

Distributed Opera: new stagings, new roles

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With the development of commercial distribution models for sharing music and musical experiences over the internet, the online screen is beginning to emerge as a significant platform not only for rock, pop and classical music experiences, but also for experiencing opera. Parallel to this extension of the audience for mainstream opera into globally dispersed networked communities, experimental artistic explorations into virtual audio-visual technologies have spread to the intersection of music drama, opera and the internet, seeking to modernize, advance and possibly transform the nature of opera as a multi-media art-form within an online virtuality.

This article considers changes and confluences in the relation between opera stage and auditorium in virtual opera experiences. The evolution of a virtual opera stage occurs partly within a linear development of the opera stage as a real place for live performances typically transformed since its origins by technological illusions and effects in the tradition of the *Deus ex machina* trope, and partly within a rejuvenated virtuality admitting of hybrid, virtual and augmented realities, involving pre-produced audio-visual scenes.

Further, the article considers how the schizophonic disembodiment of the singing opera figure, combined with growing opportunities for some level of participation and interaction by the viewer, may introduce concepts of distributed agency into opera and music-drama experiences.

Finally, these reflections are brought to a close with a description of an opera presently under development, for distribution as a tablet application – Signe Klejs and Niels Rønsholdt's *Breathless Moment*.

Distributing mainstream opera

It is reasonable to expect that the networked human computer interface will bring important new perspectives to music theatre and opera. (Interface can be understood quite broadly at this stage, as embracing stationary and mobile computerised devices and their ancillary physical interfaces such as the mouse, keyboard, controller, touchscreen, microphone, speaker and camera.) We can say this on the basis of the current development of online musical experiences - a development that has been long awaited, but is first now becoming a viable audience reality, even in the classical music industry. Rooted in the presumed autonomy of a live, acoustic event, classical music typically faces a number of technical and social challenges to the acceptance of its mediated representation or reproduction. Nevertheless, several models for relaying classical music events live (or as-if live) over the internet have recently gained acceptance and popularity with viewers. One leading example is the case of the Berlin Philharmonic's Digital Concert Hall, now successfully producing not only publicity and revenue, but also an emergent online audience community, through the sale of tickets and monthly or annual subscriptions to concerts experienced online. Within the field of opera, there is the Metropolitan Opera's concept of videocasting from New York live over the internet to cinemas throughout the world - a timely update of the former 'live from the Met' radio broadcasts. Both the Berlin Philharmonic's Digital Concert Hall and the Metropolitan Opera's *Live in HD* are now well established and broadly accepted as viable cultural experiences for a broad and

diverse global audience looking for the online mediation of typically live, acoustic classical music experiences.

These two cases have each in their own way overcome technological challenges to the task of producing musical experiences of sufficiently high quality to satisfy classical music aficionados, in order to grasp the potential of wider audiences. Both initiatives arise from the recognition that new online technologies are ascribed huge economic value. The promotion and marketing of these concepts, successfully embracing the use of social media, has additionally succeeded in producing new social contexts within which listeners can experience music while having the sense of an audience community.

While the future of virtual opera, for some, is a vision of watching grand opera streamed live on a computer or TV screen at home, in the local cinema, or in an outdoor public viewing situation, with headphones, surround sound or massive PA systems, for others, it contains the hope that the elements and opportunities of opera may gain a new stage on the internet, enabling the creation of alternative aesthetic experiences involving dramatic music and visuals, narratives and vocal figures. On this second model, the mediatisation of opera would not only reproduce existing repertoire in more media formats, but would entail the production of opera experiences *for* specific mediatised formats, where the production of an opera would come together in its mediatisation. Presuming that these two models – virtually distributed opera, and opera produced for virtual stages – will both persist and ultimately influence one another, we can expect that interesting new audio-visual manifestations and formulations of drama, stage, figure and voice will arise in the field of networked virtual opera.

I will make some observations on topics that may affect the general field of opera presented via the internet, before going on to discuss dramaturgical choices emerging in a tablet opera presently under development for the Royal Opera House in London: *Breathless Moment*, by Signe Klejs and Niels Rønsholdt. The general topics considered here are: spectacle and mass media; immersion and interaction; the virtual space of the digital opera, and; the consequences of schizophonia and disembodiment for the development of figure and role in internet opera experiences. These categories of reflection are relevant to my considerations of dramaturgy in relation to *Breathless Moment*.

Critique of spectacle and mass media

Regarding the internet as the paradigmatic mass media of our time, one aspect to consider in the coupling of opera and its distribution over the internet is the critical tradition associated with the concepts spectacle and mass media in relation to the arts. Descending from a Marxist critique of commodity fetishism, reification and social alienation, cultural theory in the 20th century was permeated by considerations of the role of technology in relation to the development of the arts and cultural forms. On the one hand, there was the belief that art could be revolutionised by technology and that this technological revolution, enabling a closer alignment of aficionados and the broader public, would bring about collective modes of production and reception in art. On the other hand, there was the question of how the aura of ritual and cult that once surrounded art, staging its artworks as precious and autonomous, would fare in the face of art's technologisation and associated developments such as reproduction, proliferation and distribution, the identity of originals and copies, and the separation of artistic experiences from original works.

In relation to the internet, this sceptical debate has continued in the form of concerns about how the economic hierarchies of the internet encourage a superficialisation of content distributed

via this form of mass media. On the other hand, however, there is a growing recognition that the internet presents opportunities for artists to attempt new forms of experimental aesthetics, offering fruitful forms of resistance to the expectations and habits that spectators attach to the new medium.

We are accustomed to having audio-visual experiences via the internet that approach the spectacularity of operatic dimensions, such as following news - of global reach or deeply personal intimacy - as it breaks via tweets, videocasts, photoblogs and other media flows where content may be generated by individual users or large organisations. We are accustomed to the aestheticisation of daily life and of personal tragedies great and small, mediated by audio-visual devices such as laptops, tablets and smartphones.

In contrast to the framing of chamber and orchestral music as absolute and distanced from worldly affairs, opera has historically been regarded as offering a creative stage for articulating protest and social change (Zalfen 2010). The socially critical potential of opera stands however in great contrast to the spatial limitations of its historical diffusion: lushly decorated buildings accessible only to those able to pay for highly-priced tickets. This discrepancy became the bane of opera's development at the turn of the millennium, giving rise to criticisms of a kind of elitism that could no longer be supported by national public purses (Zalfen 2010, Hodkinson 2012). Mass media seem able to overcome this dilemma, offering for the first time the possibility for opera to escape one of its most dominant clichés in the public eye. As noted by Benjamin, the loss of aura through reproduction removes power from the notion of the original (in this case, the live, unmediated event produced at great expense for an extremely limited audience). Thus, digital technology has the potential to participate in the democratisation of opera. However, just as opera's socially critical potential was in earlier epochs limited by the contexts of its performances (the luxurious buildings accessed by privileged audiences), there is presently only reason to believe in the democratisation of opera by its mediation through digital technology and online distribution so long as these technologies and the internet are regarded as non-hierarchical spheres of distribution. That is to say, although in the early days of widespread internet usage, many hailed the free-exchange and gift economy principles possible in the internet, we now know that being online in 2013 is as much a matter of commerce and property as with any other vehicle for mass communication.

The critique of spectacle in relation to mass media also attaches to a feared loss in the experiential qualities of events that occurs when what once was experienced live becomes subject to a modern-day diffusion through mass media. This criticism is directed towards the inevitable simplification of complex events (with its attendant danger of vulgarization) when filtered through broadcast media (Debord 1967). The criticism is also directed towards a commodification of experience that takes place when events are lifted out of reality. And finally, the reification of experience is claimed to produce passivity in the viewer, removing the viewer's possibilities for reacting and participating in socially complex situations.

One station in the discourse on the aesthetic experience of spectacles through mass media was Adorno's comparison of phantasmagoric effects in Wagner's operas and early mainstream cinema (Adorno 1991). Adorno regarded the key to the appeal of Wagner's *Gesamtkunstwerk* as being the music-drama's ability to bring about a sensual bombardment of the listening viewer. The combination of Wagner's music with other artistic means evoked for its staging seduced viewers in a magical delusional effect that he described as phantasmagoria. Adorno counted among the characteristics of phantasmagoria: optical illusions; a dream-like character; an erasure of an ordinary sense of time passing (in favour of an experience of an extended moment); the eclipsing of everyday topics in an extravagantly ardent expressive mode, and; themes of sexual decadence

and deviance. Although these characteristics seem idiosyncratic, it may be worth bearing them in mind as we seek to describe aesthetic online experiences with opera as an artform. Adorno also believed that Wagner had deployed these phantasmagoric effects specifically in order to reach a larger audience – an argument that is also worth considering not only in relation to media such as mainstream film, but also the internet, with its global reach.

The ability of Wagner's music dramas to produce these effects in listeners resonated, for Adorno, with what Walter Benjamin had described as the aura of the artwork (Benjamin 1968). But Adorno and Benjamin differed on their view of how the technology of the film medium impacted on the aura of artworks. Adorno felt that Hollywood films also produced an effect similar to the aura of the Wagnerian artwork, while Walter Benjamin argued that film's mechanical reproducibility robbed it of its auratic character.

Immersion, interaction and participation

At this point, it is worth broadening the discussion of spectacular effects and mass media to include the concept of immersion, which – together with strategies of illusion - has played a major role in the relationship of art to machine technology in all epochs (Grau 2003). The concept of immersion is central to the creation of virtual environments, and therefore crucial in our considerations of the evolution of operatic stages and figures in online opera experiences. Similarly central to virtual environments are the concepts of interaction and participation – interaction often implying some physical involvement on the viewer's part mediated by technology, and participation indicating some level of social empowerment through access to a social network or community facilitated by mass media. While immersion is a receptive mode, and interaction and participation indicate more physical activity, the mobilisation of all three terms in relation to the making and experiencing of artworks online indicates a movement away from a merely passive contemplative mode in the beholder towards increased involvement of the viewer and some degree of distributed or collective authorship.

We may regard immersion as initially representing a contrast to the kind of critical distance proposed in Marxist theory under the term 'alienation', with experiences of immersion involving states of sensual and emotional seduction, and experiences of alienation involving intellectual rationale and goals of 'understanding' artworks. The aim of most virtual environments is to install an artificial world that fills the viewer's entire sensory field, offering an all-embracing totality akin to the phantasmagoric effects of Wagner's operas described by Adorno.

But while Adorno associated phantasmagoric effects with the production of spectacles and an attendant passivity in the viewer, immersion in digital and virtual art may be coupled with some level of participation, feedback or digital interaction, such that there would be no contradiction in talking about the ubiquity of immersive interactive environments in virtual art. For the design of such environments the productional issues then revolve around what kind of interface and digital environment the viewer will interact with. Users' possibilities for active participation will vary from simple viewing to complex interaction of the type familiar from some computer-games. Thus, concepts of interactivity and participation must be defined specifically in each instance. For each interface, it is necessary to consider whether and how the sender-receiver model is extended, or even possibly transgressed, and whether the system demonstrates adaptivity through user feedback.

Despite these developments, user-generated content is not yet a main area of inquiry and exploration for the development of online opera experiences in the future. Although professional artists have been creating networked collaborations and real-time online musical performances

since the 1990s, we are still in the early days of user-generated content within artistic contexts. Opera is a multi-disciplinary art form that combines vocal and instrumental music, dramatic and literary traditions, the visual and plastic arts, and all their attendant artistic structures. Every opera is therefore a highly complex expressive matrix, in which various aesthetic systems combine and compete contrapuntally to influence structure and purvey form and narrative. It remains at present an open question what kind of opera would be able to honour the level of artistic and compositional complexity at play in advanced opera, while opening itself up to collective input. The following case, *The Twitter Opera*, demonstrates the challenges faced by user-generated content.

In 2009, the Royal Opera House in London staged *The Twitter Opera*, which was a first attempt at opening up opera to user-generated content – more specifically, crowdsourcing, i.e. the application of open-source principles to fields outside software. *The Twitter Opera*'s libretto was made up of tweets posted by opera fans on a dedicated Twitter mini-blog. This strategy aimed at augmenting audience proximity to the making of opera through a spontaneous collaboration that required no preparation or particular competence beyond the composition of tweets, short texts of up to 140 characters. The tweets were then edited into a libretto by John Lloyd Davies, with only about 2-3% of the submitted tweets being used in the final lyrics. The complex process of mass participation in generating cultural text was thus filtered through the traditional trope of the individual author. The libretto was then set to music that integrated familiar opera tunes into a newly-composed score by Helen Porter and Marc Teitler. (Carbone and Trimarchi: 228-233). We cannot really talk of distributed authorship, or its inverse live equivalent 'audience participation' in any artistically serious sense here.

Social and media networks unleash new forms of collective expression and interpretation, in which interlinking chains of responses and prompts produce different forms of social manifestation and social movements. Since the early 1990s, when chat-rooms arose, the textual potential for virtual reality came into view, offering hypertextual dimensions. While various alternatives to the way that the libretto for *The Twitter Opera* evolved could be imagined – still within the goal of allowing opera lovers to participate in the demystification of the process of making operas - and while technology for the collective or social development of concepts is constantly developing, the fact remains that we probably value the complexity of opera's integration of various artistic media and refined use of stage technology too much to be able to be genuinely satisfied by operas generated through mass participation.

A team surrounding composer Tod Machover at MIT has been developing interactive tools for virtual music-making by professionals and amateurs alike since the 1980s; their results to date include hyperinstruments and Hyperscore, software programmes that facilitate instrumental virtuosity and composition by non-professionals, and mass collaboration, such as in *A Toronto Symphony* (2012). Machover has also created technologically advanced operas such as the *Brain Opera* (1996), which included playful inputs from live audiences and online viewers, and *Death and the Powers* (2012), in which the stage features both robots and a virtual scenography that is moved by remote control through the performance gestures of the main singer. Despite the coupling of this set of interests – mass participation by amateurs, and the use of advanced technology in opera stagings – with a considerable and ongoing research activity, Machover's projects demonstrate that we are some way from being able to produce human computer interfaces that are intuitive enough for many people to take part in the making of opera, and at the same time sufficiently refined for the result to be aesthetically and emotionally complex and spectacular.

Opera and computer games

We may be able to imagine the potential consequences and opportunities for opera more vividly if we look at the development of computer and video games – an audio-visual internet format that is paradigmatic for the development of online experiences, providing developmental models for all forms of internet activity. Just as social media are paradigmatic for distribution of any product via the internet, and thus integral to the building of audiences for opera distributed in this way, computer games are paradigmatic for the development of narratives produced specifically to be experienced through the human computer interface. The gaming industry has devoted decades of research and development to the strategic evolution of immersive audio-visual experiences. Opera produced for online reception and distribution may be expected to take its cue from the dramaturgical strategies evolved in computer-game production.

Opera and computer games share many similarities, such as their common preoccupation with creating immersive audio-visual experiences, and the modern interpretation of archetypes and myths and epic quests familiar from ancient times. But computer games pose completely new dramaturgical and narrative demands on a form of representation such as opera. Opera typically combines dramatic and literary (poetic) traditions, live vocal and instrumental music, visual and plastic arts to tell stories in which musico-dramatic structures are constituted by thematic relations across a work, as well as by individual numbers. Despite some competitive jostling between disciplines ('directors' opera', for example), live music is the chief dramatic and structural agent in opera. Dramatic climaxes and tension-building music must be conceived very differently when the relatively linear narrativity of live opera is replaced with multi-linear narratives constructed through viewing choices that cause the order of events to pause, repeat, or jump forward or backward. The dramaturgy of computer games is mainly oriented around the fulfilment of certain ultimate goals – typically, staying alive, avoiding fatal dangers, or finding a holy grail – while the player acquires skills at an increasingly high level. The viewer is a player, and the player is a protagonist, often embodied in an avatar. This avatar may be visually and stylistically very simple, or may represent an advanced fantasy-figure with complex characteristics. The player not only influences the behaviour of the avatar, but also has responsibility for its actions and survival.

In terms of musical structures, computer games pose completely new dramaturgical demands on composers. Whereas in the case of film, image and music can be perfectly aligned, and in opera, through-composed music provides the time-frame within which all other narrative structures must be resolved, a computer-games composer cannot predict which actions the player will execute and when a dramatic climax may require a tension-building music. In the vast majority of games, this has resulted in a separation of music from the dramatic structures of the game; short loops of jingle-like music are repeated without regard to the dramatic development of the game, delineating the establishment of worlds and levels rather than the accumulated emotional experience of the main characters and the complexity of their interaction with one another. In games that exhibit a more developed relationship between musical structure and game structure, the music may be composed of an underlying mood layer, with individual details relating to the actions of an avatar. This is the case in Playdead's video game *Limbo*, released in 2010, for which Martin Stig Andersen created the audio. A kind of electronic ambience emerges - a *film noir*-ish steady rain of quiet analogue static and electronic cicadas in the background, out of which discreetly differentiated individual sound objects arise. The sounds of discrete actions, such as footsteps, are made up of several separate sonic components, allowing the composer to vary the combination of components at each repetition, making each footfall sound unique. This level of detail in the inner composition of the

sounds, stemming from Andersen's background in studies of acousmatic music and the creation of sophisticated electronic sonic objects, enables the creation of a sound aesthetic that is both darkly urban-industrial and yet also has the organic feel of a world close to nature, as experienced by a child running through a forest landscape.

Stages and interfaces

Regarding opera in the internet under the aspect of the stage image entails considering both what technologies replace the wings, backstage and machinic splendor of a well-staged opera, and what internet behavior replaces the experience of being part of an opera audience in an opera house.

In this context, as in others, viewing and listening are embodied in acts, spaces, and habits related to the technological conditions of viewing.¹ A consideration of the technology of viewing must of course take account of how different human computer interfaces impact on viewers' involvement and experience. Here, too, it is to be expected that the designing of interfaces for online opera experiences may follow the development of interfaces in computer gaming. Where once game consoles were required for a user to move and act within a constructed virtual environment, the move in games media from stationary computer to tablet or smartphone has enabled interactive situations to progress from the requirement of a prosthesis (console or mouse) to a more literally tactile contact between image and user, where commands can be given, and manoeuvres more plastically performed, at the touch of the fingertips: tapping, pinching, dragging, flicking and scrolling are the new left, right, up and down. I will come round to more specific observations on the touchscreen as interface during my discussion of *Breathless Moment*.

With the online screen, the elements and possibilities of opera as a multi-medial artform in the broadest sense of the term win a new stage - or, to be precise, many new stages. On the online virtual stage, there is an almost infinite number of computer screens on which to distribute pre-produced digital audio-visual content. Consequently, there is a parallel diversity of hard- and software. The user's hardware for reproducing the visual space and audio diffusion is inevitably of varying quality, speed and size. Diversity in the depth of information, as a function of the resolution of the display (i.e. the amount of data encoded in the transmission channel), is possibly the greatest hurdle for both quality-conscious opera houses and also for experimental music-dramatic productions.

On the one hand, the internet separates stage and auditorium spatially from one another, removing the audience spatially and temporally from the scene that it is viewing; on the other hand, the internet offers an opening for viewers to enter, digitally, into a dramatic environment, moving around a scene that previously would have been experienced through the visual interface of the 'fourth wall' of the stage-front. This prompts a medial transformation in the relationship between performance and viewing, erasing to some extent the proscenium separating stage and auditorium by the insertion of an alternative interface. The screen is, of course, still a material barrier between the viewer and the technology/backstage, but it can be touched (and not only observed), and the viewer's touch may change important parameters of what is shown or even change the course of the dramatic events. Possibilities for networked viewers to interact are becoming, over time, not only progressively greater, but also more varied, and the online viewer of music-drama attends both as part of a new type of online audience community and as an individual - a user, viewer, spectator, and maybe even participant.

1) The re-enactment of para-social relations lost in the transfer of opera from stage to screen was discussed by musicologist Sarah Zalfen, in her paper 'Listeners in Solitude, Listeners as Collectives', given at the symposium *The Art of Listening – Trends und Perspektiven einer Geschichte des Musikhörens*, held by the University of Potsdam at Radialsystem Berlin, in July 2012.

Separation of production and reception – schizophonia and disembodiment

Online listening is the latest manifestation of what Murray Schafer called ‘schizophonia’, the separation of a sound and its electroacoustic reproduction, or, the technological separation of sound production and reception. Schafer made the distinction in order to emphasise and articulate various antagonistic relations between art, daily life and aesthetic listening. The question, for projects staging the digital reproduction of opera, is in what ways this separation leads to either an enhanced or a diminished experience for the opera viewer. The factors at stake may include presence, liveness, sound quality, embodiment, and identification between performer and audience. Opera as a live art involves liveness and communion in time and space; the performer’s body, or presence in a medium; and a direct relationship between performer and audience. The spatial separation of performers and listeners is already familiar from radio listening and television viewing, where viewers are rarely seated for long periods as in the opera house but rather tend to have the radio or television on while performing other tasks. Online listening as a practice oscillates similarly between different states of attention, and may coincide with reading and writing e-mails, chatting by text or doing work. Individual and para-social dimensions are connected in flexible and often paradoxical ways, such that a loss in one relation involves a gain in another aspect of the same relation.

The separation of musical production and reception in online opera offers opportunities for disembodiment, with consequences for new conceptions of, for example, role and figure. This is true not only for opera but also for all technologically mediated stagings of bodies and voices. Virtual online environments developed for gaming and social networking display a high level of audio-visual casting and transformation of identities – in turn offering new models of role-formation. It is to these transformations that we may look to imagine the future of opera in these respects. Even before considering the question of user-generated content through online participatory networks, the potential for advanced emerging media technologies to influence the dramaturgical development of opera’s conceptions of figure and role seems assured. One experiment in the creation of a virtual stage for opera that directly addresses the issue of disembodiment is the opera project *Death and the Powers* mentioned above, led by composer Tod Machover at MIT. In this opera, Machover seeks a new performance expression and style. The movements of the singers are registered by sensors and transferred to a virtual set-design. In the development phase of the opera, singers were asked to react to emotional cues such as ‘joy’, ‘anger’, ‘sorrow’, etc. with ‘typical’ gestures from the choreography of 20th century operas. From these movements, it was possible to deduce that positive emotions were most commonly accompanied by vertically orientated movements in the left hand and left arm, while negative emotions were dominated by the right side of the body, making horizontal movements. These movements were then transferred onto virtually formed, or visually projected bookshelves, lamps and walls on the stage. The idea is that in performance, the singer – standing in another room – is able to move the objects of the set-design on the stage, bringing them into affect through his own movements using the sensor system. Furniture moves, walls change colour, the chandelier begins to function as a virtual musical instrument, etc. The research team working on the opera and its associated technologies calls the result ‘disembodied performance’.

Figure and role in historical and internet opera

In the intersection body/internet, the networked human body is undergoing a process of virtualization. This is driven mainly by relationships of power and control surrounding the

negotiation of the online individual, but also has spin-offs for experimental art. Visions of the self as disembodied or able to be modified more fluidly online lead to fantasies of self-determination and liberation. The invention of avatars and other virtual bodies has created a thirst for acting out new personae in cyberspace; Jared Cohen and Eric Schmidt propose that in the near future the world's online population will exceed the population of the earth, by virtue of a combination of a growth in the number of people networked online worldwide and the fact that some of them have more than one identity in the internet (Schmidt & Cohen, 2013).

The scenario relevant for our purpose here, considering the development of operatic figures and role within a partly disembodied, networked paradigm, is that a suspension of the limits defining body could also be providential for rethinking and reconceiving aspects of identity such as gender within an artform such as opera. This is so not only because opera's rich conceptual and aesthetic history provides a gallery of roles and figures with which to discuss the contemporary audio-visual staging of roles in virtual or hybrid environments (computer games also involve interesting concepts of role-play between virtual identities such as avatars, and many of them exhibit similarly heroic, tragic or magical traits as opera figures); operatic figures are made up of bodies and, crucially, voices. The role of gender in figure is crucial in opera, because of the natural qualities and limitations of vocal registers. In the operatic tradition, this has led to both a number of seemingly immutable conventions about the portrayal of gender stereotypes, and also a parallel maverick trend towards wrongfooting audiences with the use of cross-dressing and punning through costumes, and, more essentially to the music, the employment of unusual vocal tessituras, and skilful vocal writing for extraordinary and uncommon vocal talents. During the Baroque, heroic roles were typically sung by castrati – males singing in the conventionally female alto or soprano ranges. This tradition arose during a time when women's right to perform in public was extremely limited, thus creating a need for men to sing women's parts. A castrato probably sung the female role of Euridice in the first performance of Monteverdi's *L'Orfeo*, for instance. Since the decline of the castrato, roles written for, or typically sung by castrati have been replaced by the use of either women, or countertenors or falsetti.

Erin Manning, in *Politics of Touch*, explores some paths along which research on the senses can extend beyond commonsense approaches to sensing and the body, suggesting consequences for alternative constructions of discourses on gender, biology and politics. Maybe the same can be imagined in relation to opening up to artistic manifestations of voice and body (i.e. the singing figure) that extend beyond the traditionally live vocal role.

Manning works from a background in dance, and thinks of a 'working' body as a *sensing body in movement*. She makes the point that touch is not just the laying of hands, but an act of *reaching toward*, so that touch forces us to think the body alongside notions such as repetition, prosthesis and extension. She warms to the Deleuzian 'body without organs', which can be well exemplified by the virtual or online figure – be it an avatar, a graphic animation figure, or other invented figures modeled on real bodies. But the aspects prosthesis and extension are also at play in our relationship with the technologies that deliver virtual experiences in the internet: tablets, for instance, are held close to the body and operated via a touchscreen over which the user's fingers glide, slide and hover - stroking, pinching and parting. In experiencing an opera at a computer device such as a tablet, the viewer is potentially as much a working body as an operatic figure.

So, a consideration of producing opera via the internet involves reviewing the relations between body and sensing not only in terms of what consequences digital online media have for the dramatic figures portrayed, but also the for the body of the listener and the physical contact involved between listener and medium, impacting on the content – or the presentation of the content – displayed.

Breathless Moment

Breathless Moment is a tablet opera devised by interactive media art designer Signe Klejs and composer Niels Rønsholdt, presently under development in collaboration with the Royal Opera House in London and the Center for Advanced Visualization and Interaction (CAVI) in Denmark.

The opera is designed with a high level of sensitivity to the medium through which it will be experienced, taking account of the habits of tablet users, in particular habits related to experiencing cultural forms such as films and music in the personal zone of the tablet.² The choice of the tablet format for *Breathless Moment* is partly rooted in the observation that tablet users are accustomed to having frequent contact with the device while viewing, and that this contact, via the user interface, is both light and intuitive, encouraging a variety of interaction techniques.

After downloading *Breathless Moment* as an App, the user is recommended, on the introductory splashscreen, to wear headphones. The music in *Breathless Moment* is composed with recordings of acoustic instruments and voices (the Danish Radio Concert Orchestra and Radio Choir) and electronic material and effects. The composition takes account of a loss of range in frequency and decibels through the limits on reproduction quality imposed by the tablet medium's digital-to-audio converters, by omitting the extremes of register and volume otherwise common in contemporary music.

Visually, the point of view follows a virtual camera path, a camera track along which the viewer can move. The viewer decides the speed, but the path is laid out in advance. Movement within the scene is frozen in time, so that the viewer moves through a static situation – an inversion of the situation in live opera where the audience sits passively while figures and stage-sets move and change. Moving through frozen time, the viewer zooms away from an extreme close-up (of an eye, seen through a texture that reveals itself as a veil) to a panorama exposing the entire dramatic scene. This progression takes place via the close exploration of various scenes, where the viewer may choose to linger, causing the dramatic structure to dwell in certain spaces, filling out the time spent there with a gradual deepening of musical complexity rather than a linear development of narrative.

Choreography and composition

Although operatic figures were never common-sense, they often performed in ways that, for the given epoch, summarized recognizable emotional and sensory behaviour. Although such behaviour might not be exactly normative, it at least fitted into patterns. The Baroque choreography of poses representing a series of affects was one of the most codified operatic choreographic languages. The movement of the viewer of *Breathless Moment* through a scene in which it is possible to move along a predetermined path, but not to interact effect the action similarly fits a mode of digital behavior familiar to 21st-century computer users from video games.

At the beginning of one of the opera's three parts, we see a close-up of an eye with a pattern superimposed upon it, which gradually reveals itself as a veil. This part proceeds by an expansion of the visual field that is simultaneously a gradual unveiling of the dramatic situation, focusing on the figure of a veiled mother grieving at the funeral procession of her son, a young man lying on a stretcher. We are viewing an interpretation of the tragic story of Iphis, from Ovid's *Metamorphosis*, a young man who commits suicide in a final and redundant attempt to attract the attention of

2) At the time of writing, *Breathless Moment* exists as a trailer and a pilot. Information about *Breathless Moment* cited here derives mainly from the trailer and from an interview with composer Niels Rønsholdt conducted on 1st May 2013 by Skype.

Anaxarete, with whom he's fallen in love. In the *Metamorphosis*, the gods punish Anaxarete for her conceit and coldness in rejecting Iphis without responding to his attempts to address his unrequited love to her, by turning her into stone. The point of view of the camera that the viewer controls via touchscreen turns out, when fully revealed, to be the final vision of the funeral scene seen by Anaxarete before she is turned into stone – her overall view of the tragedy, in all its frozen drama.

The opera leans on archetypal dramatic figures from Ancient Greek literature and on the Greek tragic theatrical convention of the homogeneous chorus, while successfully adapting musical and dramatic expression to the medium and media habits of the tablet opera viewer. Both in its modeling on figures from Greek tragedy, its use of a choir, and the formal deployment of structural repetitions akin to that of Baroque passacaglia forms and the classical Da Capo aria, *Breathless Moment* continues musical and dramatic traditions going back to early opera.

Looping is an essential musical structure in *Breathless Moment*. Presenting an opera on tablet entails taking account of the fact that viewers may stray from the action for short moments or longer periods. Tablet users typically have several programmes open, including communicative channels such as e-mail, instant messaging and voice chats. *Breathless Moment* is designed such that while the viewer is 'away from' the action, a musical looping takes place, enabling a smooth exit and re-entry. The refined integration of looping into the composed dramatic expression occurs along a sliding scale of various repetition functions. As in all periods of the opera tradition, comprehension of text is one good reason for repetition. But the new looping adaptation of aria structure has a role in supporting a new dramaturgy also. The camera path along which the viewer moves has audio zones. Each zone has its loops: an accompaniment, and a longer melodic phrase of 20-35 seconds, based on a passage of text. Musical qualities are supplemented as the loops repeat, such that the complexity and timbral richness of the sound continue to grow, the longer the viewer 'stays'. Also, there is a sense of accumulation through repetition and successive deepening that leads in the same direction, perhaps, as an operatic climax. This kind of dwelling supports an experience of immersion in a private world where the viewer is able to determine the intensity and duration of his or her own engagement.

Disembodiment and re-embodiment of figure and voice occurs through the fact that the viewer can choose, for some voices, whether they sing or whisper. By pinching the screen, the viewer can alter between singing and whispering modes for a given character; this action simultaneously offers the chance of focusing on text comprehension or on vocal expression.

Conclusion

I hope to have shown, with this description of *Breathless Moment*, at its present state of development, that artistic considerations of how to create an absorbing opera experience using a tablet interface involve designing both stage/auditorium and figure/role in relation to concepts such as immersion, interaction, participation, disembodiment and, to some extent, distributed agency. Re-thinking operatic techniques of composing, dramatisation and choreography in terms of these concepts offers opportunities for re-creating, in new forms, relations between performers and spectators in present-day virtual or hybrid opera experiences.

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