

Challenging Virtuality: A Personal Reflection

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Bach scholarship has been at the cutting edge of musicology for generations. The pioneering ambition of the Bach-Gesellschaft, to publish all of Bach's works in a complete edition, set a scientific precedent. A century later it was Bach researchers again who led the way in establishing the standard for modern editorial techniques. Yo Tomita continued the time-honoured tradition by leading musicology into electronic publication with the Bach Bibliography.¹ It went live in 1997 when many of us were still trying to get our minds around the concept of Internet communication, just six years after Howard Rheingold published *Virtual Reality: Revolutionary Technology of Computer-Generated Artificial Worlds and How it Promises to Transform Society* (New York: Simon and Schuster, 1991). Twenty years have passed since then and I am concerned about how virtual technologies might inhibit the future shape of Bach scholarship.

The vision to publish Bach's works and make them known throughout the world has been stable for generations,² and with encyclopaedic recording projects, the completion and now revision of the *Neue Bach-Ausgabe* and the ongoing search for Bach documents,³ it is still current. Assuming Bach studies follow the trends set by Mozart studies,⁴ it is only a matter of time before the NBA and Bach documents are available digitally. When that day arrives, anyone, anywhere will have access to a wealth of Bach sources at any time. The old vision will be fulfilled. What shape will Bach studies take then? Will there be such a thing as Bach studies at all? What is the future vision for our discipline, and how can digital technology be harnessed to serve it?

Throughout the 1990s Bach scholars welcomed online research resources, such as Zedler's dictionary (from 1997) and an increasingly wide variety of seventeenth and early eighteenth-century German books.⁵ Publication of the

* In the spirit of the subject matter, all the footnotes are links.

1 Yo Tomita, Bach Bibliography, <http://www.music.qub.ac.uk/tomita/bachbib>

2 Neue Bachgesellschaft e.V., <http://www.neue-bachgesellschaft.de/>

3 Bach-Archiv Leipzig, <http://www.bach-leipzig.de/>

4 Digital Mozart Edition. A Project of the Mozarteum Foundation Salzburg and The Packard Humanities Institute, <http://dme.mozarteum.at/>

5 Johann Heinrich Zedler, *Grosses vollständiges Universal-Lexicon aller Wissenschaften und Künste*, 68 vols. (Halle: Zedler, 1732–1754), accessible at *Johann Heinrich Zedlers Grosses vollständiges Universal-Lexicon aller Wissenschaften und Künste*, Bayerische Staatsbibliothek. Digitale Bibliothek, <http://www.zedler-lexikon.de/>; [Christian Ludwig], *Deutsch-Englisches Lexicon*

much discussed Göttingen Bach Catalogue and Bach Digital were eagerly anticipated.⁶ It was a decade full of promise. But in the first decade of the twenty-first century excitement turned to anxiety as social media exploded,⁷ and Bach chat rooms buzzed with amateurs desperate to discuss their experience of Bach's music. Uninformed, opinionated, and sometimes vitriolic exchanges sullied the forums, discouraging engagement by serious scholars. Was this a foretaste of open access research? When Wikipedia was born, in January of 2001, its invitation for anyone, regardless of educational qualifications, to make a written contribution seemed outrageous. How academics despised it! And yet time has shown that, in spite of the original prejudice of scholarly elitism, such new educational paradigms can gain acceptance in a short space of time, even to the extent of active sponsorship by a venerated establishment.⁸

Parallel to the monolithic output of the central Bach archives, there has been a wide variety of Bach research undertaken by individuals studying at institutions of higher education, where quality control is guaranteed by university guidelines, and facilitated by expert tutors. Statistics compiled from entries in Yo Tomita's Bach Bibliography with 'Bach' in the title show that, despite financial cuts and changing priorities in musicology, there has been a stable interest in Bach research at the university level over the past forty years.⁹ Of the 565 theses (an average of 141.25 per decade) published between 1970 and 2009, 170 appeared between 2000 and 2009. Of the 170 PhD/DPhil theses (an average of 42.5 per decade) published between 1970 and 2009, 42 were published between 2000 and 2009.¹⁰ Practically orientated DMA theses with 'Bach' in the title have continued to increase in popularity since the degree was introduced in 1950s. Will the 24/7 availability of Bach resources inspire a continuation of this trend in university Bach research? Traditionally it has been the reader with access to specialist libraries, rather than the general public, who could consult scholarly Bach publications. This privilege created a silent and invisible quality control over Bach research, a control that will disappear once all Bach resources are digitised. How will this affect the quality of discussions about Bach? Will it stimulate more engagement by amateurs? Will it result in an 'abuse' of the resources? Will it

(Leipzig: Thomas Fritschen, 1716), accessible at Internet Archive. Open Library, http://openlibrary.org/books/OL23370249M/Deutsch-Englisches_Lexicon

⁶ Göttinger Bach-Katalog: Die Quellen der Bach-Werke. Datenbank der Werke J. S. Bachs und ihrer handschriftlichen Quellen bis 1850, <http://www.bach.gwdg.de/>; Bach Digital, <http://www.bach-digital.de/>

⁷ 'Social Media Explained a la @ThreeShipsMedia', Instagram, <http://instagr.am/p/nm695/>

⁸ Duncan Geere, 'The British Library is looking for a Wikipedian-in-residence', *Wired.co.uk* (9 Feb 2012), <http://www.wired.co.uk/news/archive/2012-02/09/wikipedian-in-residence>

⁹ The Bach Bibliography does not claim to be exhaustive and the statistics in the table should be taken as a guideline rather than as definitive.

¹⁰ The data was generated using the Comprehensive Search option of the Bach Bibliography (<http://www.gub.ac.uk/~tomita/bachbib/bb-complex.html> 1), with 'Bach' in the 'title' field, 'PhD' in the 'Bibliogr. info' field and the 'theses' option selected from 'Publication Types'. New titles may have been added to the database since the time of writing. Records in the Doctoral Dissertations in Musicology database are currently far from complete. See American Musicological Society. Doctoral Dissertations in Musicology, <http://www.ams-net.org/ddm>.

enrich Bach interpretation? We cannot know, but one thing is clear: new technology will bring both risks and possibilities.

	Ph.D/DPhil	English	German	Other	MA/MMus	English	German	Other	D.M.A.	TOTAL
1950-59	8	8	0	0	7	1	6	0	0	15
1960-69	24	20	4	0	19	14	3	2	6	49
1970-79	41	26	15	0	43	29	4	10	13	97
1980-89	50	35	12	3	54	40	12	2	22	126
1990-99	37	20	13	4	84	62	9	13	51	172
2000-09	42	32	4	6	75	66	2	7	53	170
TOTAL	202	141	48	13	282	212	36	34	145	629

The challenge of virtuality is not unique to our times. Bach himself had to face the destabilising effect of new technologies, not least when he heard about the potential of electricity. In 1734 a six-column description of electrical force was published in Halle and Leipzig.¹¹ Bach and his contemporaries could read of Gray's flying boy and many other experiments completed in England 'three years ago' involving the movement of physical objects by invisible electricity.¹² The author concludes that Gray's results cannot be explained and that further experiments must be undertaken until the properties of electrical forces can be understood more exactly.¹³ Bach could neither predict how electricity would transform society, nor how it would change music publishing and copying procedures. He could no more imagine an electric photocopier or laser printer, than we can imagine a building printer.¹⁴ Nonetheless, the prospect of this new virtual force may have influenced the decisions Bach made in his final fifteen years of life. Thoughts of electrical power may even have affected the decisions he made about how to leave his compositions, which to leave in fair copy and which to publish. With the benefit of hindsight, and in the light of technological developments, we can judge which of Bach's decisions were farsighted.

Courage and prescience are required if Bach scholarship is going to rise to the challenge and maximise on the possibilities of increased digitisation and connectivity. Every eighteen months processing speed and computational potential doubles, proving the veracity of Moore's law.¹⁵ It is mind-blowing to see how the integrated Internet of Things¹⁶ will affect every area of our daily lives,¹⁷

¹¹ See 'Electrische Krafft', in Zedler, *Universal-Lexicon*, 8, cols. 708-13, <http://www.zedler-lexikon.de/blaettern/einzelseite.html?seitenzahl=373&bandnummer=08&dateiformat=1&supplement=0&view=100>

¹² 'Electrische Krafft', in Zedler, *Universal-Lexicon*, 8, col. 710, <http://www.zedler-lexikon.de/blaettern/einzelseite.html?seitenzahl=374&bandnummer=08&dateiformat=1&supplement=0&view=100>

¹³ 'Electrische Krafft', in Zedler, *Universal-Lexicon*, 8, col. 713, <http://www.zedler-lexikon.de/blaettern/einzelseite.html?seitenzahl=376&bandnummer=08&dateiformat=1&supplement=0&view=100>

¹⁴ D-shape. Monolite UK Ltd, <http://d-shape.com/cose.htm>; or indeed a rocket printer; see Philippa Warr, '3D-printed rockets for Nasa's Space Launch System', *Wired.co.uk* (9 Nov 2012), <http://www.wired.co.uk/news/archive/2012-11/09/3d-printed-rockets>

¹⁵ 'Moore's Law' (last modified 8 Nov 2012), Wikipedia. Wikimedia Foundation, http://en.wikipedia.org/wiki/Moore%27s_law

¹⁶ The Internet of Things Council, <http://www.theinternetofthings.eu/>

with low levels of intelligence granted to passive objects.¹⁸ How will all this affect the way we learn? Technology of the twenty-first century is destabilising the centrality of the traditional publication-orientated archive in favour of location-less repositories of information and data. How can we embrace the challenge of technological developments for the benefit of Bach scholarship? How can we stimulate growth in Bach research based on easily accessible digital resources? What structures will encourage quality control in a digital age? Shall we dream into existence the first Virtual World Bach (VWB) academy, where Bach experts guide future generations in their use of Bach documents? If so, what form would such a VWB take? Progress will not wait for Bach studies to catch up. Prejudice and fear must be overcome. Now is the time to brainstorm ideas and challenge virtuality rather than be challenged by it. Let us discuss how to enable Bach's music, in its widest sense, to be an enriching cultural force in tomorrow's transformed society.

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¹⁷ Samantha Murphy, 'Is This The Future of Touchscreen Tech? New Video Will Blow Your Mind', *Mashable* (3 February 2012), <http://mashable.com/2012/02/03/day-of-glass/>

¹⁸ OECD, 'Machine-to-Machine Communications: Connecting Billions of Devices', *OECD Digital Economy Papers*, 192 (2012), <http://dx.doi.org/10.1787/5k9gsh2gp043-en>