On Metadata:

Performing Arts Materials In Our Digital World

The performing arts, those arts in which humans present their own actions for display to other humans, are notoriously rich in texts, which we must understand to mean not simply articles of writing, but signifying expressions in any medium, including photographs, videos, and paintings. Prior to the modern notion of "multimedia," the performing arts brought together people, objects, and actions to express meaning. Yet the study of the performing arts has continually reduced these various texts to the media of the written word, offering explanations where visceral actions once played. Metadata, the offering of information about data, would seem to magnify this reduction, and yet it actually offers a crucial structure on which a system of rich explanation can bring life back to the events of performance as they are studied.

The Global Performing Arts Consortium (GloPAC), is an international group of institutions [i] and individuals[ii] committed to using innovative digital technologies to create multilingual, multimedia resources for the study and preservation of the performing arts worldwide. Our goals include:

- Enabling libraries, museums, performing arts groups, and individuals to provide global access to their performing arts collections.
- Providing scholars, students, and artists with easily accessible information that is both full and authoritative.
- Reframing the study of the performing arts from a global perspective so that diverse traditions can be effectively compared and contrasted.
- Facilitating the study of the performing arts in their source language(s) as well as in English.
- Offering creators of performing arts access to the wealth of world-wide performing arts resources on which to draw for inspiration and study.

- Making it possible for teachers at all levels to efficiently and dependably find multimedia, multicultural materials to fruitfully supplement their curricula.

To accomplish these goals GloPAC has undertaken a long-range project to build a system, accessible through the Internet for a global reach, which allows scholarly and public interaction with a variety of performing arts materials. The first part of this project has been to build a database system, the Global Performing Arts Database (GloPAD), a multilingual, Web-accessible database combining digital objects (pictures, video and sound clips, virtual reality objects, etc.) with authoritative and detailed descriptive information about each item.[1]

This paper is intended to describe the development of this database system for performing arts materials, in particular to describe for non-information technology people the metadata structure on which this system is based and how this structuring relates to the study of performing arts.

Performing reproduction

Across the globe, and throughout history, creating a performance has meant accumulating signs and setting them into associations for an audience to read. This gathering together of media becomes a performance when directed at a receptive audience. On the other hand, the appreciation and study of the performance has been a matter of gathering up some of those same material texts and explaining how they came together to create the performance event. Some performing art traditions have strong histories of collecting the media used in their performances, using those archives to reproduce productions and to train performers. Other performing arts do not preserve the material of their performances, focusing solely on the kinetic training of

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[1] A next step, on which we are currently embarking, is to set up Performing Arts Resource Centers (PARCs), Web-based environments advancing the teaching and study of the world's performing arts at all levels.

their performers' bodies and leaving the recording of performances to external agents. In either case, access to the traditions comes with involvement

How we maintain and reproduce the texts born out of performances is one of the dominant issues facing the performing arts worldwide. There is a cycle of production and reception that builds each tradition. Knowledge of how to read a given performance type is the same knowledge of how to produce those performances. Whether they intend to or not, both audiences and performers train to read the signs of an art. In most performing art traditions audiences expect certain elements, whether story contents or material signs such as set design or gestural patterns. This cycle of reception and production can be effected by external powers such as commercial tourism or academic study; in fact such external powers are always at work. We find this issue of reproduction in the tension between the traditional audiences—culturally literate audiences and populations more or less trained to read certain performing arts—and globalized audiences and practitioners. Whether or not one laments the decline of traditional arts due to the disappearance of knowledgeable audiences, the dominant appreciation—and therefore financial support—of performing arts resides today in a quasi-universal perspective. In particular the speed with which our digital age is able to consume, the blunt power of the Internet, does indeed risk homogenization. The habit of the Internet and digital reproduction is to reproduce many of the same items, proliferating certain iconic expressions and ignoring or burying the richer variations. But it need not be so if we supplement the basic patterns of reproduction with good information born out of the performing arts traditions themselves. For us to study the performing arts we must gain access to the material used in a tradition. For traditions to train others as audiences they must gain access to the means of transmitting those materials.

Interestingly this matter of repetition and variation is itself the fundamental paradox of performing: it is the play of reproducing a piece that defines the action of performing. One performs a piece by repeating the actions called for, and a piece comes into

existence when it is repeated in performance. When we go to examine the core of a performance we find that all we can talk about are the variations of the same that gave the moment meaning as an event. And at the level of the performing art of course the repetition of specific bodily movements, certain sounds, and sets and properties constitute the elements of training and accordingly the building blocks of that performing art. The play of reproduction and variation over time build the tradition of a given performing art.

So on all sides of the stage, in rehearsal, production, and appreciation, the question of how the multimedia texts of performing arts are preserved and made accessible impacts the continued life of those arts. For this reason we must not denigrate the archivists and the Web masters as taxonomists of dead artifacts, but rather work with them to allow the particular relationships of the performing arts traditions to be expressed in the materials being collected.

That is the mission, but what are these multimedia texts that we are talking about here? We can begin to envision the media that go into a typical theatre production by considering the schema on the following page. In this web of practices and objects we see some of the typical components of a theatre production: the venue that brings together the performers and audience; the designers who set the scene of action with back drops, costumes, or light and sound accompaniment; the rehearsals that prepare the ensemble action; or the publicity that attracts the audience and frames the performance for their appreciation. Each of these components has its own sub-components: its temporal definition (publicity goes out before the opening) or creative roles.
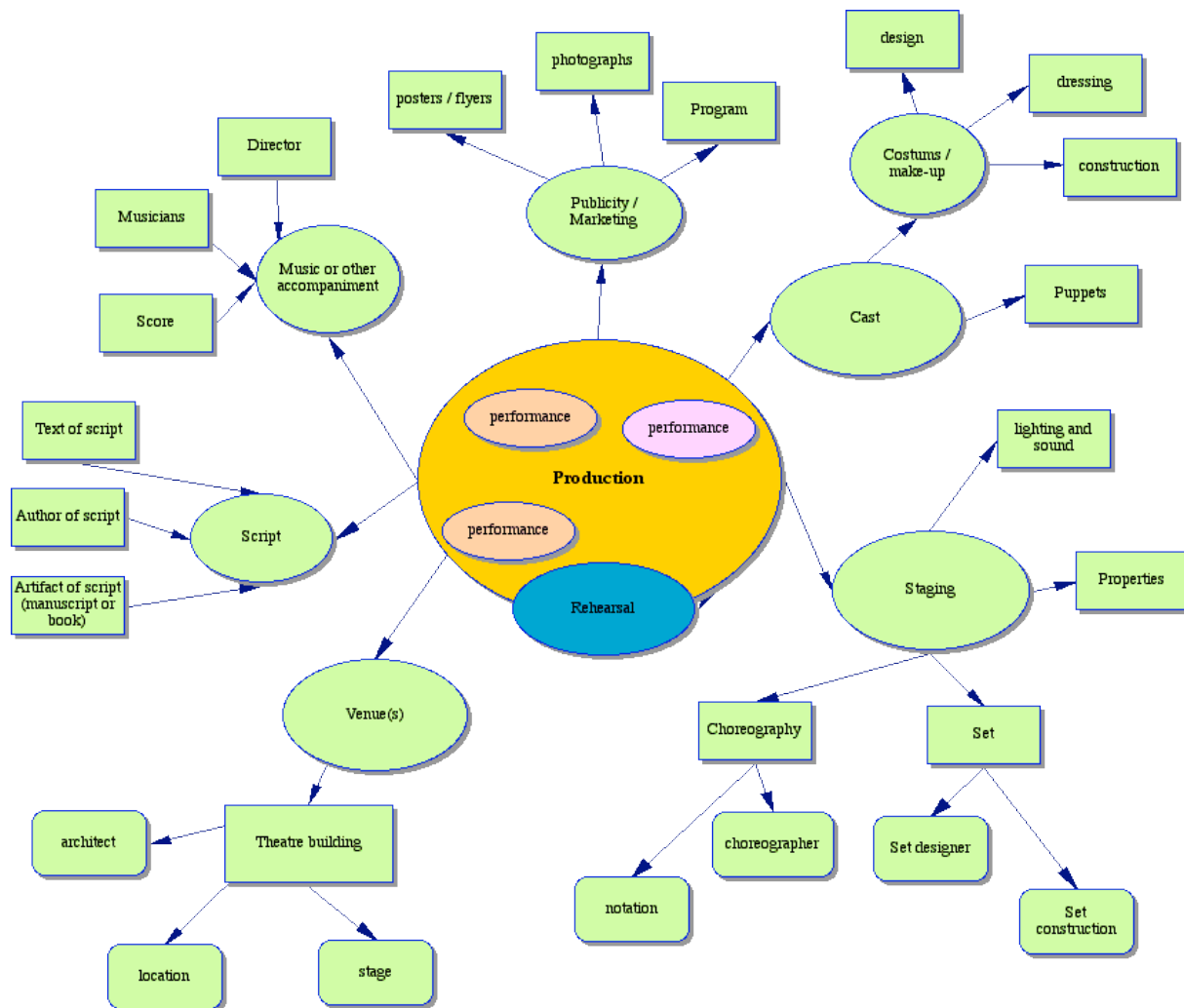
fig. 1: schematic web diagram of some of the elements of a typical theatrical production.

As immediately evident in the diagram, components of a production extend into further and further detail, and while individual productions or performing arts traditions may do away with one or another of the branches, many productions demand even further detail to properly make sense of what happened. There may be no ensemble rehearsal for a production of a noh play, a production consisting of a single performance on a given date at a certain place, but the *shite* actor's private recitation of lines or rehearsing of the dance steps are certainly a rehearsal of the piece. The other immediately apparent fact about the performing arts is that the components of any production are made up of a great variety of media. Perhaps this is one reason that

theatre history has been largely a matter of writing a narrative of the performance event, its preparation, its occasion, and sometimes its impact on either the local setting or the narrating author themselves. In other words, the written word, in narrative form, has been a powerful standardizer of the plethora of media that go into a performance event. Be that as it may, to talk about a production one must begin to break up its happenings into conventional building blocks.

To learn about a performing art or a performance within a performing art genre, whether as an audience member or as a practitioner, one must work with conventions and variations. And the organization of conventions and variations is what a metadata structure attempts. Michael Day has written:

> Metadata is sometimes defined literally as 'data about data,' but the term is normally understood to mean structured data about resources that can be used to help support a wide range of operations. These might include, for example, resource description and discovery, the management of information resources and their long-term preservation.
> While the first use of 'metadata' originated in contexts related to digital information (chiefly with regard to databases), the general understanding of the term has since broadened to include any kind of standardized descriptive information about resources, including non-digital ones.[2]

The use of "standardized, descriptive information about resources" has two purposes: to allow efficient retrieval of resources through a search process, and to

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[2] Michael Day, "Metadata In A Nutshell" http://www.ukoln.ac.uk/metadata/publications/nutshell/ 21August 2001. Accessed 9 April 2006. "So, for example, library catalogues, abstracting and indexing services, archival finding aids and museum documentation might all be seen as containing metadata. The advantages of this are twofold. Firstly, it allows librarians, archivists and museum documentation specialists to co-operate usefully across professional boundaries. Secondly, it enables the cultural heritage professions to communicate more effectively with those domains that also have an interest in metadata: e.g., software developers, publishers, the recording industry, television companies, the producers of digital educational content and those concerned with geographical and satellite-based information."

allow comparative study of resources in order to recognize similarities and differences. For the study of the performing arts, both uses are important.

The Global Performing Arts Database Project

When we ask ourselves why we have worked to create a metadata structure for the performing arts—and we have often in fits of exasperation asked ourselves why we are doing such a thing—the answers come back much more utilitarian than theoretical. That is, it is the uses to which a global collection of performing arts materials can be put that have driven the development of the database structure broadly and the many particularities of our overall project. But what are these so-called uses? What are the specific tasks behind the vague phrases such as "information resources" and "discovery methods?"

The Global Performing Art Consortium (GloPAC) was established in order to offer access to archives of performing arts related materials isolated by geographic distance or by institutional specialization. Digital reproduction and the expanse of the Internet have made it possible to distribute materials to audiences and locales previously unreachable. But simple access has often been a double-edge sword, introducing new visual materials but discarding in the process the expected contextual information that has traditionally been taught through training in a performing art tradition or in the use of an archive. In contrast, GloPAC not only allows access to previously isolated archives, it also provides information that puts the materials of those archives into their performing arts contexts. Specifically GloPAC projects bring together not only the materials from various collections, but also people who have specialized knowledge about those materials, people who collect the materials (archivists), study the material (scholars) and practice the performing arts out of which the materials were born.

This collaboration among archivists, scholars and practitioners is fundamental. The database has been designed not simply to collect, but to exist as a space for

continuous collection and collaboration between people in different geographic regions. Below I will describe the Internet interfaces for the database that permit this remote collaboration. For example, the necessity for the database to function in several different languages is a need responding to the complex vocabularies and linguistic histories of performing arts, not just a matter of "user ease".

Our project also identified the need to be able to bring together and describe different types of materials when dealing with the performing arts. While the database itself contains only digital files,[3] these files serve as digital surrogates for a wide variety of artifact materials because the performing arts are always a complex mix of plastic arts, sound, movement, and other visual presentations. While photographs are the most common medium, used to represent everything from scripts (text) to set designs (drawings or paintings) to stage properties (physical objects) to rehearsals (activities) to moments of performance themselves, GloPAD was never intended to be only a photo collection and has had to accommodate audio-visual, three-dimensional, and other recording types as well as interactive models in order to properly reflect the media of the performing arts.

GloPAD: An Online Database

The Global Performing Arts Database (GloPAD) is a system that collects and offers for display digital media and their descriptive information. While the database itself is a complex arrangement of tables and rows of numbers and text and relations among them, the real power of the system lies in the "interfaces" that allow information to be entered or extracted from that arrangement of data tables. The main power of

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[3]We have faced the common digital age challenge of rapid technological decay. That is, while there are more and more sophisticated formats for digitally capturing or reproducing physical objects and events, formats also quickly become obsolete or exile certain user-audiences who do not have the current technology to play a new medium. This aspect of digital collections is magnified in GloPAD because artifacts from the performing arts come in such a variety of media that multiple formats are necessary to reproduce them digitally. Until recently most collections databases have been organized around single formats of materials.

these interfaces is that they allow many people to write and read on the same collection of items and their information. There are two main interfaces for GloPAD: an "Editors' Interface" that allows a group of editors to add and edit information and to upload digital files such as photos or video, and a "Public Interface" that displays the items and their related information. Both of these interfaces are Web-accessible, meaning that they are Web sites which people bring up on their computer in an Internet browser (e.g. Firefox, Netscape, Internet Explorer, Safari, and so on). The importance of Web-accessibility is that it allows interaction with the database by people in physically remote locations. Currently, on a daily basis we have people editing and uploading to the database from locales as remote as Singapore, St. Petersburg, Russia, Ithaca, N.Y., Seattle, and Tokyo.

Structurally the heart of the GloPAD system is the Editors' Interface, for it is the environment that allows the collaborative addition and revision of information and it defines the records that can be created by editors. The Editors' Interface has a close relationship to the actual database itself, while the Public Interface is a selective expression of the contents of the database, displaying certain data and relationships but certainly not all. In fact, though we speak of a single Public Interface for GloPAD (the site that resides at www.glopad.org), there could be, and will be, several public interfaces, different expressions of the contents of the database based on different arrangements of material or different functional designs. These alternate public interfaces are what we propose as Performing Arts Resource Centers (PARCs), Web sites that focus one set of the contents of GloPAD.

For the general Web audience, the public interface of GloPAD is what they experience. Expressing what is "in" GloPAD, the public interface is a Web site that displays records of information on either specific items—still images, video clips, or virtual models—or records of information on elements of performing arts—piece records, biographical records, production records, and such that we call "background records" because they are not tied to a single digital item. A record in the case of the public

interface is a Web page that hosts information related to that item, whether the item be a digital reproduction of a performing art artifact or a piece of background information such as a short biographical record of an actor. There are two crucial features of this interface that rely on the technology of the Internet: the relating of records by way of active links and the dynamic rendering of the page contents.

The public interface consists of pages of records, but what makes it useful is the ability to jump from one record page to a related one with just a click. Web page linking allows for an interactive structuring of information in the relations between records. Beyond the browsing "discovery" functions—search processes being a whole other field of development connected to metadata structuring—the linking of records allows a person to discover information in paths of their own making. For example, from a record of a photo of a costume, one can go to the linked record on the piece or pieces which use that costume, and then to a link to a production of the piece, to the person who directed the production, and on to other pieces the person directed, etc.. And in each case background records (those that are just information) have links to the images, video clips, or other digital items to which they have some relation.
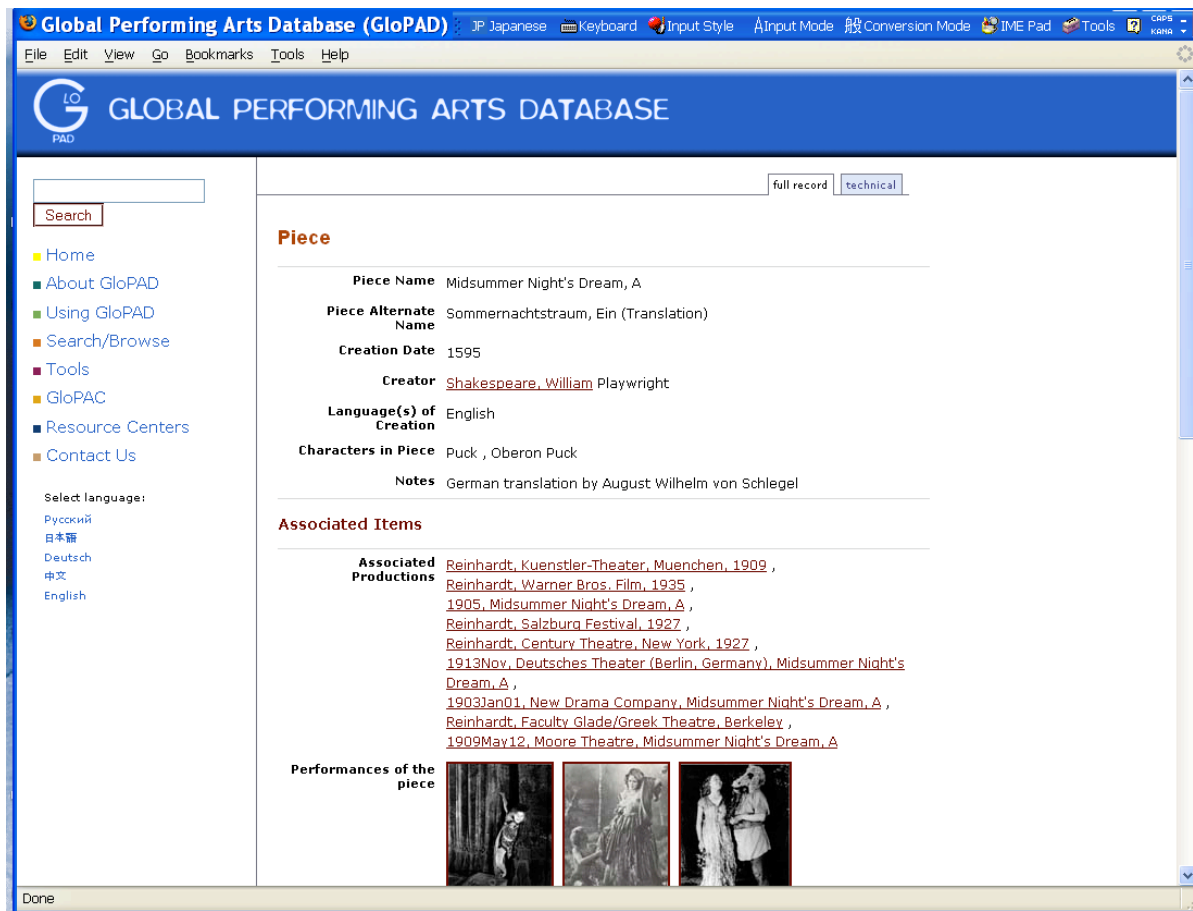
Fig. 2: example of a piece record from the GloPAD Public Interface. Underlined red text and thumbnail images are links to their own Person, Production, or Digital Object records.
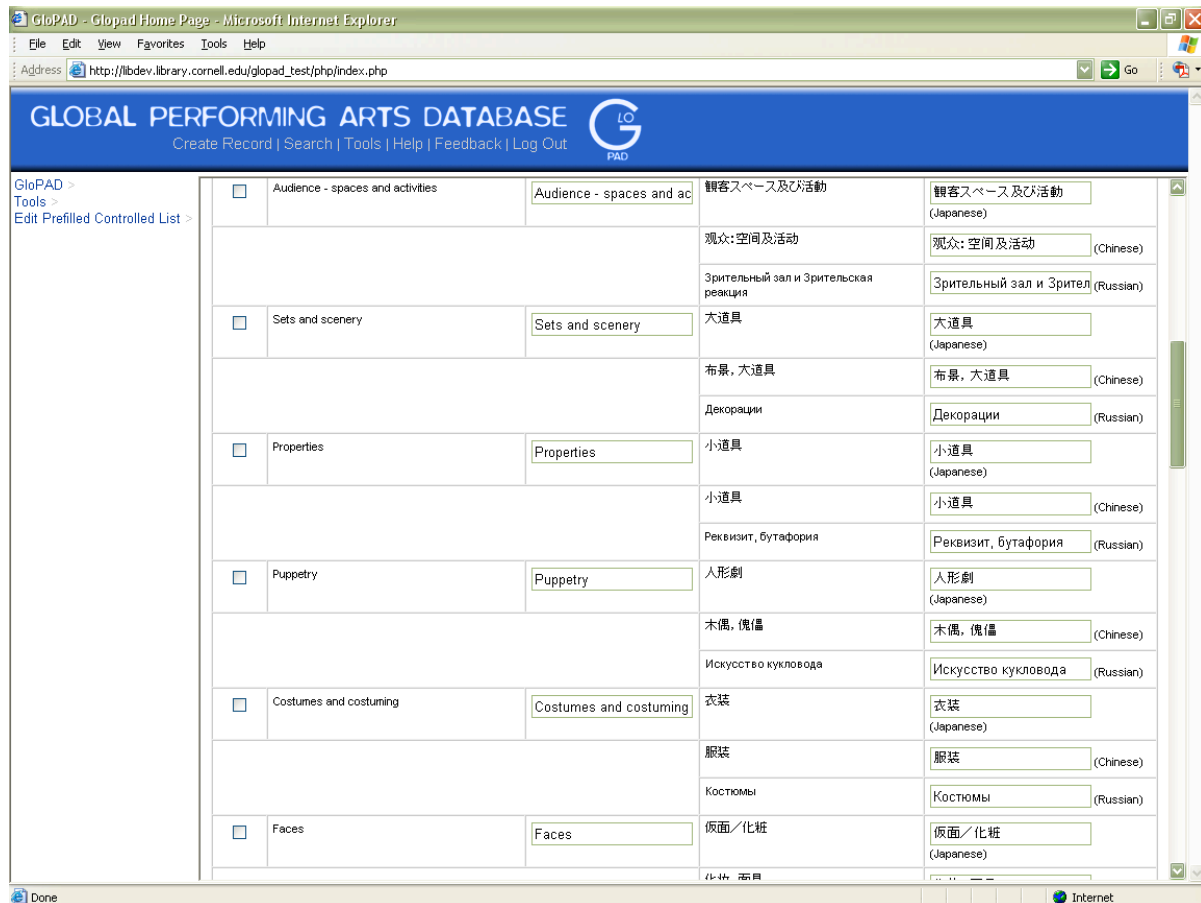
The public interface is dynamic in the sense that the relationships between records can be read along many different paths. Furthermore, the interface is dynamic in that the relationships (links) as well as the record contents themselves are continuously updated.   This dynamic interaction with the database is what makes the public interface more than a static publication such as an exhibition catalogue. That is, each time a record is viewed its contents are "drawn" at that moment so that changes are immediately expressed. In real life this means that a photo that today is only annotated with the date it was taken and the performing arts represented can tomorrow be part of a record that includes information on the piece being performed

and the persons shown. This updating occurs, of course, by work done on the other interface, the Editors' Interface.

The Editors' Interface of GloPAD, the heart of the system, consists of a number of Web page forms for adding or editing records of information. This interface has three key features: it is accessible at all times to its group of registered editors; it reuses records in order to allow the cumulative addition and editing of information; and it is designed to expand its descriptive metadata.

The Editors' Interface is accessible because it is a Web site that registered editors can access from any computer with an Internet connection and a standard Web browser. Though it is simply a Web site, different editors have different levels of administrative access; only those with special training can delete certain records or modify significant lists. While seemingly unrelated to performing arts, these administrative features are actually quite important to the system because they allow the structuring of information about performing arts to grow and adapt. The vocabularies and relationships that make up a database record can be modified or expanded, which means for example that a category or term that did not exist in the system yesterday can be added today and used immediately to describe a new set of material. This feature of the Editors' Interface allows the descriptive metadata to be expanded.

fig. 3: The GloPAD Editors' Interface. Edit screen for the vocabulary list of categories of components. Edits made on this screen then display on the pull-down lists of record screens. This is an example of the relational metadata in the GloPAD system.

Within the Editors' Interface there are three basic types of information or data: descriptive metadata about individual items such as a given person or performance (which we sometimes call the actual content, and which includes technical data about the digital objects collected), relational metadata that gives us information about the relationships between items or their general performing arts context, and administrative metadata that keeps track of how the database system itself is functioning. In order for the real content—descriptive information about performing arts—to be built, the other types of information must do their work. In order to describe a given performance event, I must have access to the vocabularies and categories that will let me tell you what sort of piece was performed, in what sort of space the performance took place,

and the sorts of functions the people fulfilled in the production. While we can blithely reduce this descriptive metadata down to the "who, what, when, and where," selecting appropriate answers is actually a much more complex task.

GloPAD Metadata Structure

The event of performance is the core around which other information is built. The performance moment (which may be represented by the tenth of a second required to click a camera, or the 30 minutes of a video recording) is the momentary act of performance caught in the artifact object (digital object). We have been trying to get at what is loosely called the "subject" of material in databases and catalogues that track books or pictures. The subject for GloPAD is the performing art history that is related to the artifact. Unlike most other theatre related databases, GloPAD is not focused on the dramatic text (the piece), nor on the chronological history of a theatre's programs (performance records), although both of these aspects of performing art history are part of the information captured in our database. Instead GloPAD tries to accommodate the rich description of all the various elements that can go into performances and their traditions.

As we have said previously, the Editors' Interface (EI) of GloPAD represents the core of the database project. Beyond the EI's characteristics as an online and expandable system of data entry, it structures how artifacts are described. This structuring of description, the metadata structure of the database, appears most clearly in the Editors' Interface framework of records.

First of all we must recognize the difference between descriptive and administrative metadata in the database system. Administrative metadata is the information about the running of the database system, such matters as who is entering information, when records are created or edited, and what changes have been made to certain sets of data. While administrative metadata is crucial to the organization of the

work processes and the project as a whole—as we have outlined above in explaining the organizational system of the project—it is largely information generic to database projects and does have anything specific to do with performing arts information. The other side of the equation is the descriptive metadata. Descriptive metadata is what makes GloPAD a unique database system devoted to the performing arts; the descriptive metadata of GloPAD is the layout that lets people describe various elements of the performing arts. We find this layout in the series of record forms in the GloPAD Editors' Interface.
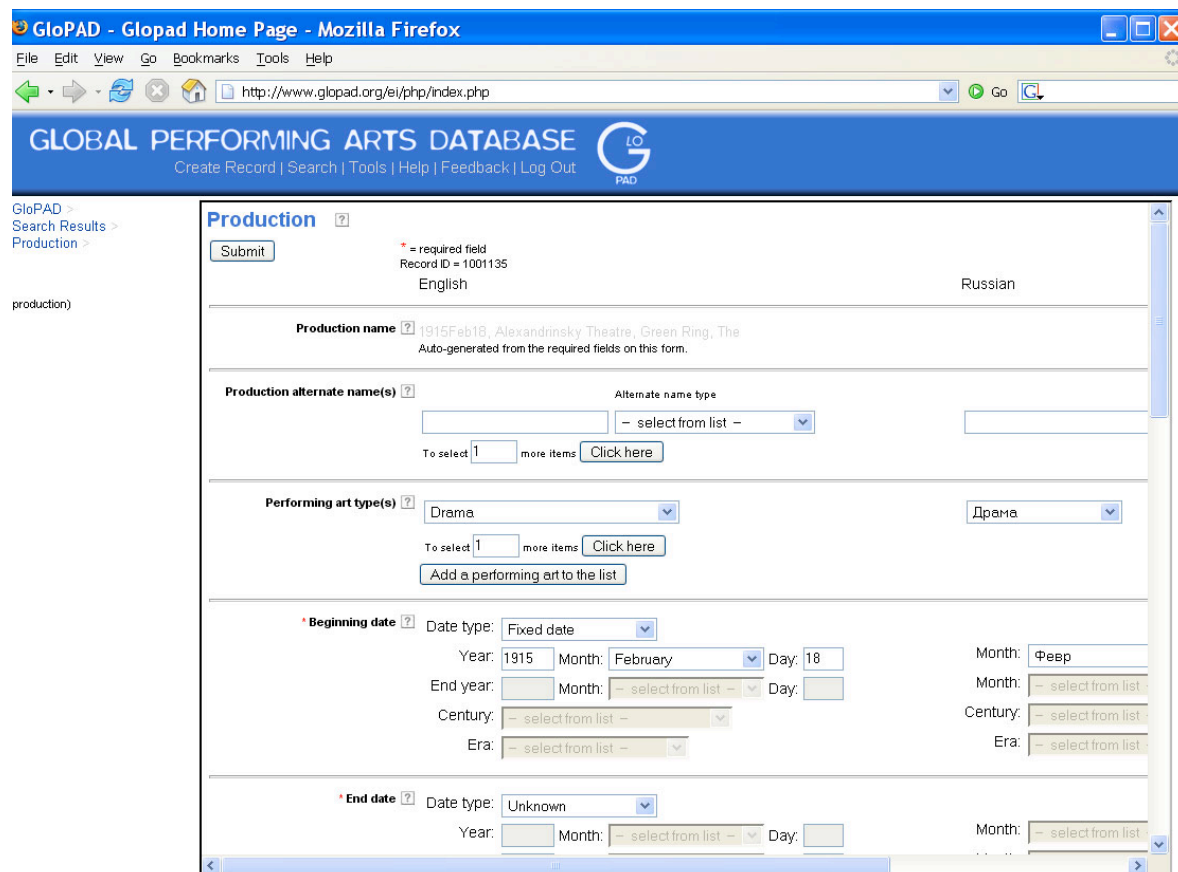

fig. 4: GloPAD Editors' Interface, Production record screen. An example of a background record in the system.

Conventional theatre-related databases are either indexes of performance records, biographical collections, or philological archives of dramatic texts. GloPAD includes each of these kinds of information, but attempts to allow a broader examination of performance history by centering materials as generic objects. This

means that rather than organizing the database around a certain type of information, such as listings of show dates and locations or chronologies of actors' professional appearances, the system simply captures an object of any material sort and allows a description of that object's relevance to performing arts history.

When an editor has a performing arts artifact they wish to present in GloPAD, they first catalogue the digital rendering of that artifact (technical metadata) and then go on to describe the relationships to performing arts histories that make that artifact significant to performing arts histories. To describe the performing arts significance of a digital object the GloPAD structure divides the description into two paths of information: information about what is represented in that specific object, and background information needed in order to describe the specific object but not unique to that object. The records describing what is represented in the specific object are called the "core records," while other information is added in "background records." Background records are used repeatedly, for example the biographical information on a person or the name and historical information on a certain piece. The core records have a one-to-one relationship with a digital object, describing the unique elements represented in that object.

An editor entering into GloPAD a photo of a moment in a scene from *Waiting For Godot* would in the core records describe the performance moment of that single photo, detailing the particular gesture, the character(s) depicted, visible parts of the set, or other details shown therein. But to complete the description the editor will also make use of background records such as records about the production and the piece *Waiting For Godot*; the biographical records of Samuel Beckett, the actor(s) depicted, the director and other creators; and the record of the place where that performance occurred . Each of these background records either exist already in the database or must be created for they will be used for other images of other productions or other pieces. With a solid base of background records at her disposal, the editor describes her

individual artifact by detailing relationships amongst existing entities in the system—this photo shows Mr. X playing the character of Y in the piece Z created by the playwright Q.

GloPAD Core Records

In GloPAD, the central structural concept is the performance moment. This is defined as the moment of performing that is represented in the digital object as offered by the contributing editor In the case that a digital object represents something that is not an event of performance, the contributing editor describes that element in a separate, non-performance, record that we call the Component record. Logically, the performance event is central to GloPAD so the EI system follows a structure where an editor asks first whether performance is represented and then goes on to give information on all that which is not performance. Often a digital object will contain both the representation of a performance event and other elements that are significant to performing arts history, in which case both a Performance record and one or more Component records will be created. The result is that a single digital object can be linked to a great wealth of information, whether about the performance moment represented therein or whether information about some material or practical aspect of the performing art tradition out of which that performance moment was born.

Take, for example, the very common digital object of a photo image taken of a performance, a photo taken by an audience member of the action on stage. The GloPAD system is set up to register—beyond the cataloging information on the digital file and its source—the moment of performance seen in the snapshot: the time of the event, who is shown, what they are doing, and, importantly, within what context they are performing. Context in most cases means information about the given day's show, the two-hour event, or the production, a two-week run of performances, of which that photo captured a single moment.

In the GloPAD metadata structure we have chosen to center this performance moment instead of the common concept of "a performance," which is usually assumed

to be the vague entity called the show. We have come to this way of presenting performing arts materials through a process of trial and error, because the usual manner of describing performance history privileges a narrow concept of a piece, a concept that belongs to drama but that is not applicable in many histories of performing arts. For example, the typical program for a Kabuki theatre has been for the last hundred years or more a selection of what we might call scenes from pieces. To present a set of photos of a given five minutes of one night's show as representing the show as a whole would be worse than reductive, missing the main focus of that theatre, which is to present the acting and design rather than retelling a narrative story. By centering the performance moment, GloPAD is able to offer both a description of the momentary action and the record of productions as well.

Of course there are many objects in the database that do represent shows in the typical sense of a day's program. Tickets, leaflet programs, and playbills all offer information on their shows and can be described within GloPAD as artifacts of a given production, described in Component records as elements of the performing art and related to the people, places, pieces, and groups involved in the production of the show.
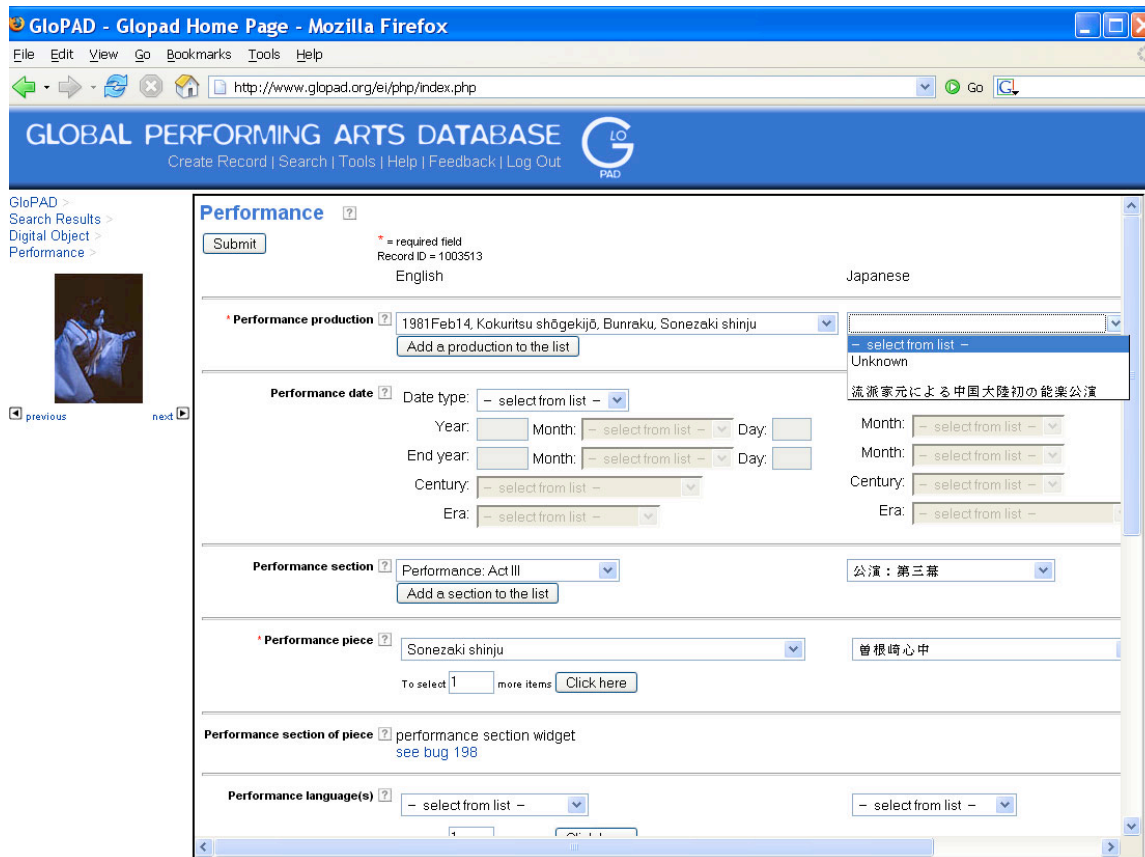
Fig 5: The GloPAD Editors' Interface Performance record screen. This record refers to the performance moment represented in the thumbnail image to the left.

The core records of GloPAD are those records that relate uniquely to the single digital object being described. In terms of content—as opposed to administrative or cataloguing metadata such as the specifications of the digital file or its archive—there are two core record forms on the Editors' Interface: the Performance record and the Component record. The Performance record describes the moment of performance represented in the digital object. If what is represented in the object is not an act of performance then one describes the contents with the Component record. In short a Component record is anything performing arts related that is not a representation of an act of performance. Thus a photo of a set construction, or an audio recording of a rehearsal, or a photo of a mask will all be described using the Component record. Component records for a given digital object are potentially infinite, that is, there can be as many things described as relevant to the performing arts as an editor sees

represented in the object. For example, what information about a performing artist's, a director's, or a playwright's life are relevant? In how much detail should they be described? These questions have no simple answer, which is why GloPAC has chosen to work with experts in the performing arts and to leave many such judgements up to them. The result is that some digital objects in GloPAD are described in great depth, others with only minimal information. All records can be expanded by future specialists.

Sometimes a photo of a performance moment will also serves as a excellent example or a particular costume, mask, or set. Then the editor can create both a Performance record, and one or more Component records. This is particularly important for performances that have been infrequently documented, allowing limited sets of record materials to be springboards for detailed, and on-going, explanation.

GloPAD Background Records

If we look back at the diagram of elements of a production in figure 1, we get an idea of the background records that are necessary to begin describing artifacts from performing arts history. At a very crude level these are the standard "who, what, when, where, and why." But for the performing arts the elements that answer these general questions have some particular inflections, inflections which change with each different genre of performing art we investigate.

What are the GloPAD background records?

The piece. After dates of performance, the piece performed is the most commonly looked-for element of performing arts histories. Yet the concept of the piece is rather loosely defined for most performing arts, relying on the assumptions and processes of unification that go with dramatic histories. This means that theatres that have developed within the cultural sphere of the dramatic text, those traditions that have the plays written in advance by single playwrights and have those plays performed as a single piece, have assumed the role of standard bearer for all the performing arts

traditions and have had the effect of creating archives in their mold. GloPAD, in trying to open itself to the global sphere of performing arts traditions, has had to work with the concept of piece by leaving opportunities for the supplemental definition of specific historical instances. We are not arguing that talking about pieces is mistaken, nor even that pieces are merely a means to look up other material. There is no doubt that what piece is being performed is a bit of information that is quite important for all sorts of treatments of performing arts history. Simply put the common idea of a performance piece does not fit the actual histories of many performing arts traditions and thus must be modified in order for materials from those other traditions to be described within the GloPAD system.

For GloPAD the base definition of a piece is "the framework of the performance, whether written by a named person or persons or culturally transmitted." Obviously this definition leaves most of the work of definition up to the editor and the process of describing this "framework of the performance." So let us look at the process of creating a Piece record for GloPAD using the Editors' Interface and the Piece record form.

As with other background records in GloPAD, Piece records are used to compile information within other types of records. It may seem too obvious, but when one is compiling a record of a given production one of the first bits of information you will give is the pieces that were performed during that production. In GloPAD this process is carried out by linking the records for those pieces to the record for the production that you are describing. Thus instead of writing anew "Craps Last Tape" for each of eight productions including that piece, I create one record for the piece "Craps Last Tape" and simply select it in each of the eight production records. All the records within GloPAD work this way, with many of the record types—Production for example—consisting mainly of arrangements of selections.

The relationship of an element to a known piece is one of the standard indexes for many performing arts, therefore the GloPAD metadata structure allows for many

elements to be described by their relationship to a named piece. A given set or scenery is designed for a given piece, and that set design is recorded in many traditions as belonging to the piece. Yet how that piece is named and how that piece is used in a single production often varies so that GloPAD must not only link the piece to the element, but also describe the specific relationship. For example, a photo of a set design must be accompanied with the information that the design was produced for a certain section of a piece, and for a production that used a translation of the piece into another language. The piece as a unified whole, and its history of development and transformation, are recorded in the GloPAD Piece record. The uses of that piece, or its variations, are recorded in other records through relational metadata such as fields identifying the "section of piece performed" or "function of creator of piece."

Person. The Person record for GloPAD is in itself pretty straight-forward; it is a biographical record of the names, birth and death dates, and main institutional associations of a person. Links to this record, however, occur on almost every other record form in the system, creating a web of relationships that give definition to a person's performing arts history. The main function of the record in itself is to identify a single individual as a known, and named, entity. The record is then put into relationship with many other records throughout the system, and in these relationships a performing arts history of the individual is formed. So, for example, if we look back at our production diagram in figure 1 we can see that in almost every sub-sphere of action we would want to describe certain people and their functions in that part of the production. In large commercial theatre productions such as a Broadway show each job may be fulfilled by a separate individual: each actor playing a single character, a lighting designer and a sound designer as well as several costumers, the director with little connection to the house manager and publicity staff. In other productions all of these functions may be carried out by a single person. The individual who directed and played one part in one production will likely have played other parts for other

productions or may have written a play produced by some other group of individuals, and as that Person record is associated with more and more events in the database a history is developed.

There are two associations with people, or Person records, that are especially important in the context of the performing arts: the ability to track multiple names of an individual, and a list of functions that people carry out. In the case of multiple names, GloPAD allows editors to register on the Person record itself so-called alternate names and, more importantly, the types of these alternate names. For example, in many professional traditions performers take on different stage names in the course of their careers and it is valuable to list these various names and the dates they were used. Alternate names are also needed in the transliteration of names from one written script to another or simply in the various spellings in a single language. On the GloPAD Person record form one enters the text for an alternate name and then selects the type of that alternate name from the following list of name types: Alternate spelling, Alternate transliteration, Birth name, Childhood name, Full name, Maiden name, Married name, Nickname, Pen or literary name, Religious name, Retirement name, Stage name, Earlier stage names.

The functions that people carry out are, as stated above, not a part of the Person record, but rather are generated as that person is associated with other records such as records of a production, a performance moment, or a piece. The types of functions that a person fulfills depends on the contextual record. Thus for example, a person might be designated as a translator, composer, editor, or choreographer for a Piece record, but will not be designated as the puppeteer or dancer for that piece. Functions such as puppeteer or dancer would be recorded for a production or a performance. The full list of person functions only appears on the Component form, where the object being described can be almost any sort of object and activity and

therefore the association a person has to that element can be any function imaginable in the performing arts.[4]

Production. The concept of "a production" is widely used in the performing arts; however, its definition varies according to the histories of different genres. Therefore in GloPAD we have tried to make the Production Record both general and flexible, defining a production as simply "a collection of one or more performances." The record is filled out with details of when and where the production took place, and who participated in its creation. We have tried to build in to the GloPAD Production record the ability to describe the many ways that performing arts have been produced. . This means that the first order of business is to record the type of production that is being described, not only the dates and venues of the production event, but also how the event performances was carried out. One widely held notion of a production today is a run of once-a-day performances of a given play over a period of time, but even within this definition there are many variations. A Broadway show may run almost daily for months or even years, while a repertory theatre company may mix multiple performances of several pieces in a season. There are also many other types of productions. In Japan for example a noh play is usually performed only once with the same cast in a event that includes several noh plays as well as sung or danced pieces and a kyogen play. On the other hand Kabuki and puppet theatres run on twenty-day cycles of programs usually comprised of scenes taken from different pieces, often with distinct day and evening programs. In GloPAD we have pared down the production types to a list of five: repertory theatre run, multi-performance program, single event, long run, and tour. These very generic types have the advantage of not adhering to any

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[4] The list of functions, like other lists in the database, is amendable, capable of adding further functions as new performing arts are described. The full list of person functions currently in GloPAD is shown in the file "glopad_functions_ml_jun2006_nputf8.txt" appended to the DSpace record for this paper. We are regularly asked by editors entering materials into GloPAD to add terms to this list, and we maintain translations of the needed terms in Russian, Japanese, Mandrin Chinese, and German.

single performing art tradition, leaving the details of the type of the production to explication within the record.

The matter of naming productions is closely linked to the issue of types, and as with the situation of types we have chosen to abstract production names while offering the opportunity to record and describe the particular instances of production names coming out of distinct traditions. Thus the name of a production in a GloPAD Production record is actually auto-generated, a default combination of the required entries of beginning date, venue, performing group, and piece title. However, the GloPAD Production record also has an entry field for the Production Alternate Name where one can register the name given to the production from within its performing art tradition, for example the name given on a program published as part of the production.

Perhaps the most difficult matter to describe in database relationships is the plethora of roles that people handle in the course of a theatrical production. Historically one cannot assume the straight-forward structure of a production organized by a director and carried out by actors playing single character roles. Thus one of the crucial parts of the GloPAD Production record is the associating of persons to a given production. Structurally this happen by linking in the database Person records, identified by person names, to Production records. But beyond the basic link, which in effect only says "this person was associated with this production," we must describe the manner of involvement that person had in the production. This is where the complicated vocabularies of performance traditions must be given their place. By allowing vocabulary lists such as theatrical roles to be added to by our contributing editors we make a place for these traditional vocabularies.[5]

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[5] Appended to the DSpace record of this paper are a number of tab-delimited text files that contain exports of the current performing arts vocabularies in the database. These are the lists of functions, performing arts roles, production types, piece types, person alternate name types, arts of performance, and component types.

Conclusion

To describe a performance in words has always seemed to be deeply unsatisfactory. Or rather, any verbal reproduction of the event of performance has always seemed to first apologize for what it cannot reproduce for the reader or listener. This is in part a matter of the limitations of words, but fundamentally is a matter of the translation of one set of texts into another. The Global Performing Arts Database, despite its multimedia approach to recording performing arts histories, does not escape the problem of reproduction. However it does offer a structure for bringing together many more discourses, many more ways of speaking about and witnessing performances, than the words on paper approach to explication. The very act of dynamically bringing together material, both artifacts from performance histories and vocabularies of description, creates a richness that has not been tested until now. GloPAD, as a site bringing together material contributors and description editors, is a new type of territory that will produce new travelogues in the study of the performing arts.

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[i] Current GloPAC Institutional Partners (in order of date of first participation):

Universities: Cornell University, University of Washington, Binghamton University, Columbia University, National University of Singapore, University of Hawai'i at Manoa, Hosei University (Tokyo), University of California, Irvine, Pennsylvania State University

Museums: St. Petersburg State Museum of Theatre and Music (Russia), Museum of the City of New York. San Francisco Performing Arts Library and Museum

Performing Arts Organizations: Gertrude Stein Repertory Theatre (New York), The Necessary Stage (Singapore), Thang Long Water Puppet Theatre of Hanoi, Chinese Opera Society (Singapore), Kanai Scene Shop Ltd.

[ii] See http://www.glopac.org/about/index.php for a complete list of participating individuals.