



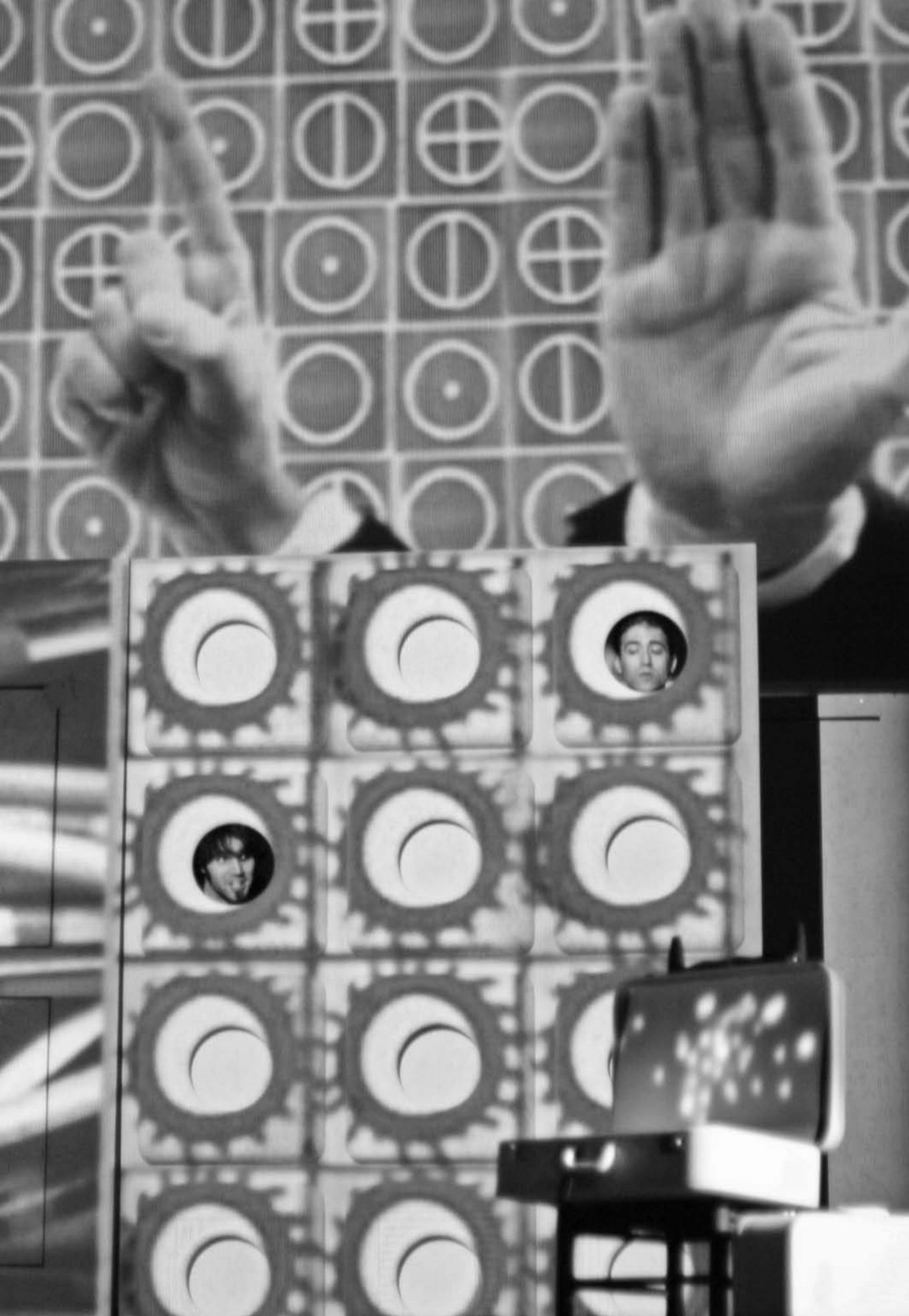
LIVE MOVIES

A Field Guide to New Media For the Performing Arts

edited by

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Documenting Multimedia Performance Studio's New Stage Technology Project



PRODUCTION / PRACTICE

Knowledge of the technical
makes creativity possible

— Josef Svoboda





GAIL SCOTT WHITE

NEW MEDIA SCENOGRAPHY



Jane Franklin and "Miss B," *In the Blink of an Eye*, performed by Jane Franklin Dance, Dance Place, Washington, DC, 2001.

What Is New Media Theater?

New media theater is an invented space that relies on human invention. New media scenographers work with one foot in virtual space and the other in the built environment. Their art is a hybrid practice and a collaborative synthesis, combining the ideas and actions of playwrights, directors and actors with the inventions of set, lighting and costume designers.

Since its inception, theater investigates the language of the outer world and relates it to the inner world. It explores, portrays, dissects, and reflects the human condition. Theater examines social codes, their origins, their current manifestations and their possible outcomes.

Twenty-first century urbanites and suburbanites are plugged-in, on-camera, and data-transferred. Digital technologies are part of their daily lives, and, by extension, their art. New media scenographers create hyper reality, since projected images are inherently real and unreal. They are allusions to another place, space, event, memory, feeling. New media theater can genuinely enrich the audience's overall experience or cause emotional detachment. New media can be powerful and persuasive and therefore should be used thoughtfully and responsibly.



Joshua McCarthy (animatronic Thomas Alva Edison) with Alexander Graham Bell ventriloquist dummy, MPS/Cyburbia's *Silence & Darkness*, 2004.

Live theater is a meta-medium where new media scenographic designers work in tandem with directors, actors, lighting, set, costume and sound designers to develop a meaningful *mise en scène*. Directors and new media scenographers should use projections for expressive, communicative and evocative purposes. New media scenographic artists should create original artwork whenever possible, just as set, lighting and costume designers create new work for each production. New media projections should support actors and scripts, not dominate them.

Although new media artists may spend many hours faithfully staring at illuminated screens, they do not worship blindly at the altar of technology. New media artists question and embrace the ever-unfolding drama of technoscience and the relations between humans and their machines.

Idea + Technology + Context = New Media Art

New media artists jump the gap between bits and atoms. They create digital projections that can mimic or defy reality, stand still or travel through time and space. Their paint brushes are hardware, software and projectors; their

canvas can be anything or anyone on the stage or in the house. Projections travel through space, and to be seen, they must be caught on a light-reflecting surface. This surface can be front or rear projection materials, props, objects, set pieces, soft goods, costumes, skin, floors, walls, and virtually any surface that reflects rather than absorbs light.

The ideas contained in authors' and directors' heads will never get to the stage without the efforts of others. The live actor is the measure of theatrical space. The stage can be a street corner, the scenography a streetlamp, but it is the live actor, breathing the same air as the audience that creates theater. New media artists commit to the actor, the director, and the script as they collaborate with set, lighting, costume, and sound designers in the building of thoughtful and thought-provoking stage environments.

New media scenographers should rarely order from the "illustrate reality" menu. Simulated reality may be what is called for in a certain scene, yet in most cases, it should not be the only fare offered. Illusion, metaphor, allegory, trope and visual poetic license are all staples in the multimedia diet. There is much to be learned from the Magical Realists, Surrealists, Futurists, Expressionists, Cubists, Dadaists, Situationists, and literally all modes of the creative and performing arts.

New media designers/artists must recognize/understand that all images carry multiple meanings. These meanings have cultural and individual variations. Moving and still images tell stories. They may speak to the audience directly or indirectly, but the new media designer must understand the language of images and shape it into a collaborative discourse with the playwright, director, actors and designers.

New media has unique characteristics and possibilities such as: the ability to instantly journey from place to place and through time, to defy gravity, to shift scale and location, interact with live performers, relive or reinvent the past, predict the future, and connect remote performers to the audience. These characteristics should be well understood and used thoughtfully.

Text, words, sounds, smells and images all evoke memories and conjure images. The new media designer should think about the collective experiences of the audience. Tap into this rich resource. Do not exploit this connection. Avoid clichés. Remember humans think pictorially as well as linguistically.

Many of today's actors, audiences and playwrights have grown up watching film and television. A cinemagraphic language is understood, and jump-cuts, extreme close-ups, freeze-frame, fast-forward, rewind, slo-motion, flashback, split screen are all part of the vocabulary. New media artists understand the language of montage and how to use it wisely.

What Is Not New Media Theater?

New media theater is not simply video pasted onto theater. Nor should it be an exercise in technology for technology's sake. New media art is not stock, canned or clip art but rather a meaningful montage that is borne out of ideas, technology and effort. If directors desire puffy clouds, ocean waves and beautiful sunsets, then they do not need to hire a new media scenographer. If, on the other hand, a director has a genuine interest in using digital art and technologies to create visual metaphors that add layered meanings to live performance, then it is time to work with a new media scenographer.

New media art does not fit neatly into one category. New media scenography is used in alternative and mainstream theater, opera, dance, and performance art. While corporations, governments, educational and religious organizations use new media technologies to inform and influence their constituents, their practices are not new media art. Creating multimedia scenographic art is a far cry away from typing a few words into a search engine and selecting the first image that pops up.

Directors, actors and designers should experience the added value of collaborating with new media artists in the theater. If a director, actor or designer sees the new media scenography as something to endure, then the new media scenographer has failed.

What Does A New Media Scenographer Do?

Much of new media work is done before rehearsals begin. The new media scenographer starts with the script and then begins the processes of research, idea generation and concept development. After initial meetings with the show's director and designers, the new media artist will develop sequence charts and storyboards for the director's input and approval. The new media scenographer brings art making and technology to the service of scenic design. They work with others to create live environments that function as dynamic and interactive components of the performance.

The new media scenographer has the overall responsibility for design, production, testing and delivery of digital scenography. In cases where the budget is minimal or new media is only required in a few scenes, the new media scenographer may do all of the work. In cases where the new media needs are complex, the new media scenographer will often work with other new media artists and technicians.

The new media scenographer searches for the perfect balance between new media art, the built theatrical environment, and the live performance. To find this balance new media designers must be innovative, flexible and good



Drew Myers (Gamma), Chris Parsons (Beta), and Charles Holley (Alpha), *Cyburia's Silence & Darkness*, MPS, 1999.

listeners. New media scenographers should keep directors, designers, actors and stage managers visually informed. Concept drawings, storyboards, sample media, production charts, and online access to the work in progress are essential tools for clear communication.

New media designers are project managers. They should determine standards and templates for all projections and masks, production work flow (including quality assurance testing), intermediate and final deadlines, and software and hardware needs.

New media scenographers and new media artists not only create art, but are responsible for the technical delivery of it in the theater. Just as lighting, set, costume and sound designers' creative work must be delivered to the stage for tech rehearsals and performances, so must the work of the new media scenographer. This means not only having all new media art complete prior to load-in but also having it all loaded into a reliable, flexible show control system.

This field is relatively new, constantly changing, and frequently misunderstood. Scenographic artists are shaping new media theater, not just by bringing new media art and technology into the theater, but also by being responsive, dependable, creative, affable humans. New media scenographic designers should be calm, focused, problem-solvers. A new media scenographer's character traits should never upstage a production meeting or tech rehearsal.

The New Media Designer/Artist's Manifesto

New media scenographic artists create original artwork whenever possible, using archival footage when needed and stock footage only rarely. Set and lighting designers create new and unique environments that reflect the ideas

and desires of playwrights, and so should new media scenographic designers and artists. When making new media art, focus on how actors fit into projected spaces. It is helpful to have scaled images of actors in each scene file as reference objects.

Find the balance. What is the proper balance of light between the actors and new media? What is the correct balance in scale between actor and new media? As Ron Chase, a pioneer in projection design for opera, said at the 2005 Broadway Projection Master Class, "The actor should be exquisitely matched to the projection."

Remember that night defines day and dark shapes light. Projected scenery is not always the best idea. The new media designer must make an honest call. Avoid the tendency to overload the audience by stacking media on top of media.

Develop a cohesive visual language between new media scenography and all other components of the designed and built theatrical environment.

Think of how you frame new media within the live performance. It is not just the media, but the context that it is presented in, that creates meaning.

Pay attention to transitions. How media start and end is important.

Develop all images to their highest artistic and technical levels. Images should be free of compression artifacts, clipped color, noise, and poor craftsmanship.

Moving images attract the eye. They can be used to distract the audience on purpose but they should not distract from the actors' performance. Less can really be more.

Unless genuinely called for, new media scenographers should avoid flashy, intruding and distracting effects, "eye candy," and cascading images. Don't get carried away with tools. "Just because you can doesn't mean you should." warns Wendall Harrington, leading NY projection designer.

The global script archive is a multicultural, multilingual, time-traveling repository of authors' visions and thoughts. Although scripts can be read, studied and written about, it is the interpretation and performance of scripts that give them theatrical life. Read the script and keep it handy while creating new media art and animations.

Collaborate, collaborate, collaborate. New media designers must listen to and learn from playwrights, directors, actors, designers, stage managers and fellow new media artists and technicians.

Lighting designers are visual artists who paint with light and shadow. New media artists paint with moving and still images. The lighting designer and the new media designer can speak with one voice or appear to be talking in alien tongues. An overly bright projection can destroy an ethereal scene. Lights aimed at or bounced onto projections can wash them out. Color palettes and light levels must be in sync, and in-sync requires collaboration, communication and mutual respect.

New media designers must also establish extra-productive working relationships with the set and costume designers. Projections are light traveling through space. The surfaces projections strike define their form. Without set pieces and costumes explicitly designed to catch new media projections, the projections will seem like add-ons or afterthoughts.

New media designers must encourage, support and respect the new media artists and programmers who work on the production. The new media scenographer should think of the new media artistic team as the director thinks of the cast. They are a rich repository of experience, imagination and skill. They have much to contribute to the work.

For the new media production artists: the rich experience of teamwork requires a level playing ground. Avoid hierarchy. Share the jewels and the drudgery.

Remember new media scenography cannot come to life on a computer screen. New media artwork exists only during the live performance. In order to understand the live performance better, attend the first actors' read-through and several key rehearsals. Observe the actors and blocking carefully and take notes. Visualize the projections in each scene.

New media designers should avoid conventional "screens" whenever possible and instead work with the director, set designer, and costume designer to discover inventive surfaces to hold projections.

New media scenographers should use the most appropriate means of media production and media delivery. Do not simply rely on video. Video is low resolution and noisy, yet it can work well if its strengths and weaknesses are understood. Higher resolution formats are already available including High Definition (HD). 35mm slides create rich, dense beautiful still images and the projectors can be stacked and connected to a switcher and dissolve unit for show control and animated transitions.

If sound is to be synched with projections, determine at the first designers' meeting how sound will be handled. In most cases the new media designer will give the video/animation soundtrack (with an embedded clock track) to the sound designer/engineer.

Be prepared. Technology accidents are like most all other types of accidents, in that they can be prevented. When a stage manager sees a trip hazard, they also see to it that the trip hazard is fixed. The new media scenographer should always be on the lookout for technology trip hazards. All media systems (including backup systems) must be in top working order. Remember that the digital gods and goddesses are unforgiving and they will punish you (public humiliation is at the top of their list) if you either commit hubris or don't do your homework.

The new media artist must work closely with stage management. Paper techs save time and help to make actors and run crew more confident working with new media projections.

Organize, organize, organize.

Test drive new media artwork from storyboard, animation, rendering, compressing and encoding, to projection as early in the production process as possible.

Learn everything possible about projection materials, projectors and show control systems. Depending on the production budget, the new media designer will need to work with a wide range of materials, equipment and software.

The show control and media delivery system must be tested, reliable, flexible, and have built-in redundancy.

The digital gods and goddesses are not always smiling, or if they are it is that quirky little half-smile they get when they've devised an extreme challenge. There are always technical problems to be solved in new media scenography. Face them head on and remember each problem solved extends one's reach.

Theater is not *Real Life* but rather it illuminates, questions, and teaches us about the human condition. On closing night, the director, actors, designers, new media artists and technicians should feel that through the collaborative process of combining different ideas, influences, actions and objects they have created an evocative and meaningful audience experience.



Joshua McCarthy (animatronic Edison), MPS/Cyburbia's *Silence & Darkness*, 2004.

Coming to Terms

New Media Theater: The integrated use, in live performance, of animation, film, video, photography, digital/electronic art, sound and text with the practices of set, lighting, costume and sound design.

New Media Designer/Artist: The person(s) responsible for the design, development, production and delivery of new media scenography within the context of live performances.

New Media Scenography: A hybrid art form encompassing the design, production, control and integration of new media with live performers and the built theatrical environment.



DAVE SOLDIER

NOTES FROM UNDER THE FLOORBOARDS

Who's Nuts?

Anyone who writes, produces, designs, or directs new opera is *nuts*. The potential of an emotionally and musically overwhelming work entering any repertoire is tiny. Nearly all new work (the English word for opera) is doomed to derision by opera lovers (please don't misunderstand, I like crazy bands of eccentrics!) — a teeny fraction of music fans devoted to museum pieces who don't need or want anything different. The mutually exclusive audience for novel ideas in music, another band of honorable eccentrics, generally won't sit still for opera's length or affectations. If *Tosca* (or the *Magic Flute* or *Lulu*) were created today, note-for-note identical to the original, she would have as little chance of repeat performances as would Jimi Hendrix, if he appeared today, of receiving a major record deal.

Beyond active disregard / automatic animosity from fans, there are inherent frustrations that have bedeviled opera creation since 1603, when the Camerata of Florence assumed the legacy of Athenian theater, both Apollonian or Dionysian, by using all of the devices that singing, playing, acting, storytelling, and stagecraft had to offer. More manifestos by Wagner and Harry Partch, and the Beijing Opera tradition, demand the same access to all the arts to produce an overwhelming experience.

These factors cause a set of immediate production problems: How can one use singing actors and not be embarrassing? How can lyrics be understood when screamed over an orchestra? Where are those capable singers, how can we teach them the music, and how can we afford them? How can you ever afford an orchestra with all the instruments you need, even if for only a single full rehearsal (usually the case)? How do you

incorporate the story and musical style with the set and production people and, often more daunting, a house staff that is often unhelpful and even resentful? Then how do you develop a pretty large audience to justify all that effort?

There are occasional strategies that attack these problems successfully even in the Grand Ol' Opera manner. Here are a couple of examples I witnessed in New York City. The Metropolitan Opera produced John Corigliano's *Ghosts at Versailles* (1991), in which he figured out how to admit with his discomfort with the tradition — Corigliano once told me that he didn't like opera — by satirizing arias and creating a Marx Brothers plot device so that singing in full operatic voice would not be an affectation. It was funny, particularly Marilyn Horne's belly dancer role, moving, beautifully orchestrated, and not much of a critical success, as predicted from the *Tosca* hypothesis. It moreover required specialty voices and expansive stagecraft, and probably will not become a repertoire piece. The New York City Opera produced Tobias Picker's opera *Emmeline* (1996) woven from *bel canto* tradition, even using the only tried and true operatic plot device, i.e., by the end, leave a heroine either unjustly dead or in such bad shape that she might be better off so.

Such new works, with a story and large orchestra and singers who can project over that orchestra to the back rows of a large theater, are rare and sure to become rarer still. There is no opera labeled as such at, say, the Brooklyn Academy of Music or anywhere else that begins to pay back its costs. A decade ago, the cost of a New York City Opera production was reported to be four million dollars, while the genuine cost for any event at Lincoln Center would require a ticket price of \$500. The price of orchestras, singers, and hordes of production and theater staff, are not coming down and will rise further as the "classical" music world starves. There are only a very few composers, directors, and producers who have determined how to negotiate this, combining a means to cajole support from benefactors in the classical style and the several countries who place tax funds into such projects in the contemporary style. If you can name the exceptions, it proverbially proves the rule.

Yet as surely as the same basic human satisfied by village elders reciting legends of Heracles is now filled by TV scriptwriters with stories of heroes in weekly situation comedies, the desire for major league emotional catharsis with music survives. We've been a resilient species when it comes to filling our psychic wants, and I'm way confident opera creation will survive human cupidity better than will low-lying coastal cities or the majority of uncultivated large animal and plant species.

Says Who?

The most exciting new opera doesn't solve those inherent quandaries but end runs them. Here are examples, none of which can enter any repertoire, but act to stir, excite, move, trouble, knock over, decimate — whatever it is that great musical theater does. They happen to each have found their way via the subject of our book, “new media” — recall the “all devices” manifesto and that this is an ancient approach — to let a thousand flowers bloom.

Film opera. Michel Legrand's *Umbrellas of Cherbourg* (1964), a magnificent tearjerker entirely in song with a singable motif from start to finish worthy of a post WWII *Carmen*. A fine example to demonstrate that the most universal work is the most particular — not only would you have to replace Catherine Deneuve, but you couldn't recreate the fatalism of the setting and characters who understand the effects of the Algerian war in provincial France.

Or post-facto found film, with Richard Einhorn's *Voices of Light* (1995), using live Early Music singers and orchestra to provide music for Carl Dreyer's silent 1928 film *The Passion of Joan of Arc*.

Animated opera. With frame-by-frame drawing, you can do anything: look at the extensive animation credits to Benoit Charest's *Les Triplettes of Belleville* (2003), another heartrending Francophonic. As for all Anglophone opera after Purcell except *Porgy and Bess* and Partch's work, hardly a word can be understood, but *Triplets* doesn't even make the claim to be parsable.

Or it can be far less labor in animation, c.f. Mark Stamen's *Southpark: Bigger, Longer & Uncut* (1999), with the ultimate Disney “I want” song, Satan's homoerotic longing aria climbing higher and higher and then higher by half-steps. (I'm proud to have pioneered this device in my survey-determined composition, *The People's Choice: The Most Wanted Song and The Most Unwanted Song*, a conceptual collaboration with Komar & Melamid.)

You didn't suspect this was going to be an opera. The most exciting new direction of all: and, behold, an avenue by which mere humans, rather than organizations or the very wealthy, might be able to produce their own work.

In Bob Telson's *The Gospel at Colonus* (1983), the show begins as a gospel concert, and bit by bit, one is in the midst of the story of Oedipus Rex, a favorite of Henry Purcell and Harry Partch. Every word sung in this piece can be comprehended.

In John Cameron Mitchell and Stephen Trask's *Hedwig and the Angry Inch* (1998), the audience enters a rock club, orders a beer, and listens to Hedwig and her rock band perform, then retell a fable from Plato's *Symposia* (a

favorite of Erik Satie) and plunges us into a glam tragedy where the heroine is either unjustly dead or in such bad shape that she might be better off so.

By the way, what is it about Athens throughout four hundred years of opera?

More opera than you suspect. Not one of the examples above uses a classic opera voice or a musical vocabulary that draws directly from the operatic tradition. But Ira Schiff's late ensemble *La Gran Scena* routinely used a host of drag queen sopranos who sang the repertoire precisely and made vicious fun of every aria and great singer. Shows were accurate excerpts of the most emotional moments from Grand Opera. The internal logic decreed that parsability of the lyrics here would be as much of a mistake as under-acting.

John Moran's operas with the Ridge Theater, for example, *Matthew in the School of Life* (1995), were composed entirely on computer. There were usually no conventional instruments, but rather music made of assembled samples. More startling, there was no singing, but spoken vocals played over a PA system with actors mouthing the words in pantomime as human puppets. Every word is clearly understood, and the excitement of beautiful singing was replaced by the surprise of comparing one's expectations to what would next occur. Laurie Olinder's sets used a combination of simple motifs and projections that, together with the wide-ranging sounds, elicited disorientation rare in the performing arts.

What Are They Saying?

There are singers with voices that sail over the orchestra and are still understood. But even with the examples of *The Ghosts at Versailles* and *Emmeline*, the audience can barely if at all understand the lyrics; in the latter case, a listener in my row asked what language the opera was in.

Let's return to those old Greeks and how they sang their stories. The vocal style of Homeric myths survived unbroken until recently in the islands, and you can hear them on recordings made by Alan Lomax for the Smithsonian. The music is neither an open throated uninflected "early music" sound nor an unmeasured Gregorian Chant but a funky repeated riff with a voice that sounds like Howlin' Wolf or James Brown. I don't speak Attic but even I can understand some of the words. No wonder the repertoire lasted more than 4000 years.

The loss of intelligibility is often credited to the composer, and there are obviously composers who place accents in ways that make sung English awkward and would never have lasted a minute with Ira Gershwin.

But more often after the composer can sing the part in a poor yet perfectly comprehensible voice, the song is repeated by a professional singer in round vowels and perfectly clipped consonants that barely resemble any spoken tongue. This manner of singing has become part and parcel of contemporary conservatory training for big voices. Even many of the best enunciators are required to handle a part musically in a language made in part of sounds they cannot produce.

Conservatory voice is not required to produce a big sound: gospel singers possess the other song tradition in the USA where a non-amplified voice can be easily heard and parsed over a big group of instruments. Gospel singers do not typically read music, and a composer working with an orchestra needs to figure out the means to make the combination work: I succeeded in one oratorio for gospel singers and orchestra, *Mark Twain's War Prayer*, in which the parts were easily memorized and in the gospel tradition, but faced a gospel group's revolt in my opera *Naked Revolution*, where I tried to get them to sing outside of the tradition. This problem can in principal be solved by plenty of rehearsal and coaching, but organizing this is nearly impossible for amateurs and out of the question with professionals.

Our new media may come to the rescue in several ways. First, over the past decade, nearly all composers have learned to write or copy out their scores on the computer (I hear a lot of short repeated phrases in recent composed music, fundamentally because it is hard to map out longer ideas on a computer screen), much as nearly all letters are presently written as e-mails. The advantage for us is that it has become trivial to record accurate parts for the singers to memorize. Thus, a gospel singer or any vocalist can learn the music: it should be understood that even many opera singers are poor readers and learn mostly from recordings. It does not, however, address the problem that non-classical singers do not know how to follow a conductor and require experience and explanation to understand how entrances are cued and tempos followed.

Second, and sometimes sadly, there is the microphone. Amplification allowed Bing Crosby and Louis Armstrong and nearly all subsequent pop singers to have a career, and is responsible for the opera voice seeming affected, one that children make fun of in the playground. In truth, the opera voice is no more affected than crooning, but was developed to sail over loud instruments and hit the back of the hall. The invention of the microphone nevertheless allows even non-singers to mumble or hum their voices in new opera.

Whenever possible, I prefer the sound of the unamplified voice to one coming out of speakers. My oratorio, *The Apotheosis of John Brown*, used un-mic'd voices in front of a baroque orchestra, and we performed it at theaters that never otherwise used unamplified music. As I hoped, the

audience had to be quiet and thus became quite absorbed in the story. The same approach did not work with the 10-piece chamber group for my opera *Naked Revolution*, when it became clear that the audience could not follow vocal melodies over a piano, winds, and percussion. Some otherwise outstanding singers cannot be heard with 19th century instruments without amplification, and to exclude them is to limit the range of vocal expression. The blame lies not only with the musicians, but also with audiences that have grown up with music blasted at them through speaker systems during all of their formative musical experiences. They say they can't otherwise "hear" it.

An opera critic for the *New York Times*, Anthony Tomassini, has been a strong critic of vocal amplification in his columns. I heard him lecture on the subject one evening at the Harvard Club, using a microphone to be heard in a room that in previous decades didn't require one.

There is another beneficent side to microphones inevitably to come. Prerecorded voices are already used in opera, and as mentioned, in most of John Moran's work there is no live singing, but a musical arrangement of spoken voice recording, often soundlessly mouthed by live actors. This will lead to more ways to express the voice musically, either prerecorded, or more interestingly, live. It's now possible to so closely trail the genuine rhythms and microtones of the voice that an instantaneous musical accompaniment could follow it precisely. We can do immediately — purely from a technical level — what it took Harry Partch a lifetime to develop.

Who's In The Pit?

Part of the spectacle of opera is the knowledge that the pack of living musicians just outside the staged action is busy cooking up the sound, and it's the part of the experience that I treasure most. But the conventional orchestra is doing its best to commit suicide. The orchestra once had the expansive quality that the opera manifestos wished for, incorporating new instruments as they developed. The Johann Strauss orchestra, playing Viennese dance music, used most of the same sorts of instruments as the Vienna Philharmonic. Yet now, not a single instrument common in American popular music is included in the conventional orchestra. If a composer writes for these instruments, the costs to the orchestra in extra performers, in part due to union regulations that charge extra salary for players of "non-conventional" instruments, effectively disallows their use. As a consequence, the orchestra seems affected to most music lovers, a suitable background for the kid in the playground singing "Figaro, Figaro" with a big opera voice.

Finances also dictate a near impossibility of more than a single rehearsal before performance. In order for this to run smoothly, the

orchestra cannot be given anything that requires deviation from normal practice. For instance, asking an orchestra to play a simple contemporary American pop rhythm invites not only a rhythmic disaster, but ensures that the majority of rehearsal time will be wasted on that section.

I love the orchestra nonetheless, and wish to use it. These opportunities are extremely rare, and will clearly become rarer. Even Philip Glass, who is certainly the most established opera composer alive, is often writing his pieces for a small amplified ensemble. Some operas, like the filmed examples, organize their players once, while the John Moran pieces, may not use any live musicians even during recording.

This is already old news. A review of one of Moran's pieces in the *New York Times*, didn't mention the fact that this was an opera with neither live singing or a musical instrument other than the computer.

I'd like to claim that instrumental possibilities for the orchestra will expand, and that we will have access to gamelan orchestras or Harry Partch's instruments, but it seems that the number of instruments will dwindle further, and Glass's ensemble of about six instruments plus prerecorded parts, or Hedwig's group of four rock 'n' roll musicians with some prerecorded parts, will be the only available option.

But what we *can* do was not imagined even by Wagner, Nancarrow, or Partch. And we doggone well better figure out why the Lord wished us to be born in this era by learning how to work these new instruments. Our model ought to be Bill Monroe incorporating all the old instruments into a new version of music, Harry Partch inventing new instruments for a completely new music, and Mozart adding clarinets just because they became available. It warn't easy for any of them either...sixty years of one night stands for Bill and poverty at times for all three...who said this was for wimps?

Where Do You Get This Stuff From?

The most exciting opera opening I've seen was *Hedwig*, when after being carded and admitted to a typical skuzzy rock club with a pretty typical silly glam rock opening, the world shifts under your feet into an involved, heart-rending story, albeit of a heroine either unjustly dead or in such bad shape that she might be better off so.

The use of venues that participate in the story makes sense now not only because of the new resources one can use, like rock singers or PA systems, but economically. *Hedwig* ran for years, presumably made its costs back if not a profit, and had a large audience and developed rabid fans in part because renting the bar at the Riverview Hotel was a lot cheaper than the Brooklyn Academy of Music.

A parallel tack is to insert the performers into the projections, as Laurie Olinder does for the John Moran pieces, or as Kirby Malone and Gail Scott White have done for *Naked Revolution*. A few small props work wonders for this: in *Naked Revolution*, the onstage props included the original Komar & Melamid socialist realist paintings that were the genesis of the work! The creative approach to projected sets by Gail and Kirby was one reason that our budget was 0.5% of the cost of an opera of similar length and vocal forces at New York City Opera.



Eric Greene (Citizen George Washington), *Naked Revolution*, MPS, 2001.

It's only a matter of some time and work before the audience is incorporated into this stage, a virtual reality or total immersion opera. When this is solved, a typical theater will not be required, and perhaps only some projectors and PA systems and a few select props will be required to perform pieces anywhere. We will then use theaters only by choice...

Does This Mean Something?

It means that there ain't no standard path and everyone needs to figure it out for themselves. We are in the middle of a revolution in sound and design and ideas as great as any time in history, and we can't see it all. Only fifty years ago, Stockhausen, Cage, and Boulez could gain notoriety in modern music circles by being the first to use the *I Ching* or arbitrary timbre or rhythmic phrase differences or modifying some notation. Now, one can come up with comparable small discoveries almost effortlessly. True, the changes are mostly due to new technology, but that's been true throughout civilization. But the discoveries also come from exploring the past from a different point of view. That's how this operatic stuff all started, and how Wagner and Partch got their notions.

For the last example of new media opera directions these days, please go to the web <<http://www.mulatta.org/Elephonic.html>> where I have placed a two minute opera sung by two elephants, Luk Kang and Pratidah, with a live elephant orchestra performing in the Thai jungle. It's very classical except that the performance can't tour — the two divas are booked up.

DAN HOBSON

PRODUCTION MANAGEMENT IN THE MULTIMEDIA REALM

Computers are becoming more and more a part of everyday life. Many people cannot imagine going for an entire day without internet access, e-mail, or at the very least their PDA and iPod. It is only natural that a generation who grew up along with the computer would want to incorporate its capabilities into their art as well. Ever increasing computing power and advances in projection equipment have brought the opportunity for digital designers to become a huge part of what once was strictly a lumber and muslin world.

Just about everyone has done some form of multimedia production. Remember the overhead projector you helped run in high school? The teacher spoke, the transparencies changed, and sometimes there was even interaction between “performer” and media. Overhead projectors still have their place. Shadowplay of one form or another on a rear-projection screen is still used by many companies, large and small. However, many companies have also moved ahead as technology has advanced. Perhaps more important has been the corresponding drop in price of advanced computing and projection equipment, placing what was once only possible for high-budget Broadway productions within the grasp of smaller companies eager to explore the possibilities the technology has to offer.

Incorporating video projection into a theatrical production opens up the designer to a huge array of possibilities. But along with those possibilities comes a new set of parameters that are unlike many of the traditional sequences encountered in mounting a production. Much depends on how extensively the video is to be incorporated into the performance. Is it a straight video that runs on a screen next to the performer? Is it a series of clips that are rear projected at different points during the show? Or does the projection take a more active role, illuminating, animating, or even becoming the scenery itself? It is in this final scenario that the role of the production manager and production team begins to change more dramatically.

Certain things about light cannot be changed. It travels in a straight line (at least in theatrical distances) unless it reflects off of something. And it always reflects off of what it hits, sometimes more, sometimes less. The struggle in working with projection in a theatrical setting is the delicate balance between illuminating the actors and allowing for maximum clarity of the projection. Much of this is accomplished in the selection of lighting instruments. The less controllable units, fresnels, scoops, R40 strip lights, all have a place in designing around projections. They must be used very judiciously, and in locations that don't allow for direct or initial reflection spill on projection surfaces. Ellipsoidal instruments allow for much more control, and make avoiding the projection surfaces easier. Remember, though, that light ALWAYS reflects, and even if that front light is bouncing off a flat black floor, it will bounce up onto the screen if the angle allows. Even the actors play a role in ensuring the integrity of projected images. Just as it bounces off the stage, light also reflects off costumes. Careful blocking helps, but a slight turn of a torso can make a huge difference in the amount of light that reaches the screen.



Grant J. Wylie (Delta), Chris Parsons (Alpha), Prince Rozario (Gamma), Mike Solo (Beta), *Cyburbia's Silence & Darkness*, MPS, 2004. Lighting and scenic design by Dan Hobson.

The video aspect of a production has many variables. The truth is that it cannot have too many variables. Especially in the case of a touring production, the more flexibility the video technicians have, the easier their jobs will be. A zoom lens may well serve the purposes in a given venue, but having as many lenses (short-throw, long-throw, etc.) on hand as possible allows the video technician to make a decision rather than be forced into one. It may mean the difference between having to severely keystone an image and being able

to project it straight on. The projectors themselves can make a difference as well. Apart from the basic variables of brightness and contrast ratio, features such as horizontal and vertical keystone correction and lens shift make fine tuning an image easier. Especially in the case of front projection, this can be essential. Remembering that light travels in a straight line, any cone of light that accompanies front projection also limits the acting area when trying to avoid having the actors walk through the projection. This prompts a higher angle of projection and a greater need for keystone correction.

New software plays a part in the adjustability as well. Programs are being developed that allow for increased manipulation of images, and new video codecs offer significantly higher resolution and relatively low file sizes.

Back for a moment to the basic variables mentioned before, brightness and contrast ratio. Most current projectors fall into two groups; Liquid Crystal Display (LCD) and Digital Light Processing (DLP). In general, the LCD projectors achieve a higher lumen output, while the DLP projectors are capable of much higher contrast ratios. The higher contrast ratio tends to make up for a lower output as far as overall image quality and clarity, so a 2000 lumen DLP projector may serve just as well as an LCD projector generating 3000 lumens. If possible, contact a local rental house or professional video supply dealer to arrange for tests in your space of the projectors you are considering. Numbers only take you part way to the decision. Actually viewing the projections side by side is the only true way to decide which projector (or combination of projectors) will work best for your production.

Once the projectors have been selected, there are still a few more steps before the images actually make it to the set. Decide where the projectors are going to be placed, even if the set pieces are not available yet. Consult with the director on blocking and traffic patterns, remembering that whatever is holding the projector becomes an obstacle to flying or rolling scenery if it is placed onstage. The cone of light must be considered as well before placing your projectors. Will the actors play within it, or must the director avoid those areas when that projector is in use? Once a position is determined, *measure, measure, and measure again*. Often the size of an image is based on the throw distance with very little room for error. A projector with a zoom lens or image adjustment capabilities can make up for some minor changes, but working with the correct distance from the start will help to maintain the image integrity. With distances and positioning set, project an image created using the same software and hardware that will be used through the projector you will be using with the playback equipment you'll be using. This is the only way to get an accurate determination of the image that will make it through to the projection surface. Some decks cut out a small portion of the image.

Some software will render an image that produces non-square pixels when transferred to DVD or other media. A projection grid is very helpful in these circumstances. It will help to determine the usable image size in pixels. There are also considerations for masking out certain parts of the image for special effects, but we'll leave that to a more in-depth discussion on image creation.

So you've determined the equipment you'll be using, and you've created your source material. The next step is to get it into the theatre. As an alternative, get a VERY accurate set of drawings or measurements of the space you'll be working in. One of the nice things about video is that as long as there is clear space, it can be done almost anywhere. The trick comes when you begin introducing angles, either from the side or above. Then the intricacies of the theatre come into play; wing space, front of house positions, accessibility. If you're setting up in the theatre you'll be performing in, allow plenty of time for the initial set-up. *Then double it.* And be sure to take measurements whenever possible. This will help not only with placement for the current show, but for reference material if the show goes on tour or if a similar show is proposed.

Video not only creates a whole new column in the production calendar, it affects the other aspects of production as well. Lighting in particular must be dealt with differently in the cases where video is being used extensively. In the planning stage, instruments with controllable beams, such as ellipsoidal reflector spots, are preferable to instruments that are more suited to washing the stage, such as PAR cans, fresnels or strip lights. More lights may be necessary than in a standard plot, since illuminating an actor in a certain position may require that an additional light be hung rather than just opening up a shutter. For this reason, as well as to allow for more specific shuttering and level setting, the focusing and cueing of lighting should be allowed more than their usual amount of time in any given space. It is also important to consider that a lighting designer may be working for the first time with video. In cases where video projections are not confined to screens, but rather are part of the ambient light on the stage, it may take more time than expected to mix and balance the projected light and the stage lighting.

Sound may or may not require additional time as well. Depending on the level of experience the venue or sound operator has working with video, it may take some time for the proper connections to be made and speaker placement to be worked out. Different playback decks have different outputs and sound quality, and varying cables or outputs may provide an improved sound quality. Video often demands that the sound image originate from the area of the screen itself. This is not always possible with a venue's standard speaker arrangement.

Above all, organization is the key to making a production that incorporates video run smoothly. Not that this would not be true of any show, but the precision that can be required of actors and stage crew in video-intense circumstances demands a higher level of attention to detail. Perhaps the first really important hire on such a project is the stage manager. The additional layer of video cues makes having a calm, collected stage manager imperative. The precision demands of certain video production elements often mean that sequences need to be rehearsed repeatedly. This can quickly become a strain on crew and actors. The stage manager will be called upon to see that the rehearsals run smoothly and that the cues are called and executed as consistently as possible to avoid any wasted time. The job description will also include cheerleader when the rehearsals do run longer than the cast and crew expect.

Much of what has been detailed here would cause one to ask; “Why should I even try to use video if it’s this much trouble?” Well, the answer is in the experience. It’s the actual moment when everything comes together, when the actors hit a precise mark within a masked video and appear as one with the projection. It’s the moment when the scenery and video blend seamlessly, when an environment appears onstage that would have been unachievable and inconceivable without the contributions of video projection; when it’s no longer video media, but video magic.

Video first.

If possible, incorporate software/hardware that allows for shifting of images.

Side light, reducing bounce onto screen surfaces, is extremely useful.

Projected light will not adequately illuminate through a scrim.

Lighting elements behind a scrim should be done from as extreme a side angle as possible, unless multiple sources at low levels are a possibility.

Multiple sources at lower levels are preferable as long as they can be contained.

Allow lights more time than for a conventional show.

Hire a REALLY cool-under-pressure SM.

Don't forget to incorporate the projection into the lighting scheme.

And vice versa.

No glossy surfaces.

Three-thread scrim makes a good projection surface.

Try different cables. Some may work better than others depending on the source deck or computer.

Remember that set positions need to be ACCURATE.

Light blocking from backstage sources is important.

Spike and rehearse, rehearse, rehearse.



KIRA HOFFMANN

STAGE MANAGEMENT FOR MULTIMEDIA PERFORMANCE

Introduction

The development of specialized technology in performing arts production has allowed theater artists and designers to realize concepts and designs that previously could only be referred to in the abstract through the traditional areas of scenic, lighting, sound and costume design execution. Theatrical productions in the twenty-first century are able to communicate almost Hollywood-style special effects onstage, with the advent of computerized traveling set pieces and flying rigs, pyrotechnics, intelligent lighting, high-tech audio sampling and playback, and mechanical components in costumes and wigs. All of these design choices, however, seem to be additions to the theatrical “bag of tricks” in that they are simply additions to a production’s central design, rather than the entirety of the complete design itself. This concept of “complete design” is currently being explored by the Multimedia Performance Studio (for whom I have been in charge of stage management since 2001), housed at George Mason University in Fairfax, Virginia, through the highly sophisticated technology of multimedia computer animation projection as a theatrical design element. This format includes multimedia projection as an additional layer to the traditional design areas, serving not only as a backdrop, but also as illusions of scene changes, flying effects, and projected costumes.

As with any new technology in theatrical practice, the understanding and organization of how this new multimedia technology is to be integrated into the traditional model of theatrical production in all of its phases, from pre-rehearsal to performance, is critical. The role of the stage manager as the single company member who is expected to know everything about a production and all of its elements is becoming increasingly more challenging — previously, a

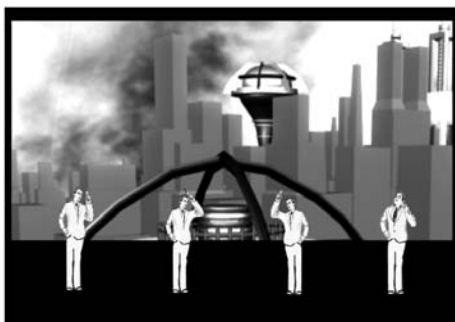
Photo: Ioulia Kouskova.

prompt book may have included cues in the areas of lights, sound, follow spots, fly rail, set changes, and cue lights. With multimedia projection, numerous projection playback console operators must be cued, not only to hit the classic “GO” button, but also for various additional actions, such as “wiping out” or “looping” a continuous image. Just as any professional stage manager must know the basics of lighting and audio technology in order to troubleshoot or assure that proper vocabulary is being used in order to communicate needs to technicians, a basic knowledge of the multimedia equipment being used and its functions is vital. Generally speaking, most operators of multimedia projectors and playback units are specialists themselves, so it is in the best interest of the stage manager to take advantage of the operator’s knowledge by requesting a demonstration of how the equipment functions, from playback unit to projector. It is also important to learn the terms, phrases and descriptions of the operator’s actions, in order to correctly call cues, and to discuss what the protocol will be should a projection not appear, or work incorrectly; in the example of calling a lighting cue, the traditional calling of “go back,” or “stop cue,” when a cue is called too early or there is a technical problem, may not be the correct response, due to the meticulous timing necessary in a multimedia production. Additionally, a familiarity with every projected image — what it looks like, how it moves, its projected location and target — is as equally important to the stage manager as the familiarity with the script or score.

The Pre-rehearsal Period

Since the creation of multimedia projection images is incredibly time-intensive, it is critical that a majority of the design concepts are already realized well in advance of the rehearsal process. Storyboards and true color graphic prints of the eventual images are integral to have at the first official theatrical production team meeting, in order for costume, lighting, and scenic designers to understand the color palettes, scope of size, and projection surface placements for the entire production’s design concept.

At this time, multimedia designers should also be able to discuss with the sound designers which sound designs will be pre-recorded independently from any sounds which plan to be embedded within the projections. All of this information will be important to stage management, as these early meetings will reveal cue-calling patterns regarding what percentage of set changes, audio cues, and major projection scenes will be called rather than built into the multimedia itself. The most valuable tool at this point in the production process for the stage manager is the early version of the Projection Scene Breakdown (based on a multimedia sequence chart); although for cast and



Storyboards from MPS/Cyburbia's *Silence & Darkness*, 2004.

rehearsal call use, a traditional French Scene breakdown is important, the Projection Scene Breakdown will focus the technical goals and challenges of each rehearsal, particularly during the Tech Period. Additionally, this document will have rough timings and titles for each projection, with a description of any actor-placement requirements, which will also assist in the structure and focus of the Rehearsal Period. The multimedia designer should be aware of strict deadlines regarding the production of this document in time for the first pre-rehearsal production team meeting.

Multimedia Performance Studio / Cyburbia Productions

Time Traveler Zero Zero

Multimedia Shots and Sequence Chart

Date Modified 1.16.04

Version 2.5

ScnNo	SeqName	Desc	Med	Artists	Notes
Description of categories presented at the end.					
0-0-0	Amelia Drifts Down	Amelia falls slowly to the ground and lands in a crouching position	Video		Against a plain dark background. After Landing in crouching position, stands up.
0-0-1	Prologue	Art and background during prologue	Video		
0-3-0	Amelia Walks Away	As Amelia walks away to screen right, camera zooms in on her feet	Video		Amelia delivers prologue
0-0-2	Radio Dials	Representing timeline, similar to a radio dial	2D	Ricardo, Prince	Dial will be synched to prologue when key events in time are referenced
0-1-0	Gearworks/ Softmachine	Cyberspace establishing shots of gears and "soft machine." Requires a black mask for JT to be seen behind scrim	2D, 3D	Ricardo, Noah	reference works of William S. Burroughs' <i>Naked Lunch</i> . Picabia's paintings. requires a black mask for JT to be seen

Also at this pre-rehearsal meeting, a Master Production Calendar should be provided with dates reporting when individual multimedia projections should be completed and ready for viewing by actors and designers; committing to these due dates is very important throughout the process, since traditional scenery pieces or solid mock-ups may not be present in the production design for the actors to visualize during the rehearsal period. Although the virtue of flexibility is always key to stage management's success in any theatrical production, it is critical that any delay, or anticipation of a delay in the completion of multimedia designs, is carefully examined, paying close attention to the domino effects into other production design areas and timelines.

The Rehearsal Period

Additional duties are necessary for the rehearsal stage manager working on a multimedia production, the most important of which is the careful recording of timings for any scenes that directly correspond to a multimedia sequence. The rehearsal process should be mapped out in order to rehearse the scenes that are most intertwined with projected scenery and the interactions of any moving projections with the performers. The consistent timing of the length of dialogues and actions happening in a scene must be reported to the multimedia designers once the scenes have a consistent pattern and timing, so that the projected images are then edited to work within the dramatic action.



Charles Holley and Chris Parsons (Servants), Alex Helsabeck (Gen. Geo. Washington), Eric Greene (King George III), MPS's *Naked Revolution*, 2001. Production Stage Manager, Kira Hoffman.

The taping out of the rehearsal room must be as specific as possible, so that actors are aware of anticipated “danger zones” where projectors may be placed behind a projection surface, as in the case of rear projections. Actual areas where actors will not be able to cross in order to avoid visible shadows in the projection will be discovered during the Tech Period, but for this phase of rehearsal, it is important to get the actors used to the concept of their shadows not being “onstage” even when backstage. Another challenge for stage management includes the increased use and specificity of spike marks. If an actor is to interact with or be incorporated into a projected image, many times the image

has been specifically designed around that action; actor placement is critical in order for the desired effect to be successful. Reiterating the importance for actors to “hit their marks” during the rehearsal process will allow for a much smoother Tech Period. Communicate with the actors, and be sure the spike marks are clear and easy for them to locate and understand. Accurate spike placement is equally important in the case of using temporary set pieces or hand props as alternative projection surfaces.

In addition to scheduling costume fittings for actors, there may also be the need for multimedia designers to photograph or film actors in order to incorporate their images into the projected media. For this reason, certain costume items may require an early due date in order to be included into the timeline that allows for the completion of certain multimedia sequences that use actors in character. Ideally, these needs would be articulated as early in the process as possible — very soon after casting — in order to craft a rehearsal schedule that makes optimum use of the time allotted with each actor in the rehearsal room, costume shop, video studio, or on location.

Daily rehearsal reports will also include a section for the multimedia designers; since many times the first viewing of a multimedia sequence is during the Tech Period, having a forum in which to ask questions and relay information is very important in order to have a clear and unanimous vision of what each scene hopes to accomplish visually.

If at all possible, multimedia designers should find a way to bring their work, even in an unfinished state, to rehearsals via a laptop or color stills in order to inform the actors and production team. Posting a storyboard or set model in the rehearsal room is always an excellent reference tool.

The Tech Period

As with any new technology, the amount of time necessary to incorporate it into a traditional model must be respected. The standard “tech week” of theatrical production should be carefully examined and extra time should be allowed for the load-in and setup of projectors and playback equipment. Time must also be allowed for the focusing and precise placement of front and rear projectors — it is during this time that stage management must assess and mark out areas backstage where actors may not cross in order to avoid unwanted shadows on the projection surface — this will also determine the space available backstage for scenery and prop storage.

A block of time should also be allotted to introducing the actors to the performance space and the projections before the first technical rehearsal takes place, not just to set actor spike marks for scenes in which moving images may

incorporate actor movement, but also in order to allow the cast to see the images so that they understand the impetus of their actions, and to avoid distraction during the working technical rehearsal. During this run-through of projections, it is also valuable to rehearse any scene changes and actor-driven set changes now that the true running time of the images is available, and to take careful notes for the rehearsal report regarding any multimedia sequences which may need timing adjustments based on the time needed to complete the scene changes. It is incredibly beneficial to “sketch in” these set changes ahead of time, even if it takes a full rehearsal day, so that stage management can focus on running the technical rehearsals without stopping to choreograph each set change during rehearsal time.

Since the introduction of multimedia into the performing arts is still a relatively new concept, many times the operators of the playback equipment may have little or no theatrical experience. A brief meeting with the operators before immersion into the technical rehearsal, in order to familiarize them with stage terminology, such as upstage, downstage, stage right and stage left, in addition to the cueing language of stage management, is critical; be sure all operators understand the terms “warning” and “stand by,” and that “GO” is the only word upon which to act. Other subjects that are taken for granted in the theater industry, such as headset etiquette and the importance of call times, should be introduced to these technicians new to the theater production world.

Above all, patience and realistic expectations are the most important concepts to maintain when stage managing a production with multimedia projections. It is ideal to have two assistant stage managers backstage, especially if there are rear projectors present; the assistants should be trained to perform basic troubleshooting on the equipment in case of a problem.

The pace of technical rehearsals may be slower than usual, due to the re-cuing of projection sequences when it is necessary to re-rehearse a certain scene or sequence. Additional time may also be required to assure that the focus of stage lighting instruments remains off projection surfaces during each multimedia sequence. It is important to build in additional time into the Tech Period in order to allow for the challenges presented when initially using multimedia projections. For this reason, careful judgment regarding what is to be accomplished each day is imperative, in order to avoid wasting the time of actors called. A production meeting should be held at the end of each rehearsal day in order to assess the needs brought about by the day’s work, and an actor hotline should be in place in order to alert actors to their call times, which may be grossly different from originally anticipated. If a projection sequence needs to be changed, the next day’s plans must be carefully evaluated, in order to confirm that the missing piece will not impede the next day’s progress.

Performance

Before every performance, in addition to a dimmer check and sound check, stage management must confirm with multimedia equipment operators that a systems check has been completed on each projector and playback unit, and that each projector has been re-focused on all projection surfaces. For this reason, it is good practice to set multimedia equipment operator show calls earlier than lighting and sound board operators, in order to allow for any troubleshooting in case of technical problems.

In performance, a system of backup plans should be prepared in the event of a playback error; planning ahead with multimedia equipment operators will reduce the chances of panic and will allow for full concentration when establishing the rhythm of calling cues. It is in these emergency situations that a grasp of the technical vocabulary related to multimedia design and playback will assist in clear communication and speedy problem-solving during live performance mode.

It is ideal for the production stage manager to call the performance cues from the back of the house, not only to view the best and largest possible stage picture, but also to monitor projector focus and possible shadows from the backstage area, as in the case of rear projections. For this reason, a reliable communications system to backstage is critical, so that assistant stage managers positioned backstage may be alerted and respond to any shadow issues or poorly focused onstage projectors.

Conclusion

Multimedia projection as a theatrical design element, although challenging for first-time users, is one of the most exciting and innovative components of twenty-first century performing arts. Successful stage management of a multimedia theatrical production requires patience, a willingness to learn new vocabulary and technical equipment, and skill in time management. However, the stage manager's most valuable talent, when working on a production that involves multimedia, is the ability to adapt the traditional theatrical process as we know it, from pre-rehearsal to performance, to incorporate the technology and techniques necessary in order to allow for the full potential of this exciting new component of theatrical design.



ERIC BRODY

SHOW CONTROL

Introduction

A consistent visual elements in all Multimedia Performance Studio (MPS) shows to date has been the use of projections as an integral part of each show's aesthetic. These projections have been implemented using a number of different methods throughout the life of MPS. With each show we have attempted to improve upon our methodology, giving us more control and ultimately allowing us to integrate the projected material into the show more effectively. By doing this, we had the opportunity to create a visual experience during our live performances that is very much unlike what people have grown to expect out of the theatre. During the production of *Silence & Darkness* in the autumn of 2004, we used Dataton's Watchout software to control the animations being sent to each of the three projectors we used. It was my responsibility to learn this software, create the "show" (a process which I will go over in greater length later on), and to control it during the performances. By using a media server to feed images to our projectors, rather than using a direct video feed as we had before, we gained a level of flexibility and manageability that was previously unobtainable. In this essay I'd like to expound on how the media server application works, what it is capable of, and how MPS, specifically, utilized it to meet our self-imposed challenges and, as usual, some we didn't expect.

Progression Towards Media Servers

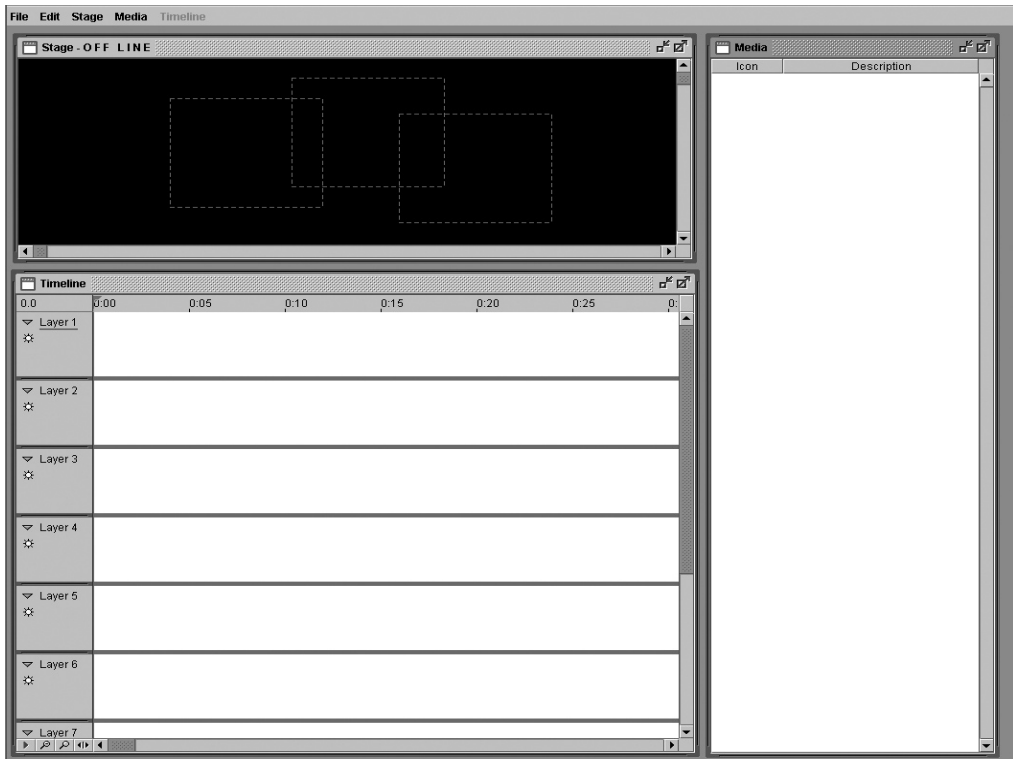
Before the 2004 production of *Silence & Darkness*, MPS used a number of different methods of employing multiple projectors during a live performance. The methods we used were by no means exhaustive in terms of what could

possibly be done to approach this challenge, but by explaining the methods we used it, should illuminate the reasons why we were led to using a media server in their stead. The first method we tried was to use multiple MiniDV cameras, each feeding to its own projector, and being controlled live. The limitations of using a cassette playback feed during a live performance are myriad. Cassette playback is, by definition, completely linear and completely fixed. This means that all video is in a fixed position within the feed, and is immovable without recording over that part of the tape (though in order to get a clean video it's wise to re-record the entire tape instead of just one section). Pausing the cassette tape in the event of some sort of delay within the show (set changes, etc.) is also not a good option, as it results in a fuzzy, ugly image while paused. It is also difficult to make changes to your show, as that involves re-recording your tape(s). We found that cassette playback allows very little in the realm of flexibility and control. It also makes any sort of actor interaction with the video very difficult, as the timing must be absolutely perfect. In light of these limitations, we moved on to DVD playback.

DVD playback is somewhat less limited and easier to work with than MiniDVD playback, but it does share some of the same drawbacks. For example, a DVD can be set up with chapter markers and menus, which allows for greater control over what video plays when. This is particularly useful between scenes, as the projectors can be blacked out while the controller pulls up the desired video sequence. A paused DVD image, while providing a more attractive image than that of a paused MiniDV tape, is often-times fuzzy and jerky and not of adequate quality to be left on the projector for very long during the show. Making changes to a show using DVD playback is somewhat easier than MiniDV, as the DVD is created in a non-linear fashion if a program like DVD Studio Pro is used. This allows sequences to be rearranged or replaced fairly easily, but a new DVD still needs to be recorded each time any change is made. Actor interaction is equally as difficult with DVD playback as with MiniDV, the timing issue not being resolved. Another problem with both of these formats is that the entirety of any video coming out of the projector must be one solid image. They do not allow any sort of control in a sectional manner, nor do they allow for any sort of overlays that have not already been placed directly into the video. This was not sufficient, as we wanted to be able to cue different parts of our projection at different times in a live setting. This brought us to the use of media servers.

A Brief Explanation of Media Servers

Before I discuss how MPS, specifically, used and benefited from the use of media servers, I think it will be helpful for me to explain exactly what a media



Dataton's Watchout Graphical User Interface with Stage, Timeline and Media windows.

server is, and what it can do. A media server is a method for controlling the images that are shown on one or more displays (projectors, televisions, computer monitors, etc.). This is accomplished using one server computer, and a separate client computer for each display, all of which are networked together using CAT5 cable. After each client computer is configured with its client application running, it does not need to be touched by human hands. All of the work to set up and run a show is done using the server computer. The show is set up using a non-linear timeline, very much similar to those used in video editing and compositing applications. Video is then placed on the timeline in the desired play order. Each video is also placed on a layer, which allows for overlays and transparency. This means that multiple pieces of video can be placed on top of each, and seen through if desired; allowing the show controller to create detailed layering effects without having to re-render any video. The video can also be moved around (even between different displays), change its size or transparency, as well as many other settings. The timeline also has many different ways with which it can be controlled. It can be paused cleanly at any time, it can be told to hold at a specific point, or told to loop at a specific point. The timeline can also be set up to play the video independently of where the cursor is within that particular video. This allows the controller to pause the cursor within that video while it plays and loops independently (such as for a video that plays while the

audience is being seated or for a scene with greatly varying length during each performance), then the controller can resume the cursor and move on to the next video when the next cue is called by the stage manager. Once the show is set up, the server computer sends the clients whatever video files they need over the network. This way, during the show, the only information that needs to be sent over the network is when to stop or play each file, and how. It should be noted that these observations are based on my own experience with Dataton's Watchout, which may have greater or fewer capabilities than those in other media server applications.

Why MPS Used Media Servers

Firstly, to give an idea about how much we had to learn and adapt in order to employ media servers, I should say something about my own level of expertise before the 2004 production of *Silence & Darkness*. At the time, I already had extensive experience using video editing and compositing applications such as Apple's *Final Cut Pro* and *Adobe After Effects*. I had not, however, used or even heard of a media server application before I began learning Watchout for the show. With any experience using non-linear editing timelines, however, it is not very difficult to adapt to Watchout's interface, provided you keep a manual close by. Even without prior knowledge, Watchout is actually a fairly good introduction to the world of non-linear editing, considering that it is not nearly as featureful (thus, less intimidating) as most editing and compositing applications.

Now, the reasons why MPS decided to use media servers as opposed to the MiniDV or DVD formats should be fairly clear based on the previous sections, so I'll just summarize them briefly for clarity's sake. By using media servers, we were given much greater control over when and how our video sequences could be played back. We could control layering, size, timing, positioning, and a myriad of other things directly within the server application.

There are essentially two things that these levels of control allowed us to do. The first was to reduce the number of times we would need to go back and re-render our video, as this process takes a great deal of time. That time was already reduced just by using a media server because if something needed to be changed, we could re-render one specific file instead of our entire show. It was further reduced because we were able to manipulate the movement and layering of our video to achieve things that previously would have only been possible if they were rendered directly into the video. The second thing the greater level of control allowed us

to do was to incorporate a level of interactivity within the show. Using Watchout's sophisticated cueing system, the show controller was able to activate particular pieces of video during the performance, in sync with what the actors were doing on stage.

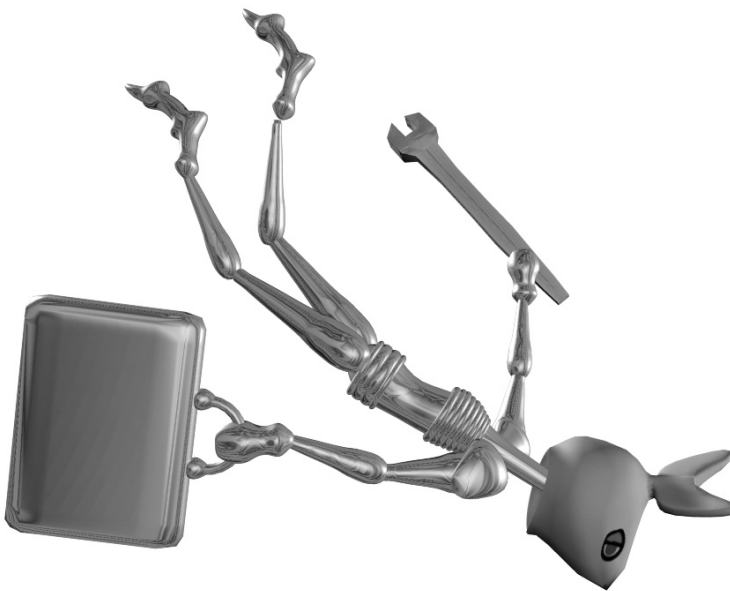
How MPS Used Media Servers

After we decided to use Watchout for our show control during *Silence & Darkness*, and got acquainted with the application, we quickly found out just how useful it could be. We set it up to control three projectors for the production. We used a front projector, a rear projector, and what we called a "special" projector. The front projector was able to cover the entire stage and backdrop with its image, therefore we had to block off parts of the projection using carefully calibrated masks. The rear projector threw its image onto a screen in the center of the backdrop from behind. This allowed the actors to walk in front of the backdrop without the projections landing on their bodies. The special projector was placed in a catwalk above the house to stage right, and was angled so it could hit certain places on the stage. It was only used in a few special situations, some of which could only be accomplished with the use of a media server. An example of this is when we had the special projector display an image of an explosion directly on the chest of one of our actors as he threw open his jacket. With Watchout's cue system we were able to send a command to the special projector precisely as he opened his jacket to start the animation, and then turn it off exactly when he closed it. The timing of this particular effect would have been nearly impossible to work out without the use of a media server.

Watchout also helped us with the production in ways that we had not anticipated. For example, during one of the stage transitions there was a set piece that was catching part of the projection from the front projector. However, once it was off stage, that part of the projection was spilling conspicuously onto the stage. Using Watchout we were able to create a simple mask for that area of the projection and cue it to appear once the set piece was off stage in order to cover up that part of the projection without interrupting the animation playing in the background. In another example, from the beginning of the show, we wanted to display words on the screen above one of our actors. When we got into rehearsal and saw that the words just popped on to the screen without a transition, we decided that was too sudden. Instead of having to go back and render out a video with a fade in it, I was able to set up cues to change the opacity of the words within a few seconds and make the change to that part of the show right there in rehearsal. We came across this type of situation many times, where changes could be made in seconds during rehearsal that would have taken many hours to make using DVD or MiniDV playback.

Conclusion

It does not take long to figure out that a media server is an incredibly useful tool when working with new media theater. It is a liberating piece of software/hardware allowing artists greater flexibility than with other technologies. The caveat is, of course, that media servers require an initial monetary investment. As with anything there are degrees of cost in terms of the different brands of media servers, but any of them will take a small to moderate bite out of a budget. This bite can often times be taken from a production's set budget though, as the projections can be used to replace certain set pieces if one would so desire. In the end, when working with projections, especially multiple projections, the cost is well worth it. The amount of time saved by using this method is invaluable, not to mention the decrease in levels of frustration. And, most important, the media servers allow designers, artists and operators to shift a sizable portion of their focus away from the technical issues and roadblocks, and onto the art. In the end, that's really what this is all about.



SEAN LOVELACE

SOUND DESIGN AND COMPOSITION FOR OUR WORLD AS WELL AS OTHERS

It had always been my goal to create a soundtrack to a live movie that was one continuous soundscape, and lasted the duration of the performance. Songs would be interwoven throughout the greater piece but there would be an emphasis on the continuity of sound throughout the performance. One piece that embodies all of the emotions and themes of the actor's performance and not only complements it, but acts in tandem as a character. In working with the Multimedia Performance Studio as a composer and sound designer for both *Time Traveler Zero Zero* and *Silence & Darkness*, I worked alongside the musical directors Amelia Winger-Bearskin and Kelly Wilson, respectively, to create and orchestrate the aural elements of both productions.

I learned that the best way to prepare a group of musicians of diverse backgrounds for performing the soundtrack to a live movie was to spend a great deal of time jamming together. In all honesty, we would practice the songs we had only so much before we wanted to play something new. Improvisations that lasted an entire practice became integral to being able to perform with one another. When dealing with a group of creative people, it's hard for our brains to sit still.

Even though I believe the use of one's equipment to its fullest capacity is more important than what brand of equipment it is, I will provide a somewhat basic breakdown of the computer system I used to compose the music for the two MPS performances. In both cases the primary computer used was an Apple G3 Pismo laptop running Propellerhead's Reason Software as well as various freeware recording utilities. During the production of *Silence & Darkness*, this laptop happened to malfunction, and the Mason Media Lab generously loaned me a G4 laptop. This laptop was a great deal more powerful than the Pismo and allowed me to utilize a large number of virtual instruments in Reason at once. Reason allows a user

to compose various forms of music using a “virtual rackspace” full of software synthesizers and samplers, as well as audio signal routers and effects units. One is able to control all these virtual instruments and units either with the program’s sequencer or external midi sequencers. As is the case with most modern midi software, one can use Reason to control other programs or allow Reason to be controlled by other programs. In both performances, we utilized the program’s internal sequencer as well as using two different midi controllers.

One of the MIDI controllers is a standard two-octave keyboard that allows one to play any of the instruments. This was helpful when writing songs especially because it gave the other composers a chance to add their musical skills to my multiple manipulations of sound in Reason. Amelia Winger-Bearskin and I wrote over half the songs for *Time Traveler Zero Zero* using the keyboard controller. For a couple of the songs from *Silence & Darkness*, Kelly Wilson sent me midi files of melodies she had written which I then programmed various synthesizers and samplers to play.

When a show called for sound effects, I would program the sound effects into one of Reason’s sampler units and then control that with an external midi drum machine controller. An entire show’s sound effects could easily be loaded into one sampler, programmed in a sequential way to provide anyone who wishes the ability to trigger sound effects live during a performance. Sometimes various musicians made sound effects with their instruments. It was a common strength between both groups of performances to be able to create lush and intricate soundscapes that only seem to come about through collaboration with others.

In addition to sound effects, the midi drum machine controller allowed me to play various other instruments in a more percussive way than on a keyboard. Similar to the keyboard, this controller is able to use any of the modern software instruments that offer midi capabilities. Additionally, these two controllers are only examples of the variety available to an eager midi musician. There are controllers filled with knobs and sliders of all sorts, as well as various length keyboards, and drum machine oriented controllers. One’s creations are no longer limited by the amount of equipment he has, but rather by the power of his personal computer. This is the case regardless of the software one chooses to explore.

It is hard not to become overwhelmed by the amount of hardware and software available to the eager scientist of sound. Where does one begin? I have already suggested that it should not matter what piece of gear one uses, provided you learn it inside and out. Once you have the abilities to create sound, you should focus on doing just that. The pursuit of the perfect sound should not be constricted by any preconceived notions of what music is or is not — this is about sounds in the raw. Sound has multiple roles in the live movies

of MPS. It serves not only as an atmosphere to the setting, but also acts as a character and in the case of the songs, reinforces the story and thematic elements similar to a Greek chorus.

The majority of the sampled and synthesized sounds were all built from scratch. Our sample sources varied from records to DVD's to recordings of the musicians making jokes in between rehearsals.

After a while we all became absorbed in the work and would constantly discover new aspects of the play that we could flesh out with sound. This was especially the case with *Time Traveler Zero Zero* where there was a much larger collaborating group of musicians. *Silence and Darkness* had only three musicians whereas *Time Traveler Zero Zero* had eight.

With *Silence & Darkness* I felt like I had a great deal more freedom to create an entirely new soundscape, unlike anything our ears were already familiar with. Being equipped with a sampler, many of my source sounds were things we are very familiar with. Even in *Time Traveler Zero Zero*, I wanted to manipulate the stock sound effects we used, to give the performance space a much more surreal atmosphere.



Cyburbia/MPS musicians, Sean Lovelace, Matt McGarraghy, Matt Cain (l.), and Sean Lovelace (r.).

The way I decided to soundtrack the future is influenced in part by my and others' ideas of what the future might sound like. From the sounds of theremins, synthesizers, and beyond, our culture has a pre-conceived idea about what dystopic Science-Fiction sounds like. Simply, it is an exaggeration of the sounds of our modern day settings. The artists creating works that focus on other worlds and civilizations are really speaking a great deal about their own (our?) culture.

The mobility of a laptop allowed me to take my work with me wherever I went. This was something I had experience with prior to working with MPS but it is an important advantage over using a desktop. It allows an artist to carry a high-powered digital instrument with him wherever he may go, sketching out ideas as they appear. An advantage of our technological age, I could take my work with me wherever I went and work on it as I had time to. While working on various sounds in the wild of society, I noticed a great deal of imagery and sounds influencing me. Particularly in the creating of a lot of the sounds for *Silence & Darkness*, the landscape of the university littered with numerous individuals on their cell phones, obviously wishing they were somewhere else, on the other end of the phone call, where that individual also shares a similar interest in being somewhere else. We have become eager to communicate with the distant and sometime unfamiliar voice, rather than to seek out peers in our immediate physical environments. So much of the sound of both of the productions, represents a way of combating the isolation of our cellular society of individualism through collaborative efforts.

The songs were written in various ways. With *Time Traveler Zero Zero*, it would be common that Amelia Winger-Bearskin, the other primary composer, and I would get together to work alone on figuring out the shell melodies and arrangements for any one song. The rhythms were the crude sort of drum machines and moody tempos that we both love. The first completed track from *Time Traveler Zero Zero* for instance, was created and finalized in one night with Chris Andrews at The Basement Recording Studio (TBR) in Burke, Va. In a fashion typical to the generation of most songs with MPS, what we had to go on were the script by Kirby Malone, the writer/director, and the lyrics he provided for the songs. It was our task to translate words, directions, and feelings into the sound that would define the world we wanted to create on stage.

Another advantage of the studio is that it allowed us to make demos of the songs as they were in progress. Recording the demos, and then copying them to CD's for each band member, allowed curious pairs of ears to know what the show was beginning to *sound* like, and it also provided the musicians a track to practice with. In some instances it also gave the animators an opportunity to sync their digital animations to the songs we would perform. This was much more common with *Time Traveler Zero Zero*. Another difference between the two was that in *Time Traveler* some things were played back sound-wise from the DVDs that contained the videos for the show allowing precise synchronization between image and sound when needed. This meant my computer was free to play other things and not have to devote its resources to those tracks, but it also meant they would remain unchanged for the sum of a performance's run. In *Silence & Darkness*, we triggered all of the music, soundscapes, and sounds from the stage.

Our production manager, Dan Hobson, said *Time Traveler Zero Zero* was one of the most complicated shows for sound he had encountered in a while. Into the PA mixer we ran audio from the DVD players, audio from the stage including a mixer that my laptop and other electronics were plugged into, the wireless microphones for the actors and singers, wired microphones for the singers, microphones for the various instruments, and all of this was to be managed by a sound man during a live performance.

It was much more common for myself to perform sometimes as a human sound effects record during *Time Traveler Zero Zero* which required a great deal of generic real world sounds, such as doors, doorbells, birds, ambient television noise, and other pleasantries of our sonic conception of the world. With *Silence & Darkness* I was allowed a great deal of freedom as a sound designer to create an entire universe of sounds unlike anything we had ever heard. When we first began working on *Silence & Darkness* it was my hope to fill the soundscape with dead air static and the sounds of dying cellular phones. The sounds of malfunctioning machinery litter every aspect of *Silence & Darkness*, perhaps a metaphor for the breakdown in communication that the performance focuses around, or one interpretation of the sounds of the dystopic future.

After a certain point in the production of a live movie, I have a complete concept of how I will want the majority of the show to sound and eventually am asked to explain that idea on paper. The musicians and sound designers provided various forms of documentation including scene-by-scene timelines. Theatrical sound cues were something I had not taken into account. Using a word processor or spreadsheet program of one's choice, one can put the lay of the land for the sound of the entire show on paper. More often than not, the hardest part is figuring out how to explain to someone exactly what something will sound like. The tedious task of knowing the lengths of time for each piece of sound in the show can be daunting as well, but in the end the process serves to make sure one hasn't left anything important out of the overall plan. All of it can be typed out into a simple language that describes basically what happens each scene, with whom, and for how long as far as sound is concerned. For *Time Traveler Zero Zero*, we followed the design of a multi-media chart that had existed since the beginning of the project. Regardless of how it looks, one must be sure to align it with a unit of measurement that makes sense to everyone else who is reading it. As I said, a scene-by-scene break down is the best way to do it. When I reflect on the experience, there are a lot of clerical and managerial things I could have done to insure I kept better track of what was going on throughout the process, but I figured why take time away from the actual production of the music? There is a dangerous fear that is very real to me that in making my art it will become just another paper-pushing nightmare.

It should be noted that the need for sound cues has the potential to restrict the creation of a soundtrack to a live movie that becomes one long continuous experience. This of course is not the only factor that would limit the soundscape from being comprised of one long continuous movement of music. An advantage of this however would be that it has the potential to add a different feeling to the live movie each performance. And in the making of both MPS productions, there was a great deal of dialog between the director and myself as well as the other composers and musicians about the nature of improvisation.

Because of the chaotic belief that “if anything can go wrong, it will,” there is a need, especially in theatre, for knowing exactly how things will be executed, what it will look like, and in my case, how it will sound. Because in both performances, all of the musicians are on the stage the whole performance, we never get a chance to hear how the audience might perceive us. During our rehearsals at the theater, I sat out in the seats to listen, but I am still ever curious to know how the audience heard it each night. I imagine that any performer is interested in gaining his audience’s perspective, if only for one instant.

As I have already mentioned, being able to jam with one another during practices was perhaps the greatest way the musicians in the performances came together. It is important for musicians to be very familiar with those who will accompany them in performing in a live movie setting. Once any set of musicians becomes familiar with the subtleties of one another’s playing, it can take the group performance to a whole new level. When collaborating with others in making art of any kind, it is best to minimize your ego as much as possible. That seems to be a good rule of thumb for dealing with most situations in which you have to deal with anyone. We are all working towards the same goal of making the most amazing music and show ever, and I feel with both groups of musicians there was a lot of amazing music made. So often life seems to swallow the eager musician alive and it is rare that he ever has enough time in the day to make all the music he’s been thinking about all day. However in working on both of these productions, one has to devote so much time to it and to the music that it allows one to become totally enchanted with it and again, make the most amazing art one is capable of making.

PAT KELLY

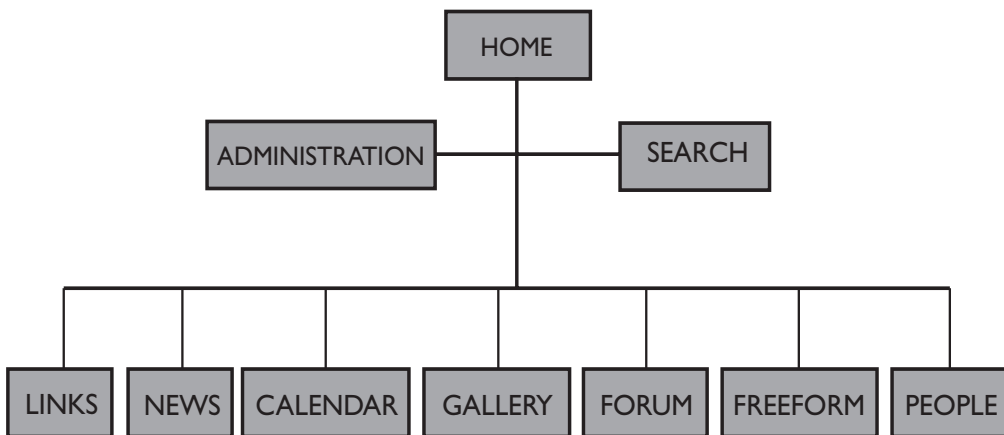
COMMUNITIES OF PRACTICE: COLLABORATION ONLINE

One of the challenges with creating a successful multimedia performing art studio is managing all the different aspects associated with production; from direction, choreography, scenography, and projections to sound and music. Many different ways to achieve project coordination exist; some work, some don't. The Multimedia Performance Studio (MPS) has tried many and was open to a new idea: have everyone who is participating in the performance manage themselves in an online collaboration. This idea had much promise, with new media artists spending hours online already, having them check into another web site for a few minutes to enter their daily activities related to the show, or to share concerns with others in the production, wouldn't be too out of the way or difficult. Working with this concept the "Community of Practice" was born.

The concept of Communities of Practice has existed for many years and has been called many things. The Internet itself started out as a chat line so that universities could communicate and share scientific ideas with one another. Online conferencing, blogs, portals, listservers all attempt to group items by subject matter so that other like-minded individuals can find them and share in the exploration of their ideas. Costume designers need to be able to get measurements from actors, sound designers need to coordinate with lighting designers, set design needs to be able to coordinate with graphic artists, and the production manager needs to be able to check in with all of them. For MPS, the Community of Practice needed to provide each type of performing art subgroup a tool that they understood and could use. It needed to be web-based so that it was platform-independent (could be used on Macintosh and PCs) and needed to be updated in real-time so that time-critical information could be shared as soon as it was available. This tool would need to allow for each group to see what their group is doing and what other groups are doing. They would need to be able to share web sites that provided concept ideas, time

period information, and additional story ideas. Important news needed to be published in a manner where everyone could get it. The performance schedule would need to be available. Animators and multimedia artists needed the ability to post images and files to share with other artists. A chat forum would allow people to post messages and get answers to problems. Performers needed a sketching board where they could allow for freeform ideas to be discussed, images could be critiqued, files could be reviewed all within a single “live” document. They would need to have a listing of everyone participating, with their phone numbers and roles and abilities. Most importantly they would need to be able to browse and search all these areas by meaningful criteria and access them within a single web site. In theory, such a system would enable a group of artists, who have limited time to be all in the same place at once, to collaborate with an enhanced sense of direction and clarity.

With all of those requirements, creating an architecture for the community of practice was easy (see flow chart below).



The Home Page needed to be able to give everyone a quick overview of the newly updated sections on the site. Links would allow users to post different web site address along with some comments about that site. News would list all the important topical messages. The Calendar would have the production schedule, meetings, and due dates listed. The Gallery allowed users to post photographs, graphic images and files to share with others, and to solicit input on them. The Forum allowed people to have conversations and share ideas, a blog. Freeform gives users the ability to generate a web page with links, text and images in a WYSIWYG (what you see is what you get) web editor, allowing people who have no knowledge of web page generation the ability to create pages. The People area is where everyone who's in the production is

Viewing People in Dramaturgy category

Records: 1-3

View by Category?: [All](#) | [Direction / Choreography](#) | [Dramaturgy](#) | [Management](#) | [Production / Coordination](#) | [Projections](#) | [Scenography](#) | [Sound / Music](#) |

[Gouldsmith, David](#)
Website: [micro](#)
Skills: history, research, supporting materials, cross-references, related work, artwork
Assigned Tasks:

[kachelries, kathy](#)
Skills: history, research, supporting materials, cross-references, related work, costumes, motion, talking, behavior, pictures, movies, machines
Assigned Tasks:

[Prater, Rebecca](#)
Skills: history, research, supporting materials, costumes, puppets, vocals, instrumentation, artwork, still
Assigned Tasks:

Records: 1-3

listed with contact information, their skills and what tasks they'll be working on during the production. Search would query all the previously mentioned categories. It would allow you to search for all the postings by a certain person; or find all the references to a particular scene. The Administration area would allow users to upload information into each of these categories.

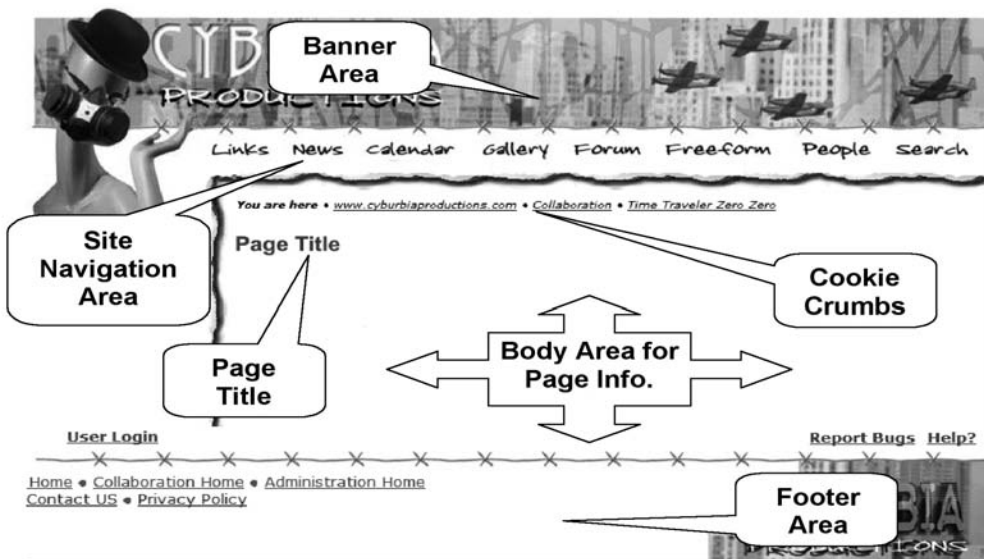
With the site architecture created we still needed a mechanism from which a single community or group could be accessed and/or all the communities could be accessed if need be within each of the pages. To accomplish this another architecture was created. This one mimicked the production groups: dramaturgy, scenography, sound & music, projections, direction & choreography, production & coordination, and management. By adding this additional architecture each page could be sorted by all categories or a specific category. So if someone needed help researching a topic they could sort the People page on Dramaturgy (see screen capture above). If a costume designer needed to find out when a costume fitting was scheduled, they could sort the Calendar on Scenography.

After the architectures were planned out, we had to brainstorm how we were going to enable the web site to be dynamically updated by the new media artists in a “user friendly” way so that everyone would be able to use a web browser from any computer and input their contributions. In addition we needed to think about how a project with limited resources could maintain this web site through multiple performances, basically what would this site’s life-cycle be? To dynamically update the web site we would have to use a web programming language that could enter information from a web page into a database. With the understanding that this collaboration environment may outlast the specific performance and be employed for additional plays, a programming language that is easy to read and write would be necessary, so we chose Active Server Page (ASP) technology writing to an Access database. Both ASP and Access are Microsoft based, ASP utilizing the Visual Basic Scripting Language; the development platform would be Macromedia Dreamweaver. By using these technologies we ensured that once the system was built and used in production it could easily be handed off to another generation of users. To manage the graphic design (look and feel) of the web site, Dreamweaver Templates were used. A Dreamweaver template is similar to a template in Microsoft Word. They allow you to set font headings, style and colors; page background color and images; header and footer banners, links and graphics; along with many other items. So by utilizing web programming technologies being taught at the university, and Dreamweaver as the development platform, anyone knowing those tools could pick-up the system where the last person left off; herein creating the life-cycle of the site.

After those decisions were made the construction of the community of practice began, starting with the graphic design that would be inserted into the primary web site template. Knowing that the template could be easily changed or modified, and working on a tight deadline, the design work was quickly created using a theme of “Cyberpunk” (as seen on the facing page). This design would be carried out on every page within the web site. With a standard header banner, navigational links (these links are reflective of the site’s architecture, i.e. Links, News, Calendar, etc.), cookie crumbs (underneath the site navigation) that help users identify what page they are on, page title, the page body where all the dynamic information will be populated, a “User Login” link where artists will go to upload information to the site, “Report Bugs” and “Help?” links, and a footer with some additional links and graphics.

Now it was time to take a look at programming each page so they do what we want them to do. By thinking this process through before you start coding, it enables you to identify similarities within the pages where code can be reused, saving time. Here you find similarities in the page title, the Records area, View by Category area, and within the way the records (Calendar, Forum and People information) are displayed within the body. This process is also

helpful to identify pages that will require heavy programming, like the Home Page, the Calendar and the Gallery. During this stage of the process you also begin to sift out the information needed within the page, like who posted the information, when, what the information is called and the information itself. Will a thumbnail be needed to display an image, and will the calendar page allow you to scroll to previous and future months? The best approach to collect this information is to have continued interaction with the users to solicit their feedback. It's also a good idea to consider how users will input their data into the site. For the communities of practice we determined that splitting it in half was the best approach, creating a view-only and an administration side. The view-only side would allow anyone who came to the site the ability to read all the posted information about the performance. The administration side would allow the users to add items to each of the pages via web page forms. After submitting their information to the site they could return to the administration menu to edit and delete their entries. By creating these two environments, it gave information control and administration to the individuals that owned the information, getting rid of the need for a webmaster or database administrator.



The web form input fields (the areas where you would enter things like name and address into a web page) are directly related to the database schema. For every input field that exists in the web form a database field exists. In general the process would be: input "name" via a web page form, a "name" is submitted into the name field in the database, a "name" is extracted from the database name field and populated in a web page; all of which is being completed via the ASP. So once the administration area was built we could begin to populate the database via the web forms. After which we could

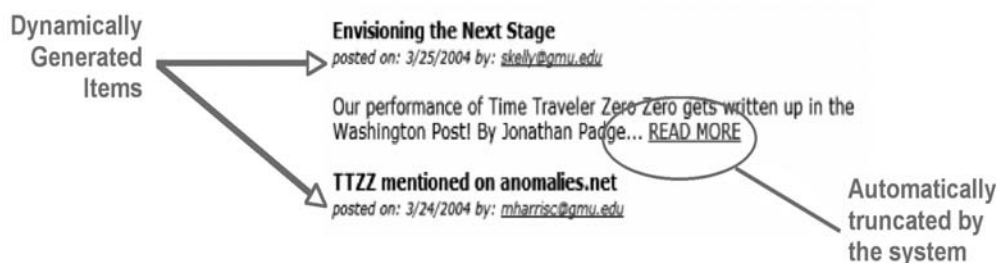
extract the information from the database to populate the view-only pages. We'll repeat this process many times for every page to work out the bugs, refine the interface and to ensure they meet the users' needs.

The Home Page of the site needed to be unique in function from all the other pages. Instead of submitting information via a web form to populate the Home Page, the Home Page collects information from the database and displays it by date, showing you the most recent updates to the site. By creating the Home Page to function in this manner it required no one to manage it, keeping our web site management strategy consistent.

Once the site was built and published in a live web environment it was time for the users to engage it to aid with their project collaboration. Users would initially have to create an account that would require them to enter items like name, email address, phone number and password. In addition it would ask for information about their skills and what group they would primarily work in (as depicted in the following screen capture).

Skills (check all that apply)	
Dramaturgy	<input type="checkbox"/> history <input type="checkbox"/> research <input type="checkbox"/> supporting materials <input type="checkbox"/> cross-references <input type="checkbox"/> related work
Scenography	<input type="checkbox"/> set / sculpture <input type="checkbox"/> lighting <input type="checkbox"/> costumes <input type="checkbox"/> props <input type="checkbox"/> puppets <input type="checkbox"/> electronics <input type="checkbox"/> robotics <input type="checkbox"/> animatronics
Sound / Music	<input type="checkbox"/> sound design <input type="checkbox"/> sources <input type="checkbox"/> playback <input type="checkbox"/> microphones <input type="checkbox"/> amplification <input type="checkbox"/> vocals <input type="checkbox"/> instrumentation <input type="checkbox"/> conception <input type="checkbox"/> integration
Projections	<input type="checkbox"/> artwork <input type="checkbox"/> still <input type="checkbox"/> animated <input type="checkbox"/> 2D <input type="checkbox"/> 3D <input type="checkbox"/> screens <input type="checkbox"/> front and rear projection <input type="checkbox"/> scrims <input type="checkbox"/> machines <input type="checkbox"/> video <input type="checkbox"/> slides
Direction / Choreography	bodies as: <input type="checkbox"/> motion <input type="checkbox"/> talking <input type="checkbox"/> behavior <input type="checkbox"/> pictures <input type="checkbox"/> sculpture <input type="checkbox"/> music <input type="checkbox"/> movies <input type="checkbox"/> machines
Production / Coordination	<input type="checkbox"/> production notebooks <input type="checkbox"/> storyboards <input type="checkbox"/> sound and light plots <input type="checkbox"/> set design <input type="checkbox"/> costume sketches <input type="checkbox"/> multimedia sequence charts <input type="checkbox"/> cue sheets <input type="checkbox"/> rehearsal reports <input type="checkbox"/> contact sheets
Management	<input type="checkbox"/> budgets <input type="checkbox"/> schedules / calendars <input type="checkbox"/> publicity <input type="checkbox"/> fundraising <input type="checkbox"/> website
YOUR PRIMARY GROUP: <input type="text" value="Direction / Choreography"/>	
<input type="button" value="Create User Account"/>	

After creating an account they could begin posting information to any of the pages in the site. In addition, their account information would be re-used by the site to populate the People page. Once logged into the system your user name and the date and time would be automatically captured by the system for every submission the user made. By doing this, the user and the system could track activities. An example of the system tracking your activities would be Search. The Search function could query all entries submitted by a user, so Tom B User could search the site for everything he submitted to it. Another example would be on the view-only pages. Users who submitted items to these pages would always have their email address attached to the items in case a viewer had a question about a posting and wanted to contact the author (as seen in the following screen capture).



This enabled the site to be more robust with content while requiring the users to enter very little. By using these dynamic content generation tricks it allowed the site to have a consistent interface while being informative and require the users to enter only the information specific to the pages they wanted to populate.

With the creation of this Community of Practice for the Multimedia Performance Studio, participants were able to engage the pre-performance coordination, utilizing web technologies that enabled them to coordinate on a level that was previously unreachable. They could upload links, news, photos, graphics files and animations, and blog and query the project enabling them to have a faster response to schedule and scene changes; multiple artists could collaborate on a single graphic or animation; music could better coordinate with scenography, and management could track everyone's progress. All while saving a snap-shot of the environment during the performance to aid in future planning and assessment. The MPS Community of Practice was an innovative approach to solving some of today's hardest project collaboration issues.



KIRBY MALONE

COLLABORATIVE PRODUCTION

MULTIMEDIA COMPOSITION, DESIGN AND PRODUCTION FOR “LIVE MOVIES”

• Narrative:

- montage: the language of images (close-up, long shot, dissolve, cross-fade, super-imposition, rhythmic cutting)
- “live or memorex?”: live performers interact with, become, transform from, pre-recorded and “live” projected characters
- setting (illusory, sculptural, suggested, explicit, immersive, kinetic)
- cinematic techniques (fast-forward, freeze-frame, rewind, slo-mo, flashback, split screen)
- comic book techniques (thought and word balloons, juxtaposed tableaux of frozen action)
- documentary techniques (super-titles, sub-titles, timelines, archival footage and imagery)
- dream states: the stage as a portal (or “dream window”) onto a world of altered consciousness

• Media:

- digital and conventional photography
- film and digital video
- archives, libraries and the world wide web
- digital imagery: Photoshop, Painter, Illustrator, etc.
- digital motion graphics and animation: AfterEffects, Maya, Flash, Motion, etc.
- digital compositing and editing: Final Cut Pro, Premiere, etc.
- digital sound: ProTools, Digital Performer, etc.

• Machines (projectors, media servers, audio, etc.):

- media servers and show control (Dataton Watchout, High End Systems’ Catalyst DL2, DVD players, video editors)
- video/ data projectors: DLP (Digital Light Processing) vs. LCD (Liquid Crystal Display), and how they compare in regards to lumens (brightness), contrast ratio, etc.; lenses, installation, etc.
- video production equipment: cameras and camcorders, lenses, lights, cabling, tripods, dollies, etc.

- sound equipment: samplers, mixers, processors, microphones (wired and wireless), acoustic and electronic instruments, amplifiers, speakers, etc.
- relationship to lighting technology and design (goboes, moving “intelligent” instruments, DMX, Ethernet, fade rates and synchronization, etc.)
- **Screens and Scenography:**
 - scrims
 - front- and rear-projection screens
 - kinetic scenic elements (turntables, tracks, traps, costumes, robotics, animatronics, environmental “wraparound” designs such as “virtual caves,” etc.)
 - relationship to scenic and costume design
- **Design and Production:**
 - script analysis
 - drawings, sketches, renderings
 - storyboards
 - multimedia sequence charts, shot lists and cue sheets
 - scenic models: “virtual 3D” and “real world” tabletop

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NOTES FOR COLLABORATIVE PRODUCTION

meaning, content, subject matter, value, ideas, emotions, art in time

words and language, scripts and texts

dramaturgy

history
research
supporting materials
cross-references
related work

scenography

projections
set/sculpture
lighting
sound and music
costumes
props
puppets
electronics, robotics
and animatronics

sound/music

sound design
sources (samplers, archives, etc.)
playback (mini-disc, DAT, CD, laptop, etc.)
microphones (wireless, contact, etc.)
amplification
music
vocals
instrumentation
conception and integration

projections

- artwork
 - still, animated
 - 2D, 3D
- screens
 - front and rear projection
 - scrims and other surfaces
- machines
 - show control
 - video/data
 - slides
 - other
- formats (digital files, miniDV, S-VHS, DVD, etc.)

direction/choreography

- bodies as motion
- bodies as talking
- bodies as behavior
- bodies as pictures
- bodies as sculpture
- bodies as music
- bodies as movies
- bodies as machines

production/coordination

- production notebooks
- storyboards
- sound and light plots
- set designs (2D, 3D models, 3D animation)
- costume sketches
- multimedia sequence charts
- cue sheets
- rehearsal reports
- contact sheets

management

- budgets
- schedules/calendars
- publicity
 - press releases
 - documentation
 - press kits
- fundraising
 - hustling
 - grants
 - venture philanthropists
 - in-kind
 - alliances
 - commerce
 - the biz