale and the Spectrum.' *Cabinet*, no. 22, Winter 2006, accessed March 2016, <http://cabinetmagazine.org/issues/22/peel.php>.
- RAMACHANDRAN, Vilayanur S. 'Mirror Neurons and imitation learning as the driving force behind "the great leap forward" in human evolution.' *Edge*, last modified June 1st, 2000, accessed March, 2016, http://www.edge.org/3rd_culture/ramachandran/ramachandran_index.html.
- SARTRE, Jean-Paul. *The Psychology of the Imagination*. Translated by Bernard Frechtman. London: Methuen, 1972.
- SHAW-MILLER, Simon. *Eye hEar the visual in music*, Farnham and Burlington: Ashgate, 2013.
- 'Synesthesia and the Synesthetic Experience,' last modified October 7th, 1997, accessed March, 2016, <http://web.mit.edu/synaesthesia/www/synaesthesia.html>.
- SCRIABIN, Alexander. *Prometheus: Poem of Fire*. Video, 28:54, September 14th, 2010, accessed March, 2016, <https://www.youtube.com/watch?v=V3B7uQ5KoIU>.
- STEIGLER, Bernard. 'Derrida and Technology: fidelity at the limits of deconstruction and the prosthesis of faith.' In *Jacques Derrida and the humanities: a critical reader*, edited by Tom Cohen, (Cambridge: Cambridge University Press, 2001), 256-69.
- VAN CAMPEN, Crétien. 'Synaesthesia and Artistic Experimentation.' *Psyche* 3, no. 6 (1997), accessed March, 2016, <http://www.theassc.org/files/assc/2290.pdf>.
- WARD, Jamie. *The Frog Who Croaked Blue: Synesthesia and the Mixing of the Senses*. Hove and New York: Routledge, 2008.

