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White Paper: New Methods of Documenting the Past: Recreating Public Preaching at Paul's Cross, London, in the Post-Reformation Period

Submitted by: John N. Wall, Project Director

OVERVIEW

The Virtual Paul's Cross Project helps us to explore public preaching in early modern London, enabling us to experience a Paul's Cross sermon as a performance, as an event unfolding in real time in the context of an interactive and collaborative occasion.

This Project uses architectural modeling software and acoustic simulation software to give us access experientially to a particular event from the past – the Paul's Cross sermon John Donne delivered on Tuesday, November 5th, 1622.

These digital tools, customarily used by architects and designers to anticipate the visual and acoustic properties of spaces that are not yet constructed, are here used to recreate the visual and acoustic properties of spaces that have not existed for hundreds of years.

These tools enable us to integrate the physical traces of preFire St Paul's Cathedral with the surviving visual record of the cathedral and its surroundings to create a visual model of the Cathedral and its churchyard. They also enable us to experience a historically faithful interpretation of Donne's preaching style, based on contemporary descriptions of his capacity to engage his congregations imaginatively and emotionally and to delight them with his wit.

In accord with the methodological principles for developing computer-based visualizations (and now auralizations) of historically significant cultural sites set forth in the *London Charter for the Computer-based Visualisation of Cultural Heritage*, the Virtual Paul's Cross Project is defined as a "evidence-based restoration" of the north east end of Paul's Churchyard in November of 1622.

Following the Charter's concern for the importance of intellectual transparency in computer-based modeling and visualization of historic sites, the Virtual Paul's Cross Project lists all research sources and seeks to clarify how the various kinds of historic materials came together to make possible what one sees and hears on this site. This includes discussions of sources for all the elements of what one sees and hears on this site, as well as assessment of the relative values of different kinds of evidence.

In addition, clear distinctions are made between those aspects of the site that 1. represent historic information, or 2. offer representative approximations of lost structures, or 3. recreate lost experiences. In the case of the latter of these aspects of the Virtual Paul's Cross Project, the grounds for belief in the (extent of the) accuracy of approximations or recreations, as well as careful presentation of the assumptions guiding their development and realization are extensively delineated.

This approach is intended to help us to understand and evaluate our assumptions about the look and sound of the Paul's Cross sermon, to add experience in real time to our repertory of tools for interpreting these events, and – because it is flexible and open to change – to create the opportunity for testing and evaluating multiple models of the event it recreates as new information and new interpretations emerge.

As a result of this project, we are now more fully aware that early modern sermons were participatory and collaborative, improvised from notes, and responsive to specific local conditions like random ambient noise, crowd size, and the specific conditions of the setting, including the weather and the bells of the cathedral clock. We are also more fully aware that the details of performance conditions can sometimes be glimpsed in the surviving texts of these sermons.

Results of the project and a full account of the process of development are published on our website http://vpcp.chass.ncsu.edu. A blog that documents the progress of the project (http://virtualpaulscrossproject.blogspot.com/) continues to be supported and will be used to communicate information about future developments concerning this project.

We are also developing a proposal to complete our model of the entire cathedral and its surrounding churchyard, including an acoustic model of the cathedral's interior in which we will be able to hear complete worship services, including music, readings, prayers, and sermons for both the morning and evening observances of Christmas or Easter in the 1620's. This will include the performance of music composed for the Choir of St Paul's in the early 17th century, heard for the first time in 400 years in the space for which it was originally composed.

This Project has been the work of a highly collaborative international team of that has included historians, architects, archaeologists, linguists, actors, and engineers, and has been supported generously by the National Endowment for the Humanities and by the College of Humanities and Social Sciences, the College of Design, and the NCSU Libraries here at NC State University.

In addition, throughout this Project we have been supported and guided by members of our Advisory Committee. They have overseen the process, guided us in times of indecision, challenged us when we needed to be, encouraged us in times of crisis, and helped us bring this Project to a successful conclusion.

The full list of colleagues involved in the Project, as well as the full list of the Advisory Committee, may be found on the Project website.

A. Project Activities

As planned, we have created a three-dimensional visual model of St Paul's Churchyard and the Paul's Cross Preaching Station. This model brings the surviving visual record of St Paul's in the 16th and 17th centuries together with measurements of the original foundations of the cathedral and other structures still in the ground in London.

A fly-around view of the visual model is available here: http://vpcp.chass.ncsu.edu/fly-around-the-visual-model/. An account of the construction of the visual model is here: http://vpcp.chass.ncsu.edu/churchyard/view/.

An account of the resources we drew on for the visual model is here: http://vpcp.chass.ncsu.edu/churchyard/resources/. An account of meteorological and environmental information incorporated into the visual model is here: http://vpcp.chass.ncsu.edu/the-weather/.

We have also created a digital model of the acoustic properties of this space, inside of which we can hear a full two-hour presentation of a Paul's Cross sermon, delivered in original pronunciation in an acoustic setting that includes both randomly occurring ambient noise of crowds, birds, dogs, and horses and the regularly recurring ambient noise of the cathedral's clock tolling the hours and quarter hours.

We originally set out to assess the audibility of outdoor preaching for different sizes of crowds and from different positions in the crowd. We have completed this part of the project. Go here -- http://vpcp.chass.ncsu.edu/experience/ -- to hear excerpts of John Donne's sermon for November 5th, 1622 from 8 different positions in Paul's Churchyard and in the presence of 4 different sizes of crowd. We have also modeled different kinds of ambient noise. Go here -- http://vpcp.chass.ncsu.edu/listen-ambient-sounds/ -- to explore the sounds of birds, dogs, horses, and church bells in Paul's Churchyard.

Go here -- http://vpcp.chass.ncsu.edu/listen-the-sermon/ -- to hear the entire sermon from two different listening positions in Paul's Churchyard. Go here – http://vpcp.chass.ncsu.edu/hear/ -- to read an analysis of what we learned about the acoustics of Paul's Churchyard by Ben Markham, one of the acoustic engineers who worked with us on this project.

We learned from this part of the project that the buildings around Paul's Churchyard created a natural theater, amplifying the sound of the human voice sufficiently to allow people across Paul's Churchyard to hear a preacher clearly even 140 feet away if the space was otherwise quiet. This means that well-documented contemporary reports of challenges to audibility in this space reflect the sound of crowds, which, as John Donne says, could interrupt the preacher "for up to a quarter of an hour."

This realization has led us into more extensive considerations of the role of the crowd in the Paul's Cross sermon, not just as a source of competition with the preacher but also as a collaborator with the preacher in the overall experience of the sermon. All accounts of Donne's preaching describe him as eloquent and witty, but also emotionally communicative; his sermons, we learn, contain traces of efforts to prompt, even script, congregational response.

B. Accomplishments

1. Proposed in the application

    a. We have made available the experience of Paul's Churchyard as a 3-dimensional space and the Paul's Cross sermon as an experience that unfolds in real time.

b. We have been able to integrate historic evidence from paintings, engravings, and drawings with data about the precise size and location of buildings in Paul's Churchyard from recent surveys of the foundations of these buildings.

c. We have been able to assess the crowd-handling capabilities and the acoustic properties of Paul's Churchyard, including the audibility of open-air preaching in this space with different crowd sizes and under ambient noise conditions representative of London in the early 17th century.

d. We have been able to explore how events like the Paul's Cross sermon were organized and experienced.

2. Developed in the process of implementation

a. We have demonstrated the value of digital modeling as a means of bringing together disparate kinds of evidence about the visual appearance of lost places, drawing on the visual record but evaluating it in light of numerical data like contemporary surveys of buildings now lost together with archaeological surveys of surviving traces of these buildings.

b. We have demonstrated the value of digital modeling as a means of assessing the accuracy of historic images of past spaces

c. We have demonstrated the capability of acoustic modeling tools to recreate the sound of lost spaces.

d. We have demonstrated the capability of acoustic modeling to bring together for evaluation the sounds of lost spaces and the styles of address of early modern preaching.

e. We have demonstrated the limits as well as the opportunities provided by digital modeling of historic spaces. To have credibility, digital modeling requires transparency in process, acknowledging the capacity of digital models to carry the feel of authenticity even when they are pure speculation. This requires clarity about the sources of everything included in the model and the degrees of approximation involved in each detail.

3. Pointing toward further research

a. We have become aware that Paul's Cross sermons were delivered in the context of occasions that ended in the singing of Psalms, perhaps led by the cathedral choir. We hope to acquire funding to model choral and general audience psalm singing so that we can hear these through the acoustic model and add this element to our website.

b. We have become increasingly aware that the early modern sermon was a collaborative event, that congregations responded actively and vocally to the preachers, and that Donne's sermons show traces of this response. This opens up new lines of inquiry and understanding about the unfolding process of early modern preaching.

c. We have also become increasingly aware of the early modern sermon as an improvised event, based on notes developed in sermon preparation but composed in process on the occasion and in the context of the event itself. This opens up new lines of inquiry regarding the relationship between the texts of these sermons, now clearly recognized as memorial reconstructions done days or more after the event they reconstruct, and the sermon-as-delivered. Other new lines of inquiry involve the relationship between the sermon-as-preached and dimensions of the setting of its delivery such as the ringing of bells to mark the passage of time.

d. We have also become aware of the importance of coming to think of the meaning of early modern sermons as community-building and identity-forming occasions as well as occasions for the communications of ideas and beliefs.

C. **Continuation of the Project**

The next phase of this Project will be the Virtual St Paul's Cathedral Project, with three goals: 1. to complete our model of St Paul's Cathedral, both outside and inside, 2. to complete our model of Paul's Churchyard, modeling the three quadrants of the Churchyard not included in the Virtual Paul's Cross Project, and 3. to create an acoustic model of the interior of St Paul's Cathedral, where we will restage worship conducted inside the building. This will include recreating a full liturgical day at St Paul's on a major feast day like Christmas or Easter, with Bible readings, canticles, and prayers from the Book of Common Prayer (1604), two full sermons, and organ and choral music written by musicians at St Paul's in the late 16th and early 17th centuries for performance by the Cathedral's organs and its choir of men and boys.

D. Long Term Impact

My hope for the long term impact of this project is that our understanding of the Paul's Cross sermon as an interactive and collaborative performance will be taken up by other scholars and become a central concern in the scholarship of this period. I hope to contribute to this development by carrying out the next stage of this project (outlined in Section E, above) to create visual and acoustic models of St Paul's Cathedral and recreate worship services in this space. Our understanding of early modern worship in England is handicapped by lack of detailed primary evidence; the cathedral model will allow us to bring together aspects of what we know about worship in this cathedral into a coherent picture and to experience this understanding by restaging worship services using music composed for this space by musicians at St Paul's in the 1500's and 1600's.

I also hope that this Project will make a convincing case for expansion of acoustic modeling as a way of recovering the sounds of lost spaces in early modern England.

I also hope it will contribute to the necessary conversation around what it is that we do when we create models like this one. The most important aspect of this project for me has been the process of examining the historic record, evaluating its explanatory and reporting authority, and integrating the visual record with hard data from surveys of the buildings' foundations. The second has been the exploration of the concept of approximation; we know, pretty well, what St Paul's Cathedral looked like, but we know only to some degree of approximation what the Booksellers' shops looked like. We have used real buildings as our models, buildings that survive from the early modern period in urban areas or in cathedral towns, but we must be candid that what one sees around the north and east sides of the Visual Model is more representative of the buildings that were actually there in the 1622 than they are accurate depictions.

In the same way, we know the size of the base of the Preaching Station, but not how tall it was. So our model reflects a decision about height driven by modern principles of design and questions of audibility than by any precise sense of "how tall it really was." These limits have been acknowledged in our discussion on the website but it is difficult to represent in the model the degrees of accuracy we believe we are displaying. So there is the temptation, when one views the model, to conclude that everything one sees is accurate to the same degree.

Similar concerns apply to what one hears. No one knows what Donne's voice sounded like, or how fast or how slow he spoke, or what words or passages he chose to emphasize. What one does hear is informed by contemporary accounts of Donne's preaching style, and hence is, again, an approximation of Donne's voice rather than a reproduction of it. The pacing of the actor performing Donne's sermon is appropriate for maximum audibility in the space of Paul's Churchyard, it turns out, so that sounds like a reasonable approximation, but much of the specifics of intonation, emphasis, and the like, is at best suggestive.

In all these cases, there are reasonable alternatives; one of the outcomes I hope for this project is for others to come up with their own interpretations of Donne's voice and use our models to explore those possibilities.

For me, the most important aspect s of this project are twofold: 1. The consequences of reviewing the evidence and coming to at least tentative and approximate conclusions about how things looked, and what things sounded like, and 2. The consequences of thinking through carefully what had to happen if this event was to happen.

SUMMARY

I believe that we have been able to demonstrate the value of modeling lost spaces, both visually and acoustically, to help us bring together evidence from the past about the look and feel and sound of past places and events. We have been able to organize a wide range of kinds of information, assess its value as documentation, and integrate it into a coherent experience of lost sights and sounds. We have also

had to deal with the concept of approximation, the relative relationship between the image shown and the object it represents. Some parts of the model are highly accurate depictions; others are accurate generically or typically. We have had to be clear about sources and resources for everything we display, both visually and acoustically.

I have also been through a fundamental transition in my understanding of the early modern sermon. When I started this Project, I thought of a sermon as essentially a lecture given with energy and commitment, perhaps, but primarily about a presentation of ideas and information to a crowd of attentive listeners. Now, I think of these sermons as collaborative and interactive improvisations, with priest and congregation working together in an event that is as much about identity formation and community development as it is about specific elements of content.

I am fully aware, and in fact, insist on recognition of the fact that this Project is not about time travel, that there are vast areas of lost experience we will never be able to recover. This approach does, however, give us ways of experiencing differently and therefore thinking differently about the past, ways that can be transformative of our understanding.

I think we have done well in our presentation of the sights and sounds of Paul's Churchyard on November 5th, 1622; I do, however, recognize that we have not been able to communicate the smell.

The chief product of the Project is the website (http://vpcp.chass.ncsu.edu), the blog (http://virtualpaulscrossproject.blogspot.com/), and also the installation to be opened at the James B Hunt Library at NC State University in September 2013. Full details concerning this installation will be forthcoming.

Other products of this project include the visual model (built in the program Google SketchUP and imported into the AutoDesk program 3Ds Max) and the acoustic model developed by Acentech, Inc (Cambridge, MA).

The visual and acoustic models are available for others to use by consultation with Dr John N Wall at jnwall@ncsu.edu. The visual model allows for 360 degree fly-around viewing of the basic model. The full acoustic model allows the user to hear the acoustic space of the northeast corner of Paul's Churchyard with any combination of the following:

1. randomly occurring sounds of dogs, horses, and birds.

2. crowd sounds

3. sounds of the cathedral's clock bell ringing out the quarter-, half-, and three quarter-hours as well as any hour of the day

4. the sound of Donne's sermon for November 5th, 1622, from 12 different listening positions and in the presence of crowd sizes of 250, 500, 3000, and 5000 people