

Johnson considers the necessity of acquiring an understanding of techniques (both modern and older), the question of style, the problems and shortcomings of notation, and the challenge of finding something original to express in the 21st century, and the processes involved in the act of composition. In the next chapter, Brian Lock – another composer – writes about ‘Music Technology’. This is a difficult assignment given the speed with which technology continues to evolve, but Lock has produced a clear and useful introduction to the intelligent application of technology to different aspects of musical study, especially composition and recording.

The final chapter is Nicholas Cook’s ‘The economics and business of music’. It begins with a thought-provoking case study: Beethoven’s Ninth Symphony. There’s an illustration of music written at the start of Beethoven’s career, the Op. 1 piano trios published by Artaria in 1795, chosen to make some points about why Prince Lichnowsky’s name is prominent on the title page. The caption for this plate raises an intriguing issue: while it’s true that the title page is in French because this was the accepted language of Europe’s cultured classes at the time, I wonder about the second half of the caption: ‘if it had been in German, sales would have been lower’. Are there *any* examples of German-language title pages for chamber music from major publishers in Leipzig or Vienna at the time – let alone one where slow sales can be attributed to the language used? Cook’s chapter moves on to a discussion of issues such as copyright and performing rights, and then considers the current state of Classical music ‘in the marketplace’. His conclusions are convincingly argued – realistic rather than idealistic, but mercifully free of the dismal spin that often characterises discussions on the ‘future’ of classical music.

There are certainly good things in this book, but there’s sometimes a tendency to rather prescriptive thinking, an occasional over-reliance on gobbledegook (when clarity of expression is surely one of the things any university teacher tries to inculcate in her or his students), and an approach to the question of why we study music at all that tends to emphasise the utilitarian and the methodological, rather than the thrill of discovery that leads students to deeper forms of enquiry.

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**The Biology of Musical Performance and**

**Performance-Related Injury** by Alan H. D. Watson. Lanham, MD: Scarecrow Press, 2009. Paperback, 369 pp. + CD, £34.95. ISBN: 9780810863590.

The awareness of musicians’ health and wellbeing is changing. Within the UK, this is aided by schemes such as the *Healthy Orchestra Charter* and the *Sound Ear Initiative*. Musician-specific treatment centres and national organisations are also emerging in many countries within Europe and North America, promoting and developing this work. Additionally, an increasing number of institutions and centres are actively involved in researching the physicality and psychology of musical performance, as a means of improving and informing musicians’ health and wellbeing.

It is in response to this that Alan Watson has written *The Biology of Musical Performance*. In the introduction, Watson suggests that while there is a considerable body of knowledge on the physical processes involved in musical performance, this

knowledge remains scattered through science literature and written in a language not terribly accessible to many musicians. He further identifies that 'The object of this book is to help performers overcome this barrier by presenting them with accurate information on the biological principles that underlie their craft' (p. xi). Through discussing the physicality of performance, Watson aims to provide musicians with the knowledge and understanding to prevent injury, as well as develop an efficient and sustainable technique for many years of playing.

Watson's book joins a small, yet growing, collection of books dedicated to understanding musicians' bodies and the physicality of performance. At one end of the spectrum are books written by medical professionals, such as the seminal *Medical Problems of Instrumentalist Musicians* edited by Tubiana and Amadia (2000), written in a manner potentially somewhat daunting to musicians. At the opposite end are books written for musicians by musicians; more accessible but in some cases lacking the rigour of the former. There are now a growing number of books written for musicians by those with experience in both medicine and music; written with a level of detail found in medical texts but presented in a manner more practical for musicians. It is to this group which *The Biology of Musical Performance* hopes to speak. With the performing musician in mind, the ten chapters of this book, each addressing a different part of the body, originated from a series of lectures Watson has given at Cardiff University and the Royal Welsh College of Music and Drama.

Watson notes that in order to grasp some of the issues that musicians face, an understanding of the basic make-up of the body is an essential first step. With this in mind, the first four chapters cover

'Introduction to the tissues of the body', 'Posture and the back in musical performance', 'The shoulder, arm, and hand', and 'Breathing in singing and wind playing'. These chapters do get rather heavy at times and some musicians may well shy away from them as a result. Readers will, however, be well rewarded for their perseverance. In Chapter 2, Watson provides an excellent discussion on proper playing posture, paying particular attention to the more anatomically challenging instruments of small strings, flute, and guitar. Within Chapter 3, Watson describes some of the more common musicians' ailments including overuse syndrome, tendonitis, and nerve problems. Chapter 3 then concludes with an excellent discussion on preventing injuries, addressing practice behaviours and strategies, posture and the development of sustainable technique, and possible ergonomic instrument modifications.

In recent years, Watson has undertaken considerable research into the mechanics and patterns of breathing for singers and wind players. This research is used well in Chapters 4 (Breathing in singing and wind playing) and 5 (The voice), within which the not-so-visible actions involved in breathing and support are explained. These explanations will be of great use to many musicians and teachers in demystifying and gaining control over these processes. In particular is the section within Chapter 4 in which Watson provides an anatomical discussion of various schools of vocal support. Additionally, Chapter 5 has a thorough discussion on common vocal problems and ways of preventing and treating them, which should be well received by the vocal community.

Though possibly of less interest to musicians, Chapter 7 (The structure and organization of the brain) contains one of the most clear and succinct explanations of the

musically relevant structures and functions of the brain that I have read. In doing so, Watson does not try to cover too much or overwhelm readers, but rather provides a straightforward introduction. Following on from this, Chapter 8 (How the performance of music affects the brain) addresses the ways in which music, and musical learning, affects the brain. Here Watson explores how the brain has been studied and some of the changes that have been noted in musicians' brains. A section addressing focal dystonia provides an excellent survey of the research associated with this topic and the questions still remaining.

Musicians' hearing is becoming an issue of particular interest for many within the profession, in part due to the introduction of directives such as the *Noise at Work Regulations* which came into effect for the UK's music industry in 2008. In Chapter 9 (Hearing and the processing of musical sound by the brain), Watson provides an in-depth discussion of sound and the structure and function of the ear. Following a brief overview of the hearing problems experienced more commonly by musicians, Watson offers a thorough discussion on noise-induced hearing loss, including how the damage occurs, current research, and recent initiatives undertaken within the UK and the USA to address this and minimise occurrence.

The book concludes with a chapter on a topic of great concern for many musicians: performance-related stress and its management. Rather than jumping straight into treatment strategies, Watson first provides a theoretical overview of stress and discusses its physiological and psychological origins and manifestations. Some discussion is then given to psychological and physical strategies that can be employed to cope with stress. The book does not try to be a 'how-to' guide at any point, however, and while a

number of sections throughout do include a discussion of strategies for various objectives (postural training and dealing with anxiety for example), these sections provide the reader with an overview of research undertaken and then direct the reader towards further references which deal more exclusively with such strategies. Given this, readers should not expect to find too many 'exercises' per se in this book, but rather they will find the physical explanation of the need for, and effects of, various types of exercises and strategies.

Of particular note about this book is the inclusion of a CD of supporting materials. The CD includes colour versions of all the figures used in the book, alongside videos and PowerPoint animations which demonstrate some of the bodily actions discussed, and sound files to accompany the chapter on hearing. While considerable effort is made to explain the body's movement in words throughout the book, the CD serves as an excellent learning and teaching material to enhance understanding.

Watson's intention was to write a book about the physicality of musical performance that musicians would be interested in reading. A number of sections within this book are unavoidably dense, which does run the danger of making them potentially daunting for musicians. It is notable, however, that this book is not as inaccessible as other books on the body, making the chapters informative for the musician who wants to better understand what their body is doing.

Potentially dividing musician readers, this will undoubtedly be an invaluable resource for those researching the physiology and biomechanics of performing musicians. In light of this, music performance students would no doubt benefit from having access to this book. Additionally, any institution or

centre conducting related research would be well advised to acquire a copy.

*Problems of the Instrumentalist Musician.*  
London: Martin Duntz.

**References**

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