

Music and Science in London, 1800–51

27–28 June 2014

King's College London, Strand

Room SWB20 (Music Department)

Organiser: Sarah Hibberd (Nottingham)

PROGRAMME

(discussion of pre-circulated papers)

FRIDAY 27 JUNE

10.00–10.15: Introduction (Sarah Hibberd)

10.15–1.00: **Session 1: At the Opera**, respondent: Cormac Newark (University of Ulster)

Céline Frigau Manning (Université Paris 8): Examining opera singers. How scientific categories become instruments of exceptionalisation and normalisation

COFFEE/TEA

Gundula Kreuzer (Yale University): Faire un tamtam: noise and the gong in 19th-century opera

1.00–2.00: LUNCH

2.00–5.00: **Session 2: Instruments**, respondent: John Tresch (University of Pennsylvania)

Ben Marsden (University of Aberdeen): Comparing notes: musical and scientific instruments in early nineteenth-century London

Simon Werrett (University College London): Music and the arsenal: artillery, sound, and science in Woolwich, 1800-1850

COFFEE/TEA

Sarah Hibberd (University of Nottingham): Underground Technologies: The Lisbon Earthquake at the Cyclorama

DINNER

7.00 Sagar Vegetarian, 31 Catherine Street, WC2B 5JS

SATURDAY 28 JUNE

10.00–12.30: **Session 3: Invisibility**, respondent: Roger Parker (KCL)

David Trippett (University of Bristol): Music, Machines and Material Minds

COFFEE/TEA

Inge van Rij (New Zealand School of Music): 'A living, fleshy bond': the electric telegraph and conceptions of Western art music in the mid nineteenth century

12.30–2.00: LUNCH

2.00–3.00: Some conclusions (Sarah Hibberd)

DINNER

7.00 Sofra Covent Garden, 36 Tavistock Street, WC2E 7PB

OTHER PARTICIPANTS include: Tamsin Alexander (Cambridge), Oskar Cox Jensen (KCL), Jonathan Hicks (KCL), Katherine Hambridge (Warwick), Laura Protano-Biggs (Cambridge), Wiebke Thormahlen (RCM), Flora Willson (Cambridge)

Administrative support: Angela Waplington (KCL)

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Music in London 1800–51, dir. Roger Parker



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ABSTRACTS

(alphabetically)

Céline Frigau Manning: 'Examining opera singers. How scientific categories become instruments of exceptionalisation and normalisation'

In some descriptions from the first half of the nineteenth century, scientific categories are syncretically used to explain opera singers' talents, their innate and acquired dispositions for singing and acting, and their effects on their audiences. Although such discourses reformulate prior interpretative frameworks such as climate theory or mechanicism, they tend to emphasise internal causes more than external ones. The well-known theory of the humours thus finds itself combined with physiognomy or newer research in the fields of electricity, phrenology and the nervous system.

Rather than reconstituting a "scientific" approach towards acting and singing practices, thus linking them to real scientific processes, I intend to focus on specific discursive models of observation and enunciation in use among early nineteenth-century operatic audiences. By highlighting such criteria as expression and empathy, these texts contribute to the processes of operatic creation and reception, and to the forging of new interpretations of singers' public images, as both exceptional artists and socially normalised individuals.

Among the various descriptions speckled across the English, French and Italian literature and press of the time, I will focus here on at least two revealing texts. One is a fictitious dialogue entitled *La Pasta nell'Otello*, by Dr Luigi Morando de' Rizzoni (Verona, Crescentini, 1830). It contains an intradiegetic prop – a numbered portrait inspired by physiognomy, clarified by a long commentary used by one character to demonstrate that Giuditta Pasta is the most gifted actress of her era. The other text is a lecture presented at the Paris *Société Phrénologique* by Dr Charles Place, *De l'art dramatique au point de vue de la phrénologie* (Paris, Hennuyer et Turpin, 1842), dedicated to the English actors Charles and Fanny Kemble, and to the singer Adelaide Kemble.

I will attempt to show how this lesser known source material does not merely imitate scientific demonstrations, nor simply reflect their discursive dissemination across the burgeoning field of music criticism. Taking into account the specificities of each text and its models, I will establish how these various figures are distinctive responses to the sensual, predominantly female power of singers, and the intense emotion of operatic experience. This aesthetic power and emotion are simultaneously rationalised and fuelled by such normative scientific concepts and approaches.

Sarah Hibberd: 'Underground Technologies: The Lisbon Earthquake at the Cyclorama'

To the Coliseum, some years before its final fall, was added the Cyclorama [in December 1848] - an extraordinarily realistic representation of the earthquake of Lisbon. The manner in which

the earth heaved and was rent, the buildings toppled over, and the sea rose, was most cleverly contrived, and had a most terrifying effect upon the spectators; frightful rumblings, proceeding apparently from under your feet, increased the horror, which was anything but diminished by accompanying musical performances on that awful instrument, the apollonicon. Never was better value in fright given for money. *Edmund Yates: His Recollections and Experiences* (London, 1884)

This paper examines the Cyclorama – its visual and aural effects and its reception – in the context of scientific debates between catastrophists and uniformitarians about geological history. During the first half of the century Londoners were confronted with a rapid succession of revolutions in scientific thought that had to be assimilated into the emotional as well as the intellectual structures with which the public understood external reality and their place in it. Science was a source of both excitement and anxiety: the Cyclorama offers a lens through which to understand these tensions.

The geologist Charles Lyell had recently explained earthquakes and volcanic activity in a manner that fundamentally changed public understanding of the history of the earth, and in so doing challenged the religious narratives that had formerly underpinned it. The Cyclorama's representation of the 1755 Lisbon earthquake invited the spectator to confront such destruction in this new light: the immersive visual and aural effects (alluded to in Yates's quote, above), and the musical narrative(s) offered by the Apollonicon (which included excerpts by Auber, Beethoven and Rossini) were crucial to the shaping of the experience, and can be understood in the context of other artistic/poetic responses to Lyell's proposals.

Gundula Kreuzer: 'Faire un tamtam: noise and the gong in 19th-century opera'

In 1855, Wagner ridiculed the idea that his Tannhäuser overture might include a tam-tam stroke; yet for the opera's Parisian premiere of 1861, he added just that. This duplicity exposes the tam-tam's ambiguous status in mid-19th-century Europe. Introduced to Western composers during the French Revolution, the expensive Asian instrument was employed in increasingly nuanced ways, particularly in opera: single shudder-provoking strokes tended to mark dramatic culminations, while repeated soft strokes evoked the uncanny. At the same time, the non-pitched gong commanded attention at popular theaters, colloquialisms and music-theatrical treatises soon denoting its effect as clichéd. Examining a cross-section of 19th-century operas and satires, the first part of my paper affords more concrete insights into the gong's little-discussed musical and dramatic (ab)uses; I show how a growing appetite for spectacle fostered new timbres, which in turn encouraged views of the orchestra as noisy technology.

Beyond scores, however, the tam-tam assumed an independent existence as stage technology proper. Production books reveal its centrality for coordinating stage hands: the "earsplitting" gong consummated the multimedia climax while simultaneously veiling the

noise of machinery. As such, it might be considered an aural signifier of Wagner's Gesamtkunstwerk. Moreover, its palpable sound waves and long reverberation epitomize the bodily effect Wagner desired for his works. No wonder that theaters in the later 19th century added the tam-tam as an all-purpose effect enhancer to older operas as well, performance materials listing it as accessory. This left the tam-tam fluctuating between orchestra pit and backstage, music and machinery, artistic medium and technological supplement.

By exploring this porous acoustic space, my paper challenges common equations of stage technology with optical effects and of stagings with opera's "visual" side. As a novel sound effect, the tam-tam paradigmatically opens our historical ears to the sonic dimension of stage technologies more generally, from the bells signaling scene-shifting to the creaks of the sets themselves. Bringing opera into dialogue with the recently burgeoning field of sound studies, my paper ultimately seeks to yield fresh insights into the materialities, functions, and multivalences of stage technologies in the conception and realization of 19th-century opera on stage.

Ben Marsden: 'Comparing notes: musical and scientific instruments in early nineteenth-century London'

The idea of this paper is to explore the relationship between music and science in early nineteenth-century London by examining the interactions between musical and scientific instrument makers and, in several senses, musical and scientific performers. Musical performance and the technologies associated with music have been relatively little studied by historians of science but the existence of figures like William Herschel, astronomer and musician, suggests that such explorations might be revealing. A key focus in this paper will be Charles Wheatstone. His family was well-known in the musical instrument-making business; and yet he worked as a high-profile, and highly innovative, professor of experimental natural philosophy (physics) at King's College London in the 1830s. As the inventor of the concertina and one of the chief advocates of the electric telegraph, was Wheatstone unusual? To what extent did other key philosophical performers, like Michael Faraday in London, or Robert Willis in Cambridge and London, rely on the potential of music to entertain and engage audiences for practical science?

Inge van Rij: "'A living, fleshy bond": the electric telegraph and conceptions of Western art music in the mid nineteenth century'

The development and rapid dissemination of the electric telegraph in the mid nineteenth century is profoundly entangled with music in ways that are seldom if ever acknowledged. Those cultural histories of the telegraph which concern sound focus on listening more generally rather than musical works (Sterne); on the other hand, while musicology has displayed an increasing fascination with the role of technology, the focus within this discipline has primarily centred on technology and instruments designed specifically for creation or reproduction of music, thereby overlooking the telegraph. Moreover, particular emphasis is often placed on sound recording as enacting 'the moment when everything suddenly

changed' (Attali). In fact, the telegraph anticipated several key premises of recording by decades. As I will demonstrate in this paper through discussion of select compositions and criticism, telegraphic discourse interacted with significant transformations not only in the creation and understanding of sound, but also in fundamental concepts of art music, on the level of musical language, composer, and performer alike.

The language of the telegraph is heard not only in the direct imitation of Strauss Jnr's *Telegraphische Depeschen*, but also in Sudre's development of a 'universal musical language' to communicate across distances. An examination of works by Berlioz and Kastner reveals how the telegraph fed into conceptions of musical transcendence via Spiritualists and the Aeolian harp. The attendant emphasis on mind over body was extended through the employment by conductors of telegraph technology to control musicians across ever greater distances. This apparent disembodiment of the telegraph carried threatening implications for those social or ethnic groups aligned with the body, including performers. However, electricity was also primarily a 'tactile' medium (McLuhan), and sensitivity to the telegraphic signals in art music thus also entails a new appreciation of the powerful role of embodied performers. Listening for the sounds of the telegraph in music of the mid nineteenth century thus not only enriches our appreciation of the historicity of these works, but offers new perspectives on the fraught negotiations between art and science, embodiment and transcendence, performer and composer which continue to be transmitted in our own era.

David Trippett: 'Music, Machines and Material Minds'

The icon of the machine in early nineteenth-century Britain was subject to a number of contemporary critiques. In Thomas Carlyle's *Spirit of the Times* (1829), he cautioned about their social status: "not the external and physical alone is now managed by machinery, but the internal and spiritual also." This kind of reactionary criticism gave rise to numerous caricatures by William Heath and Thomas McLean (et al.) about "the march of intellect" that was upending society and ending what Carlyle called "the old natural methods."

Pedagogy and the life of the mind were implicated within this critique, ("we have machines for education: Lancastrian machines; Hamiltonian machines; monitors, maps and emblems"), and this paper asks to what extent education in music composition was influenced by this. In particular, this involves the emerging science of phrenology and its relation to materialism. A number of journal articles appeared on the topic of music and phrenology, bolstered by the establishment, in 1823, of the London Phrenological Society, and, in 1838, its sister organization, the *British Phrenological Association*. Major publications by figures such as George Combe (*Essays on Phrenology* [1819]; *Elements of Phrenology* [1824]; *Constitution of Man* [1828]) and Robert Chambers (*Vestiges of the Natural History of Creation* [1844]), place the creative imagination, music and the "natural" life of the mind into a fraught discourse of music and materialism.

The cost of a material mind was a perceived loss of contact with the "gifts of nature ... the dynamical nature of man ... the mystic depths of man's soul" (Carlyle), but reactionary criticism did not have the last

word. The concept of machine was also invested with magical potential to transform matter, to generate energy, and can be understood as a new ideal type of mechanism, one associated with "the metamorphoses of the fantastic." (Tresch 2012). I shall examine these conflicting ideals and fear over mechanism, as paradigm and rallying cry, in the context of music pedagogy during the second quarter of the century.

Simon Werrett: 'Music and the arsenal: artillery, sound, and science in Woolwich, 1800-1850'

This paper will explore the place of Woolwich Arsenal as a site for practices and investigations relating to music, sound, and echoes in the period 1800 to 1850. Woolwich "Warren", as the Arsenal was known, was Britain's imperial artillery hub in this period, and served multiple roles as a site of ordnance production and testing, scientific education and experimentation, pomp and spectacle, and tourism. The paper will examine work by Woolwich gunners, officers, and men of science in music and sound. It will consider the early activities of the Royal Horse Artillery Band, created in 1793; the connection between Woolwich artificers who made and performed fireworks and the London pleasure gardens and their musicians; and the numerous experiments into the velocity of sound and the nature of echoes made by Olinthus Gregory and other natural philosophers connected to the Royal Military Academy at the Arsenal. The paper will argue that music and sound played an important role in artillery, both on and off the battlefield, and show how this provided significant resources for scientific investigations of sound in the period.



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