Chapter VIII
Interactive Systems for Multimedia Opera

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ABSTRACT
This chapter considers the development of systems to deliver multimedia content for new opera. After a short overview of the history of multimedia in opera, the specific requirements of opera are analysed, with emphasis of the fundamental musicality of operatic performance. Having considered the place of multimedia elements in the narrative and acting space, the relevance of previous practice in electroacoustic music and Vjing is considered as a model for a working approach. Several software and hardware configurations explored, including the use of gestural control by the actors themselves. The creation of a keyboard based “video instrument” with a dedicated performer, capable of integration into the pre-existing musical ensemble, is recommended as the most effective and practical solution.

INTRODUCTION
By definition, opera and musical theatre should be the ultimate multimedia experience, and new technologies are bound to become an ever increasingly important part of this art form. Indeed, I would go further and suggest that the inclusion of computer sound and video is essential to the development of the form in our new century, expanding its range hugely and bringing much needed new audiences. In particular, we need to recognize the highly visually sophisticated nature of modern audiences, who have learnt the languages of cinema and television from birth, using these techniques to enhance our storytelling in opera and creating works of contemporary relevance. It is “an honest expression of the life we’re living now” as Steve Reich, an important pioneer in this field, says (Reich & Korot, 2001).

Developing suitable interactive systems will be a part of bringing new media into the fold, so that they work successfully with what is there.
already. At its best, the experience of live opera, both large- and small-scale work, can be overwhelmingly powerful. I am convinced that much of this power derives from the fact that it is live, and that we are aware of the fragility and variability of what we are seeing. Also, the original conception of opera as “drama through music” still applies, not that music is the most important element, all should carry equal weighting, but it is the music that is at the helm, so to speak, and musicality has to be a key principle. It is vitally important not to lose this in the push to include computer sound and video, and this is all too easily done. In particular, the marriage of prerecorded material with live elements needs to be very carefully handled so that the performers do not feel straight jacketed, as this is immediately deadening. As far as possible, the performers and conductor must have the freedom to drive the work along and interpret it as they wish, and any system we use for delivery of the media should enable this, responding to the energy of a particular performance, and functioning in an essentially musical way.

In order to achieve a successful integration, it is just as important that the use of computer sound and video is written into the work from the outset, as an integral part of the story to be told. To use these elements purely atmospherically or decoratively is to miss the point. These additions are capable of so much more than this, creating entire layers of narrative and character, defining worlds for these characters to inhabit, and alternative timelines for them to move in. In parallel with recent instrumental electroacoustic music, the design and implementation of the system itself is a significant part of the score, with the nature of the interface between person and machine informing what is possible. Clearly, what is said will adapt itself to the nature of the medium, and this will have an effect on the content of such works and the way that they are staged.

It also has to be recognised that even small-scale opera involves the collaboration of a rather large number of people, all of them trained specialists, from conductor to stage manager, working together in, hopefully, a highly organised way. Over the centuries, chains of command have developed that are logical and effective. Therefore, careful thought must go into developing systems that are appropriate to this type of collaborative ensemble. What may work for one form of multimedia production may not work here.

Thanks to advances in computer technology, the creation of such works has become a real possibility and, drawing from my own experience of composing and producing multimedia opera and electroacoustic music, I will set out and evaluate the types of interactive systems that might be best suited to the task, exploring in detail the requirements for what is to be achieved and the software and hardware possibilities. I shall investigate the nature of a practical interface with singers, ensemble, and conductor (as well as other elements of stagecraft such as lighting and set design) and how this is to be achieved.

BACKGROUND

The use of the moving image has a venerable history in opera. During the second phase of composition of *Lulu* (1929-1934), Alban Berg included a “film music interlude” between Act II i and II ii, and inserted a “film music scenario” in the short score of the opera. The film music interlude was to accompany a silent film that continued the action, showing events that could not be shown onstage, with annotations in the score indicating how images and actions would correspond to the music, and this was realised after Bergs death at the 1937 premiere (Weiss, 1966). More recently, Tod Machover’s *Valis* (1987) (Richmond, 1989), Steve Reich’s *The Cave* (1993) and *Three Tales* (2002)—described by Reich as “music theatre video” works (Reich & Korot, 2001)—and Barry Truax’s *Powers of Two* (1995) (Truax, 1996) represent much more complete and successful